## Internal Ex-Post Project Evaluation 2019

## **Evaluation Report**

May 2023

# Japan International Cooperation Agency

(JICA)

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T     20       T     20	rear* 2006 2006 2006 2008 2004 2005 2006 2008 2007 2007 2007 2007 2007 2007 2007	Evaluation           Ex-post           Evaluation           Evaluation           Evaluation           Evaluation           Evaluation           Evaluation	Year 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019 2019	Philippines Laos Timor-Leste El Salvador Afghanistan Malawi Tanzania Tanzania Tanzania	Roads Forestry / Forest Preservation Higher Education Agriculture / General Government / General Vocational Training Agriculture / General Water Supply	Improvement of Quality Management for Highway and Bridge Construction and Maintenance Forest Strategy 2020 Implementation Promotion Project The project for Capacity Development of Teaching Staff in the Faculty of Engineering, the National University of Timor-Leste (CADETES) Supporting the small-scale farmeres in the Eastern Region Project on Enhancing Women's Economic Empowerment in Afghanistan Institutional and Human Resource Development Project For One Village One Product Programme (OVOP) Formulation and Training of the Guideline of the DADP Cividelinea on Enrichten Coherne Development	200600935 200601529 200601585 200603028 200603845 200603845
T 20 T 20 T 20 T 20 T 20 T 20 T 20 T 20	2006 2008 2004 2005 2006 2008 2007 2007 2007 2007	Ex-post           Evaluation           Evaluation           Evaluation	2019 2019 2019 2019 2019 2019 2019 2019	Timor-Leste El Salvador Afghanistan Malawi Tanzania Tanzania	Preservation Higher Education Agriculture / General Government / General Vocational Training Agriculture / General Water Supply	Forest Strategy 2020 Implementation Promotion Project The project for Capacity Development of Teaching Staff in the Faculty of Engineering, the National University of Timor-Leste (CADETES) Supporting the small-scale farmeres in the Eastern Region Project on Enhancing Women's Economic Empowerment in Afghanistan Institutional and Human Resource Development Project For One Village One Product Programme (OVOP) Formulation and Training of the Guideline of the DADP	200601585 200603028 200603845
T     20	0008 0004 0005 0006 0008 0007 0007 0007 0007	Ex-post           Evaluation           Ex-post           Ex-post           Evaluation	2019 2019 2019 2019 2019 2019 2019	El Salvador Afghanistan Malawi Tanzania Tanzania	Higher Education Agriculture / General Government / General Vocational Training Agriculture / General Water Supply	The project for Capacity Development of Teaching Staff in the Faculty of Engineering, the National University of Timor-Leste (CADETES) Supporting the small-scale farmeres in the Eastern Region Project on Enhancing Women's Economic Empowerment in Afghanistan Institutional and Human Resource Development Project For One Village One Product Programme (OVOP) Formulation and Training of the Guideline of the DADP	200603028 200603845
T     20	0008 0004 0005 0006 0008 0007 0007 0007 0007	Evaluation           Ex-post           Evaluation	2019 2019 2019 2019 2019 2019 2019	El Salvador Afghanistan Malawi Tanzania Tanzania	Agriculture / General Government / General Vocational Training Agriculture / General Water Supply	Timor-Leste (CADETES) Supporting the small-scale farmeres in the Eastern Region Project on Enhancing Women's Economic Empowerment in Afghanistan Institutional and Human Resource Development Project For One Village One Product Programme (OVOP) Formulation and Training of the Guideline of the DADP	200603028 200603845
T 20 T 20 T 20 T 20 T 20 T 20 T 20 T 20	2004 2005 2006 2008 2007 2007 2007 2009	Evaluation           Ex-post           Evaluation	2019 2019 2019 2019 2019 2019	Afghanistan Malawi Tanzania Tanzania	General Government / General Vocational Training Agriculture / General Water Supply	Supporting the small-scale farmeres in the Eastern Region Project on Enhancing Women's Economic Empowerment in Afghanistan Institutional and Human Resource Development Project For One Village One Product Programme (OVOP) Formulation and Training of the Guideline of the DADP	200603845
T 20 T 20 T 20 T 20 T 20 T 20 T 20 T 20	0005 0006 0008 0007 0007 0007 0009	Ex-post           Evaluation	2019 2019 2019 2019 2019	Malawi Tanzania Tanzania	Government / General Vocational Training Agriculture / General Water Supply	Project on Enhancing Women's Economic Empowerment in Afghanistan Institutional and Human Resource Development Project For One Village One Product Programme (OVOP) Formulation and Training of the Guideline of the DADP	
T 20 T 20 T 20 T 20 T 20 T 20 T 20 T 20	1006 1008 1007 1007 1007 1007	Ex-post Evaluation Ex-post Evaluation Ex-post Evaluation Ex-post Evaluation Ex-post Evaluation Ex-post Evaluation	2019 2019 2019 2019	Tanzania Tanzania	Vocational Training Agriculture / General Water Supply	Institutional and Human Resource Development Project For One Village One Product Programme (OVOP) Formulation and Training of the Guideline of the DADP	200604840
T 20 T 20 T 20 T 20 T 20 T 20 T 20 T 20	1006 1008 1007 1007 1007 1007	Ex-post Evaluation Ex-post Evaluation Ex-post Evaluation Ex-post Evaluation Ex-post Evaluation	2019 2019 2019 2019	Tanzania Tanzania	Agriculture / General Water Supply	Formulation and Training of the Guideline of the DADP	
T 20 T 20 T 20 T 20 T 20 T 20 T 20	2008 2007 2007 2007 2009	Ex-post Evaluation Ex-post Evaluation Ex-post Evaluation Ex-post Evaluation	2019 2019	Tanzania	Water Supply	Cuidelines on Indention Coheren Der 1	200605042
T 20 T 20 T 20 T 20 T 20	2007 2007 2007 2009	Ex-post Evaluation Ex-post Evaluation Ex-post Evaluation	2019			Guidelines on Irrigation Scheme Development The Project for Enhancement of Water Supply	
T 20 T 20 T 20 T 20	2007	Evaluation Ex-post Evaluation Ex-post Evaluation		Tanzania	Social	Management of Zanzibar Water Authority	200605044
T 20 T 20	2007	Evaluation Ex-post Evaluation	2019	1	Infrastructure / General	The Rural Water Supply and Sanitation Capacity Development Project	200605059
т 20	:009	Ex-post Evaluation	•	Senegal	Education	Project on the Improvement of Educational Environment	200605487
			2019	Laos	Banking / Finance	Project for Enhancing Capacity of Public Investment Program Management (Phase 2 project)	200700667
т 20	013	Ex-post	2019	Bangladesh	Water Supply	The Project for Advancing NRW Reduction Initiative	200701280
т 20	013	Evaluation Ex-post		-	Government /	(PANI) of Chittagong WASA Project for Strengthening Capacity of Ho Chi Minh	
	015	Evaluation	2019	Viet Nam	General	National Academy of Politics and Academy of Public Administration in Training of Public Leaders and Civil	200701983
т 20	2008	Ex-post	2019	Tanzania	Agriculture /	Technical Cooperation in Capacity Development for the ASDP Monitoring and Evaluation System (The Phase 1	200702477
		Evaluation Ex-post		Bosnia and	General Agriculture /	Project) The Project for Confidence-Building in Srebrenica on	
т 20	2008	Evaluation	2019	Herzegovina	General	Agricultural and Rural Enterprise Development The Project for Capacity Development on Transportation	200704336
т 20	2011	Ex-post Evaluation	2019	Philippines	Transportation / Traffic / General	Planning and Database Management in the Republic of	200800077
т эт	2010	Ex-post	2019	Sri Lanka	Government /	the Philippines The Project for Training of Frontline Officers in	200800421
	2010	Evaluation Ex-post	2019	(Oceania)	General Rivers / Erosion	Community Development in Conflict Affected Areas in Sri The Strengthening Community-Based Disaster Risk	200800430
		Evaluation Ex-post			Control Agriculture /	Management Project Technical Cooperation in Strengthening the Backstopping	
	.008	Evaluation Ex-post	2019	Tanzania	General Water Resources	Capacities for the DADP Planning and Implementation The Programme for Emergency Water Supply for	200800912
G 20	.009	Evaluation	2019	Ethiopia	Development	Addressing Climate Change Strengthening Environmental Management and Linkages	0868690
т 20	012	Ex-post Evaluation	2019	Thailand	Environment Issue	among Central, Regional, Provincial and Local Levels	200900131
т 20	2010	Ex-post Evaluation	2019	China	Environment Issue	The project for promotion of municipal solid waste recycling	200900176
т 20	2010	Ex-post Evaluation	2019	Indonesia	Environment Issue	Project for Climate Variability Study and Societal Application through Indonesia-Japan "Maritime Continent COE"- Radar-Buoy Network Optimization for Rainfall Prediction	200900251
т 20	2009	Ex-post Evaluation	2019	Philippines	Forestry / Forest Preservation	Project on Integrated Coastal Ecosystem Conservation and Adaptive Management under Local and Global Environmental Impacts in the Philippines (SATREPS)	200900303
т 20	2009	Ex-post Evaluation	2019	Cambodia	Health / Health Care	The Project for Improving Maternal and Newborn Care through Midwifery Capacity Development	200900381
т 20	2010	Ex-post	2019	Cambodia	Health / Health	Strengthening Human Resources Development System of	200900382
т 20	010	Evaluation Ex-post	2019	Viet Nam	Care Health / Health	co-medicals in Cambodia Project for Improvement of the Quality of Human	200900434
т 20	.009	Evaluation Ex-post	2019	Afghanistan	Care Health / Health	Resources in the Medical Service System Urban Health System Strengthening Project	200900817
	.005	Evaluation	2015	Aighanistan	Care	Capacity Development of Fisheries Resources Monitoring	200500017
т 20	2010	Ex-post Evaluation	2019	Morocco	Fisheries	for Sustainable Management of Small Pelagic Resources in the Kingdom of Morocco	200900914
т 20	010	Ex-post Evaluation	2019	Ghana	Health / Health Care	Studies of Anti-viral and Anti-parasitic Compounds from Selected Ghanaian Medicinal Plants (SATREPS)	200900935
т 20	010	Ex-post	2019	South Africa	Environment	Prediction of Climate Variations and Its Application in the	200901000
G 20	009	Evaluation Ex-post	2019	Nepal	Issue Roads	Southern African Region (SATREPS) The Project for the Improvement of Community Access	0961410
	2009	Evaluation Ex-post	2019	Malawi	New / Renewable	The Project for Introduction of Clean Energy by Solar	0961720
	1012	Evaluation Ex-post	2019		Energy New / Renewable	Electricity Generation System The Project for Introduction of Clean Energy by Solar	0962150
G 21	.012	Evaluation	2013	Nigeria	Energy	Electricity Generation System The project for Capacity Development of Faculty of	0902130
т 20	2010	Ex-post Evaluation	2019	Timor-Leste	Higher Education	Engineering. Science and Technology, the National University of Timor-Leste (CADEFEST 1)	201000106
т 20	011	Ex-post	2019	Malaysia	Environment	Project for Development of Low Carbon Society Scenarios	201000158
т 20	011	Evaluation Ex-post	2019	Malaysia	Issue Rivers / Erosion	for Asian Regions Research and Development for Reducing Geo-Hazard	201000174
	1011	Evaluation Ex-post	2019	Philippines	Control Roads	Damage in Malaysia caused by Landslide and Flood Improvement of Quality Management for Highway and	201000183
	2010	Evaluation Ex-post	2019		Agriculture /	Bridge Construction and Maintenance, Phase 2 Livelihood Improvement Project for Southern	201000183
1 20	.010	Evaluation	2013	Laos	General	Mountainous and Plateau Areas Project for Sustainable Development of Human Resources	201000228
т 20	2011	Ex-post Evaluation	2019	Laos	Health / Health Care Human	for Health to Improve Maternal, Neonatal and Child Health Services Project for the Capacity Development of Business Persons	201000236
т 20	2010	Ex-post Evaluation	2019	Laos	Resources / General	through Laos-Japan Human Resource Development Institute	201000237
т 20	2010	Ex-post Evaluation	2019	Laos	Health / Health Care	Capacity Development for Sector-wide Coordination in Health Phase 2	201000240
т 20	011	Ex-post Evaluation	2019	Viet Nam	Environment Issue	Establishment of Carbon-Cycle-System with Natural Rubber	201000263
т 20	010	Ex-post	2019	Viet Nam	Agriculture /	Project for the Development of Crop Genotypes for the	201000268
т 20	011	Evaluation Ex-post Evaluation	2019	Panama	General Fisheries	Midlands and Mountain Areas of North Vietnam Comparative Studies of the Reproductive Biology and Early Life History of Two Tuna Species Yellowfin Tuna and Pacific Bluefin Tuna for the Sustainable Use of These	201000445

Type of Assistance	Project Start Year*	Type of Evaluation	Evaluation Year	Country	Sector/Theme	Project Name	Project Number
Т	2010	Ex-post Evaluation	2019	Paraguay	Water Supply	Project for Capacity Development of Distribution Network Management of ESSAP	201000507
Т	2011	Ex-post Evaluation	2019	Egypt	Roads	The Project for Improvement of the Bridges Management Capacity	201000559
т	2013	Ex-post Evaluation	2019	Ghana	Electrical Power	The Project on Electrical Engineers Training for African Countries (EETA)	201000591
Т	2011	Ex-post Evaluation	2019	Malawi	Agriculture / General	Sustainable Land Management Promotion Project	201000598
т	2011	Ex-post	2019	Kenya	Rivers / Erosion	Project on Capacity Development for Effective Flood	201000605
т	2011	Evaluation Ex-post	2019	Tanzania	Control Government /	Management in Flood Prone Areas Project for Capacity Development for Local Government	201000637
т	2011	Evaluation Ex-post	2019	Burkina Faso	General Primary	Training Phase 2 Project of Teacher Training Improvement in Science and	201000643
		Evaluation			Education	Mathematics at Primary Level Phase II Establishment of Sustainable Livelihood Strategies and	
т	2011	Ex-post Evaluation	2019	Cameroon	Agriculture / General	Natural Resource Management in Tropical Rain Forest and Its Surrounding Areas of Cameroon: Integrating the Global Environmental Concerns with Local Livelihood Needs	201000646
Т	2011	Ex-post Evaluation	2019	Tanzania	Water Resources Development	Rural Water Supply and Sanitation Capacity Development (RUWASA-CAD) Project Phase 2	201000654
Т	2011	Ex-post Evaluation	2019	Zambia	Primary Education	Strengthening Teachers' Performance and Skills (STEPS) through School-Based Continuing Professional Development Project	201000656
Т	2011	Ex-post Evaluation	2019	Tanzania	Water Supply	Project for Enhancement of Water Supply Management of Zanzibar Water Supply Authority Phase 2	201000669
Т	2011	Ex-post Evaluation	2019	Malawi	Business Management	Strengthening the Capacity of OVOP Programme for Delivering Services to OVOP Group in Malawi	201000677
т	2011	Ex-post Evaluation	2019	Nigeria	Agriculture / General	Rice Post-Harvest Processing and Marketing Pilot Project in Nasarawa and Niger States	201000679
Т	2012	Ex-post Evaluation	2019	Mauritius	Rivers / Erosion Control	Project for Landslide Management	201000714
Т	2010	Ex-post Evaluation	2019	Senegal	Primary Education	Project on the Improvement of Educational Environment Phase 2	201000720
Т	2014	Ex-post Evaluation	2019	Kenya	Ports	Project for Technical Assistance to Kenya Ports Authority	201000923
т	2011	Ex-post	2019	Viet Nam	Transportation /	on Dongo Kundu Port, Mombasa Master Plan Project for Improving Public Transportation in Hanoi	201001241
т	2011	Evaluation Ex-post	2019	Ethiopia	Traffic / General Rivers / Erosion	Capacity Development Project for Countermeasure Works	201001755
т	2011	Evaluation Ex-post	2019	Peru	Control Agriculture /	for Landslide Project for Improving Livelihood of Small-Scale Farmers	201002700
_		Evaluation Ex-post			General Tourism /	in Cajamarca Project on Community Tourism Development through	
Т	2011	Evaluation	2019	Ethiopia	General	Public-Private Partnership in Simien Mountains National Park and Surrounding Areas	201003042
Т	2011	Ex-post Evaluation	2019	Tanzania	Agriculture / General	Project for Capacity Development for the ASDP Monitoring and Evaluation System Phase 2 (The Phase 2 Project)	201003384
Т	2011	Ex-post Evaluation	2019	Laos	Government / General	Project for Establishing Public Investment Plan under NSEDP (Phase 3 project)	201100192
Т	2011	Ex-post Evaluation	2019	Viet Nam	Environment Issue	Multi-beneficial measure for the mitigation of climate change in Vietnam and Indochina countries by development of biomass energy	201100209
Т	2012	Ex-post Evaluation	2019	Viet Nam	Business Management	Project for Strengthening the Enforcement of Intellectual Property Rights in Viet Nam	201100210
Т	2013	Ex-post Evaluation	2019	Viet Nam	Energy / General	Establishment of Energy Management Training Center	201100218
Т	2011	Ex-post Evaluation	2019	Viet Nam	Roads	Development of Landslide Risk Assessment Technology along Transport Arteries in Viet Nam	201100219
Т	2012	Ex-post Evaluation	2019	El Salvador	Fisheries	Production Improvement and Extension of Shellfish Aquaculture Project	201100316
Т	2011	Ex-post Evaluation	2019	Nicaragua	Social Welfare Services	The Project for Enhancing Integrated Service Delivery for Social Risk Prevention and Attention for Families and Communities	201100347
т	2011	Ex-post Evaluation	2019	Chile	Social Infrastructure / General	Research Project on Enhancement of Technology to Develop Tsunami-Resilient Community	201100358
т	2011	Ex-post Evaluation	2019	Ecuador	Regional Development Planning	Integrated Sustainable Rural Development in the Province of Chimborazo	201100369
Т	2012	Ex-post Evaluation	2019	Jordan	Tourism / General	Sustainable Community Tourism Development Project in As Salt City	201100430
т	2013	Ex-post Evaluation	2019	Morocco	Urban Sanitation	The Project for Capacity Development for Solid Waste Management in Tiznit Commune and Neighboring Communes	201100466
т	2011	Ex-post Evaluation	2019	Kenya	Basic Healthcare	Project for Development of Rapid Diagnostics and the Establishment of an Alert System for Outbreaks of Yellow Fever and Rift Valley Fever	201100516
т	2012	Ex-post Evaluation	2019	Tanzania	Roads	Rural Road Maintenance System Development Project	201100557
т	2012	Ex-post Evaluation	2019	Mauritius	Social Infrastructure / General	Project for Capacity Development on Coastal Protection and Rehabilitation	201100599
Т	2011	Ex-post Evaluation	2019	Senegal	Primary Education	Strengthening Mathematics, Science, and Technology Education Project (PREMST) Phase 2	201100635
т	2011	Ex-post Evaluation	2019	Uganda	Government / General	Project for Capacity Development in Planning and implementation of Community Development in Acholi Sub-Region	201100957
т	2011	Ex-post Evaluation	2019	Viet Nam	Health / Health Care	Determine the Outbreak Mechanisms and Development of a surveillance Model for Multi-Drug Resistant Bacteria (SATREPS)	201102131
т	2012	Ex-post Evaluation	2019	Egypt	Agricultural Engineering	Project for Drainage Water Quality Control for Irrigation in Middle Delta	201102494
т	2013	Ex-post Evaluation	2019	India	Transportation / Traffic / General	Master Plan Study on the Introduction of Intelligent Transport System (ITS) in Bengaluru and Mysore	201102787
Т	2012	Ex-post Evaluation	2019	Tanzania	Agriculture / General	Project for Strengthening the Backstopping Capacities for the DADP Planning and Implementation under the ASDP Phase 2	201103032
Т	2012	Ex-post Evaluation	2019	Brazil	Urban Sanitation	Project for Improvement of Operation and Maintenance of Water Supply and Sewerage Systems in Parana State	201103229
т	2011	Ex-post Evaluation	2019	Kenya	Urban Sanitation	The Project for Capacity Development of Solid Waste Management of Nairobi City	201103456
т	2013	Ex-post Evaluation	2019	Viet Nam	Urban Transport	Project on Improvement of Urban Transportation of Danang City	201103497
	2012	Ex-post	2019	Viet Nam	Banking / Finance	Project for Promoting E-customs in Vietnam	201103781

Type of Assistance	Project Start Year*	Type of Evaluation	Evaluation Year	Country	Sector/Theme	Project Name	Project Number
T	2012	Ex-post Evaluation	2019	Guinea	Measurement / Map	The Large Scale Topographic Mapping Project for Sustainable Development in Conakry City and its Surrounding Area	201103782
т	2012	Ex-post Evaluation	2019	Mozambique	Business Management	The Project for Development of Local Industry through One Village One Product Movement	201200047
Т	2013	Ex-post Evaluation	2019	Tajikistan	Roads	The Project for Improvement of Road Maintenance	201200094
Т	2012	Ex-post Evaluation	2019	Palestine	Banking / Finance	Project for Improvement of Local Finance System in Palestine	201200156
Т	2013	Ex-post Evaluation	2019	Palestine	Tourism / General	Project for Sustainable Tourism Development through Public Private Partnership (Phase 2)	201200164
Т	2013	Ex-post Evaluation	2019	Cambodia	Measurement / Map	Project for Productions of Integrated Digital Terrain Model and Electronic Navigational Chart in the Kingdom of Cambodia	201200196
Т	2013	Ex-post Evaluation	2019	Laos	Development Planning / General	Project for Urban Development Management	201200221
Т	2013	Ex-post Evaluation	2019	Kyrgyz Republic	Transportation / Traffic / General	Project for Capacity Development for Maintenance Management of Bridges and Tunnels	201200296
Т	2012	Ex-post Evaluation	2019	Cuba	Water Resources Development	The Project for Capacity Enhancement of Groundwater and Seawater Intrusion Management	201200301
Т	2013	Ex-post Evaluation	2019	Ethiopia	Water Resources Development	Project for Groundwater Resources Assessment in the Middle Awash River Basin	201200311
т	2012	Ex-post Evaluation	2019	Тодо	Transportation / Traffic / General	The Project for the Study on Togo Logistics Corridor Development	201200316
Т	2014	Ex-post Evaluation	2019	Timor-Leste	Development Planning / General	Project for Study on Dili Urban Master Plan	201200320
Т	2013	Ex-post Evaluation	2019	Viet Nam	Rivers / Erosion Control	Project for Building Disaster Resilient Societies in Vietnam (Phase 2)	201200370
т	2012	Ex-post Evaluation	2019	Tunisia	Tourism / General	Project for Strengthening the Capacity for Tourism Promotion	201200461
Т	2013	Ex-post Evaluation	2019	Viet Nam	Industry / General	Project for strengthening TOT functions at Hanoi University of Industry (HaUI)	201200494
т	2013	Ex-post Evaluation	2019	Ecuador	Agricultural	Project for Reactivation of "Catarama River Basin Irrigation Project"	201201460
т	2013	Ex-post Evaluation	2019	Burkina Faso	Agriculture / General	The Project for the Formulation of Master Plan for the Market-Oriented Agriculture in Burkina Faso (PAPAOM)	201202259
т	2012	Ex-post Evaluation	2019	Tunisia	Regional Development Planning	Project on Regional Development Planning of the Southern Region in the Republic of Tunisia	201202784
т	2013	Ex-post Evaluation	2019	Cote d'Ivoire	Measurement / Map	Digital Topographic Mapping Project for Urban Infrastructure Development	201202911
т	2012	Ex-post Evaluation	2019	Cote d'Ivoire	Development Planning / General	Project for the Development of Urban Master Plan in Greater Abidjan	201202920
Т	2013	Ex-post Evaluation	2019	Ethiopia	New / Renewable Energy	The Project for Formulating Master Plan on Development of Geothermal Energy in Ethiopia	201203104
G	2012	Ex-post Evaluation	2019	Palestine	Urban Sanitation	The Project for the Improvement of Solid Waste Management in the West Bank	1260610
G	2012	Ex-post Evaluation	2019	Honduras	Electrical Power	Micro-Hydroelectric Power Generation Project in the Metropolitan area of Tegucigalpa	1260860
G	2012	Ex-post Evaluation	2019	Tajikistan	Health / Health Care	The Project for Improvement of Medical Equipment and Water Supply and Drainage Facilities for Maternal and Child Health Care Institutions	1261080
т	2015	Ex-post Evaluation	2019	Papua New Guinea	Regional Development Planning	Project for the Study on Lae-Nadzab Urban Development Plan	201300224
Т	2014	Ex-post Evaluation	2019	Bosnia and Herzegovina	Government / General	The Project for Confidence-building through Rural Development	201300259
Т	2014	Ex-post Evaluation	2019	Uganda	Agricultural Engineering	Project on Irrigation Scheme Development in Central and Eastern Uganda	201300276
Т	2014	Ex-post Evaluation	2019	Mongolia	Banking / Finance	Project for Capacity Building of Public-Private Partnership in Mongolia	201300530
G	2013	Ex-post Evaluation	2019	Ethiopia	Water Supply	The Project for Water Supply to Small Cities in Southern Part of Amhara Regional State	1360110
G	2013	Ex-post Ex-luation	2019	Laos	Weather / Earthquakes	Project for Improvement of Equipment and Facilities on	1360780
G	2014	Ex-post	2019	Djibouti	Water Transport /	Meteorological and Hydrological Services Project for Construction of Patrol Vessels for Enhancing the Ability to Secure Maritimo Sefety and Security	1361050
Т	2014	Evaluation Ex-post Evaluation	2019	Senegal	Ships Development Planning /	the Ability to Secure Maritime Safety and Security Project for Updating Dakar Urbanization Master Plan by the Horizon 2025	201400309
	2014	Ex-post	2019	Sri Lanka	General Measurement /	Capacity Development Project for Creating Digital	201400516

Country Name			anagement for H	lighv	way and Bridge Construction and Maintenance
Republic of Philipp	ines	(Phase I and II)			
I. Project Outline					
Background	Decembre 30% of at the p was an staff an	ber 2009, the proportion of the the paved national roads needed proportion of the paved national urgent issue for DPWH. In parti	paved national ro d repair and rehab road of 95%, furt cular, it was esser cycle composed	ads i ilitat ther o ntial	partment of Public Works and Highway (DPWH) in n the total length was approximately 70% but about ion due to cracks of pavements. While DPWH aimed enhancement of road and bridge maintenance system to strengthen technical capacity of the regional office a series of activities including inspection planning,
Objectives of the Project	mainten manual aimed a mainten engined <phase 1. Ove cons 2. Proj man imp</phase 	hance management and bridge s and guidelines as well as impr at enhancing capability of engin hance management of roads/br ers in other regions. I & II> rall Goal: Capability of DPWH truction and maintenance and m ect Purpose: Capability of engin agement of road/bridge constru- roved in the pilot regions.	maintenance ma ovement of mana eers of DPWH ar idges, thereby co I and Regional C aintenance manag eers of DPWH, R action and mainte	ontrib ontrib Office gemen egion enanc	nal Offices and district engineering offices on quality ces and maintenance management of road/bridge is
Activities of the Project	Ce 2. Ma <ph: and <ph: Slop as w Man 3. In Japanes <phase 1) E: 2) Tr 3) Tr 4) Ec M 5) Oj ac <phase 1) E: 2) Tr 3) Tr 10 4) Ec Mase 1) E: 2) Tr 3) Tr 10 5) Oj ac 2) Tr 3) Ec ac 2) Tr 3) Ec ac 2) Tr 3) Ec ac 2) Tr 3) Ec ac 2) Tr 3) Ec ac 2) Tr 3) Ec ac 2) Tr 3) Tr 10 20 20 20 20 20 20 20 20 20 20 20 20 20</phase </phase </ph: </ph: 	ntral Visayas Region (Region VI in activities: ase I> i) Development and delive maintenance), ii) Formulation of ase II> i) Establishment of road/ e Management System (RSMS) rell as trainings in CAR and R agement System (BMS) and imports (to carry out above activities be Side I> coperts from Japan: 15 persons aining in the third country donesia): 9 persons puipment: Clinometers and Lase eters, etc. peration cost: Travel cost, co ministration cost for the regiona II> coperts from Japan: 11 persons aining in Japan: 22 persons puipment: Office equipment, for d equipment, etc.	II), and Davao Reg ery of training pro Etechnical manual bridge maintenan- and improvemen egion VII, iii) De provement of RMI (Vietnam and er-Type Distance st for vehicles, l offices, etc.	gion gram s on ce ma t of F evelc MM Phii <ph 1) 2) 3)</ph 	e), Cordillera Administration Region (Region CAR), (Region XI) ns on quality management of road/bridge construction road/bridge construction and maintenance anagement cycle, ii) Promotion of utilization of Road Routine Maintenance Management Manual (RMMM) opment of engineering inspection manual on Bridge as well as trainings in Region VII and Region XI lippine Side hase I> Staff allocated: 21 persons Land and facilities: Office spaces in DPWH and the three model Regional Offices Operation cost: cost for the pilot projects, cost for the project staff hase II> Staff allocated: 56 persons Land and facilities: Office spaces in the three model Regional Offices Operation cost: cost for project implementation
Project Period	<phase Februar <phase< td=""><td>y, 2007 – February, 2010 II&gt;</td><td>Project Cost</td><td>(ex- <ph< td=""><td>hase I&gt; -ante) 350 million yen (actual) 498 million yen hase II&gt;</td></ph<></td></phase<></phase 	y, 2007 – February, 2010 II>	Project Cost	(ex- <ph< td=""><td>hase I&gt; -ante) 350 million yen (actual) 498 million yen hase II&gt;</td></ph<>	hase I> -ante) 350 million yen (actual) 498 million yen hase II>
Implementing		r, 2011 – September, 2014 I and Phase II>		(ex-	-ante) 350 million yen (actual) 439 million yen
Agency		nent of Public Works and Highw	vav (DPWH)		
Cooperation Agency in Japan	<phase< td=""><td>I&gt; Ministry of Land, Infrastruct</td><td>ure, Transport and</td><td></td><td>rism ra Engineering International, Hanshin Expressway</td></phase<>	I> Ministry of Land, Infrastruct	ure, Transport and		rism ra Engineering International, Hanshin Expressway

## II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

[Evaluation of the Project Purpose and the Overall Goal and the envisaged logic for achieving and sustaining the project effects]

The following issues should be considered in order to evaluate the achievement level of the Project Purpose and the Overall Goal of the two projects.

Phase I: The indicator 1 of the Project Purpose is overlapped with the indicator of the Output 1. The indicator 3 of the Project Purpose is not relevant due to no activity to establish training system.

Phase II: The indicators of the Project Purpose used by the terminal evaluation were different from the ones in the revised project design matrix (ver.3) but there was no explanation about reasons why the terminal evaluation team used different indicators. Therefore, while the information and data at the time of terminal evaluation are used for the ex-post evaluation, the verifiable indicators for the Project Purpose and the Overall Goals for the Phase II are based on the PDM ver.3

Therefore, in the ex-post evaluation, the two projects are interpreted as one intervention, and the Project Purpose and Overall Goal were restructured to verify achievement levels and continuation of the effects.

#### 1 Relevance

<Consistency with the Development Policy of the Philippines at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policies of the Philippines prioritizing maintenance and rehabilitation roads and bridges in the "Medium-term Development Plan" (2004-2010 and 2011-2016) and "Medium-term Program" (2005-2010 and 2011-2016) of DPWH and those policy priorities had not changed throughout the project periods.

<Consistency with the Development Needs of the Philippines at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the development needs of the Philippines for proper maintenance and repair of roads and bridges in order to improve the service level and to reduce repair cost as well as to extend the lifetime of the road infrastructure for sustainable development of the country. The development needs had not changed throughout the project periods.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA Policy to prioritizing support for "enhancement of economic structure for sustainable growth and overcoming of constraints on growth" in the "Country Assistance Program" (2000). <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The restructured Project Purpose for the Phase I and Phase II was achieved. The technical methods and quality control required by the technical manuals and guidelines have been utilized (Indicator 1). In terms of the number of defects repaired (Indicator 2), there were 6 cases of road repair and 12 cases of bridge repair under the Phase I. Also, 2 pilot projects for road maintenance and 8 pilot projects for bridge maintenance were conducted under the Phase II. In terms of proposing and taking the necessary countermeasures (Indicator 3), damages on bridges were properly diagnosed and the most proper measures were taken to fix the damages under the Phase I. Under the Phase II, the conditions of the target roads and bridges were improved through implementation of the pilot projects.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued. In the pilot regions of CAR, RO VII, and RO XI, the inspections/repair of roads and bridges by using the technical manuals/guidelines developed/revised by the projects, including the regular inspection and repair, have been continuously conducted but the frequency of regular inspections and repairs have decreased due to the improvement of road and bridge conditions. The trainings of road and bridge maintenance by using the technical manuals/guidelines developed/revised by the project have been conducted by DPWH but the number of trainings has decreased because some of the engineers have been already trained. For the period from February 2016 to January 2019, some trainings, such as the technical guidelines and manuals developed by the project, were conducted under the Phase III (2016-2019) in non-pilot regions as part of the sustainability program in cascading information and skills to other regions.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved by the time of ex-post evaluation. For the period from 2015 to 2018, DPWH conducted the trainings of road maintenance and bridge maintenance for each Regional Office (Indicator 1). From 2016, the trainings were conducted for non-pilot regions as a part of the project activities of the Phase III. Also, for the same period, all the 10 Regional Offices conducted inspections of roads and bridges at least once by using the technical manuals/guidelines developed/revised by the project and necessary repair works (Indicator 2). In addition, the Department Order (DO no. 94 s. 2014) has been issued instructing all DPWH Regional, District Engineering Offices and Project Management Offices to use the technical guidelines/manuals developed during the Phase II for road and bridge maintenance work and the District Engineering Offices have conducted regular inspection on roads and bridges in accordance with the Department Order No.41 Series of 2016. Conditions of roads and bridges have improved over time because of the regular inspection and maintenance conducted by DPWH (Indicator 3). Only in Region XI that the percentage of roads with bad condition have increased from 2011 to 2018 but such increase can be attributed to calamity and conversion of local/provincial roads to national roads.

Some positive impacts by the project have been observed at the time of ex-post evaluation. The participation of women in the trainings conducted by DPWH increased from 25% in 2015 to 35% in 2019. No negative impact on natural and social environment by the project has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

	Tenie vement of 110	eet i uipose and overan doar					
Aim Indicators		Results					
(Project Purpose)	Indicator 1	Status of the Achievement: achieved (continued)					
Capability of engineers of	The technical methods and quality control	(Project Completion)					
DPWH, Regional Offices	required by the technical	<phase i=""></phase>					
and district engineering	manuals/guidelines developed/revised by	- The inspection apparatus/equipment introduced by the training, such as the					
offices on quality	the project are properly utilized and	portable digital clinometer and laser type distance meter, were utilized for					
management of	practiced in the pilot projects and in other	the routine inspection for roads					
road/bridge construction	activities.	- Data on bridge quality were collected and analyzed in accordance with the					

## Achievement of Project Purpose and Overall Goal

nd maintenances and		manual.								
naintenance management	-	•	es on bri	idges were	properly	diagno	sed in a	accordance	ce with	the
f road/bridge is improved		manual. <phase ii=""></phase>								
n the pilot regions.	<p]< td=""></p]<>									
	-			nanuals/gui	idelines d	evelope	ed/revis	sed by the	e projec	t were
				projects.						
		x-post Eva								
	-	o. of insp		-	-	using t	the tecl	nnical m	anuals/	guidelines
	dev	veloped/re	vised by	· ·	-				1	
				Type of	201	15 2	2016	2017	201	8
				activity					<u> </u>	
		Pilot Regi		Inspection			0	1	4	
	(	(CAR, RO		Repair	1		0	1	3	
		and RO X	(I)							
	-	o. of inspe		•	••••	using	the tec	hnical m	anuals/	guidelines
	dev	veloped/re	vised by	· ·	-					
				Type of	201	15 2	2016	2017	201	8
				activity						
		Pilot Regi		Inspection	n 1		1	1	7	
	(	(CAR, RO		Repair	1		1	1	2	
		and RO X	(I)							
	[No	o. of regula	ar inspe	ction/repai	r of bridg	es in ac	cordan	ce with t	he tech	nical
	ma	anuals/guid	lelines d	leveloped/r	evised by	the pro	oject]			
	I	Region	Туре о	of 201	15 2	016	2017	7 20	18	2019
			activit	ty .						(plan)
		CAR	Inspecti	ion 56	5	44	27	1	9	13
			Repai	r 22	2	48	67	4	5	18
	F	RO VII	Inspecti	ion 16	7	88	70	5	8	58
			Repai	r 54	1	36	94	9	6	74
	J	RO XI	Inspecti	ion 73	3	47	14	1	2	12
		F	Repai			37	60		7	28
Indicator 2		atus of the			eved (cor	ntinued	)			
The number of defects	-	roject Com Phase I>	pletion)							
	<p1< td=""><td></td><td>af tha ma</td><td>ad repair.</td><td></td><td></td><td></td><td></td><td></td><td></td></p1<>		af tha ma	ad repair.						
	-			ad repair. oridge repa	ir					
	- n	12 cases Phase II>	or the t	лиде гера						
	<p]< td=""><td></td><td>rojecto</td><td>for road -</td><td>interer -</td><td>A WORA</td><td>cond</td><td>ted (1:</td><td>CAP -</td><td>nd 1 in</td></p]<>		rojecto	for road -	interer -	A WORA	cond	ted (1:	CAP -	nd 1 in
	-	2 pilot p RO VII)		for road ma	annenanc	e were	conduc	ieu. (1 in	UAK 8	ing i m
	_	,		for bridge	maintena	nce wer	e condi	ucted (A i	n RO J	/II and /
	-	in RO X		or orrage	munitendi		e conu			n and <del>1</del>
	(F.	x-post Eva	/							
		efer to the I	-	r 1						
Indicator 3		atus of the			eved (co	ntinue	0			
The engineers of DPW		roject Com				minuet	•)			
and the district engineer	-	hase I>	Piction)	,						
to define the issues in t	0	nase 1-							nroner	
	the maintenance -	Damage	s on hri	dges were	properly	diaonos	sed and	the most		
management and propo		-		dges were		-	sed and	the most	proper	
management and propo countermeasures then t	ose the necessary	measure		dges were taken to fix		-	sed and	the most	proper	
countermeasures then t	ose the necessary take necessary <p< td=""><td>measure Phase II&gt;</td><td>s were t</td><td>aken to fix</td><td>the dama</td><td>ages.</td><td></td><td></td><td></td><td></td></p<>	measure Phase II>	s were t	aken to fix	the dama	ages.				
countermeasures then t actions for the future su	ose the necessary take necessary <p< td=""><td>measure Phase II&gt; The con</td><td>s were t ditions o</td><td>aken to fix</td><td>the dame t roads a</td><td>ages. nd bridg</td><td>ges wer</td><td>e improv</td><td>red thro</td><td>ugh</td></p<>	measure Phase II> The con	s were t ditions o	aken to fix	the dame t roads a	ages. nd bridg	ges wer	e improv	red thro	ugh
countermeasures then t	ose the necessary take necessary <p< td=""><td>measure Phase II&gt; The con impleme</td><td>s were t ditions o</td><td>aken to fix</td><td>the dame t roads a</td><td>ages. nd bridg</td><td>ges wer</td><td>e improv</td><td>red thro</td><td>ugh</td></p<>	measure Phase II> The con impleme	s were t ditions o	aken to fix	the dame t roads a	ages. nd bridg	ges wer	e improv	red thro	ugh
countermeasures then t actions for the future su	ose the necessary take necessary <p ustainable -</p 	measure Phase II> The con impleme repair.	s were t ditions o entation	aken to fix	the dame	ages. nd bridg	ges wer	e improv	red thro	ugh
countermeasures then t actions for the future su	ose the necessary take necessary <pi ustainable -</pi 	measure Phase II> The con impleme	s were t ditions of entation luation)	aken to fix of the targe of the pilo	the dame	ages. nd bridg	ges wer	e improv	red thro	ugh
countermeasures then t actions for the future su	ose the necessary take necessary <pi ustainable - (Ex Re: Sta</pi 	measure Phase II> The con impleme repair. x-post Eva efer to the I atus of Ach	s were t ditions of entation luation) ndicator	aken to fix of the targe of the pilo r 1.	the dama et roads an t projects	ages. nd bridg	ges wer	e improv	red thro	ugh
countermeasures then t actions for the future su improvement.Overall Goal)Indicator 1	ose the necessary take necessary <pi ustainable - (Ex Re: 25 on the technical (Ex</pi 	measure Phase II> The con impleme repair. x-post Eva efer to the I atus of Ach x-post Eva	s were t ditions of entation luation) ndicator ievemen luation)	aken to fix of the targe of the pilo <u>r 1.</u> nt: achieve	the dama troads and t projects d	ages. nd bridg for roa	ges wer d slope	e improv	red thro	ugh
countermeasures then t actions for the future su improvement.Overall Goal)Indicator 1 The number of training	ose the necessary take necessary <pi ustainable - (Ex Re: gs on the technical Division (Ex</pi 	measure Phase II> The con implement repair. x-post Eva efer to the I atus of Ach x-post Eva to, of traini	s were t ditions of entation luation) ndicator ievemen luation)	aken to fix of the targe of the pilo r 1. nt: achieve oad mainte	the dama troads and t projects d enance in	ages. nd bridg for roa all regi	ges wer d slope ons]	e improv stability	red thro and br	ugh idge
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Coverall Goal)Indicator 1Coverall Goal)The number of training manuals/guidelines dev the project delivered by	ose the necessary take necessary ustainable (Ex Re: gs on the technical veloped/revised by	measure Phase II> The con impleme repair. x-post Eva efer to the I atus of Ach x-post Eva (0. of traini 2015	s were t ditions of entation luation) ndicator ievemen luation)	aken to fix of the targe of the pilo r 1. nt: achieve <u>oad mainte</u> 2016	the dama et roads and t projects d enance in 20	ages. nd bridg for roa <u>all regi</u> 17	ges wer d slope ons]	e improv stability	ed thro and br	ugh idge 2019 blan)
Overall Goal)Indicator 1Coverall Goal)Indicator 1Capability of DPWH and Regional Offices ngineers on quality nanagement ofThe number of training manuals/guidelines dev the project delivered by	ose the necessary take necessary <pi ustainable - (Ex Re: gs on the technical (Ex veloped/revised by y DPWH.</pi 	measure Phase II> The con impleme repair. x-post Eva fer to the I atus of Ach x-post Eva (0. of traini) 2015	s were t ditions o entation luation) ndicator ievemen luation) ngs of r	aken to fix of the targe of the pilo r 1. nt: achieve 2016 9	the dama et roads and t projects d enance in 20	ages. nd bridg for roa <u>all regi</u> 17	ges wer d slope ons]	e improv stability	ed thro and br	ugh idge
Coverall Goal)Indicator 1Coverall Goal)The number of training manuals/guidelines dev the project delivered by	ose the necessary take necessary <pi ustainable - (Ex Re: gs on the technical (Ex veloped/revised by y DPWH.</pi 	measure Phase II> The con implement repair. x-post Eva effer to the I atus of Ach x-post Eva to. of traini 2015 15 to. of traini	s were t ditions o entation luation) ndicator ievemen luation) ngs of r	aken to fix of the targe of the pilo <u>r 1.</u> nt: achieve <u>oad mainte</u> 2016 <u>9</u> ridge main	the dama et roads and t projects d enance in 20 4 ttenance i	ages. nd bridg for roa <u>all regi</u> 17 <u>n all re</u>	ges wer d slope ons] 2 gions]	e improv stability 2018 15	ed thro and br	ugh idge 019 blan) 4
Overall Goal)Indicator 1Coverall Goal)Indicator 1Capability of DPWH and Regional Offices ngineers on quality nanagement of oad/bridge construction nd maintenance andIndicator 1	ose the necessary take necessary <pi ustainable - (Ex Re: gs on the technical (Ex veloped/revised by y DPWH.</pi 	measure Phase II> The con impleme repair. x-post Eva fer to the I atus of Ach x-post Eva (0. of traini) 2015	s were t ditions o entation luation) ndicator ievemen luation) ngs of r	aken to fix of the targe of the pilo r 1. nt: achieve 2016 9	the dama et roads and t projects d enance in 20	ages. nd bridg for roa <u>all regi</u> 17 <u>n all re</u>	ges wer d slope ons] 2 gions]	e improv stability	red thro and br	ugh idge 2019 blan) 4 2019
Overall Goal)Indicator 1Capability of DPWH and Regional Offices ngineers on quality nanagement of oad/bridge constructionIndicator 1	ose the necessary take necessary <pi ustainable - (Ex Re: gs on the technical (Ex veloped/revised by y DPWH.</pi 	measure Phase II> The con implement repair. x-post Eva effer to the I atus of Ach x-post Eva to. of traini 2015 15 to. of traini	s were t ditions o entation luation) ndicator ievemen luation) ngs of r	aken to fix of the targe of the pilo <u>r 1.</u> nt: achieve <u>oad mainte</u> 2016 <u>9</u> ridge main	the dama et roads and t projects d enance in 20 4 ttenance i	ages. nd bridg for roa <u>all regi</u> 17 <u>n all re</u> 17	ges wer d slope ons] 2 gions] 2	e improv stability 2018 15	red thro and br	ugh idge 019 blan) 4

improved.	Indicator 2	Status of Achie (Ex-post Evalu		chived.				
	The number of inspections and repair works	[No. of inspection and repair of roads by Regional Offices]						
	on roads and bridges conducted by the Regional Offices by using the technical	Type of activity	2015	201		017	2018	
	manuals/guidelines developed/revised by	Inspection	7	3		10	10	
	the project.	Repair	7	2		0	9	
		[No. of inspect	tion and rep	pair of brid	ges by Reg	ional Offic	es]	
		Type of activity	2015	201	6 2	017	2018	
		Inspection	0	1		8	16	
		Repair	7	4		13	15	
	Indicator 3 The percentage of roads and bridges with bad conditions decreases.	Status of Achie (Ex-post Evalu [% of roads wi	uation)					
		L	2011	2015	2016	2017	2018	
		Philippines	13.11	7.57	6.36	5.64	4.67	
		CAR	17.60	17.44	17.60	17.64	14.60	
		RO VII	0.99	1.10	0.99	0.66	0.22	
		RO XI	8.80	8.87	8.80	9.36	9.70	
		[% of bridges		-		1		
			2011	2015	2016	2017	2018	
		Philippines	10.34	6.60	5.24	1.87	1.18	
		CAR	0.45	0.33	0.30	0.12	0.06	
		RO VII	0.60	0.40	0.24	0.13	0.16	
		RO XI	0.77	0.12	0.10	0.06	0.04	

3 Efficiency

Although the total project period was as planned (ratio against the plan: 100%), the total project cost exceeded the plan (ratio against the plan: 133%). The outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability <Policy Aspect>

The "Philippine Development Plan" (2017-2022) includes the improvement of International Roughness Index (IRI) from 2015 baseline value of 4.62 to 3.0 by the end of 2022. This can be achieved by improving the condition of roads through regular maintenance of roads and bridges. In addition, various Department Orders (DO) have been released in relation to road and bridge maintenance and inspection such as DO 94 series of 2014, DO 41 and 164 series of 2016, DO 23 and 24 series of 2019, among others. Therefore, the trainings and the inspection and repair works based on the technical manuals/guidelines developed/revised by the project have been endorsed by those policies.

## <Institutional Aspect>

There has been no change in the organizational setting since the project completion. DPWH has been responsible for budgeting and budget allocation for the trainings of road and bridge maintenance as well as the inspection and repair works of roads and bridges by the Regional Office and District Engineering Offices. The number of maintenance staff of each region has been fixed based on the DPWH budget: CAR with regular employees of 13 and job order (non-permanent) of 21, RO VII with 13 and 56 and RO XI with 13 and 50. There are additional staff working for inspection and repair in the District Engineering Offices that help out the Regional Offices. The total number of trainers for the trainings and OJTs on the improved road and bridge maintenance by using the technical manuals/guidelines developed/revised by the project in the three pilot ROs decreased from 256 in 2015 to 36 in 2019. However, in addition to the Working Group members of the project, the personnel of other ROs have been engaged in the technical trainings and every year the number of trainers increases depending on the training they held because according to DPWH all trained staff can be trainers/resource persons in the future.

<Technical Aspect>

The training mechanism based on the technical manuals/guidelines developed/revised by the project has been sustained due to the DO No.94 Series of 2014 mandating DPWH personnel to conduct inspection and repair works based on those manuals and guidelines. In addition, the regular trainings following those manuals and guidelines have been conducted by the DPWH Bureau of Maintenance for the period from 2017 to 2019. The skills and knowledge of the engineers of the pilot Regional Offices and the District Engineering Offices have been improved over the years. Also, the level of skills and knowledge of the engineers of DPWH and the three pilot Regional Offices have been sufficient as resource persons for the technical trainings by DPWH.

As mentioned above, DO No. 94 series of 2014 prescribes the DPWH personnel in charge of implementation such as the Regional Offices, District Engineering Offices and Project Management Offices to adopt the technical manuals and guidelines developed by the project.

<Financial Aspect>

DPWH has continuously allocated the necessary budget for the road and bridge maintenance as well as the technical trainings based on the technical manual/guidelines developed/revised by the project.

<Evaluation Result>

In light of the above, there has been no problem in any aspects. Therefore, the sustainability of the effectiveness through the project is high

#### 5 Summary of the Evaluation

The project achieved the Project Purpose and the Overall Goal through the implementation of the improved road and bridge maintenance by the technical trainings based on the technical manuals/guidelines developed/revised by the project. As for efficiency, the project cost exceeded the plan.

Considering all of the above points, this project is evaluated to be highly satisfactory.

## III. Recommendations & Lessons Learned

## Lessons Learned for JICA:

The DPWH has been able to institutionalize the outputs made by the Project through the issuance of various Department Orders. They have continuously utilized the manuals and handbooks developed by the Project not just for purpose of training but also to actually enhance its operations in terms of inspections and repair works of road and bridges. This is actually a good way to ensure the sustainability and effectiveness of Projects. For future and existing technical projects of JICA, it should be discussed with counterpart agencies on how the outputs would be institutionalized so that the outputs will not just get shelved and forgotten after its completion.



Technical Working Group Meeting



Counterpart Working Group Meeting



Bridge Inspection



Road Inspection

Country Name	•			conducted by Euos Office. June, 2020			
Lao People's Demo Republic		Forest Strategy 2020 Implementation Promotion Project					
<b>1</b>							
I. Project Outline	1						
Background	ic and population growth had been progressing while the wth and Poverty Eradication Strategy" (2004). Under the t Strategy 2020" in order to define long-term development y sector as the forestry sector had played a vital role from vever, the Forest Strategy (FS) Secretariat did not have estry sector, to monitor implementation of the plan, and to al Afforestation Development Plan". In addition, capacity planning was essential for the FS Secretariat.						
Objectives of the Project	policy-r aimed a sustaina 1. Ov sec 2. Pro and	related priority actions for the in at developing capacity of forestry able and productive forest use in rerall Goal: Sustainable and prod etor planning and management is oject Purpose: Capacity of fores	itial five-year per y sector on plann Lao PDR. luctive forest use promoted. try sector on pla plans, dialogues	ation plans, dialogues with stakeholders and addressing of riod of "Forest Strategy 2020" implementation, the project ing and management, thereby contributing to promotion of in Lao People's Democratic Republic through appropriate nning and management is developed through formulation s with stakeholders and addressing policy-related priority ategy 2020" implementation.			
Activities of the Project	1.Pro2.MaFSact3.InpJapanes1)Ez2)Tr3)Ec	pject Site: the whole of Lao PDR ain Activities: 1) Updating fores 2020 implementation, 2) Traini ivities, 4) Participatory land and buts (to carry out above activities	st strategy/impler ings on sector m forest use planni s)	nentation matrix and monitoring, reporting and assessing anagement, 3) Policy formulation and awareness raising			
Project Period	April 2	006 – September 2010	Project Cost	(ex-ante) 183 million yen, (actual) 205 million yen			
Implementing Agency	Depart	ment of Forestry (DOF), Minis	try of Agricultur	e and Forestry (MAF)			
Cooperation Agency in Japan	Forestr	y Agency, Ministry of Agricult	ure, Forestry and	d Fisheries			

## II. Result of the Evaluation

<Constraints on Evaluation>

• As the project was jointly implemented with SIDA, it was necessary to undertake an ex-post evaluation considering the effects of activities performed by the organization. However, even though the Planning and Cooperation Division of DOF has been in charge of coordination and management of all projects supported by development partners, they could not provide any information about SIDA's activities.

<Special Perspectives Considered in the Ex-Post Evaluation>

The project set an indicator "Value-added per m3 of log from natural forest increases with a rate higher than GDP/capita increases" to verify the achievement status of the Overall Goal at the time of ex-ante evaluation. However, as also mentioned in the summary sheet of terminal evaluation (Japanese), the data on the indicator was not available even at the time of ex-post evaluation. Thus, instead of the indicator, this ex-post evaluation made use of "official price of timbers set by the Government of Laos" as an alternative indicator to verify the achievement status of the Overall Goal.

#### 1 Relevance

<Consistency with the Development Policy of Laos at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Laos' development policies of the "National Growth and Poverty Eradication Strategy" (2004) setting an agriculture and forestry sector as one of the four central sectors at the time of ex-ante evaluation as well as "The Five-year Plan" (2006-2010) raising "sustainable forest management" as one of the four prioritized items at the time of project completion.

<Consistency with the Development Needs of Laos at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Laos' development needs of capacity building of the FS Secretariat to plan and implement a five-year plan in the forestry sector and on sector management and policy analysis and planning.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with "The Country Assistance Programme for Lao PDR" (2006) focusing on "agricultural regional development and utilization of sustainable forest resource" as one of the priority areas. <Evaluation Result>

## 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. Through the project, an institutional framework to promote effective inputs to FS2020 implementation by stakeholders was established and started to be operational (Indicator 1). Also, FS2020 implementation was supported by improving a policy and legislative framework, undertaking public awareness activities, increasing the incomes of smallholders and communities from forestry, and supporting DOF in coordinating Reducing Emissions from Deforestation and Forest Degradation (REDD) initiatives (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The Project Effects have been continued since the project completion. At the beginning of the project, the FS Secretariat planned to take a responsibility for the institutional framework established by the project, but in fact it did not function well. Thus, the Planning and Cooperation Division of DOF took over the institutional framework during the project and has undertaken the necessary activities to support the implementation of FS2020 thereafter. For example, the division develops a law and a policy to promote sustainable forest management, forest industry development and biodiversity conservation while receiving supports from each donor. <Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved at the time of ex-post evaluation. As mentioned above, the Planning and Cooperation Division of DOF has taken the necessary activities to support the implementation of FS2020 (Indicator 1). According to the report on the assessment of forest cover and land use of Lao PDR during 1992-2002 and the same report during 2002-2010, the rate of forest loss between 1992 and 2002 was 134,330 ha./year, and then, decreased to 33,963 ha./year. between 2002 and 2010 (Indicator 2). According to the data on official price of timbers set by the Government of Laos, the price has been static since 2014 (Indicator 3). <Other Impacts at the time of Ex-post Evaluation>

No other positive or negative impacts were observed at the time of ex-post evaluation.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

	Achievement of Proje	ct Purpose and Overall Goal
Aim	Indicators	Results
(Project Purpose) Capacity of forestry sector on planning and management is developed through formulation and monitoring of implementation plans, dialogues with stakeholders and	<ol> <li>An institutional framework to promote effective inputs to FS2020 implementation by stakeholders is established and operational, by:</li> <li>Developing the collaborative relationships among different relevant stakeholders;</li> <li>Providing more comprehensive information and monitoring on forest</li> </ol>	<ul> <li>Status of the Achievement: Achieved (Continued) (Project Completion)</li> <li>To establish the institutional framework and make it operational, the following activities were undertaken.</li> <li>Collaborative relationships with a number of different stakeholders on different issues were developed, such as the Forestry Sub-Sector Working Group (with donors), the national REDD Task Force (among concerned MAF departments, National Land Management Authority (NLMA) and Water Resource and Environment Authority), support</li> </ul>
addressing policy-related priority actions for the initial five-year period of "Forest Strategy 2020" implementation.	<ul> <li>sector collaboration, issues and developments; and</li> <li>Mobilizing more financial resources to support forest sector development</li> </ul>	<ul> <li>from technical advisors from different donor-assisted project, development of the Participatory Land Use Planning manual (working with NLMA), and several partners supporting development and certification of teak smallholders in Luang Prebang district.</li> <li>Relevant information on forest sector collaboration, issues and developments was shared through the above-mentioned collaborative relationships.</li> <li>More funds were mobilized for the forest sector, especially for climate change, forest carbon, and REDD initiatives.</li> <li>(Ex-post Evaluation)</li> <li>The Planning and Cooperation Division of DOF has been in charge of the institutional framework established by the project and has undertaken the necessary activities to support the implementation of FS2020.</li> </ul>
	<ul> <li>2. FS implementation is supported through:</li> <li>Policy and legislative framework,</li> <li>Broad public understanding and support,</li> <li>Pilot efforts to increase rural smallholder and community incomes from forestry, and</li> <li>Coordination of efforts to respond to climate change, through REDD initiatives.</li> </ul>	<ul> <li>Status of the Achievement: Achieved (Continued)</li> <li>(Project Completion)</li> <li>The implementation of FS2020 was supported by the following activities.</li> <li>Policy and legislative framework: revision of the Forestry Law and adoption of the new Wildlife Law in 2007 and other key regulations.</li> <li>Broad public understanding and support: publicizing and dissemination of related laws by national lawmakers and DOF officials, preparation of a village manual on the related policy and laws, and other public awareness activities.</li> <li>Pilot efforts to increase rural smallholder and community incomes from forestry: implementation of pilot projects with teak and NTFPs in Luang Prebang district.</li> <li>Coordination of efforts to respond to climate change through REDD initiatives: holding of REDD Task Force meetings, preparation of the REDD Readiness Preparation Proposal, and etc.</li> </ul>

(Overall Goal) Sustainable and productive forest use in Lao People's Democratic Republic through appropriate sector	<ol> <li>Institutional framework for sector planning and management is effective at mobilizing and coordinating all stakeholder inputs to support the entire forest sector and comprehensive FS implementation.</li> <li>Rate (ha./year) of forest loss/degradation</li> </ol>	<ul> <li>and biodiver</li> <li>Broad public new improviorganize dis Northern proviorganize dis Northern provide Pilot efforts from forest village-level publicize it development planting of t</li> <li>Coordination initiatives: information law and a stimely and a stivities raised if the implementation in the planning and a stivities raised if the implementation in the planning and a stivities raised if the implementation in the implementation in the planning and a stivities raised if the implementation in the implementatio</li></ul>	legislative f ainable fore rsity conserv- ic understar ed forestry ssemination ovince, Cent a to increase ry: planning l manageme t and use of rees and NT n of efforts manageme based on a atrategy, and cccurately see n) Achieved ato cooperat in the indica	ramework est manage vation. ading and law printe session o tral provin e rural sr g to crea ent for fe de trainir of NTFPs TPs by vi to respon nt of h nalysis of l cooperat cure budg ion Divisi tor 2 of th 20.	the further development, forest support: plated in Lao and f the new im- ided, and South- nallholder and te and impro- forest NTFPs ings on mana- for villager llagers as con- d to climate nighly accur f satellite ima- ion with vari- test related to for of DOF h	elopment of industry d nning to pu English in aproved fore- d communi- ove legislati- and disser- agement, p s, and to p nmodities. change thro- rate forest ages, develo- ous donors <u>REDD+.</u> has taken th	FS2020 to evelopment ablicize the 2020and to estry law in e in 2020. ty incomes ion for the minate and reservation, romote the ugh REDD resources pment of a in order to e necessary
planning and management	between Year 2002 and 2012 is smaller than	• The amount of f			ear 2002 and	2010 was s	maller than
is promoted.	that of between Year 1992 and 2002.	that of between that from 199	Year 1992 ar 2 to 2002	nd 2002.	from	2002 to 201	0
			ha./year			963 ha./year	
		Note: although the between Year 199 available. Therefor forest loss as a con data was not availa one from 2002 to 2	2 and 2002 re, this ex-p nplementary able, so the 010.	and Yea ost evalua informat data from	r 2002 and 2 tion used the ion. Addition	2012, the data on the ally, the 201	ata was not e amount of 1 and 2012
	3. Value-added per m <sup>3</sup> of log from natural	• TT1 1 /			6.1 6	. 1.0	
					t log from 1	natural fore	st was not
	forest increases with a rate higher than	<ul> <li>The data on va available. Instea</li> </ul>					
	forest increases with a rate higher than GDP/capita increases	available. Instea government was	ad, the dat utilized to v	a on off verify the i	icial price o indicator.	of timbers	set by the
	GDP/capita increases	<ul><li>available. Instea government was</li><li>The official price</li></ul>	ad, the dat utilized to v e of timbers	a on off verify the i	icial price o indicator.	of timbers	set by the
	GDP/capita increases (Alternative Indicator: official price of	<ul> <li>available. Instea government was</li> <li>The official price static since 2014</li> </ul>	ad, the dat utilized to v e of timbers	a on offiverify the isset by the	icial price o indicator. government	of timbers (Million KI	set by the P) has been
	GDP/capita increases	available. Instea government was • The official price static since 2014 Item/Year	ad, the dat utilized to v e of timbers 2014	a on off verify the isset by the 2015	icial price o indicator. e government 2016	of timbers (Million KI 2017	set by the P) has been 2018
	GDP/capita increases (Alternative Indicator: official price of	<ul> <li>available. Instea government was</li> <li>The official price static since 2014</li> </ul>	ad, the dat utilized to v e of timbers	a on offiverify the isset by the	icial price o indicator. government 2016 0 540	of timbers (Million KI	set by the P) has been

Source : Terminal Evaluation Report, Interview and questionnaire with DOF

## 3 Efficiency

Although the project period was within the plan (ratio against the plan: 100%), the project cost slightly exceeded the plan (ratio against the plan: 112%). The outputs were produced as planned. Therefore, the efficiency of the project is fair. 4 Sustainability

## <Policy Aspect>

FS2020, which is a national policy, promotes the development of planning and management capacity in the forestry sector through formulation and monitoring of implementation plans, dialogues with stakeholders and addressing of policy-related priority actions. As the project aimed at developing capacity of forestry sector on planning and management, it has been backed up by the national policy. <Institutional Aspect>

There have not been any major changes in the organizational setting for the implementation of FS2020. The Planning and Cooperation Division of DOF has been responsible for overall activities pertinent to FS2020 such as drafting of five-year annual plans, implementation and monitoring of planned activities, and coordination among a wide range of stakeholders. 12 staff have been assigned to the division, and according to the division, they have been overloaded with their responsibilities so that the division is requesting DOF to recruit more staff. On the other hand, major problems in their work have not occurred so far. <Technical Aspect>

The Staff of the Planning and Cooperation Division of DOF has sustained the necessary knowledge and skills for the above-mentioned activities. This is because DOF organizes internal trainings twice a year for the staff. However, according to the division, further training is needed for the staff to fully perform their responsibilities given. The following topics were raised as contents of the training: 1) project cycle management, 2) monitoring and evaluation, and 3) English skills.

Budget of DOF

<Financial Aspect>

The data on the specific budget of the implementation of FS2020 was not available. However, according to the Planning and Cooperation Division of

•	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 (Plan)
,	12.1	11.8	9.5	7.1	6.6	5.9	8.4	3.3	2.3	1.8

DOF, a certain amount of budget has been allocated from DOF for their activities. Taking into account the fact that the division has had a certain number of the staff and conducted their activities to some extent as described above, the allocated budget is considered to be partially sufficient. However, the overall budget of DOF has been reduced since the project completion due to more budget allocation to related agencies to take measures against sporadic natural disasters. Although the trend is expected to continue, the minimal amount of budget for the implementation of FS2020 will be continuously secured.

<Evaluation Result>

In the light above, some problems have been in the financial aspect. Therefore, the sustainability of the effects through the project is fair.

## 5 Summary of the Evaluation

The project achieved the Project Purpose aiming at developing capacity of forestry sector on planning and management and partially achieved the Overall Goal aiming at promoting the sustainable and productive forest use in Laos. As for sustainability, the overall budget of DOF has been reduced since the project completion, and in the future, the likelihood is implied that DOF cannot secure the necessary budget for the implementation of FS2020. As for efficiency, the project cost slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- The institutional framework for the implementation of FS2020 was established by the project, but some staff who received the training and improved their skills and knowledge were transferred to other offices or promoted to higher position. DOF organizes internal trainings twice a year for the staff to maintain the necessary knowledge and skills for the activities. On the other hand, some new staff have very limited capacity for the implementation of FS2020. Therefore, in order to enhance the sustainability of the project, it is recommended that DOF consider to spend part of the financial resources for REDD+ expected to be allocated from United Nations Framework Convention on Climate Change and others on capacity enhancement of their staff from a long-term perspective through holding of trainings for technical transfer within the organization and etc.
- The Planning and Cooperation Division of DOF has a role to coordinate and manage all of the projects supported by development partners. However, information related to SIDA, a joint implementer for the project, is not properly stored and not available. Considering large dependence on foreign ODA, it is better for the Government of Laos to establish a structure to store and open basic information about the development partners in order to avoid overlapping and produce synergistic efforts between the partners. Lessons Learned for JICA:
- As mentioned above, DOF organizes internal trainings twice a year for the staff to maintain the necessary knowledge and skills for the activities while new staff have very limited capacity for the implementation of FS2020. Therefore, in order to further enhance the sustainability of the project, it is recommended to discuss from the project planning stage how to encourage those well trained to be continuously involved in the activities and how to support the development of human resources continuously in the organization.



Forest Investigation



Forestry Sub-Sector Working Group

## Internal Ex-Post Evaluation for Technical Cooperation Project

	conducted by Timor-Leste Office: March 2020					
Country Name						
	National University of Timor-Leste (CADETES)					
Timor-Leste	The project for Capacity Development of Faculty of Engineering. Science and Technology,					
	the National University of Timor-Leste (CADEFEST 1)					
I. Project Outline						
	The shortage of highly skilled human resources was one of the important national issues for Timor-Leste. In					
	order to cope with this issue, the Ministry of Education aimed at training competent engineers who were able to					
	respond to the needs of the labor market through upgrading the Polytechnics to the Faculty of Engineering of the					
Background	National University of Timor-Leste (UNTL). JICA supported UNTL for rehabilitation of facilities and equipment by an emergency grant aid (2003) and capacity development of its teaching staff by the "Project for Capacity					
	Development for Teaching Staff in the Faculty of Engineering" (2006-2010). As a result, skills and knowledge of					
	the teaching staff for education and research were improved. Yet, further strengthening of their capacities was					
	needed.					
	Through improved educational environment, practical graduation research and improved faculty management					
	of the Faculty of Engineering, Science and Technology of the National University of Timor-Leste, the projects					
	aimed at provision of excellent education under appropriate management and operation, thereby contributing to development of highly skilled human resources who would contribute to the society.					
	[CADETES]					
Objectives of the	1. Overall Goal: The quality of education in the Faculty of Engineering, UNTL is improved.					
Project	2. Project Purpose: Basic teaching capacity of teaching staff in the Faculty of Engineering, UNTL is improved					
	through practical activities.					
	[CADEFEST 1]					
	1. Overall Goal: The Faculty of Engineering, Science and Technology produces high-skilled human resources who can contribute to the society.					
	<ol> <li>Project Purpose: The Faculty provides excellent education under appropriate management and operation.</li> </ol>					
	1. Project Site: Dili					
	2. Main Activities:					
	[CADETES] i) Review and development of curriculum and syllabus, preparation of lecture notes and job					
	sheets, ii) training of teaching staff on basic mathematics and physics, fundamental engineering subjects,					
	teaching methods, etc. [CADEFEST 1] i) Review of curriculum and syllabus, practical and research-based thesis, ii) capacity					
	building of the faculty on management, etc.					
	<ol> <li>Inputs (to carry out above activities)</li> </ol>					
	Japanese Side Timor-Leste Side					
	[CADETES] [The Project 2006-2010]					
Activities of the	1) Experts from Japan: 22 persons       1) Staff Allocated: 64 persons         2) Experts from Japan: 22 persons       1) Staff Allocated: 64 persons					
Project	<ol> <li>2) Training in Japan: 19 persons</li> <li>3) Equipment: Educational and research equipment, etc.</li> <li>2) Land and Facilities: Office space, equipment, etc.</li> </ol>					
	<ul> <li>4) Local cost: Cost for invitation of other university</li> <li>3) Operation cost: Cost for workshops, etc.</li> </ul>					
	professors, seminars, research materials, books, etc. [The Project 2011-2016]					
	[CADEFEST 1] 1) Staff allocated: 102 persons					
	1) Experts from Japan: 40 persons2) Land and facilities: Office space, electricity					
	2) Training in Japan: 31 persons charges, etc.					
	3) Equipment: Educational and research equipment, 3) Operation cost: Cost for travels, site visits, etc. books, etc.					
	4) Local cost: Cost for seminars, research materials,					
	books, etc.					
	[CADETES]					
	April 2006 to March 2010 (Extended period: [CADETES]					
Project Period	April 2009 to March 2010) Project Cost (ex-ante) 290 million yen, (actual) 371 million yen					
	[CADEFEST 1] February 2011 to March 2016 (Extended (extended (ex-ante) 270 million yen, (actual) 440 million yen					
	period: February 2015 to March 2016)					
Implementing						
Agency	National University of Timor-Leste, Ministry of Education					
Cooperation Agency	Nagaoka University of Technology, Yamaguchi University, Gifu University					
in Japan						

## **II. Result of the Evaluation**

< Special Perspectives Considered in the Ex-Post Evaluation >

- As what was aimed as the Overall Goal of CADETES and what was aimed as the Project Purpose of CADEFEST1can be considered as common, the two projects can be interpreted as a continuous intervention. At the ex-post evaluation, the two projects were evaluated as one intervention. For verification of effectiveness/impact, objectives and indicators of CADEFEST1 were used.

### 1 Relevance

<Consistency with the Development Policy of Timor-Leste at the Time of Ex-Ante Evaluation and Project Completion>

The projects were consistent with Timor-Leste's development policies, such as "Sector Investment Plan" (2004) prioritizing the education sector including higher education, and the "National Education Policy" (2007-2012) setting higher technical education and university education as one of the policy goals. Moreover, the "Strategic Development Plan (SDP)" (2011-2030) set human resource development including development of high-level engineers who could meet market needs as one of the three thrusts for the immediate goal during the period from 2011 to2015.

<Consistency with the Development Needs of Timor-Leste at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Timor-Leste's development needs for an increase in the labor force with higher education and production of labor force with professional skills so that these jobs, which are mostly taken up by foreigners, would be fulfilled by national labor force.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy toward Timor-Leste supporting education, capacity building, and institution building as one of four priority areas confirmed by the policy dialogues between the government of Timor Leste and the government of Japan in January 2005and June 2008<sup>1</sup>. Those priority areas sustained by the ODA Taskforce.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the time of project completion. 77.8% of the students satisfied with the education provided by the Faculty (Indicator 1). The graduation rate of the Faculty was not verified by the time of project completion (Indicator 2), because at that time the Faculty did not have the definition of the graduation rate, that is, it was not clear whether the denominator should be the number of the enrolled students in the first grade, the registered students in the fourth grade, or the students who started the graduation research. All the subjects of the Faculty got 70% of satisfaction on average in the last two years of the project period (Indicator 3). Based on the achievement of CADETES, CADEFEST1 aimed at the capacity development of the Faculty by strengthening the faculty management system. The annual action plan was developed at each department, and the activities were implemented based on the plan. <<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have partially continued since the project completion. The Faculty started the online satisfaction survey in 2016, students' satisfaction with the lecturers has been on a decreasing trend. This may be because the crowded classrooms may have affected the teaching environment, according to the Vice Dean. The number of students increased from 152 in 2016 to 309 in 2018. On the other hand, their satisfaction with the course contents has been sustained since the project completion. Thus, it is presumed that the project effects on the classes have been sustained. Regarding the graduation rate of students (4-year bachelor) decreased. A main reason is that some students leave without formal procedures before their graduation, because they have to wait one more semester before graduation, if they finish defending their final thesis beyond the due in the previous semester. Other students drop out because they get job before completing the bachelor.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved by the time of ex-post evaluation. For the three departments of Mechanical, Civil Engineering, and Electrical and Electronics, the total number of graduates after the project completion reached 300 in the 1<sup>st</sup> semester in 2019 (Indicator 1). One of the reasons for the delay of attainment was that, on many occasions, students had to wait until the next semester for graduation although they finished defending their final thesis within ongoing semester period. Another reason was that, due to the limited availability of devices and materials for final thesis projects in Timor-Leste, they had to be ordered and purchased abroad. In a particular case, some students who have jobs do not perform actively to graduate within the time, while, drop out system has not been implemented strictly in UNTL. 60% of the graduates have got job related to their study field (Indicator 2).

<Other Impacts at the time of Ex-post Evaluation>

No other impact has been confirmed at the ex-post evaluation.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Aim	Indicators	Results
Project Purpose	1. More than 70% of the students are	Status of Achievement: Achieved (Partially continued)
The Faculty provides	satisfied with the education provided by	(Project Completion)
excellent education under	the Faculty.	- Students' satisfaction reached 77.8%, and the rate was increasing.
appropriate management		(Ex-post Evaluation)
and operation.		- No data available on students' satisfaction with the faculty education.
		- The percentage of the students who answered that they were "very
		satisfied" or "satisfied" with the lecturers were 69% in 2016, 53% in
		2017 to 51% in 2018.
	2. Graduation rate of the Faculty is	Status of Achievement: Not verified (Not achieved)
	improved.	(Project Completion)
		- No data was available, because of no established definition of the
		graduation rate.
		(Ex-post Evaluation)
		- The graduation rate of the Faculty students (4-year bachelor) decreased
		from 78% in 156 to 53% in 2018.

Achievement of Project Purpose and Overall Goal

<sup>&</sup>lt;sup>1</sup> Ministry of Foreign Affairs, "ODA Databook" (2006), "ODA Databook" (2011).

	3. As a result of class evaluation, every	Status of Achievement: Achiev	ved (Cor	ntinued)			
	subject gets more than 60 points (60% of	(Project Completion)					
	satisfaction) on average All subjects got 70% on average in the last two years.						
		(Ex-post Evaluation)					
		- The class evaluation of all	subjects	reached 7	0% in 201	9.	
(Overall Goal)	1. Number of students graduated from the	Status of Achievement: Achievem	ved				
The Faculty of	Faculty with licensure (4-year bachelor)	(Ex-post Evaluation)					
Engineering, Science and	degree exceeds 300 by 2018.	- The total number of graduate	ates in 3	departme	nts for the	e three-yea	ar period
Technology		from 2016 to 2018 was 233	3.				
(UNTL-FEST) produces		Table: Number of graduate	s in 3 de	partments			
high-skilled human			2016	2017	2018	Total	
resources who can		Mechanical	16	17	32	65	
contribute to the society.		Civil	48	39	29	116	
		Electrical and Electronics	10	29	23	62	
		Total	74	85	84	233	
		- In addition, 67 students gra	aduated	from the I	Faculty in	the 1st ser	nester in
		2019 and the total number			•		
	2. More than 60% of the students						
	graduated from the Faculty get job related						
	to their field of study.	- 60% of the graduates have got job related to their study field within one				thin one	
	, , , , , , , , , , , , , , , , , , ,	year from graduation (survey of June 2019).					
Source : Terminal Evaluat	tion Reports, Project Completion Reports, Info		2	/			

#### 3 Efficiency

The total project cost and the total project period of the two projects exceeded the plan (ratio against the plan: 145% and 112%, respectively). The outputs of both projects were not fully produced as planned. Therefore, the efficiency of the project is fair. 4 Sustainability

<Policy Aspect>

In SDP, UNTL is positioned as a critical institution that is fundamental for building the country's human capital and contributing to the national development. It also mentions that UNTL would be adequately funded to allow it to effectively perform its functions. <Institutional Aspect>

The Faculty has an appropriate structure with four departments consisting of (1) Academic Affairs, (2) Administration and Finance Affairs, (3) Students Affairs, and (4) Research and Cooperation Affairs managed by a dean and four vice deans, to promote faculty development and practical graduation research. The 4-year bachelor curriculum has been based on the national standard, and the syllabus has been developed for all subjects based on the 4-year bachelor curriculum. The Faculty has a sufficient number of teaching staff at each department such as 73 permanent staff and 1 contracted teaching staff at the Civil Engineering Department. The improvement of academic and management capacity has been continued by conducting students' satisfaction surveys, class evaluation, and research on the region needs based on the research plan. The Faculty has its own pedagogic and scientific council to improve academic capacity, and it has its own directive council to improve management capacity. The Faculty revises the curriculum and syllabi every two years. The final thesis guideline has been produced, and the curriculum revision process was undergoing as of 2019.

<Technical Aspect>

All teaching staff in the Faculty have been specialized in certain fields of study in their previous master and doctoral study which are necessary to conduct researches on regional needs and to provide guidance for graduation researches. Some management staff has limited knowledge and skills necessary for operating the faculty, according to the Faculty. Therefore, recruitment and training for new staff are proposed to UNTL by the Faculty. Training and scholarship opportunities have been provided by partners including JICA and the Camões Institute of Portugal.

<Financial Aspect>

The budget for the Faculty is not enough for research and educational activities. Budget allocation increased from 11,959 US dollars (USD) in 2015 to 51,260 USD in 2016. However, the budget decreased to 34,560 USD in 2017 and 10,880 USD in 2018. In 2019, the budget allocation has increased to 47,000 USD, since the number of the students increased. However, most budgets are allocated for staff personnel and fuel for generators.

<Evaluation Result>

Therefore, there are some challenges in the technical aspect and in the financial aspect of UNTL, and the sustainability of the project effects is fair.

## 5 Summary of the Evaluation

The Project Purpose was partially achieved, and the project effects have partially continued. Students' satisfaction has been improved, while the graduation rate has decreased. As for sustainability, UNTL has sustained its activities to teach students and to support the graduates to get employment related to their field of study with sufficient number of teaching staff and sufficient teaching capacities, but it has still had needs for improvement of some management capacity, and it has faced budget constraints that limit their research and education activities. As for efficiency, both the total project cost and the total project period of the two projects exceeded the plan. Considering all of the above points, this project is evaluated to be partially satisfactory.

## III. Recommendations & Lessons Learned

## Recommendations for Implementing Agency:

- It is recommended to the Faculty to collect information from students at the graduation and post-graduation (six months and one year after the graduation) in order to create a concrete database on the number of students from the registration up to the graduation. The current online survey system can be developed to cover these survey items.



Interview with the Vice Dean of FEST



Interview with the Vice Dean of FEST

Country Name		Supporting the small-scale farmeres in the Eastern Region			
Republic of El Salvador		Supporting the sman-scale farmeres in the Eastern Region			
I. Project Outline					
Background	34.6% of was he without civil wa implem to supp agricult and ext to supp	El Salvador is the most densely populated of the Latin American countries and lacks natural resources. 34.6% of the total population and 43.7% of the rural population lived in poverty (2004), and the country's economy was heavily dependent on family remittances from overseas migrant workers. In rural areas, small farmers without any production technology were composed of poverty. In the Eastern Region with severe damages by the civil war, most farmers with subsistence farming made this region one of the poorest regions in the country. JICA implemented the "Project for Strengthening of Agricultural Technology Development and Transfer" (1999-2004) to support the National Center of Agricultural and Forestry Technology (CENTA), an organization responsible for agricultural technology services for small- and medium-scale farmers, to improve the sustainable farming system and extension activities, and strengthen the training implementation system. Based on this achievement, a project to support small farmers in the Eastern Region was requested from the Government of El Salvador.			
Objectives of the Project	farmers project Region 1. Over	Through the systems for identifying and transferring vegetable production techniques applicable for small farmers and management improvement techniques for small farmers and vegetable production associations, the project aimed at strengthening the support system for vegetable cultivation services for small farmers in the Eastern Region, thereby contributing to the increase in their income through vegetable cultivation. 1. Overall Goal: Small farmers' income through vegetable cultivation is increased in the Eastern Region. 2. Project Purpose: The support system for vegetables cultivation services for small farmers is strengthened.			
Activities of the project	<ol> <li>Mair appl select</li> <li>Input Japanes</li> <li>Exp</li> <li>Trair</li> <li>Trair</li> <li>Rica</li> <li>Equimate</li> </ol>	<ol> <li>Project site: 4 departments in the Eastern Region (San Miguel, Usulután, Morazán, and La Union)</li> <li>Main activities: Identification of vegetable cultivation techniques and management improvement techniques applicable for small farmers, development of materials for farmers and extension workers, introduction of the selected techniques to farmers, etc.</li> <li>Inputs (to carry out above activities)</li> <li>Inputs (to carry out above activities)</li> <li>Imputs (to carry out above activities)</li> <li>Experts from Japan: 4 persons</li> <li>Staff allocated: 16 persons</li> <li>Training in Japan: 7 persons</li> <li>Local cost: Electricity, fuel, office construction, materials, PC, promotion materials, etc.</li> <li>Local cost: Travel expenses, activity operation, etc.</li> </ol>			
Project Period		2008 to March 2012 Project Cost (ex-ante) 194 million yen, (actual) 211 million yen			
Implementing Agency		al Center of Agricultural and Forestry Technology (CENTA), Ministry of Agriculture and Livestock (MAG)			
Cooperation Agency in Japan	None.				

## II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

- Because of the outbreak of COVID-19, information was collected through a questionnaire survey and phone interviews to make evaluation judgement in the ex-post evaluation. Site visits were not conducted.

- Although the ex-post evaluation is usually conducted at least three years after the project completion, the ex-post evaluation of this project was conducted eight years after the project completion, in order not to interfere activities of the succeeding project, "Horticultural farmers' Profitability Improvement Project in the Eastern Region of the Republic of El Salvador" (2014-2018).

## 1 Relevance

<Consistency with the Development Policy of El Salvador at the time of Ex-ante Evaluation>

The Saca Administration mentioned the support for the rural areas through the regional development and the revitalized agricultural and livestock sectors so as to reduce disparities between urban and rural areas in its policy plan "Safe Nation" (2004). Thus, the project was consistent with the development policy of El Salvador at the time of ex-ante evaluation.

<Consistency with the Development Needs of El Salvador at the time of Ex-ante Evaluation>

Compared to the metropolitan area of San Salvador and the Western Region, industries in the Eastern Region were less developed to ensure a stable income, and many farmers were small-scale subsistence farmers. For them, chemicals such as fertilizers, pesticides, and fungicides were putting pressure on profits because of their high prices. Thus, the project was consistent with the development needs of El Salvador.

<Consistency with Japan's ODA Policy at the time of Ex-ante Evaluation>

Based on the policy consultation held in 2004, one of the priority areas was set as revitalizing the economy and expanding employment, which includes rural development<sup>1</sup>. Also, one of the intersectoral themes was regional development with priority in the Eastern Region. Thus, the project was consistent with Japan's ODA policy at the time of ex-ante evaluation.

<Evaluation Result>

In light of the above, the relevance of the project is high.

<sup>1</sup> Ministry of Foreign Affairs. "ODA Databook 2008."

#### 2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. 16 vegetable production techniques were selected as applicable techniques for small farmers in the Eastern Region (Indicator 1). 227 direct beneficiary farmers organized 20 groups of agricultural associations, and the number of farmers cultivating vegetables in the Eastern Region increased from 437 (before the project) to 926 in 2011. Also, seven management improvement topics were selected as applicable means for small farmers in the Eastern Region (Indicator 2). More than 1,000 farmers were trained on the topics. Three of the farmers' associations became agricultural associations authorized by the Ministry of Agriculture.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued. Beneficiary farmers have continuously used applicable techniques for small farmers, such as organic material using local microorganisms and tunnel houses, and also agricultural management techniques including the organization of the agricultural association. These techniques, even though they are not all of the techniques introduced by the project, have been effective for cultivating vegetables for sale. According to CENTA, farmers have got motivated by being organized or developing personal cultivation projects. The succeeding project, "Horticultural Farmers' Profitability Improvement Project in the Eastern Region of the Republic of El Salvador" (2014-2018) was one of the promoting factors for the effect's continuity, in which farmers' organizations were supported for improving the profitability of vegetable sales through practical cultivation techniques and management improvement techniques in the same target departments.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

Women have got empowered with acquired knowledge on agricultural management and follow-up of the extension workers and came to organize women's associations for vegetable sales. The associations have got a legal figure so that they could have legal businesses like giving invoices to customers. Some have built greenhouses with support from UN Women. On the other hand, it has not been easy for many farmers to get organized with a legal figure as there are many requirements and they have to follow a long and complicated process. <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Aim	Indicators	ojeet i uipose unu e	Results	
(Project Purpose)	1. Applicable techniques for small	Status of achievement: Achieved (Continued).		
The support system for	farmers in the Eastern Region are			
vegetables cultivation services	identified and established as	- 16 vegetable prod	luction techniques were selected, and they were established	
for small farmers is	diffusion techniques in the small	as diffusion techn	niques among CENTA Agencies in the region.	
strengthened.	farmer support organizations such		Techniques identified by the project	
	as CENTA.	Soil	1. Organic material using local microorganisms (bokashi,	
		improvement	liquid fertilizers, etc.)	
			2. Green fertilizer	
			3. Crop rotation	
			4. Management of soil pH levels	
		Production of	5. Simple waiting-bed plant nurseries	
		high-quality	6. Homemade substrate	
		waiting-bed	7. Double transplanting	
		plants	8. Drip irrigation method	
			9. Water saving techniques	
			10. Water saving tank	
		Cultivation	11. Trimming and pruning techniques	
			12. Tunnel houses	
			13. House farming	
			14. Soil cover technique using crop residue	
			15. Vegetative barriers	
		Introduction of	16. Introduction of new crops such as ayote (pumpkin),	
		new crops	radish, onion, coriander, chipilin (leafy green), etc.	
		(Ex-post Evaluation	/	
		**	iques for small farmers in the Eastern Region identified by	
			been used, particularly including:	
		-	tial using local microorganisms (bokashi, liquid fertilizers,	
		etc.)		
		2. Green fertilizer		
			anting	
		4. Tunnel houses		
	2. Applicable means for small			
	farmers to improve management in			
			nent improvement topics were selected, and they were	
	and established as diffusion	established as diffu	sion techniques among CENTA Agencies in the region.	

Achievement of the Project Purpose and Overall Goal

	techniques in the small farmer	1. Organization of Agricultural Association
	support organizations such as	2. Establishment of Farmers' Market
	CENTA.	3. Basic Accounting
		4. Direct Sale Method
		5. Associative Cooperation Activities
		6. Production Planning
		7. Cost and Benefit Analysis
		(Ex-post Evaluation)
		- Agricultural management techniques developed by the project have been used,
		particularly including:
		1. Organization of Agricultural Association
		2. Associative Cooperation Activities
		3. Production Planning
(Overall goal)		Status of achievement: Partially achieved.
Small farmers' income through	of the project shows an increasing	(Ex-post Evaluation)
0	tendency after 2013.	- Data of the farmers' income was not available
increased in the Eastern Region.		- According to CENTA, it was considered that the beneficiary farmers increased
		the income, from the fact that as some farmers constructed tunnel-houses for
		vegetables with their income from vegetable cultivation.
Source: Terminal Evaluation Rep	port and information provided by MA	G and CENTA.

## 3 Efficiency

Although the project period was as planned (ratio against the plan: 100%), the project cost slightly exceeded the plan (ratio against the plan: 109%). Outputs were produced as planned. Therefore, the project efficiency is fair. 4 Sustainability

## <Policy Aspect>

Promotion of the support for vegetable cultivation for small farmers in the Eastern Region has been prioritized in MAG's policies, "Promotion for the competitiveness and productivity of agro-productive chains" (2019-2024) and "Environmental Management and Climate Change" (2019-2024).

## <Institutional/Organizational Aspect>

The organizational setting of MAG and CENTA for supporting farmers has not been changed. Each of the extension workers of CENTA has been given a designated area. However, the number of extension workers has not been sufficient to respond to all farmers' needs in a large area. When support has been needed outside the designated area, such farmers have been attended on demand. The Agricultural Information Center developed by the project has not been utilized, because many farmers did not know how to use the computer and the computer got broken and unrepaired. Although the Agricultural Information Diffusion System in the Eastern Region developed by the project has been suspended, farmers have not needed the information from the system because they have got experience more than before and got the necessary market information by themselves.<Technical Aspect>

The staff of the CENTA Eastern Region office has sustained the necessary skills and knowledge to support small farmers. Technical training was carried out to 50 extension workers from San Miguel and La Unión, and the knowledge has been transmitted among the workers through field visits and practical demonstrations held at CENTA offices, municipal offices, and communities. Manuals and guidelines developed by the project have been utilized at CENTA Eastern Region office and all other offices, especially, manuals on seedling production, elaboration of *bokashi* manure, and elaboration of calcium sulfate liquid manure, among others. <Financial Aspect>

The financial data was not available in the ex-post evaluation, but according to CENTA, the budget of CENTA including regional offices has been secured stably so far, with the Nation General Fund for staff salaries and operational expenses and some national funds and external support from the European Union and the Green Climate Fund, among others to complement activities of the technical cooperation and also goods and services for farmers as incentives for production. Future budgets cannot be guaranteed, but according to the original forecast (before COVID-19) planned in the Strategic Plan of MAG/CENTA for 2019-2024, it was expected at the time of expost evaluation that, at least, the Nation General Fund would remain the same and there would be a continuation of the technical cooperation (and donations), considering the high importance of the vegetable cultivation in El Salvador from the viewpoint of food security and product diversification.

<Evaluation Result>

In the light above, there have been issues in the institutional/organizational aspect. Therefore, the sustainability of the effects is fair. 5 Summary of the Evaluation

The Project Purpose was achieved and the project effects have continued. As the support system for vegetable cultivation services for small farmers, vegetable production techniques and management improvement topics were established, and CENTA's support system for small farmers have been strengthened. Farmers have been utilized some of the techniques and increased their income from vegetable sales. Continuity of these effects has been attributed to the succeeding project's efforts, too. Regarding sustainability, although there has been a lack of extension workers, CENTA has sustained the necessary knowledge and skills and secured budgets. As for efficiency, the project cost exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing agency:

- It is recommended to MAG and CENTA to form a platform where actors in the value chain of agricultural products for the public, industry, and academic sectors can work together for facilitating small-scale farmers' sales. This can supplement the support system which lacks a sufficient number of extension workers of the public sector.

- It is recommended to MAG and CENTA to let the staff trained by the project remain and utilize the learned skills or transfer the skills to

the newly assigned staff via training or documents, in order to fully diffuse the techniques introduced by the project within the Eastern Region and even to other regions.

Lessons Learned:

- In the project, farmers got agricultural techniques and learned management and organization for vegetable sales. The project effects have continued since the project was completed eight years before. One of the factors is the transferred techniques have been basic but matching small-scale farmers' needs who were exposed to competition from imported agricultural products and lack financial resources. In agricultural projects targeting small-scale farmers, it is important to choose techniques and products to be introduced, by making sure that the techniques can be at a level suitable for the farmers and that organized cultivation and sales can compensate the disadvantage of small-scale agriculture.

- When developing systems that have to be used at a computer or require some kind of technological skills, it is very important to assure that both the counterpart personnel and beneficiaries got the necessary knowledge to use these systems, otherwise they will not be properly used and maintained by them and expected effects will not be achieved. It is necessary to include training activities for beneficiaries on the use of the computer and also make clear how the equipment would be maintained technically and financially after the project completion. If technical and financial sustainability cannot be expected, other means should be taken for sustaining and strengthening knowledge and information of the counterpart personnel and beneficiaries, such as printed instructions of the equipment and contact list for maintenance of the equipment.



A female farmer in her greenhouse (women's association "Casa Mota")



Farmers' group making organic fertilizer bokashi.

Country Islamic Republic		Project on Enhanci	ng Women's Eco	onomic Empowerment in Afghanistan
I. Project Outline		I		
Background	political, social, to improve won (DEE) and the I information and provincial level MOWA, and, as	and economic hardships. I nen's political, social, and Department of Provincial I could not implement ex also had difficulties in gra a result, MOWA did not fu	in 2001, the Ministry economic status. A Surah* Relations (D pected responsibiliti usping and evaluating	n Afghanistan, especially women, had suffered extreme v of Women's Affairs (MOWA) was established in order t MOWA, the Department of Economic Empowerment PSR) had difficulties in grasping precise statistics and ies. The Department of Women's Affairs (DOWA) at g the problems of women and sharing information with ected in policy-making.
Objectives of the Project	collected and rep collection and a as report to MC Empowerment identification of contributing to e 1. Overall Goa 2. Project Purj empowerment			
Activities of the Project	*At the start of the terminated in June 2. Main Activit (1) (at DI meeting Manual Identifit Annual (2) (at DP manage MOWA well as (3) (at DO promot of mar Monito Annual (4) (at CEI activitie target v 3. Inputs (to ca Japanese Side 1) Experts: 9 j 2) Trainees Re 3) Equipment measures, of	e 2006. ities: EE) Implementation of gs/workshops, Establishm I on Marketing Measure cation of the priority activ Plan, etc. SR) Implementation of ement, Improvement of ba A and DOWA, Developme implementation of training WA) Implementation of t e women's income genera ket expansion for wome ring of CEPW activities, I Action Plan to be implem PW sites) Implementation es through seminar/preser vomen/communication thro arry out above activities) persons eceived: 5 persons : Office equipment, equi	training on basi ent of Working Gr es and holding we ities on women's in- training and Establ sic office management nt of the working man gs for DOWA in 34 p raining on basic addr tion in the concerned n's products, Imple dentification of the p ented by DEE, etc. of activities for targen tations/case studies bugh the Impact/Eva	<ul> <li>ministrative management, Data collection necessary to d provinces, Identification and analysis of the measures ementation of the activities for marketing measures, priority activities and preparation/implementation of the et women/communities, Sharing of outcomes of CEPW, Sharing the individual learning and changes by the luation Study.</li> <li>Afghanistan Side <ol> <li>Staff Allocated: 35 persons (cumulative total)</li> <li>Office space</li> </ol> </li> </ul>
Project Period	4) Local expe February 2005 –		Project Cost	(ex-ante) 500 million yen, (actual) 448 million yen
Implementing Agency	Ministry of Won	nen's Affairs (MOWA)		
Cooperation Agency in Japan II. Result of the E	N/A			

<Constraints on Evaluation>

In this Ex-Post Evaluation, an evaluation judgment was made primarily by analyzing information acquired by sending and collecting questionnaires, and through telephone and e-mail interviews with persons concerned due to the impact of the COVID-19 as well as security issues. Field survey was conducted on a limited scale, with face-to-face interview with SCWPELA\* and DPSR.

\* SCWPELA: Sub-directorate for Coordination of Women's Participation in Economic and Leadership Affairs. Former DEE was reorganized into SCWPELA in 2009.

The ex-post evaluation was conducted more than 10 years after project completion and no project reports that record the achievement of the indicators were available<sup>1</sup>. In addition, those at the implementing agency did not grasp the detailed situations at the project completion, and, as they were busy with response to the COVID-19, it was difficult to collect additional information. Therefore, the achievement of the Project Purpose at project completion was not verified.

## 1 Relevance

<Consistency with the Development Policy of Afghanistan at the Time of Ex-Ante Evaluation>

The Action Plan of MOWA (2003) placed priority on the promotion of assistance of woman entrepreneurs and improvement of women's employment through DEE.

<Consistency with the Development Needs of Afghanistan at the Time of Ex-Ante Evaluation>

Most Afghan women were under severe condition. Due to various social restrictions and a lack of transportation infrastructure, women's participation in economic activities did not progress. Since women were deprived of opportunities in education and employment, many were unskilled laborers.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

Japan pledged assistance toward women's empowerment at the International Conference on Reconstruction Assistance to Afghanistan in 2002. In the Japanese assistance policy toward Afghanistan, one of the three priority areas was to support for peace process, including capacity development of government organizations<sup>2</sup>.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The achievement of the Project Purpose at the time of the project completion cannot be verified. Documents with information on the achievement of the Project Purpose at the time of project completion were not available. The information was not obtained either through the questionnaire and interview with the implementing agencies. This may be because it is more than 10 years after the project completion that the ex-post evaluation was conducted. However, in existing documents, it was confirmed that the planned activities were completed and that the capacity in implementing daily works at relevant organizations was improving after the training provided by the project. <<pre><Continuation Status of Project Effects at the time of Ex-post Evaluation>

At the time of ex-post evaluation, it was confirmed that the status aimed at the Project Purpose has been realized as a result of project activities and the project effects have been continued. MOWA has been continuously implementing their duties based on appropriate TORs with clear understanding of their roles and responsibilities (Indicator 1). SCWPELA, has been promoting economic empowerment of women through exhibitions and making recommendations to the Cabinet. SCWPELA continuously reviews legal documents and policies of the Cabinet from gender perspective and makes suggestions when needed. DPSR regularly keeps collecting information from DOWA on quarterly and annual basis and, after analysis, shares the results with relevant authorities/entities when necessary. As to the TORs (Indicator 2), MOWA, including SCWPELA and DPSR, prepares their annual action plan. Based on the action plan, the Human Resource Department prepares the TORs of the staff for each department in cooperation with the relevant departments. The TORs are carefully linked to the action plans of the relevant departments. MOWA continuously identifies issues on women's economic empowerment and, based on them, provides comments and advice on all policies and legal documents at the Cabinet. Although it is difficult to precisely define the number of issues identified and proposed, MOWA clearly contributed to the development of Women Economic Empowerment have been implementing their duties based on the experience obtained through the project. Therefore, these current situations mentioned above are considered as the results of the project. In this sense, it can be said that the project effects have been continued. <Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The project has helped women earn income, which has improved gender equality in the families of the beneficiaries of the project, according to MOWA and DOWA. No negative impact has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement	of Project	Purpose	and	Overall	Goal
i terme v enneme	01110,000	1 arpose	unu	0 veran	oour

	1 tenne	venient of i Toject i urpose and o veran oou
Aim	Indicators	Results
(Project Purpose)	(Indicator 1) Changes in	Status of the Achievement: not verifiable (continued)
	counterparts' understanding on	(Project Completion)
The MOWA has	their own roles and responsibilities	No information
identified their own		(Ex-post Evaluation)
roles and		• MOWA clearly understands their own roles and responsibilities. At MOWA, SCWPELA has

<sup>1</sup> It seems that the project completion report was not officially published for some reason.

<sup>&</sup>lt;sup>2</sup> Source: Ministry of Foreign Affairs, "ODA Country Data Book in 2004 and 2005"

responsibilities to		been playing an active role in contributing to Cabinet documents and stakeholder
support women's		coordination, and DPSR has been actively collecting and analyzing information from
economic		provinces and disseminating them with stakeholders.
empowerment	(Indicator 2) Quality of official	Status of the Achievement: not verifiable (continued)
through the		(Project Completion)
implementation of	of MOWA	No information
CEPW as well as		(Ex-post Evaluation)
capacity		• The official TORs are considered to be kept in a good quality. TORs are developed and
development of		revised on time and in the right way.
MOWA.	(Indicator 3) Number of issues	Status of the Achievement: not verifiable (continued)
	identified by the Task Force on	(Project Completion)
	Women's Economic	No information
	Empowerment proposed to other	(Ex-post Evaluation)
	concerned agencies	· MOWA continuously finds issues on women's economic empowerment to comment on all
		policies and legal documents at the Cabinet including the ones on economic empowerment of
		women and the Women Economic Empowerment National Priority Plan.
(Overall Goal)	(Indicator 1) Institutional set up	(Ex-post Evaluation) partially achieved
	within MOWA to identify the	• The number of DEE (now SCWPELA) staff was reduced from 25 at project completion to
Mechanism to	issues to develop policies on	only four in 2018 partly due to organizational reform. When necessary, SCWPELA
support women's	women's economic empowerment.	communicates with DOWA through DPSR.
economic	(Indicator 2) Number and contents	(Ex-post Evaluation) achieved
empowerment has	of coordination with government	· 30 to 40 coordination meetings were held by SCWPELA between 2015 and 2019
been established at	and non-government organizations	Participants were line ministries, donor agencies, and civil society. The participants presented
MOWA.	concerned with women's	their portfolios and discussed obstacles towards women empowerment in Afghanistan
	economic empowerment	
	(Indicator 3) Contents of the	(Ex-post Evaluation) achieved
	assistance to the national strategies	
	and proposals to the Cabinet on	- Establishment of Women Chamber of Commerce in the Cabinet
	women's economic empowerment.	
	1	Afghanistan) with packaging prepared only by women (later approved)
		- Continuous reviews from gender point of view and comments on the legal documents
		and policies, including economic empowerment of women, to be discussed in the
		Cabinet.
Source: Questionnair	e and interview via telephone to MO	WA and DOWA

3 Efficiency

Both the project cost and the project period were within the plan (ratio against the plan: 90% and 100%, respectively). The outputs of the project were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

The Women Economic Empowerment National Priority Program (2016-2020), one of the ten priority programs of Afghanistan for development, stipulates policies to promote economic empowerment of women. The Program was developed in a participatory manner by engaging all line ministries as well as the international community and other stakeholders.

<Institutional/Organizational Aspect>

The structure to promote women's economic empowerment is organized and each relevant agency implements its duties. There is a shortage of manpower, however, as the number of staff at each organization has been reduced since project completion due to budget limitation. The existing structure and human resources in SCWPELA, DPSR and DOWA are sufficient to undertake their basic roles but they are fully occupied with routine administrative works in the office and too busy to sufficiently conduct data collection and advocacy to promote empowerment of women outside MOWA. They need more staff to advocate and further promote women empowerment efforts in the line ministries and at the district/village levels.

<Technical Aspect>

Those engaged in the project still use the experiences they gained throughout the project in their career although some of the Working Group members had difficulties to acquire knowledge and skills during the project period. The staff at SCWPELA have necessary skills such as reviewing and commenting the Cabinet documents and monitoring & evaluation, although they need to improve communication skills, including English writing, with stakeholders in particular the donor community. At DPSR, they have skills necessary to implement their duties to a large extent. The staff members of the SCWPELA and DPSR have not attended trainings to acquire new knowledge or to improve their skills. The manuals and technical materials developed during the project have not been utilized after project completion. At DOWA, it is desirable to allocate economic experts, as there used to be before 2009. This can let SCWPELA directly communicate with the DOWA for matters related to economic empowerment of women. Besides, economic expertise would be helpful to further promote women's economic empowerment according to their specific needs.

<Financial Aspect>

Both MOWA and DOWA have budget to implement their duty but the government fund for promoting women's economic empowerment is not sufficient. Neither SCWPELA nor DPSR has development budget for economic empowerment of women in 2020, although MOWA in some years allocated small amount of development budget for awareness raising as well as organizing events/anniversaries for DPSR. In 2020 the amount of about US\$ 8,000 is allocated to DOWA of Bamyan for organizing awareness raising. Budget for economic empowerment of women mostly comes from international community.

## <Evaluation Result>

In light of the above, some problems have been observed in terms of the institutional/organizational, technical and financial aspects of the implementing agency. Therefore, the sustainability of the project effects is fair.

## 5 Summary of the Evaluation

The achievement of the Project Purpose of improvement of MOWA's support to women's economic empowerment at the time of project completion cannot be verified because sufficient information was not available. However, it is considered that the project effects have been brought about through implementation of planned activities and continued to the time of ex-post evaluation, because relevant agencies at MOWA are conducting their responsibilities based on appropriately developed TORs and MOWA continuously identifies issues on women's economic empowerment to support other relevant agencies. The Overall Goal of establishment of mechanism to support women's economic empowerment has been partially achieved. Coordination meetings have been continuously held by SCWPELA, and MOWA continuously provides comments and advice to the Cabinet. However, the number of staff at SCWPELA has been greatly reduced. Regarding sustainability, some problems have been observed in the institutional/organizational, technical and financial aspects because of insufficiency of manpower, training opportunities and financial resources but policy sustainability is high. Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- MOWA's operations and services should reach the women at the district and village levels sufficiently. Currently MOWA and DOWA's operations are limited to the capital Kabul and centers of provinces and not provided sufficiently at district and village level partly because there is no MOWA staff at district level. It is desirable that MOWA/DOWA assign a team to work on the district level so that service delivery at the district and village levels increases and women's issues are addressed. To implement this measure, it is recommended to request international support when necessary.
- It is preferable that MOWAI allocates more staff members with sufficient qualification for advocating and promoting economic empowerment of women in relevant entities beyond MOWA.

Lessons learned for JICA:

- The project had some difficulties in transferring technical knowledge as was planned to some of MOWA staff of the Working Group during the project, partly because technical knowledge to be transferred was not suitable to the previous experiences and background of some of them. In order to effectively conduct capacity building, it is necessary to make sure that all target officials have the suitable knowledge/skills required for learning from the capacity-building program and the program is designed considering their background/experiences.
- The manuals, templates and other project management tools that are produced by the project should be user friendly to the extent possible, and preferably developed endogenously by improving the existing ones. If such documents and tools are completely new and complicated, it is highly likely that the recipient organization does not use them after project completion.

Country Name	[Phase 1] Institutional and Human Resource Development Project For One Village
	One Product Programme (OVOP)
Republic of Malawi	[Phase 2] Strengthening the Capacity of OVOP Programme for Delivering Services
	to OVOP Group in Malawi

## I. Project Outline

Background	Since 2003, when President Muluzi (then) visited Oita Prefecture of Japan along with attending the Third Tokyo International Conference on African Development (TICAD III), the Government of Malawi had implemented OVOP activities by establishing OVOP Secretariat and replicating the initiatives implemented in Oita Prefecture. To support such self-help efforts by the government and people of the country, JICA implemented Phase 1 of this technical cooperation project between 2005 and 2010. Through the implementation of the project, some achievements were observed on the capacity development of OVOP secretariat officials and OVOP group members. However, there were remaining areas and challenges for further development, such as improving access to the markets, quality control, and business management. In response to the situation faced by the OVOP activities in Malawi, Phase 2 of this project was started in 2011.		
Objectives of the	The project aimed to strengthen the capacity of OVOP Secretariat and Assistant Cooperative Liaison Officers (ACLOs) <sup>*</sup> for delivering services to OVOP activities at the local level in Malawi through the institutional arrangement, human capacity development (in the OVOP concept, value-added production technologies, and business development), the building of good practices, information sharing, promotion of quality control, and strengthening of domestic and international market linkages, thereby enabling the local community to produce value-added goods and services that are marketable nationally and internationally by using locally available resources and to increase their income level. *ACLO was changed to Assistant District Trade Officer (ADTO) after they were incorporated into the government system. [Phase 1]		
Project	<ol> <li>Overall Goal: Using locally available resources, the high quality of goods and services with comparative advantage are generated.</li> <li>Project Purpose: Institutional capacity &amp; human resources of OVOP Secretariat &amp; other related institutions are developed to create sound environment for communities to start business activities using locally available resources for higher quality products &amp; services.</li> <li>[Phase 2]</li> <li>Overall Goal: Income level of the local community engaged in OVOP movement is increased by producing value-added goods and services which are marketable nationally and internationally, by using locally available resources.</li> <li>Project Purpose: Capacity of OVOP Secretariat and ACLOs for delivering services to OVOP activities at local level is strengthened.</li> </ol>		
Activities of the Project	<ol> <li>Project Site: Malawi</li> <li>Main Activities:         [Phase 1]         <ol> <li>Establish mechanisms of OVOP planning, screening, project funding, and product marketing.</li> <li>Conduct training in OVOP concepts, small-scale business management, and production technologies.</li> <li>Verify model OVOP groups; publish "Business Manual," "Food Processing Manual," and "OVOP Technical Operation Guideline."</li> <li>Facilitate Assistant Cooperative Liaison Officers (ACLOs) to submit an activity report to districts; publish information dissemination materials.             [Phase 2]             <li>Operationalize OVOP Extension Centres with OVOP Secretariat and OVOP Award; organize study tours; organize OVOP Extinsion Centres with OVOP Secretariat and OVOP Award; organize study tours; organize OVOP Exhibitions and Fairs; send OVOP groups to trade fairs.             <li>Conduct training in product development, etc.; develop a Business Development Service providers database and the Resource Person list (not completed).</li> <li>Facilitate OVOP groups for Malawi Bureau of Standards (MBS) verification; train ACLOs in quality control of OVOP groups.</li> <li>Establish OVOP Cooperative Support Fund as an entity that purchases and sells OVOP products (including OVOP Antenna Shops).</li> </li></li></ol> </li> <li>Inputs (to carry out above activities)         <ul> <li>Japanese Side</li> <li>Malawian Side</li> <li>Phase 1] * As of Terminal Evaluation</li> <li>Experts: 6 persons</li> <li>Office space and furniture</li> <li>Trainees received: 36 persons</li> <li>Operation cost</li> </ul> </li> </ol>		
	[Phase 2] * As of Project Completion [Phase 2] * As of Terminal Evaluation		

	<ol> <li>Experts: 7 persons</li> <li>Trainees received: 63 persons</li> <li>Equipment: Vehicles, office equipment</li> <li>Operation cost</li> </ol>	, etc.	<ol> <li>Staff allocated: 11 persons</li> <li>Office space and furniture</li> <li>Operation cost</li> </ol>				
Project Period	[Phase 1] October 2005 – September 2010 [Phase 2]		[Phase 1] (ex-ante) 300 million yen (actual) 263 million yen [Phase 2] (ex-ante) 341 million yen (actual) 382 million yen				
Implementing Agency	<ul> <li>National One Village One Product (OVOP) Secretariat, Ministry of Local Government and Rural Developmen (MLGRD)</li> <li>* OVOP Secretariat was renamed to Value Addition Division under the Department of SMEs and Cooperatives, Ministry of Industry and Trade, in the Financial Year 2016/17. For readers' convenience, this report consistently uses the name "OVOI Secretariat" when referring to Value Addition Division.</li> <li>* The national level counterpart agency was changed from the Ministry of Agriculture to MLGRD in July 2005, and to the Ministry of Industry and Trade in July 2009. Then, the Ministry was split to into two Ministries, namely Ministry of Industry and Ministry of Trade, in July 2020. The Value Addition Division is currently under the Ministry of Industry.</li> </ul>						
Cooperation Agency in Japan	-						

## II. Result of the Evaluation

<Constraints on Evaluation>

• Due to the impact of the COVID-19 pandemic, we were unable to conduct a field survey. Therefore, this evaluation is based solely on the information provided by OVOP Secretariat (Acting OVOP National Coordinator (Acting Deputy Director for Value Addition) of Value Addition Division), and neither interviews with local groups nor on-site confirmation of the situation were conducted. Accordingly, detailed information, especially factors behind the provided information, was not available.

< Special Perspectives Considered in the Ex-Post Evaluation >

• Phase-integrated evaluation: Since Phase 2 was to continue what was built under Phase 1, we evaluated the two phases together by regarding them as an integrated project. We used the Overall Goal and Project Purpose of Phase 2 as those of the integrated project. As Phase 2 did not set indicators for the Overall Goal, we verified its achievement using the indicators of Phase 1's Overall Goal, which were logically found to be compatible with the Overall Goal of Phase 2. However, we omitted the target years mentioned in these indicators (i.e., 2010) as they do not fit as target years after Phase 2. Instead, we examined whether these indicators showed an upward trend after Phase 2 completion to the time of ex-post evaluation.

Project Purpose Indicator 2 "Performance level of ACLOs Annual Plan": The Mid-term Review Team and the Terminal Evaluation Team for Phase 2 concluded that this indicator was not practical to use since the degree of implementation of the annual plans would be influenced by the budget disbursement, an external factor. As an alternative, the Terminal Evaluation Team used "Performance level of ACLOs." We supported this idea and used "Performance level of ACLOs" as Supplementary Information.

 Overall Goal Indicator 2 "Number of OVOP groups which generate real net profit from the level of each group's starting year" (Use of Supplementary Information): The Terminal Evaluation Team used "Total real net profit" and "Real net profit per group" instead of this indicator as it was considered difficult to collect the actual value of the original indicator. We supported this idea and used these two alternative indicators as Supplementary Information while trying to measure the original indicator as well.

## 1 Relevance

<Consistency with the Development Policy of Malawi at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation of Phase 1, this project was consistent with the Government of Malawi's designation of OVOP as a national program. It was also consistent with the Poverty Reduction Strategic Paper (MPRPS) (2002), which aimed at realizing "sustainable poverty reduction through the empowerment of the poor." At the time of ex-ante evaluation of Phase 2, the Malawi Growth and Development Strategy (2006) mentioned the OVOP programme as a key strategy for promoting rural people's economic empowerment. Consistency with the Development Needs of Malawi at the Time of Ex-Ante Evaluation>

By the time of ex-ante evaluation of Phase 1, OVOP Secretariat had already been set up, and activities had started. There were strong requests for technical support and business management from farmers' associations who had been supported as pilots. At the time of ex-ante evaluation of Phase 2, people continued to have high expectations from OVOP activities of value addition utilizing local resources, which were deemed to contribute to the rural economy.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation of Phase 1, this project was consistent with "assistance in the diversification of rural livelihood" and "promotion of small-scale business," which were sub-areas of "food security" and "sustainable economic growth," respectively, two of the three priority areas of Japanese assistance for Malawi as of 2005. At the time of ex-ante evaluation of Phase 2, this project was consistent with "sustainable economic growth (agricultural and rural development)," one of the three priority areas of Japanese assistance for Malawi as of 2011.<sup>1</sup>

<Evaluation Result>

In light of the above, the relevance of the project is high.

### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the time of Phase 2 completion. Through the activities mentioned above, OVOP Secretariat became able to formulate Annual Plan and deliver and promote OVOP activities. They were satisfied with the performance level of implementation of the Annual Plan (Indicator 1). ACLOs (then) made their respective Annual Plans under the guidance of OVOP Secretariat and District Council (DC) offices. The performance level of ACLOs was improved between 2014 and 2015 in some activities such as loan management and support to groups, but there were rooms for improvement. Information was not available on the performance level in other years (Indicator 2). OVOP groups' satisfaction with services provided by the OVOP programme increased (Indicator 3). While the satisfaction

<sup>&</sup>lt;sup>1</sup> Source: Ministry of Foreign Affairs, ODA Country Data Book 2005, 2011.

with the OVOP programme among community members who did not belong to OVOP group was not measured, it was confirmed that they sold raw materials to OVOP groups and thus might have benefitted from the programme (Indicator 4). Besides, based on the OVOP National Strategy approved in December 2014, a cooperative union of OVOP groups called Maluso Cooperative Union was established in October 2015 and completed the registration to Malawi Revenue Authority in January 2017. This project supported the Union for making it functional (the OVOP Cooperative Support Fund established and supported by the project was also incorporated into Maluso Union). As of March 2017, ten OVOP groups were registered as "full members," and seven were registered as "partly payment."

The project's effects have partially continued to the time of ex-post evaluation. OVOP Secretariat has continued to formulate the Annual Plan after project completion. The implementation rate of the Annual Plan increased from 75% in 2014 to 100% in 2019. According to OVOP Secretariat, they have monitored OVOP groups with ADTOs and encouraged sharing of experiences among OVOP groups through Extension Centres and referral groups as recommended by the Terminal Evaluation Team of Phase 2. OVOP Secretariat has found ADTOs' performance good in general. Major activities performed by ADTOs are the provision of support and training in business management, linking OVOP groups to market opportunities, and enforcing loan adherence to loan repayments for OVOP groups in production. Regarding OVOP groups' satisfaction level, OVOP Secretariat commented that it varies depending on whether they have working capital to able to utilize the facilities the Secretariat supported with and to be in actual production.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved by the time of ex-post evaluation. The number of OVOP groups in Malawi increased from 18 in 2005 to 122 in 2019 (Indicator 1). Most of which have been upgraded to cooperatives. Also, Maluso Union has been functional with 15 member groups (cooperatives) as of 2019. The number of member groups has increased each year because they are able to find the readily available market for their products from the Union. The Union also acts as a package center to add values to products from primary producers. The real net profit of all OVOP groups in Malawi is unknown because OVOP Secretariat has only monitored the net profit of a model of some 20 groups. All of these 20 groups have shown an increase in net profit (Indicator 2). The number of OVOP products certified by MBS increased to six (cooking oil, rice, honey, baobab oil, lime, and potato crisps) by 2019. These products (e.g., hibiscus products, moringa powder/soap, cassava flour, chitenje products) have not been certified because the groups have failed to meet the MBS's standards (Indicator 3). During the project period, there was a discussion that the MBS required too high standards for OVOP products since the MBS's standards were rather for medium sized industry, not for cottage industry like OVOP groups. Considering this, although not all products have been certified as expected in this indicator, it is commendable that a number of OVOP products including major products meet the standards. <Other Impacts at the time of Ex-post Evaluation>

OVOP Secretariat pointed out a possibility of an adverse environmental impact of OVOP activities because some machinery for production required the use of firewood to heat the boiler, which might lead to improper cutting of trees. As a countermeasure, those groups using firewood are encouraged to plant trees and have woodlots within their factory area at each group member's home. Positive impacts of OVOP activities pointed out by OVOP Secretariat include empowerment of women (many women are holding high positions in OVOP groups and some are chairpersons) and an increase in assets of some group members (they bought assets such as goats and bicycles thanks to the increased income).

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Aim	Indicators	leveme	Results									
(Project Purpose)	Indicator 1: Performance	Status	tatus of the Achievement: achieved (continued)									
Capacity of OVOP	level of OVOP Secretariat	(Proje										
Secretariat and ACLOs for	Annual Plan	- OV(	OP Secre	tariat was	s satisfied	l with the	perform	ance of i	ts Annual	Plan in t	hat 75%	of the
delivering services to		plan v	lan was implemented in 2014-2015.									
OVOP activities at local		(Ex-p	Ex-post Evaluation)									
level is strengthened.		- OV(	OVOP Secretariat kept formulating the Annual Plan. The implementation rate of the Annual									
		Plan v	vas appro	oximately	7 80% in	2017-20	18 and 10	00% in 2	019.			
		- Maj	- Major activities implemented in 2019:									
		i. (	Completi	on of con	struction	of 8 min	i factory	shells.				
		ii.	Rehabilit	tation of (	6 mini fao	ctory she	lls					
		iii. Installation of 10 small scale processing and value-adding machinery										
		iv.	Capacity	v building	g of 1,000	OVOP g	group me	mbers be	elonging t	o 17 valu	e-adding	groups
		in	business	managen	nent, mar	keting, a	nd quality	y control	issues			
		v. 1	Promotio	n of 15 p	roducts a	t various	national	and dist	rict fairs			
	Indicator 2: Performance	Status	s of the A	chievem	ent: not v	erifiable	(continue	ed)				
	level of ACLOs <sup>*</sup> Annual	(Proje	ect Comp	letion)								
	Plan	Perfor	rmance o	f ACLOs	evaluate	d by OV	OP Secre	tariat (5	points bei	ing full m	nark)	
	<b>C</b> 1	Year	Report submis-	Loan manage-	Support to	OVOP concept	Value addition	Quality control	Basic business	Market linkage	Sales	Average
	Supplementary		sion	ment	groups	1				5		
	Information: ACLO's*	2014	-	1.57	3.00	5.00	-	1.70	3.78	2.61	-	2.94
	performance level	2015	2.33	3.19	3.20	2.90	2.58	2.14	2.90	2.38	1.24	2.54
	* Currently ADTOs	(Ex-p	ost Evalı	uation)								
		- OV(	OP Secre	tariat con	siders that	at the AD	TOs' per	formanc	e has beer	n good (a	bove ave	rage in
		gener	al), coop	erative, a	nd knowl	edgeable	e, as they	are able	to train g	roups on	their own	n with
		minin	nal suppo	ort from t	he Secret	ariat. No	major iss	sues relat	ting to the	ir perform	nance ha	as been

Achievement of Project Purpose and Overall Goal

		noticed.									
	Indicator 3: Satisfaction	Status of the Achievement: achi	eved	(partially	continued)	)					
	level of services provided	(Project Completion)			,						
	by OVOP Programme	ups (January	v 2016), th								
	among OVOP groups.										
	uniong of or groups.	-		, , , , , , , , , , , , , , , , , ,							
		the respondents said they wante						one hv			
		<ul> <li>A focus group discussion result also described the achievement of social expectation OVOP group members, such as gaining new skills from the training the members rece through the OVOP programme.</li> </ul>									
		through the OVOr programme.									
	(Ex-post Evaluation)										
				1.0	NUOD	11		аа			
		- OVOP Secretariat considers th		general, C	OVOP grou	ips are well co	onversant wi	in the			
		OVOP programme and activitie					11				
		- The Secretariat considers that									
		production and those not utilizin	-								
		production are satisfied, but tho									
	Indicator 4: Satisfaction	Status of the Achievement: not	verifi	iable (cont	inuation st	atus being not	t verifiable, e	either)			
	-	(Project Completion)									
	by OVOP Programme	- The satisfaction level of services provided by the OVOP programme among									
	among	communities/groups was not collected since it was not included in the end-line survey, the									
	communities/groups	reason of which is uncertain.									
	engaged in business	- However, many OVOP groups	s pure	chased raw	materials	from non OV	OP group m	embers in			
	activities at local level.	their surrounding communities, which might have contributed to their income.									
		(Ex-post Evaluation)									
		No information was available.									
Overall Goal) ncome level of the local	Indicator 1: The number	(Ex-post Evaluation) achieved									
	of OVOP groups increases cumulatively from the			2005	2010	2017	2018	2019			
community engaged in		No. of OVOP groups in Malawi		18	104	111	122	12			
OVOP movement is	level of Oct. 2005.										
increased by producing											
value-added goods and	Indicator 2: The number	(Ex-post Evaluation) partially a	chiev	ved							
services which are	of OVOP groups which	- Indicator 2 is not verifiable sin			etariat has	monitored the	e profit of mo	odel grour			
	generate real net profit	only, not that of all OVOP group			etarrat mas	inomior <b>e</b> a in	e prome or m	ouer group			
nternationally, by using	from the level of each	- Between 2017 and 2019, all of		20 model (	Troups inc	reased net pro	fit				
locally available	group's starting year	- The overall trend of all OVOP				-		lel groups			
esources.		are not monitored. Therefore, th	-	-							
05001005.	from the level of Oct.	achievement of this indicator.	ie pei	lioimanee		ier groups rep	resents part v				
	2005.	achievement of this indicator.									
	2005.	Net profit of the model OVOP g	rour	NG							
	Supplementary	Net pront of the model 0 vor g	group	2005	2009	2017	2018	2019			
	Supplementary Information: Total net	No. of model groups monitored		5	17		2010	2015			
		Total net profit of the model OVOP					62.000				
	profit of OVOP groups;	groups (thousand MK)		715	4,760	-	62,000	82,000			
	Real net profit per group	Net profit per group (thousand MK)		143	280		3,100	4,100			
		* Note: Although not clearly mentio	ned,	the data of n	et profit see	ems to represen	t nominal valu	es.			
	Indicator 3: All of the	(Ex-post Evaluation) not achiev									
	OVOP products are	- The major OVOP products are				-					
1	certified by MBS.		010	2015	2017	2018	201				
		No. of OVOP products	0	) 1	1	2		4			
				(0 1)	(0.1)	<u></u>	(D' II	·			
		certified by MBS (Name of products certified)		(Cooking oil)	(Cooking oil)	(Rice, Cooking oil)	(Rice, Hor oil, Lime, Po	ney, Baobal			

Operating Performance	e of Maluso Coo	perative Union	
	2017	2018	2019
Number of member groups	8	11	15
Purchase (thousand MK)	24,532	27,142	87,770
Sales (thousand MK)	39,942	41,376	110,436
Total net profit (thousand MK)	234	591	2,133

Source: Maluso Business Manager

## 3 Efficiency

Both project cost and project period exceeded the plan (ratio against the plan: 101% and 110%, respectively). The project period of Phase 2 was extended to achieve the Project Purpose and its sustainability fully. The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The OVOP National Strategy (2014) expired. Subsequently, OVOP Secretariat is in the process of finalizing the National Rural Industrialization Strategy that aims at building the capacity of cooperatives to enhance their contribution to rural industrialization, thereby accelerating export growth and promoting inclusive economic growth. Regarding policies that are effective at the time of ex-post evaluation, the Malawi Growth and Development Strategy III (MGDS III) (2017-2022) and the Trade Policy (2016-2021) support micro small and medium-sized enterprises (MSMEs), under which OVOP groups fall.

<Institutional/Organizational Aspect>

OVOP Secretariat was rebranded to Value Addition Division in the Financial Year 2016/17. It was one of the three Divisions under the newly formed Department of SMEs and Cooperatives but under the same Ministry of Industry and Trade. The organizational structure to promote OVOP activities is still functional. According to OVOP Secretariat, there are five Technical Officers and eight Support Staff. They have three vacant positions for Technical Officers. The fact that ADTOs were incorporated into the government system as permanent staff under District Councils, hence there is a security of their jobs, is considered as a promoting factor for the continued good performance of them.<sup>2</sup>

## <Technical Aspect>

The staff of OVOP Secretariat still have skills and knowledge. This is evidenced by that they are able to conduct training. The organization has maintained the staff who were involved during the project period. When conducting training, they utilize manuals prepared under this project, such as the monitoring checklist for groups, the record-keeping and business management manuals, and the

marketing and quality control training manuals. As mentioned in "Effectiveness/Impact" above, it is considered that ADTOs also have skills to support OVOP groups.

#### <Financial Aspect>

OVOP Secretariat has managed to secure budget allocation continuously, but they commented that the recurrent budget continued to decrease although no data was available. Also, the development budget fluctuates as indicated in the table.

Budget for OVOP Secretariat (thousand MK)							
	2017/18	2018/19	2019/20				
Development budget	210,000	100,000	200,000				
Source: OVOP Secretariat							

Thus, while there have been no major hindrances to date, there is some concern about securing a budget for the future. <Evaluation Result>

In light of the above, a financial problem has been observed in terms of unstable budget allocation for the implementing agency. Therefore, the sustainability of the project effects is fair.

#### 5 Summary of the Evaluation

This project, consisting of Phase 1 and Phase 2, partially achieved the Project Purpose by the time of Phase 2 completion. The capacity of OVOP Secretariat was strengthened satisfactorily, and that of ACLOs (currently known as ADTOs) was also strengthened but did not reach the expected level. The effects have partially continued after project completion. While OVOP Secretariat and ADTOs have continued to provide services related to OVOP activities, the satisfaction level of OVOP groups are mixed depending on whether they are in production, utilizing the services they receive. The Overall Goal has been partially achieved. The number of OVOP groups and the net profit of model groups have increased, but the profits of other groups are unknown, and not all products were certified by MBS. Regarding the sustainability, some problem has been observed in the financial aspect due to the budget decline for OVOP Secretariat. As for the efficiency, both project cost and project period exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• Basing on the outcome of the survey, there were a number of issues that were identified. These among others include: (i) Not all OVOP groups are monitored as well as that all OVOP products meet the minimum MBS's standards for certifications. (ii) There are different satisfaction levels among the OVOP groups. (iii) The recurrent budget is decreasing (although no data is available) and the allocation of development budget is not stable. We therefore recommend that OVOP Secretariat needs to lobby for increase in budget allocation or source external funding. The sufficient budget will assist OVOP Secretariat to monitor the groups, have unified satisfaction level among all the groups and improve on MBS certification standards. The OVOP Secretariat can utilize the dedicated and knowledgeable staff to monitor the groups improve on the certification of all OVOP products to meet the MBS's standards. This will assist the groups realize more profits and improve livelihoods.

Lessons Learned for JICA:

• The following lessons can be drawn from this project from the outcome of the project survey: The survey results indicate that the formation of the cooperative union, like Maluso is a good initiative. This assists in sustainability of the OVOP concept and they are able to find reliable markets for the groups' products, thereby able to negotiate for the price and able to realize profit. This has improved the economic status of the rural community. Hence, the project can be replicated in other countries. However, in future projects, when providing resources (facilities) to the groups, there need to put measures that groups need to have adequate working capital for smooth running of their business. This will minimize variations in satisfaction among the groups on OVOP activities and thereby improve on certifications of their products.

<sup>&</sup>lt;sup>2</sup> At the same time, although not undermining the sustainability greatly, ADTOs pointed out some issues such as their low rank in the District hierarchy, funding challenges, and competing demands from the Council Superiors where they are assigned to do other activities.



Training of One OVOP group (left) and display of OVOP products during 2018 Malawi Trade Fair (Right).

## Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Tanzania Office: April, 2020

Country Name	Formulation and Training of the Guideline of the DADP Guidelines on Irrigation Scheme					
United Republic of Tanz	zania Development					
I. Project Outline						
Background	irrigation technicians were not sufficient, and guidelines on irrigation projects in general, which were able to be referred to by district irrigation technicians, had not been developed, so it was difficult for districts to plan and implement irrigation projects efficiently. Through 1) developing guidelines for irrigation scheme development and operation and maintenance (O&M), and 2) strengthening technical support system, the project aimed at enhancing capacity of district and zonal irrigation technicians thereby contributing to improvement and promotion of irrigation scheme development under DADPs					
Objectives of the Project						
Activities of the project	<ol> <li>Project site: Morogoro, Kilimanjaro, Mbeya and Mtwara irrigation zones</li> <li>Main activities: 1) development of guidelines for irrigation development and O&amp;M, 2) strengthening of technical support system</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Tanzanian Side</li> <li>Experts: 16 persons</li> <li>Staff allocated: 21 persons</li> <li>Facilities: Offices</li> <li>Equipment: vehicles, motorcycles, office</li> <li>Local Operational Cost: general expenses and others</li> </ol>					
Project Period	February 2007 – January 2010Project Cost(ex-ante) 340 million yen, (actual) 298 million yen					
Implementing Agency	Ministry of Water and Irrigation (MoWI), Division of Irrigation Technical Services (DITS), Zonal Irrigation and Technical Service Unit (ZITSU, later reorganized to Zonal Irrigation Office (ZIO), and again restructured to the Regional Irrigation Office (RIO) in 2019.) Note: Irrigation commission has been shifted from MoWI to Ministry of Agriculture (MoA) after the project completion.					
Cooperation Agency in Japan						

**II. Result of the Evaluation** 

## 1 Relevance

<Consistency with the Development Policy of Tanzania at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policies of Tanzania. At the time of ex-ante evaluation, the "National Strategy for Growth and Reduction of Poverty (NSGRP)" (2005) prioritized agriculture sector development for poverty reduction and economic growth. The "Agricultural Sector Development Strategy (ASDS)", a strategy aiming at revitalizing the country's agriculture, was formulated in 2001. Based on this, in 2002, in order to realize the ASDS goal of "raising farmers' income through creating an environment that improved agricultural productivity and profitability", the "Agricultural Sector Development Program (ASDP) " was formulated, and it was also decided to allocate the development budget in the agricultural field to the" district agricultural development plan (DADP) "through the ASDP basket fund. At the time of project completion, irrigation development was one of the priority areas within the agriculture sector including the National Irrigation Policy (NIP), which was in a final stage of approval.

<Consistency with the Development Needs of Tanzania at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the development needs of Tanzania for irrigation development. At the time of ex-ante evaluation, agriculture was a key industry in Tanzania with about 50% of GDP and about 75% of total exports, and about 80% or more of the domestic working population engaged, but most relied on rainwater. The agricultural production was greatly influenced by the fluctuation of natural conditions such as drought. At the time of project completion, in Tanzania, rain-fed agriculture was mostly common method, making farmers vulnerable to irregular as well as unstable rainfalls. The irrigation development was a fundamental activity in order to improve amount of harvest, thereby stabilizing agricultural production as well as improving food securities. <<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy to Tanzania. Agriculture including small-scale irrigation is one of the priority areas under the "Country Assistance Program for the United Republic of Tanzania" (2000). <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved. Although "More than 80 % of the target groups use the guidelines to improve irrigation development." (Indicator 1) was partially achieved having low level of utilization of implementation and O&M guidelines (G/Ls)., "At least two persons per each zone are qualified as trainers of the guidelines." (Indicator 2) was achieved.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The effects of the project have "partially continued" after the project was completed. Staff for both at zonal and districts office have used the guidelines for irrigation development and improvement. The G/Ls were upgraded to Comprehensive Guidelines (CGL) in the succeeding projects, and have been updated and revised so as to meet the practical needs on the ground. However, according to district staff, it has not been easy to follow all steps of CGL for donor funded irrigation schemes because each donor has its own way to implement and operate projects. What they did is to select and to choose particular steps in CGL in order to save time and money and omit the rest of steps of CGL. Also, under the chronical shortage of budget in the current government situation, it has been difficult to have full scale government contribution to donor funded irrigation schemes, which had limited full utilization of CGL.

The trainees have been acting as trainers in each district and the training and workshops have been conducted for promoting use of CGL. <Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved by the time of ex-post evaluation. Irrigation development has improved and promoted under DADPs. During 2010 to 2018, 336 schemes have been improved and developed under the District Irrigation Development Fund (DIDF) and by other resource funds including Small Scale Irrigation Development Project (SSIDP: Yen Loan). Approximately 144 thousand ha in total have been developed during the same period. The promotion of irrigation development under DADPs have been depending on the availability of the basket fund; DIDF as well as the other Develop Partners' funds. The availability of those funds became slim in around 2016 onwards unfortunately. Therefore, without fund source, the number of physical irrigation scheme development got small since 2016.

<Other Impacts at the time of Ex-post Evaluation>

There have been some positive impacts from the gender perspective. In schemes which were involved in the project, the number of the women participated in the leadership/management in Irrigators Organization (IO) committees of the scheme has been higher than the ones which have not been trained under the project. Involving women in the leadership in IO was emphasized by the project. G/Ls promotes that the IO constitution must require at least 1/3 of IO management board to be filled by women. Not only the management, but also project encouraged the women's participation in the Operation and Maintenance of irrigation schemes by IO. During the field visit, it was found that due to gender subject matter have been much more aware after the project than before, men and women have shared workload. For example, women participation in leadership management and decision making for Mkindo IO have improved: (i) 33% of management committee members are women. (ii) Average women participation in General Assembly meeting where all important IO decision are made or approved is 49%. (iii) All IO subcommittees have at least one woman. (iv) Regarding farming activities, 65% of the duties are done by women.

It was found that during the field visits, positive impacts such as IOs' initiatives for construction of new canals and access roads, excavation of tertiary canals, collection of water tariff to be used for the O&M and administration, purchasing motor pumps, building milling machine houses, and rehabilitating the facilities. Efficiency in water distribution, reduction in conflict on water use, increases in production and others were also reported.

Since the trainings had positive impacts to the IO's and farmers at Morogoro-Mvomero District C council, Local Government Authority managed to conduct trainings for transferring the knowledge to other places which were not targeted by the project such as Dakawa, Wami Ruhindo, Kigugu and Mbogo Komtonga. As fund for complete training of CGL is not enough, Local Government Authority put more emphasis to train irrigators in listed above scheme for formulation and O&M part of guideline. According to Irrigation Engineer more importance is put to formulation because it is important for irrigators to get proper foundation of their schemes then it will be easy to make them understand the procedures such as operations and maintenance.

No negative impact on the natural environment by this project has been observed and there was no land acquisition and resettlement. <Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Aim	Indicators	Results						
(Project Purpose)	Indicator 1: More than 80 % of the target	Status of the Achievement: Par	tatus of the Achievement: Partially achieved (Partially continued)					
Capacities of the target	groups use the guidelines to improve	(Project Completion)						
Districts and Zonal	irrigation development.	The formulation G/L had been	utilized for all	l of the proposals	for the irrigation	tion		
Irrigation Offices for		development schemes for DID	F. On the othe	r hand, the imple	mentation an	d O&M		
planning,		G/Ls were not widely circulate	d yet; therefor	e there were limi	ted application	ons of the		
implementation and		G/Ls especially with regard to	the O&M sch	eme.				
O&M of irrigation		(Ex-post evaluation)						
schemes are enhanced.		Number of staff who has utilized the G/Ls						
		ZIO/	Formulation	Implementation	O&M G/L			
		District technicians	G/L	G/L				
		1.1Morogoro ZIO	9/22	6/13	6/7			
		1.2 District technicians under	4	6	9			
		Morogoro ZIO						
		2.1 Kilimanjaro ZIO	14/14	14/14	14/14			
		2.2. District technicians under	61/61	61/61	61/61			
		Kilimanjaro ZIO						
		3.1 Mbeya ZIO	2/19	15/19	6/8			

		2.2.0.1			1	0		1.1	2	0	1
		3.2 Distri	ct techni Abeya Z			0		11	3	8	
		4.1 Mtwara Z		10	1	7/17	17	7/17	17/	/17	
		4.2 District te		under		2/92		2/92		/92	
		Mtwara ZIO									
	Indicator 2: At least two persons per each	Status of the A	Achiever	nent: A	chieved	(Contir	nued)				
	zone are qualified as trainers of the	(Project Comp	pletion)								
	guidelines.	The irrigation									
		workshops/tra									
		hence it is exp		-						-	
		irrigation development district.	elopmen	t schem	ies once	e the G/I	Ls are fin	nalized	and circi	ulated 1	h each
		There are 4 in	rigation	staff at	Morogo	oro 710	and 5 ir	rigation	staff at	Kilima	viaro
		ZIO who had									
		G/Ls. As for M			-			-			
		They have pra								0	
		(Ex-post eval									
		1.Number of	trainers	5							
		ZITSU					Numb	er of trai	ners		
		Morogoro ZIG	)					4			
		Kilimanjaro Z	ZIO					6			
		Mbeya ZIO						3			
		Mtwara ZIO						8			
		2.Number of				ucted	2015		•	10	ا ٦
			mber of		2016		2017		201	18	
			training courses								
		ZIO									
		Morogoro ZIO	)		0		8		8 in 4 I	LGA,s	
		Kilimanjaro Z			1		9		9	)	
		Mbeya ZIO			2		3		3	;	
		Mtwara ZIO			5		4		9	)	
(Overall Goal)	Indicator 1:	Status of Achi		t: Partia	lly achi	ieved					
Irrigation scheme	Irrigation areas are expanded at least	(Ex-post evaluation) (Ex-post evaluation) (Ex-post evaluation)		rigation	n sche	mes a	ccented	unde	r Disti	rict Ir	rigation
development under DADPs is improved and	10,000 ha per year in line with the	Development		-			ceepteu	unut			- gavon
promoted.	Comprehensive O/L.		2010	2011	2012	2013	2014	2015	2016	2017	2018
promotour		M	5	7	7	3	-	-	9		-
		Morogoro							9	-	1 11
		ZIO							9	-	
		U U	14	18	8	7	9	9	11	- 11	4
		ZIO Kilimanjaro ZIO							11		
		ZIO Kilimanjaro ZIO Mbeya ZIO	25	24	1	0	0	0	11 0	0	0
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara							11		
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO	25 1	24 5	1 4	0 2	0 12	0	11 0 7	0	0 3
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO	25 1 10	24 5 7	1 4 5	0 2 0	0 12 5	0 0 0	11 0	0 0 0	0
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO Mwanza	25 1	24 5	1 4	0 2	0 12	0	11 0 7	0	0 3
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO	25 1 10	24 5 7	1 4 5	0 2 0	0 12 5	0 0 0	11 0 7	0 0 0	0 3
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO Mwanza ZIO	25 1 10 5	24 5 7 5	1 4 5	0 2 0	0 12 5	0 0 0	11 0 7 5 -	0 0 0 5	0 3 1 -
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO Mwanza ZIO Katavi*	25 1 10 5	24 5 7 5	1 4 5	0 2 0	0 12 5	0 0 0	11 0 7 5 -	0 0 0 5	0 3 1 -
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO Mwanza ZIO Katavi* ZIO	25 1 10 5	24 5 7 5	1 4 5	0 2 0	0 12 5	0 0 0 -	11 0 7 5 - 4	0 0 0 5	0 3 1 -
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO Mwanza ZIO Katavi* ZIO Central ZIO Total	25 1 10 5 2 - 62	24 5 7 5 2 - 68	1 4 5 5 - - 30	0 2 0 27 - - 39	0 12 5 9 -	0 0 3 -	11 0 7 5 - 4 4 - 36	0 0 5 6 - 22	0 3 1 - 1 - 9
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO Mwanza ZIO Katavi* ZIO Central ZIO Central ZIO Total The number	25 1 10 5 2 - 62 - "0" is	24 5 7 5 2 - 68 5 no pr	1 4 5 5 - - 30	0 2 0 27 - - 39	0 12 5 9 -	0 0 3 -	11 0 7 5 - 4 4 - 36	0 0 5 6 - 22	0 3 1 - 1 - 9
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO Mwanza ZIO Katavi* ZIO Central ZIO Total The number information	25 1 10 5 2 - 62 - "0" is availab	24 5 7 5 2 - 68 5 no pr le.	1 4 5 5 - - 30 roject	0 2 27 - - 39 in the	0 12 5 9 - - 35 particu	0 0 3 - 12 lar yea	11 0 7 5 - 4 - 36 r, and	0 0 5 6 - - - - - "-" m	0 3 1 - 1 - 9 cans no
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO Mwanza ZIO Katavi* ZIO Central ZIO Central ZIO Total The number information *Katavi Zor	25 1 10 5 2 - 62 - "0" is availab ie was c	24 5 7 5 2 - 68 5 no pr le. establis	1 4 5 5 - - - 30 roject	0 2 27 - - 39 in the 2017.	0 12 5 9 - 35 particu	0 0 3 - 12 lar yea	11 0 7 5 - 4 - 36 r, and under K	0 0 5 6 	0 3 1 - 1 - 9 eans no Zone till
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO Mwanza ZIO Katavi* ZIO Central ZIO Total The number information *Katavi Zon 2016 were of	25 1 10 5 2 - 62 - "0" is availab e was e construct	24 5 7 5 2 - 68 5 no pr le. establis cted in	1 4 5 5 - - 30 roject shed in the cu	0 2 27 - 39 in the 2017. urrent 1	0 12 5 9 - 35 particu The pro Katavi	0 0 3 - 12 lar yea	11 0 7 5 - 4 - 36 r, and under K urea. He	0 0 5 6 	0 3 1 - 1 - 9 eans no Zone till c, actual
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO Mwanza ZIO Katavi* ZIO Central ZIO Central ZIO Total The number information *Katavi Zor	25 1 10 5 2 - 62 - "0" is availab e was e construct	24 5 7 5 2 - 68 5 no pr le. establis cted in	1 4 5 5 - - 30 roject shed in the cu	0 2 27 - 39 in the 2017. urrent 1	0 12 5 9 - 35 particu The pro Katavi	0 0 3 - 12 lar yea	11 0 7 5 - 4 - 36 r, and under K urea. He	0 0 5 6 	0 3 1 - 1 - 9 eans no Zone till c, actual
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO Mwanza ZIO Katavi* ZIO Central ZIO Total The number information *Katavi Zor 2016 were of supervision	25 1 10 5 2 - 62 - "0" is available was construct was uncer of irri	24 5 7 5 2 - 68 5 no pr le. establis cted in der Tab gation	1 4 5 5 - 30 roject shed in the cu ora Zo	0 2 27 - 39 in the 2017. urrent 1 ne befc	0 12 5 9 - 35 particu The pro Katavi re Kata	0 0 3 - 12 lar yea ojects u Zone a avi's se	11 0 7 5 - 4 36 r, and under K urea. Ho paration training	0 0 5 6 	0 3 1 - 1 9 eans no Zone till c, actual 17. ding to
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO Mwanza ZIO Katavi* ZIO Central ZIO Total The number information *Katavi Zon 2016 were of supervision 2.The number the G/Ls und	25         1         10         5         2         -         62         • "0" is available was econstruction was uncertained and the seconstruction and the seconstructin and the seconstructin and t	24 5 7 5 2 - 68 5 no pr le. establis cted in der Tab gation ict Agr	1 4 5 5 - 30 roject shed in the cu ora Zo scheme icultur	0 2 2 2 2 2 2 7 - 39 in the 2017. urrent 1 ne befores swhich e Develo	0 12 5 9 - 35 particu The pro Xatavi re Kata implem	0 0 3 - 12 lar yea ojects u Zone a avi's se	11 0 7 5 - 4 - 36 r, and under K under K urea. Ho paration training (DADG	0 0 5 6 - 22 "-" m fatavi 2 owever n in 20 s accor	0 3 1 - 1 9 eans no Cone till c, actual 17. ding to
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO Mwanza ZIO Katavi* ZIO Central ZIO Total The number information *Katavi Zor 2016 were of supervision 2.The number the G/Ls und (National Irr Counterpart	25         1         10         5         2         -         62         • "0" is availab te was to construct was uncer         er of irri igation Fund),	24 5 7 5 2 - 68 8 no pr le. establis cted in der Tab gation fict Agr Develop Project	1 4 5 5 - - - - - - - - - - - - - - - - -	0 2 2 27 - 39 in the 2017. urrent 1 ne befc s which e Develo Fund), 1 apacity	0 12 5 9 - 35 particu The pro Katavi re Kata implem opment FACF (I Develop	0 0 3 - 12 lar yea ojects u Zone a avi's se nented Grant Food an pment I	11 0 7 5 - 4 - 36 r, and under K urea. Ho paration training (DADG d Agric For The	0 0 5 6 - "-" m fatavi 2 owever n in 20 s accor ) NIDF sultural Promo	0 3 1 - 1 - 9 eans no Cone till c, actual 17. ding to tion of
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO Mwanza ZIO Katavi* ZIO Central ZIO Total The number information *Katavi Zor 2016 were of supervision 2.The number the G/Ls und (National Irr Counterpart Irrigation Sc	25 1 10 5 2 - 62 - · "0" is availab ie was e construct was unc er of irri igation Fund), heme D	24 5 7 5 2 - 68 8 no pr le. establis cted in der Tab gation fict Agr Develop Project evelopr	1 4 5 5 - - - - - - - - - - - - - - - - -	0 2 2 27 - - 39 in the 2017. urrent 1 ne befc s which e Develo Fund), 1 apacity nder the	0 12 5 9 - 35 particu The pro Xatavi re Kata implem opment FACF (I Develop Distric	0 0 3 - 12 lar yea ojects u Zone a avi's se nented Grant Food an pment I t Agric	11 0 7 5 - 4 - 36 r, and under K urea. Ho paration training (DADG d Agric For The ultural l	0 0 5 6 - 22 "-" m Catavi 2 owever n in 20 s accor ) NIDF cultural Promo Develoj	0 3 1 - 1 - 9 eans no Zone till c, actual 17. ding to tion of oment
		ZIO Kilimanjaro ZIO Mbeya ZIO Mtwara ZIO Tabora ZIO Mwanza ZIO Katavi* ZIO Central ZIO Total The number information *Katavi Zor 2016 were of supervision 2.The number the G/Ls und (National Irr Counterpart	25 1 10 5 2 - 62 - · "0" is available was unce er of irri- igation Fund), heme D 2 (TANC	24 5 7 5 2 - 68 5 no pr le. establis cted in der Tab gation fict Agr Develop Project evelopr CAID2)	1 4 5 5 - - - - - - - - - - - - - - - - -	0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 7 2 3 9 in the 2017. 2	0 12 5 9 - 35 particu The pro- Xatavi re Katavi implement FACF (I Develop Distric roject o	0 0 3 - 12 lar yea ojects u Zone a avi's se nented Grant Food an pment I t Agric f the pr	11 0 7 5 - 4 - 36 r, and under K urea. Ho paration training (DADG d Agric For The ultural l oject for	0 0 5 6  22 "-" m Catavi 2 owever n in 20 s accor ) NIDF ultural Promo Develop r formu	0 3 1 - 1 - 9 eans no Cone till c, actual 17. ding to tion of oment ilation

developme	ent)								
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Morogoro	5	7	7	3	-	-	9	-	-
ZIO									
Kilimanjar	ro 5	5	3	3	4	11	11	3	3
ZIO									
Mbeya ZIG	O 37	27	2	-	10	13	3	15	3
Mtwara	0	0	0	3	1	1	0	0	0
ZIO									
Tabora ZIO	D 2	2	33	3	1	1	-	-	-
Mwanza	3	5	12	5	5	2	2	8	8
ZIO									
Katavi ZIO	2	2	-	-	-	-	4	6	1
Central ZI	0 -	-	-	-	-	6	2	-	-
Total	54	48	57	17	21	34	31	32	15
3.Accum	3.Accumulated Irrigated Area (thousand ha)								
Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Irrigated	331	345	354	363	450	461	461	468	475
area									

Source : JICA documents, questionnaires and interviews with National Irrigation Commission (NIRC), and zonal irrigation offices

## 3 Efficiency

Both the project cost and project period were within the plan (the ratio against the plan: 88%, 100%). The outputs were produced as planned. Therefore, the efficiency of the project is high.

#### 4 Sustainability

<Policy Aspect>

CGL has been authorized as reference for the irrigation development and has been stipulated in the policies including the "National irrigation Policy 2010", the "Revised National Irrigation Master Plan, 2018", "ASDP II" and others as well as the "National Irrigation Act no.4 2013". This is the strong support for maintaining the project achievement. <Institutional Aspect>

Operational structures for promoting small scale irrigation development at both of DITS under MoA and ZIO level have been appropriate, however, the current number of staff in each section has not been reaching to the required staff allocation. National Irrigation Commission (NIRC) is responsible for coordination, promotion, and regulation of irrigation sector development in the country. Therefore, NIRC's firm foundation as the authority for promoting irrigation development is crucial for the sustainability of the project. However, there have been frequent reshuffles and transfers of staff which weaken the NIRC's operation.

All the target areas have been provided with technical supports such as issues of quality control, preparation of estimate of materials used for construction. Also On the Job Training (OJT) have been utilized to share the appropriate skills and knowledge. Even though many officers have been trying to utilize knowledge and skills obtained from such technical supports and OJTs, ministry, zones (current Regional Irrigation Engineers), and districts technical skill has been recognized as insufficient. This is because Ministry has difficulty in maintaining skills due to frequent transfer, time lag in having new comers to the sector and retirement of a number of staff who were trained under the project.

## <Financial Aspect>

Lack of budget have been making irrigation development slow, and it has affected the quality of irrigation works and caused poor monitoring of irrigations schemes and development in general. Also, it has demoralized irrigation staff and left them with planned activities unimplemented. As future plans, NIRC will establish irrigation development fund which will be receiving as the following. Dpart of irrigation service fee collected by farmers (25% of the irrigation service fee collected by IOs), 2 from disposition or transfer of the government owned irrigation schemes, 3 the recoverable costs to be paid by irrigation schemes for irrigation development, 4 from disposable of obsolete plants and equipment, 5 funds for the certain purpose approved by the parliament 6 charge or fees in respect of programmes, publications, documents and other services provided by the commission, 7 with the approval Minister of Agriculture and the Minister of Finance and Planning responsible for finance by the way of donations, loans, or any other financial assistance from within or outside the country. This will somehow reduce the budget gap which has been experienced for some time. Its operationalization will start this FY 2019/2020.

		(Unit: 1ZS)				
V	5	Source of Fund				
Year	GoT	Foreign (SSIDP-JICA)				
2016/17	2,239,980,000	1,101,177,000				
2017/18	7/18 1,539,468,128 2,503,524,645					
2018/19	0	5,265,653,000				

## Budget of DITS for small scale irrigation development

<Evaluation Result>

Some problems have been observed in the institutional, technical and financial aspects, therefore, the sustainability of the effects through project is fair.

## 5 Summary of the Evaluation

The project partially achieved the Project Purpose at the project completion, and the effects of the project have partially continued, as the guideline developed under the project has been used to some extent. The Overall Goal has been partially achieved, because the number of irrigation scheme development have decreased since 2016, but the total area have expanded. As for the sustainability, some problems have been observed in the institutional, technical and financial aspects, however, no problem has been observed in the policy aspect. Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

## **Recommendations for Implementing Agency:**

- Ministry of agriculture is recommended to allocate budgets for irrigation development including supporting utilization of CGL, supportive supervision at all levels and to disburse the fund as planned to carry out the intended activities timely.
- In all aspects from formulation, implementation and O&M, all the items of the CGL have to be utilized fully during irrigation development. The ministry of agriculture has to prioritize irrigation schemes to be developed rather than investing into many irrigation schemes partially.
- The ministry of agriculture needs to guide/support the National Irrigation Commission by securing necessary funds and staff which make sure it performs its responsibilities as planned. Frequent reshuffles and transfer weaken them and it becomes unstable and less confidence.

## **Lessons Learned for JICA:**

- After the completion of the project for this project, there were two additional succeeding projects ("Project for Capacity Development for the Promotion of Irrigation Scheme Development under the District Agricultural Development Plans" Phase 1& 2 (TANCAID1) and (TANCAID2)) to follow up the project outputs. The continuous supports and follow up by the authorities encouraged farmers to continue applying what they have learnt from the trainings. Also, the good performance of the farmers who were trained may have contributed to making the officers in charge of irrigation development confident to expand the same trainings to other schemes.
- The positive impact by the training has been observed (Other impacts). Capacity building to Irrigators Organizations and farmers is an important component to the sustainability of irrigation projects. In the visited projects' demo sites for O&M and Formulation and Implementation (F&I), it clearly shows that the knowledge obtained from project activities contributed to the production increase and it is one of the reasons made farmers to be able to contribute to the O&M of their facilities.





Meeting with IO leaders at Mahande Irrigation scheme

Γ	Country Name	The Project for Enhancement of Water Supply Management of Zanzibar Water
	United Republic of Tanzania	Authority Project for Enhancement of Water Supply Management of Zanzibar Water Supply Authority Phase 2

## I. Project Outline

Background	In the urban area of Zanzibar, the piped water supply service started in the 1920s and groundwater has been used as one of water sources. However, due to the lack of financial resource, those water supply facilities had not been sufficiently maintained, which had led to a shortage of the system's water supply capacity. Under those circumstances, a grant aid project of "Zanzibar Urban Water Supply Development" was implemented from 2006 to 2010, in order to increase the water supply capacity. In addition, JICA conducted a technical cooperation project "Enhancement of Water Supply Management of Zanzibar Water Authority" (the Phase 1 project) from 2008 to 2010, which included the establishment of the fee collection system. The combination of the high leakage from the deteriorated distribution network and the low fee collection ratio had had negative impacts on the operation by the Zanzibar Water Authority (ZAWA). With an aim to improve the quality of service provided by ZAWA, further enhancement of the water supply management by ZAWA was to be conducted.				
Objectives of the Project	<ul> <li>capacity, (iii) strengthening costumer management others, the project aimed at strengthening the management in water supply services.</li> <li><phase 1=""></phase></li> <li>1. Overall Goal: ZAWA'S financial fundamentals established.</li> <li>2. Project Purpose: Water tariff billing and collect customers.</li> <li><phase 2=""></phase></li> <li>1. Overall Goal: ZAWA's water supply services a</li> </ul>	ment capacity, (ii) strengthening human resource management t capacity (iv) strengthening leakage reduction activities a gement capacity of ZAWA, thereby contributing to improve necessary for autonomous water supply authority are ion system of ZAWA is established to the satisfaction of its re improved. y through NRW reduction activities is improved.			
Activities of the Project	<ol> <li>Project site: Unguja, Zanzibar</li> <li>Main activities:         <ul> <li>Phase 1&gt; (i) establishing a customer administr collection and claim handling, and others</li> <li>Phase 2&gt; (i) strengthening information manager capacity, (iii) strengthening costumer management of 3. Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Phase 1&gt;</li> <li>Expert: 8 persons</li> <li>Training in Japan: 20 persons</li> <li>Equipment: GPS, Customer management set, GIS software, Account software, Payroll software, Borehole water meter, Water meter, Water supply materials, GIS software, PC &amp; printers, Vehicles motorcycle and others.</li> <li>Local Cost: Local consultant fee, secretary fee, fuel cost for supplied vehicle, communication expense and others.</li> <li>Experts: 20 persons</li> <li>Training in Japan: 20 persons</li> <li>Training in Japan: 20 persons</li> </ul> </li> </ol>	y through NRW reduction activities is improved. ation system, (ii) strengthening of capacity of billing, tar nent capacity, (ii) strengthening human resource manageme capacity and (iv) strengthening leakage reduction activities Tanzanian Side <phase 1=""> <ol> <li>Staff allocated: 10 persons</li> <li>Land and facilities: Office space for the experts, to counters for cashers, the front office, the training ya bill printers, back-up server, 500 water meters is customers, materials for plumbing, furniture, papers a others</li> </ol> <b>Phase 2&gt;</b> Staff allocated: 97 persons Land and facilities: Project offices Operation cost: Installation cost of water meters, valva and flow meters, and daily allowance for staff members</phase>			
Project Period	procurement of equipment, local consultant <phase 1=""> January 2008-December 2010 <phase 2="">November 2011-October 2016 (Extended period: November 2015-October 2016)</phase></phase>	Project Cost Project Cost < Phase 1> (ex-ante) 303million yen (actual) 248 million yen < Phase 2> (ex-ante) 348 million yen (actual) 624million yen			
Implementing	Zanzibar Water Authority (ZAWA)				

#### Agency

#### Cooperation Agency in Japan NJS Consultants Co., Ltd.

#### **II. Result of the Evaluation**

<Constraints on Evaluation>

- Face to face interviews were not conducted due to the COVID-19 pandemic, but information for this ex-post evaluation was collected through emails, telephone interviews and web meetings.
- < Special Perspectives Considered in the Ex-Post Evaluation >
- As the Phase 1 and Phase 2 projects share the common goal, the indicators for the Phase 2 project are verified to check the level of achievement of the Project Purpose and the Overall Goal.
- · Continuation of the project purpose was analyzed as factors to achieve the Overall Goal.

## 1 Relevance

<Consistency with the Development Policy of Tanzania at the Time of Ex-Ante Evaluation >

The project was consistent with the development policy of Tanzania. "Zanzibar Vision 2020", formulated in January 2002, aimed at ensuring access to safe water. In order to do so, specific goals were put in place, such as establishing a management system to supply reliable water at acceptable rates, and establishing a system for billing and collecting water tariff efficiently and effectively for all water users.

<Consistency with the Development Needs of Tanzania at the Time of Ex-Ante Evaluation >

The project was consistent with the development needs of Tanzania for enhancing water supply management in Zanzibar. As described above ("Background"), the combination of the high leakage from the deteriorated distribution network and the low fee collection ratio had had negative impacts on the operation by ZAWA.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA policy to Tanzania. At the time of the Phase 1 project, "Improvement of living environment in urban areas through the development basic infrastructure, including water line" is one of the priority areas in the "Country Assistance Program for the United Republic of Tanzania" (2000). At the time of the Phase 2 project, "Water Supply and Water Resource Management Program" is placed under the "Country Assistance Program for the United Republic of Tanzania" (2000). At the time of the United Republic of Tanzania (2008). "Enhancing institutions/organizations and facilities for strengthening water resource management capacity" was targeted. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved at the time of project completion. The indicator 1 was achieved as the zoning plan of distribution network was adopted in the design work of a project supported by the African Development Bank (AfDB) based on the advice of the experts under the project. The indicator 2 was partially achieved, as Annual Business Plan (ABP) was developed and the annual budget was approved based on ABP by the Ministry of Lands, Housing, Water and Energy (MLHWE); however, the budget execution was not materialized due to the lack of actually available fund in the government of Zanzibar as whole.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The effects of the project have continued at the time of ex-post evaluation. As mentioned above, the status of continuation of the project effects at the time of ex-post evaluation were analyzed as the factors affecting the achievement levels of the verifiable indicators of the Overall Goal (such as improvements in the water supply services and the billing and collection in the Model System).

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved.

Water supply services have partially improved (Indicator 1), as the supply hours in the Model system (the number of customers are approximately 9,400 households) has achieved the target while the supply pressure has not reached the target. After the completion of the project, the project supported by AfDB as mentioned above, both of the supply hours and pressure have improved. However, in some areas, old existing pipes have not been replaced. That is why the pressure has not attained the target yet. As a measure to this problem, ZAWA is expecting to start a new loan project with JICA (one of the components is replacement of old pipes). Also, a loan project with the Indian government has been signed and has started.

The billing and collection in the Model System have improved (Indicator 2). However, ZAWA recognized that more improvement is required through introducing new mode of payment like mobile/bank payment for the customer conveniences. ZAWA has taken some measures. First, ZAWA has finalized the integration with some local banks like CRDB Bank Plc; however, currently ZAWA has been waiting for approval of MLHWE for ZAWA to open bank account to the private bank operators. Also, ZAWA has started using mobile payment which is called "Zantel easy pesa" (officially launched on 25th September, 2020).

The outputs of the Phase 2 project have continued after the project completion. During the project implementation, the Phase 2 project enhanced the capacity for information management. Based on the improved management information system (MIS), the five-year plan as well as ABP have been prepared and the necessary budget based on these plans have been approved by MLHWE in the government. Following the capacity development for human resources under the project, ZAWA revised organization structure and staff allocation, and since 2013, ZAWA received the new salary scheme. After the capacity development for customer management under the project, ZAWA updated the database and "SBM2 (Smart Billing Manager Two)", and also enabled the third parties' (mobile payment service providers) to integrate their system into ZAWA's database and SBM2 in a compatible manner and new recruitment for continuing supporting the customer management activities. The project enhanced the capacity to plan and implement leakage reduction during the project implementation, and ZAWA transferred the knowledge and standard procedure to the AfDB-supported project as stated above and to the other ZAWA daily practices.

<Other Impacts at the time of Ex-post Evaluation>

There has been no negative impact on the natural environment. No land acquisition and resettlement occurred. <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Pr	oiect Purpose a	and Overall Goal

		1	Results				
Indicator 1: ZAWA's NRW reduction	Status of the Achievemen	nt: Achieved	d (continu	ied)			
project, in collaboration with JICA	(Project Completion)						
Technical Cooperation, is commenced. Indicator 2: ZAWA's ABP with annual planned budgets is allocated with due	The zoning plan of distribution network was adopted in the design work of the AfDB project based on the advice of the experts under the project. (Ex-post Evaluation) Verified under the Overall Goal. Status of the Achievement: Partially achieved (continued) (Project Completion) ABP was developed and annual budget was prepared based on it; however, the budget execution was hampered by the lack of fund.						
			1				
	(Ex-post Evaluation) Par			2016	2017	2018	2019
vices are improved. supply hours and water pressure as follows.	Supply hours (hrs/day)	8	12	8	8	12	12+
(baseline) 12 hrs/day (target)	Supply pressures (mH2O)	2	7	2	2	5	5
mH2O (baseline) 7 mH2O (target)		· .					
	(Ex-post Evaluation) Act		Tanaat	2016	2017	2019	2019
<ul> <li>Model System are improved as follows.</li> <li>Ratio of collected/ billed customers:</li> <li>16 % (baseline) 80 % (target)</li> <li>Ratio of collected / billed amount: 13 % (baseline) 90 % (target)</li> </ul>	Ratio of collected/ billed customers (%)	16	80	50	60	65	2019 70 85
	billed amount (%)	13	90	60	/0	80	83
	<ul> <li>project, in collaboration with JICA</li> <li>Technical Cooperation, is commenced.</li> <li>Indicator 2: ZAWA's ABP with annual</li> <li>planned budgets is allocated with due</li> <li>consideration of overriding priority for</li> <li>ZAWA's utility operation.</li> <li>Indicator 1: Water supply services in the</li> <li>Model System are improved in terms of</li> <li>supply hours and water pressure as follows.</li> <li>Supply hours (average): 8 hrs/day</li> <li>(baseline) 12 hrs/day (target)</li> <li>Supply pressures (minimum at No.8): 2</li> <li>mH2O (baseline) 7 mH2O (target)</li> <li>Indicator 2. The billing and collection in the</li> <li>Model System are improved as follows.</li> <li>Ratio of collected / billed customers:</li> <li>16 % (baseline) 80 % (target)</li> <li>Ratio of collected / billed amount: 13 %</li> </ul>	project, in collaboration with JICA(Project Completion)Technical Cooperation, is commenced.The zoning plan of distri the AfDB project based of (Ex-post Evaluation) Verified under the OveralIndicator 2: ZAWA's ABP with annual planned budgets is allocated with due consideration of overriding priority for ZAWA's utility operation.Status of the Achievement (Project Completion) ABP was developed and the budget execution was (Ex-post Evaluation) Verified under the Overal (Ex-post Evaluation) Supply hours (hrs/day) Supply pressures (mH2O)Nodel System are improved in terms of supply pressures (minimum at No.8): 2 mH2O (baseline) 7 mH2O (target)Indicator 2. The billing and collection in the Model System are improved as follows. • Ratio of collected/ billed customers: 16 % (baseline) 80 % (target) • Ratio of collected / billed amount: 13 %	project, in collaboration with JICA Technical Cooperation, is commenced.(Project Completion) The zoning plan of distribution netw the AfDB project based on the advice (Ex-post Evaluation) Verified under the Overall Goal.Indicator 2: ZAWA's ABP with annual planned budgets is allocated with due consideration of overriding priority for ZAWA's utility operation.Status of the Achievement: Partially (Project Completion) ABP was developed and annual bud the budget execution was hampered (Ex-post Evaluation) Verified under the Overall Goal.Indicator 1: Water supply services in the Model System are improved in terms of supply hours (average): 8 hrs/day (baseline) 12 hrs/day (target)(Ex-post Evaluation) Partially achieved Baseline Supply pressures (minimum at No.8): 2 mH2O (baseline) 7 mH2O (target)Indicator 2. The billing and collection in the Model System are improved as follows. • Ratio of collected/ billed customers: 16 % (baseline) 80 % (target) • Ratio of collected / billed amount: 13 %(Ex-post Evaluation) Achieved Baseline 13 billed amount (%)	project, in collaboration with JICA Technical Cooperation, is commenced.(Project Completion) The zoning plan of distribution network was a the AfDB project based on the advice of the e (Ex-post Evaluation) Verified under the Overall Goal.Indicator 2: ZAWA's ABP with annual planned budgets is allocated with due consideration of overriding priority for ZAWA's utility operation.Status of the Achievement: Partially achieved (Project Completion) ABP was developed and annual budget was p the budget execution was hampered by the law (Ex-post Evaluation) Verified under the Overall Goal.Indicator 1: Water supply services in the Model System are improved in terms of supply hours (average): 8 hrs/day (baseline) 12 hrs/day (target) • Supply pressures (minimum at No.8): 2 mH2O (baseline) 7 mH2O (target)(Ex-post Evaluation) Achieved Baseline 12 hrs/day (target) • Ratio of collected / billed customers: 16 % (baseline) 80 % (target) • Ratio of collected / billed amount: 13 %(Examine the function of collected / billed amount (%)	project, in collaboration with JICA Technical Cooperation, is commenced.(Project Completion) The zoning plan of distribution network was adopted the AfDB project based on the advice of the experts u (Ex-post Evaluation) Verified under the Overall Goal.Indicator 2: ZAWA's ABP with annual planned budgets is allocated with due consideration of overriding priority for ZAWA's utility operation.Status of the Achievement: Partially achieved (contin (Project Completion) ABP was developed and annual budget was prepared the budget execution was hampered by the lack of fur (Ex-post Evaluation) Verified under the Overall Goal.Indicator 1: Water supply services in the Model System are improved in terms of supply hours and water pressure as follows. • Supply pressures (minimum at No.8): 2 mH2O (baseline) 12 hrs/day (target) • Supply pressures (minimum at No.8): 2 mH2O (baseline) 7 mH2O (target)(Ex-post Evaluation) AchievedIndicator 2. The billing and collection in the Model System are improved as follows. • Ratio of collected / billed customers: 16 % (baseline) 80 % (target) • Ratio of collected / billed amount: 13 %(Ex-post Evaluation) Achieved / 13 90 60 billed amount (%)	project, in collaboration with JICA Technical Cooperation, is commenced.(Project Completion) The zoning plan of distribution network was adopted in the de the AfDB project based on the advice of the experts under the (Ex-post Evaluation) Verified under the Overall Goal.Indicator 2: ZAWA's ABP with annual planned budgets is allocated with due consideration of overriding priority for ZAWA's utility operation.Status of the Achievement: Partially achieved (continued) (Project Completion) ABP was developed and annual budget was prepared based on the budget execution was hampered by the lack of fund. 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## 3 Efficiency

The project cost exceeded the plan (the ratio against the plan: 134%) and the project period slightly exceeded the plan (the ratio against the plan: 114%). The outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability <Policy Aspect>

There has been policy support for the project effects to continue, including Water Policy and Water Act (2004-2006 to the time of ex-post evaluation) for the water sector directive and legislation. The "Vision 2050" (expected to be effective from 2021) shares the same objective of access to the safe water as the current Vision 2020.

< Institutional/Organizational Aspect>

ZAWA, responsible for the water services in Zanzibar, has been an independent public entity since August 2006. ZAWA has restructured the organizational structure to improve and consolidate Non-Revenue Water (NRW) reduction activities. ZAWA has split Department of Finance and Administration into two Departments of Finance and Planning, and Human Resources and Administration. It also has established a new unit of District office coordinator who will be a chief of all district offices. This restructuring has improved the efficiency and reduced the ambiguity, according to ZAWA.

The number of staff has been insufficient, as ZAWA has had a big number of unskilled staff but few skilled staff. ZAWA requested the central government to fill such vacancies, and MLHWE in the government agreed and gave permission to proceed. However, the Ministry of Finance and Planning (MOFP) could not allocate the sufficient budget due to a lack of a solid fiscal capacity and it hindered ZAWA from proceeding with this plan for recruitment.

<Technical Aspect>

ZAWA has sustained the skills and knowledge acquired by introducing relevant courses in the training system of ZAWA Training Center and other training especially senior staff and particularly on aspects of NRW, through on the job training. However, the number of skilled staff has been limited as described above.

The manuals, guidelines and materials developed under the project such as Design Manuals, Operation and Maintenance manual, Leakage Control Manual, Manual on Water Rates and Related Practices Customer Services Charter, Reduction of Illegal Water, Guideline for Disconnection Works, Bill Delivery Strategy, Awareness and Education strategy, Annual business plan, Water Demand Management Policy and strategy etc. have been used in designs for new schemes eg. Systemization and zoning of distribution networks, tariff setting as well as reference materials for other water related activities.

<Financial Aspect>

Tariff has not yet covered the cost. Unmetered tariff existed and percentage of water meter coverage have been only 20%. So, water users who paid volumetric tariff were only 20%, the rest paid fixed rate without considering the consumption volume. Although ZAWA has received subsidies from the government of Zanzibar, ZAWA has also incurred losses.

<Evaluation Result>

In light of the above, slight problems have been observed in terms of the institutional/organizational, technical and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

The project achieved the Project Purpose at the project completion, as NRW reduction project was commenced based on the advices under the project, and ZAWA's annual busines plan with budget was prepared, though the budget execution was hampered. The Overall Goal was achieved, since the water supply services, as well as the billing and collection have improved. As for the sustainability, slight problems have been observed in terms of the institutional/organizational, technical and financial aspects; however, there has been no problem on the policy aspect. As for the efficiency, both the project cost and project period exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

#### Recommendations for Implementing Agency:

- Considering the limited number of skilled staff, ZAWA and the Ministry of Lands, Housing, Water and Energy (MLHWE), which supervises ZAWA and has the authority to request the approval from Ministry of Finance and Planning for ZAWA's use of governmental fund/budget, must set aside budget for the capacity building and staff recruitment in order to improve proper management of the projects and eliminating leakages in the distribution pipes to their customers, utilizing the knowledge and experience obtained through the technical cooperation project.
- ZAWA needs to assign timely supervision of water supply to improve customer management and reduce NRW. In particular, ZAWA should make efforts for expanding metering coverage even outside the Model System of the project and for shifting the tariff system from fixed-rate tariff to volumetric tariff. In this regard, ZAWA should call on MLHWE and Zanzibar Utilities Regulatory Authority (ZURA) to undertake necessary amendments of policy, act, and regulations pertaining to the water tariff, whenever it is necessary.

Lessons Learned for JICA

- Regarding the effectiveness, it is observed that water supply services have partially improved mainly because most of the pipes were very old and had leakage, which needed to be replaced. However, in some areas, old existing pipes have not been replaced which led to the lack of safe and sustainable water supply and then to less collection water tariff. In order to reach the intended project objectives and for ZAWA to improve water supply system, technical cooperation should have been formulated in conjunction with the improvement of physical facilities through financial support (either Grants or ODA Loans) under the overall design of the cooperation programme". However, this project was commenced 2 years later than the completion of the Grant Aid projects, leading less synergetic effect between the two modalities. Taking this into consideration, JICA has strategized its operations for water supply sector in Zanzibar in a more programmatic manner, where a ODA Loan project and a technical cooperation project complement to one another are currently underway in the formulation stage.
- When JICA formulates a new technical cooperation project with an aim of reducing NRW including leakage in the place where worn-out existing system is dominantly laid, it would be highly effective to consider loan or grant project in parallel with it. A financial support needs to include financing for the replacement of deteriorated distribution network to create a synergy with NRW reduction technologies, frameworks and better customer management (e.g. tariff collection) to be introduced by the technical cooperation project.



Manifold showing the water meters installed for house connection for ten households introduced by the phase 2 project (At Makadara area)



The water meter connected to single household; old style used by the phase 1 project (At Makadara area)

# Internal Ex-Post Evaluation for Technical Cooperation Project

Country Name         The Rural Water Supply and Sanitation Capacity Development (Project United Republic of Tanzania         The rural Water Supply and Sanitation Capacity Development of the United Republic of Tanzania prepared Water Sector Development Programmer <sup>-</sup> (RWSSP).           Background         In order to cope with the limited access to safe water in rural areas, the Government of Japan technical cooperation to which included the "Rural Water Supply and Sanitation Crapacity Development (RWSSP).           Background         In such centext, the Government of Tanzania requested the Government of Japan technical cooperation to twick in included the "Rural Water Supply and Sanitation Programmer" (RWSSP).           In such centext, the Government of Tanzania requested the Government of Japan technical cooperation to twick in include the "Taning Package" developed under the Phase 1 Project (Phase 2 Jatted in September 2011.           IPinase 1         IPinase 1           Through enhancing Ministry of Water and Irrigation (MoWI) capacity for managing capacity development programmes, developing a training system model for District Water and Sanitation Teams (DWST) in managing Rural Water Supply and Sanitation (RWSS) projects, enhancing capacity development of the target Districts providing RWSS services, thereby contributing to improving the RWSS services.           Objectives of the Project         1. Overall Gual: RWSS services in the larget Districts providing RWSS services for nural communities an enhanced.           IPhase 2         1. Torough revising Programme Implementation Manual (PIM) Annexes, and developing Capacity Development implementation of RWSSP.           1. Overall Gual: The capacity of Implementing Ag		The Rural Water Supply and Sanitation Canacity Development Project
Activities of the project         In order to cope with the limited access to safe water in rural areas, the Government of the United Republic of Tarzania prepared Water Sector Development Programme (WSDP) which was designed under the Secto Wide Approach to Planning (SWA) in February 2007. WSDP was constituted by the four main components which included the "Rural Water Supply and Sanitation Capacity Development (RUWASA-CAD Project "Phase 2) tarted in September 2011.           In such context, the Government of Imagina runal areas, the Government of Imagina Rural Water Supply and Sanitation Capacity Development (RUWASA-CAD Project "Phase 2) started in September 2011.           (Phase 1)           Through enhancing Ministry of Water and Irrigation (MoWT) capacity for managing capacity developmen programmes, developing a training system model for District Water and Sanitation Teams (BWSS) is indiced. The project "Phase 2) started in September 2011.           Objectives of the Project         Through enhancing capacity development fragments of Multice and Sanitation (RWSS) projects, enhancing capacity of Basin Water Office (BWOOs), Regional Water and Sanitation Teams (RWSS) is objects, enhancing capacity of Basin Water Office (BWOOs), Regional Water and Sanitation Teams (RWSS) is object Phase 2: Capacities of the target Districts providing RWSS services.           1. Overall Goal: RWSS services in the target districts are improved.         2. Project Phase 2: Capacities of the target District providing RWSS services for rural communities are chanced.           (Phase 2)         1. Overall Goal: RWSS envices in the target District providing RWSS services for rural communities are chanced.           (Phase 2)         2. Project Purpose: Capacities of the masel sender dowe	United Republic of Tanzania	
Objectives of the project         of Tanzania prepared Water Sector Development Programme (WSDP) which was designed under the Secto Wide Approach to Planning (SWAp) in Erbarry 2007. WSDP was constituted by the four main component which included the "Rural Water Supply and Sanitation Capacity Development (RWSSP). In such context, the Government of Tanzania requested the Government of Japan technical ecoperation for the "Rural Water Supply and Sanitation Capacity Development (RUWSA).CAD Project (Flass 2) astrated in September 2011.           Project Phase 2 started in September 2011.         [Phase 1]           Through enhancing Ministry of Water and Irrigation (MoWI) capacity for managing capacity development equation of the services, threby contributing to improving the RWSS services.           Objectives of the Project Phase 2 started in September 2011.         [Phase 1]           Through enhancing Ministry of Water and Irrigation (MoWI) capacity for managing capacity development (BWOs), Regional Water and Sanitation (RWSS) projects, enhancing capacity of Hassin Water Office (BWOs), Regional Water and Sanitation Teams (RWST) in dothers, the project atimed at enhancing capacity of the target Districts Providing RWSS services.           Objectives of the Project         1. Overall Goal: RWSS services in the target districts are improved.           2. Project Purpose: Capacities of the target District Water and Sanitation RWSSP.           1. Overall Goal: The capacity of Implementing Agencies (IAYs) to implement RWSSP is strengthened.           2. Project Purpose: The system of supporting LA's capacity Development (RWSSP.           1. Overall Goal: The capacity of Implementing Agencies (IAYs) to implement RWSSP is atrong thev	. Project Outline	
Activities of the project         1         Evelopment (CD), thereby contributing to strengthening LAS capacity development programmes, developing a training system model for District Water and Sanitation Teams (DWST) in managing Rural Water Supply and Sanitation (RWSTs) and others, the project aimed at enhancing capacity due to any strengthening capacity of the target Districts providing RWSS services, thereby contributing to improving the RWSS services.           Objectives of the project aimed foal         1         Overall Goal: RWSS services in the target districts are improved.         2           1         Overall Goal: RWSS services in the target districts are improved.         2         Project Purpose: Capacities of the target Districts providing RWSS services for rural communities are enhanced.           (Phase 2)         Through revising Programme Implementation Manual (PIM) Annexes, and developing Capacity Development Implementation Guideline, the project aimed at enhancing the system of supporting Implementing Agencies (IA's) to implement RWSSP is strengthened.           1         Overall Goal: The capacity of Implementing Agencies (IA's) to implement RWSSP is strengthened.           2         Project Site:           [Phase 2]         If the system of supporting IA's capacity to implementing MWSSP.           1         Overall Goal: The capacity of Implementing Agencies (IA's) to implement RWSSP is strengthened.           2         Project Site:           [Phase 2]         If the system of supporting IA's capacity to implementing Paralia nationwide (excluding regions in Zanzibar) <t< td=""><td>Background I the to s I</td><td>Fanzania prepared Water Sector Development Programme (WSDP) which was designed under the Sector de Approach to Planning (SWAp) in February 2007. WSDP was constituted by the four main components ch included the "Rural Water Supply and Sanitation Programme" (RWSSP). In such context, the Government of Tanzania requested the Government of Japan technical cooperation for "Rural Water Supply and Sanitation Capacity Development (RUWASA-CAD) Project" (Phase 1) in order trengthen a system for implementation, operation and maintenance of the rural water supply. In order to disseminate the "Training Package" developed under the Phase 1 Project, RUWASA-CAD</td></t<>	Background I the to s I	Fanzania prepared Water Sector Development Programme (WSDP) which was designed under the Sector de Approach to Planning (SWAp) in February 2007. WSDP was constituted by the four main components ch included the "Rural Water Supply and Sanitation Programme" (RWSSP). In such context, the Government of Tanzania requested the Government of Japan technical cooperation for "Rural Water Supply and Sanitation Capacity Development (RUWASA-CAD) Project" (Phase 1) in order trengthen a system for implementation, operation and maintenance of the rural water supply. In order to disseminate the "Training Package" developed under the Phase 1 Project, RUWASA-CAD
Activities of the project       Project 2 (1) Revision of PIM Annexes, (2) development of CD Implementation Guideline, and (3 conducting Training of Traines received: 5 persons         Activities of the project       1) Experts: 4 persons         2) Trainees received: 5 persons       2) Tanzanian Side         1) Equipment and vehicles, printing, construction cost       1) Staff allocated: 15 persons         2) Tanzania Side       1) Experts: 10 persons         2) Tanzanian side       1) Experts: 10 persons         2) Tanzania nationwide explores site       1) Staff allocated: 15 persons         3) Equipment: Computer, printers and air       3) Local cost: Allowance for counterparts	Objectives of the Project [Ph 1. 2. [Ph Thi Im]	ase 1] ough enhancing Ministry of Water and Irrigation (MoWI) capacity for managing capacity developmen grammes, developing a training system model for District Water and Sanitation Teams (DWST) in haging Rural Water Supply and Sanitation (RWSS) projects, enhancing capacity of Basin Water Offices VOs), Regional Water and Sanitation Teams (RWSTs) and others, the project aimed at enhancing capacities he target Districts providing RWSS services, thereby contributing to improving the RWSS services. Overall Goal: RWSS services in the target districts are improved. Project Purpose: Capacities of the target Districts providing RWSS services for rural communities are enhanced. ase 2] ough revising Programme Implementation Manual (PIM) Annexes, and developing Capacity Developmen blementation Guideline, the project aimed at enhancing the system of supporting Implementing Agencies
Activities of the project[Phase 1] 22 districts in the Regions of Dar es Salaam, Coast, Lindi and Mtwara [Phase 2] Tanzania nationwide (excluding regions in Zanzibar)2.Main activities: [Phase 1] (1) Strengthening capacity of the Ministry of Water and Irrigation to manage capacity development, (2) developing a training system model, (3) developing capacities of BWOs and RWSTs and others [Phase 2] (1) Revision of PIM Annexes, (2) development of CD Implementation Guideline, and (3) conducting Training of Trainers (ToT)3.Inputs (to carry out above activities) [Phase 1] Japanese Side1Experts: 4 persons2)Trainees received: 5 persons2)Trainees received: 5 persons3)Equipment: computer, printer, and vehicle of equipment and vehicles, printing, contract with local consultants, construction cost [Phase 2] Japanese Side1)Experts: 10 persons2)Trainees received: 5 persons2)Trainees received: 5 persons3)Equipment: Computers, printers and air3)Equipment: Computers, printers and air3)Equipment: Computers, printers and air	RW 1. 2.	SSP. Overall Goal: The capacity of Implementing Agencies (IA's) to implement RWSSP is strengthened. Project Purpose: The system of supporting IA's Capacity Development is enhanced for proper implementation of RWSSP.
conditioners for the project office electricity and water	<ul><li>2.</li><li>3.</li><li>Activities of the</li></ul>	[Phase 1] 22 districts in the Regions of Dar es Salaam, Coast, Lindi and Mtwara[Phase 2] Tanzania nationwide (excluding regions in Zanzibar)Main activities:[Phase 1] (1) Strengthening capacity of the Ministry of Water and Irrigation to manage capacitydevelopment, (2) developing a training system model, (3) developing capacities of BWOs and RWSTs and others[Phase 2] (1) Revision of PIM Annexes, (2) development of CD Implementation Guideline, and (3 conducting Training of Trainers (ToT)Inputs (to carry out above activities)[Phase 1]Japanese Side(1) Experts: 4 persons(2) Trainees received: 5 persons(3) Equipment: computer, printer, and vehicle(4) Local expenses: general expenses, procurement(5) equipment and vehicles, printing, contract withlocal consultants, construction cost[Phase 2]Japanese Side(1) Experts: 10 persons(2) Trainees received: 5 persons(3) Equipment: Computers, printers and air(3) Equipment: Computers, printers and air

	[Phase 2] Ministry of Water (MoW)
Cooperation Agency in Japan	[Phase 1] EARTH SYSTEM SCIENCE CO., LTD. [Phase 2] EARTH SYSTEM SCIENCE CO., LTD., KOKUSAI KOGYO CO., LTD., JAPAN TECHNO CO., LTD.

#### II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

As the ex-post evaluation was conducted for both Phase 1 and Phase 2 projects in parallel, verification of the Phase 1 Overall Goal using indicator 3 and 4 was not feasible because the data are limited data.

1 Relevance

<Consistency with the Development Policy of Tanzania at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policies of Tanzania. "Vision 2025", the basic policy of national development in Tanzania, advocates "access to safe water" as one of the goals for achieving a high standard of living for the people. Also, rural water supply has been given high priority in policy documents such as the" National Poverty Reduction Strategy (NSGRP)" (2005-2010), the "National Water Policy (NAWAPO)" (2002) in harmonization with NSGRP, and the Millennium Development Goals".

<Consistency with the Development Needs of Tanzania at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the development needs of Tanzania for rural water supply. Limited access to safe water in rural areas had been a problem in Tanzania. At the time of the Phase 2 project completion, MoW launched WSDP from 2007 to 2025, and WSDP phase II just started. There was high expectation among members of WSDP that the revised PIM would contribute to improve the WSDP implementation.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy to Tanzania. At the time of ex-ante evaluation of the Phase 1 project, one of the five priority areas set based on "Country Assistance Programme for Tanzania" (2000) and the policy dialogue between Tanzania and Japan in 2001 was "Improvement of living environment by basic infrastructure development". At the time of the ex-ante evaluation of the Phase 2 project, infrastructure was one of the priority areas under the "Country Assistance Program for Tanzania" (2008). Water Resources Management and Rural Water Supply were included in this category.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

[Phase 1]

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. Among the indicators, "DWSTs adopt selection procedures of candidate communities for the scoping survey based on the demand-responsive approach (DRA) in the promotion phase" (Indicator 1) was partially achieved while "DWSTs examine and make comments to progress reports and other output reports to be submitted by the Technical and Facilitation Service Providers within the period agreed." (Indicator 2), "DWSTs update information on water supply and sanitation conditions as well as operation and maintenance of existing water supply facilities in the district every year." (Indicator 3) and "DWSTs integrate the strategies and activity plans on water supply, sanitation and hygiene promotion for households and schools into DWSP and annual plan." (Indicator 4) were achieved.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The effects of the project have continued at Lindi Region. There have been 5 DWSTs and 1 Municipal Water and Sanitation Teams (MWST) and they have continuously carried out practices initiated under the project for strengthening capacity for RWSS services. On the other hand, there has been a need of capacity building to water users and also enhancing the capacity of community organizations to give them ability to properly manage of the facility. Information on other target Regions were not collected due to time and budget limitation to execute this ex-post evaluation.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has not been achieved at the time of ex-post evaluation. Although the coverage rate of water supply improved in the target Regions, it did not reach the target value of the indicator, mainly because of rapid population growth, decrease of borehole production because of over utilization, failure or deterioration in some of projects because of lack of operational knowledge and maintenance cost, limited water sources and others, even though the target year of overall goal was set in 2015. (indicator 1). Due to the lack of operational & maintenance knowledge among the community users, the percentage of water supply points working for more than 6 months a year did not reach the target either (indicator 2).

[Phase 2]

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion, as all indicators, namely "The improved PIM Annexes (RWSSP) are authorized by MoW for official use in WSDP." (indicator 1), "The update method of the improved PIM Annexes (RWSSP) is formulated in TWG-2..." (indicator 2) and "More than 80% of RWST, which participated in ToT training provided by the Project, formulates the annual CD plan for their LGAs in line with regional scale CD implementation procedure stipulated in CD implementation guideline" (indicator 3) were attained.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The effects of the project have continued after the project was completed. PIM Annexes, for which the project supported and which was approved by MoW for official use, have been updated after the project completion. Nationally, RWSTs which participated in ToT training under the project, have continued formulating annual CD plan in order to achieve a goal targeted in water supply projects. The Capacity Development Implementation Guideline, which was developed under the project, have been updated in order for Community Owned Water Supply Organizations (COWSOs) to follow on how to implement rural water supply projects. MoW has supported RWSTs to pass on the skills provided by ToT to Regional Water Engineers (RWEs) and use of Capacity Development in order to transfer knowledge to the users and COWSOs.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved. According to a questionnaire survey conducted by MoW, more than 80% of IAs implemented RWSP nationally, by referring to the improved PIM annexes (Indicator 1). The extent to which CD support is provided to IAs was not verified as no information on the nationwide status is obtained (Indicator 2).

[Phase 1 &2]

<Other Impacts at the time of Ex-post Evaluation>

No negative impact on the natural environment by this project has been observed, and there has been no land acquisition and resettlement.

<Evaluation Result>

Therefore, the effectiveness/impact of the Phase 1 and Phase 2 projects is fair.

Achievement of Project Pur	rpose and Overall Goal

	Achievement of Project Pur	
Aim	Indicators	Results
[Phase 1]	Targets: DWSTs which practices the following	Status of the achievement: partially achieved (Partially continued)
(Project Purpose)	actions in implementation of RWSSP reaches to	(Project Completion)*
Capacities of the target	80% (18 districts) by July 2010.	- The number of DWSTs that carried out the practice was 9 out of 22
Districts providing RWSS		(40%). Although this was less than target figure, the rest of the
services for rural	Indicator 1: DWSTs adopt selection procedures of	project targeted districts were practicing DRA at least partially.
communities are	candidate communities for the scoping survey	(Ex-post evaluation)**
enhanced.	based on the demand-responsive approach (DRA)	- There have been 5 DWSTs and 1 MWST in Lindi Region. They
	in the promotion phase	have used DRA.
	Indicator 2: DWSTs examine and make comments	Status of the achievement: achieved (Partially continued)
	to progress reports and other output reports to be	- The number of DWSTs that carried out the practice was 20 out of 22
	submitted by the Technical and Facilitation Service	(90.9%). This is more than the target figure.
	Providers within the period agreed.	(Ex-post evaluation)
		- On quarterly basis at Lindi Region
	Indicator 3: DWSTs update information on water	Status of the achievement: achieved (Partially continued)
	supply and sanitation conditions as well as	(Project Completion)
	operation and maintenance of existing water supply	
	facilities in the district every year.	(95.4%). This is more than targeted figure.
	admities in the district every year.	(Ex-post evaluation)
		- On quarterly basis at Lindi Region
	Indicator 4: DWSTs integrate the strategies and	Status of the achievement: achieved (Partially continued)
	activity plans on water supply, sanitation and	(Project Completion)
	hygiene promotion for households and schools into	The number of DWSTs that carried out the practice was 19 (86.3%). This
		•
	DWSP and annual plan.	is more than targeted figure.
		(Ex-post evaluation)
		- The plans have been updated every year and its implementation plan
[D1		have been updated on quarterly basis at Lindi Region. Status of achievement: Not achieved
[Phase 1]	Indicator 1: By the year of 2015, coverage rate of	(Ex-post evaluation)
(Overall Goal)	improved water suppry mereases in the rural part of	Enhanced capacities of the target Districts providing RWSS services have
	the target districts from 57.8 % to 75.6%.	helped the water coverage reach 68.9%, but not 75.6%, due to rapid
U		population growth, decrease of borehole production because of over
improved.		utilization, failure or deterioration in some of projects because of lack of operational knowledge and maintenance cost, limited water sources and
		others.
	Indicator 2: By the year of 2015, percentage of	Status of achievement: Achieved
	water supply points working for more than 6	(Ex-post evaluation)
	months a year increases from 73% to 100% in the	The target was achieved (100%). Then due to lack of operational and
	target districts.	maintenance knowledge among the community users, as well as overloading to some boreholes with hand pumps led to repair of
		equipment sometime (e.g. hand pumps installed at schools and hospitals)
	Indicator 3: By the year of 2015, number of legally	Status of achievement: Not verified (see Special Perspectives Considered
	registered Water User Entities (WUEs) increases	in the Ex-Post Evaluation)
	compared to the present value in each target	
	district.	
	Indicator 4. By the year of 2015, people who have	Status of achievement: Not verified (see Special Perspectives Considered
	access to improved sanitation in the target districts	in the Ex-Post Evaluation)
	increases from X% to Y%.	
*At the project completion	the survey results were obtained from the question $\pi^{-1}$	l aire survey for monitoring
		e 1 project, the evaluation team only collected information from Lindi
	get and time for executing this ex-post evaluation.	
[Phase 2]	Indicator 1: The improved PIM Annexes (RWSSP)	Status of the achievement: Achieved
	are authorized by MoW for official use in WSDP.	(Project Completion)
The system of supporting	· · · · · · · · · · · · · · · · · · ·	The improved PIM annex (English and Swahili) was approved and
IA's Capacity		uploaded to MoW HP for official use by the mid of April 2015.
	Indicator 2: The update method of the improved	Status of the achievement: Achieved (Continued)

planned in line with regional scale CD 100 which is updated cumulative each year. No information was	Development is enhanced for proper implementation of RWSSP. (Overall Goal) The capacity of Implementing Agencies (IA's) to implement RWSSP is strengthened.	Indicator 3: More than 80% of RWST, which participated in ToT training provided by the Project formulates the annual CD plan for their	<ul> <li>The results of questionnane survey by AGM shows that more than 80% of IAs implement RWSP by referring to improved PIM annex</li> <li>MoW has conducted survey during AGM in order to improve or meet 85% average water required by the country to rural water supply to get safe water by 2025.</li> </ul>
implementation guideline.		provided to more than 80% of CD activities planned in line with regional scale CD implementation procedure stipulated CD	<ul> <li>(Ex-post Evaluation)</li> <li>Total number of CD for COWSCOs in Coastal Region 2018/2019 is</li> </ul>

3 Efficiency

The project cost for the Phase 1 significantly exceeded the plan (the ratio against the plan: 154%) and the one for the Phase 2 slightly exceeded the Plan (the ratio against the plan: 112%). Although the project period for the Phase 1 was within the plan (the ratios against the plan: 97%), the ones for the Phase 2 project exceeded the plan (the ratio against the plan: 128%), due to the change of the project design. Also, one of the factors the project cost exceeded the original plan was that the input from Tanzanian side planned to use the basket fund. The outputs were produced as planned. Therefore, the efficiency of the both projects is fair.

#### 4 Sustainability <Policy Aspect>

The Government of Tanzania has been very keen on water supply and sanitation in rural areas, as stipulated in the "Water Supply and Sanitation Act No. 5" (February, 2019), the "Water Supply and Sanitation Act" (2009), the "National Water Policy" (July 2002) and others. The new "Water Supply and Sanitation Act No. 5" (February, 2019) stipulated to formulate Rural Water Supply Agency (RUWASA) who will be responsible of coverage of supply of clean and safe water in the rural areas of Tanzania mainland. <Institutional Aspect>

It was only two months since RUWASA was established at the time of ex-post evaluation. Hence, the demarcation of roles and responsibilities, in terms of monitoring and updating PIM and supporting IA's CD for implementation of RWSSP, between Rural Water Supply Division of MoW and RUWASA has not been clear. Besides, MoW was still recruiting staff for RUWASA at the time of ex-post evaluation.

At the regional level, RWST at each region has two RWEs in average, however, the number of staff has been insufficient to undertake the duties for PIM and CD.

<Technical Aspect>

The situation at the time of ex-post evaluation was that most of the trained staff had moved to different offices or departments. They were transferred before establishment of RUWASA and no handing over of the project knowledge was done at all. In the course of forming RUWASA, MoW has been looking for fund both for project financing and capacity building for the new team, and has secured fund from Development Partners (DPs). Up to June 2019, all DWSTs got support from RWSTs. Following the formation of RUWASA, it was expected that RWSTs would be reformed again.

<Financial Aspect>

The government new financial year started from 1st July,2019 however, at the time of ex-post evaluation, ministries and other institutions had not received budget due to no disbursement by the Ministry of Finance. Because of the transition period, all past record have been secured at Regional Administrative Office (Registry department) then later on will be shared to RUWASA offices in the region. <Evaluation Result>

Therefore, as there have been some problems in the institutional, technical and financial aspects, the sustainability of the effects through the project is fair.

.5 Summary of the Evaluation

The Phase 1 project achieved the Project Purpose at the time of completion. The extent to which the effects have continued was not verified as information on the target Regions other than Lindi was not collected. The Overall Goal of the Phase 1 project was partially achieved, as the coverage rate of water supply improved, though it did not reach the target. As for the Phase 2 project, the Project Purpose was achieved and the effects of the project have continued. The Overall Goal of the Phase 2 project has been partially achieved, as more than 80% of IAs implemented rural water service projects referring to the improved PIM annexes. As for the sustainability, there have been some problems in the institutional, technical and financial aspects. As for the efficiency, the project cost significantly exceeded the plan and the project period exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

#### III. Recommendations & Lessons Learned

#### **Recommendations for Implementing Agency:**

- MoW is recommended to set aside budget for CD activities, and strengthen the number of staff and its skills, especially for timely
  supervision to check RWSS projects. RUWASA is recommended to carry out supervision of Regions (Districts, Wards and Villages),
  including site survey and conducting meetings and collecting necessary information to the operation and maintenance of RWSS
  projects.
- MoW is recommended to conduct capacity building of community organizations who did not receive the training during the project implementation to give them ability to properly management of the facility.

#### **Lessons Learned for JICA:**

- At the Coastal Region, COWSOs have been maintaining facilities well. However, most of the water users were complaining about
  paying water fees and they needed water free. ToT under the project only targeted RWSTs to improve the WSDP implementation
  based on discussions on the request of Tanzanian side and priorities of the activities. It might be more effective to conduct capacity
  building to water users to raise awareness on the importance of water collection fee which helps O&M of the project facility.
- As for the efficiency, one of the reasons why the project cost exceeded the original plan was that the input from Tanzanian side planned to use the basket fund. However, the Tanzanian policy changed and the fund could not be used as planned. Although the input from counterparts is necessary to retain their ownership in the project, it is also important to consider the extent of the input and its certainty in consideration of that the input is realistic and not excessive expectation of the unstable input of the counterpart.



A woman pumping water at Kilangala Village in Lindi Region

## Internal Ex-Post Evaluation for Technical Cooperation Project

	conducted by Senegal Office: December, 2020			
Country Name				
Republic of Seneg	Amélioration de l'Environnnement Soclaorie :PAES)			
I. Project Outline				
Background	Senegal aimed at the enrollment rate of primary education of 100% by 2010. Although the enrollment rate reached to 82.5% in the year of 2004/2005, the completion rate, the proportion of pupils completing the primary education without retention remained at around 50%. Issues of educational environment to hamper the completion rate varied by school and it was necessary to cope with those issues at school level. On the other hand, since the schools had limited resources, supports by parents and local communities were essential for improvement of educational environment. The school management committee (Comité de Gestion de l'École: CGE) system was introduced in the country for improvement of educational environment by the Presidential Decree in July 2002. However, there were schools without CGE or CGEs not functioning. Therefore, it was necessary to functionalize CGEs and to enhance support systems for CGEs, such as technical supports and monitoring by local education administrations.			
Objectives of the Project	<ul> <li>Through capacity development of CGE members, enhancement of support system for CGEs and dissemination system of the improved CGE model, the project aimed at establishment and dissemination of the improved CGE model in all the 14 regions, thereby contributing to improvement of school environment and reinforcement of access and quality of education.</li> <li><phase i=""></phase></li> <li>1. Overall Goal: 1) Improvement of school environment through community participation, 2) Dissemination of new model of school management by functional CGE in other regions.</li> <li>2. Project Purpose: A new model of school management by functional CGE is established and implemented.</li> <li><phase ii=""></phase></li> <li>1. Overall Goal: 1) School environment and PDEF (10 Year Program of Education and Training) management system are improved by functional CGE, 2) Access and quality of education is reinforced.</li> <li>2. Project Purpose: The model of functional CGE is stabilized and disseminated in all the regions.</li> </ul>			
Activities of the Project	<ol> <li>Project site: <phase i=""> Louga Region, <phase ii=""> All the 14 regions (Pilot regions: Fatick Region and Kaffrine Region)</phase></phase></li> <li>Main activities:         <phase i=""> i) Workshops and training for establishment of functional CGEs, ii) Trainings on planning of Voluntary Action Plan (Plan d'Action Volontariste: PAV) and CGE management for the CGE members, iii) Capacity enhancement of support system at regional level and workshops for promotion of CGEs, iv) Trainings for planning and management of School Project (Projet d'Ecole: PE).     </phase></li> <li><phase ii=""> i) Revision and improvement of the functional CGE model developed by the Phase I, ii)Trainings on establishment of CGE and planning of PAV for school directors, teachers and CGE members, iii) National workshops for approval on the revised model of functional CGE and for validation on the model of functional CGE Union (UCGE), iv) planning of dissemination of the revised CGE model and capacity enhancement of the dissemination system.</phase></li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li><phase i=""></phase></li> <li>Experts from Japan: 3 persons</li> <li>Experts from Japan: 7 persons</li> <li>Training in Japan: 6 persons</li> <li>Third country training: 19 persons (7 in Niger, 8 in Burkina Faso, 4 in Niger)</li> <li>Equipment: Vehicle, photocopy</li> <li>Operation cost: cost for project implementation</li> </ol>			
Project Period	<phase i=""> <phase i="">         May, 2007 – May, 2010          <phase ii="">       (ex-ante) 230 million yen (actual) 265 million yen         September 2010 – August, 2015       Project Cost         (Extension: August 2014 – August 2015)       Project Cost</phase></phase></phase>			
Implementing	<phase and="" i="" ii="" phase=""> Ministry of National Education (The Ministry of Education changed to the Ministry of National Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education (The Ministry of National Education (The Ministry of Education (The Ministry of National Education (The Mini</phase>			
Agency Cooperation Agency	National Education since 2012)			
in Japan	<phase and="" i="" ii="" phase=""> None</phase>			

#### **II. Result of the Evaluation**

< Special Perspectives Considered in the Ex-Post Evaluation >

[Verification of Overall Goal]

Since the Overall Goals for the Phase I can be covered by the Overall Goals for the Phase II, this ex-post evaluation integrally verified the achievement level of the Overall Goals for the two projects by using the verifiable indicators for the Overall Goals for the Phase II.

1)

[Continuation of the Project Effect]

For verifying continuation status of the project effects by the Phase I and Phase II, the indicators for the Project Purpose of the Phase II are used since the Phase I was implemented as a pilot basis in only one region (Louga) and the Overall Goal of the Phase I is dissemination of the functional CGE model. 1 Relevance

<Consistency with the Development Policy of Senegal at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policies of the government of Senegal aiming at the primary education enrollment rate of 100% and prioritizing functionalization of management organizations in "the 10 Year Plan of Education and Training (Plan décennal d'éducation et de formation: PDEF)" (2000-2015) which policy priorities had not changed throughout the project periods. In addition, CGE has been institutionalized as management organization of PDEF by the "Declaration No. 2002-652" (2002).

<Consistency with the Development Needs of Senegal at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the development needs of Senegal for improvement of school management and school environment by functional CGEs because of the limited dissemination of the functional CGEs model for improving school management. The development needs had not changed throughout the project periods.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA Policy to Senegal. One of two priority areas for the "Country Assistance Program for Senegal" (the draft version in 2007 and the final version in 2009) was "Improvement of living conditions of the rural poor" including improvement of basic services for the rural poor.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose of Phase II at the time of Project Completion>

The Project Purpose for the Phase II was partially achieved. 8,285 out of total 9,328 schools (88.8%) in the country established CGEs in a democratic way, and CGEs were established by more than 80% of the schools in 13 regions except Dakar (Indicator 1). Three regions of Kaolack, Fatick and Kaffrine organized education forum and 100% of the commune in each region established UCGE in the three regions (Indicator 2). 4,028 out of total 8,285 CGEs (48.6%) in the country submitted PAV to the Education and Training Inspector Office (Inspection d'Education and de Formation: IEF) and only three regions of Diourbel, Fatick and Kaffrine achieved the target value of 80% of CGEs submitting PAV to IEF (Indicator 3).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued. In 13 regions except Dakar<sup>1</sup>, 98% of the schools established CGEs in 2019. CGEs has continued to submit their PAVs to IEFs since the project completion. The proportion of CGEs submitting their PAVs to IEF has improved to 65% since the project completion. On the other hand, there was no data available on the number of UCGEs established after the project completion because there has been no obligation for CGE to set up UCGEs and no follow-ups for them by the Ministry of Education. In terms of support for CGEs, each time inspectors carry out pedagogical supervision, they are dealing with issues related to the organization and functioning of the CGEs at the same time. In addition to this, the Ministry of Education, through the Directorate of General Administration and Equipment (Direction de l'Administration Générale et de l'Equipement: DAGE), has organized an annual mission to monitor and evaluate the subsidies allocated to schools. This monitoring and evaluation mission is also a means of support and follow up the CGEs and this mission produces a report that gives an overall situation. The support and follow up system are part of the inspectors' visits to schools and the activities have been carried out by the inspectors at IEF level for all the primary schools. However, the monitoring of the CGEs is not done at the regional level. The monitoring to strengthen the functioning of CGEs is the direct responsibility of IEFs. <Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal 1 has been partially achieved by the time of ex-post evaluation. According to the monitoring report of CGEs by the Ministry of National Education, CGEs have contributed to improvement of school environment through implementation of small construction and rehabilitation works for school facilities including classrooms, kitchen canteens, blackboards in classrooms, and so on, which have been included in their PAV and financed with the community contributions. On the other hand, it was not clear whether CGEs had contributed to improvement of capability of teachers, initiatives of school directors and people's awareness for education. The Overall Goal 2 has been partially achieved by the time of ex-post evaluation. The educational indicators to verify improvement of access and quality of primary education, such as the proportion of entrance age population entered in primary school (TBA), the numbers of students in the 1<sup>st</sup> grade, the repetition rate and the certification rate for primary education, were improved in more than 8 regions. For the period from 2015 to 2018, with the World Bank-funded Project for "the Improvement of Quality and Equity in Basic Education (PAQEEB)", the Ministry of Education initiated the implementation of Quality Improvement Contracts (Contrat d'Amélioration de la Qualité: CAQ) which essentially focused on issues of improving the quality of teaching and learning. However, this new initiative (CAO) has not been developed in all schools. Although there is no data on the number of CGEs that have implemented CAQs in their schools, a significant number of schools have begun to take action on education quality issues. On the other hand, the CGEs invested a lot in the aspect of accessibility to school through sensitization activities to ensure that parents enroll their children in school. This explains the evolution of the number of pupils enrolled in the first grade from 2015 to 2018. It is only in 2019 that the PAV take charge of activities related to quality with the organization of reinforcement courses and so on.

<Other Impacts at the time of Ex-post Evaluation>

<sup>&</sup>lt;sup>1</sup> Since Dakar is divided into three academies (Rufisque department, Pikine department and Guédiawaye department, and Dakar department) by the Ministerial Order No.13508 issued in August 2013.

Some positive impacts by the project have been observed at the time of ex-post evaluation. The project has enabled some women to take on more responsibility in the management of the school as CGE members. There are women who hold treasurer and president positions in some schools. In addition, women are more interested in the education of their children, especially girls. Before the project, the allocation of the grant to the CGEs was done through the IEFs, now the allocation has been done directly to the school's account which is managed by the CGE. The direct allocation of the grant to the CGEs facilitate the implementation of PAVs.

No negative impact was observed at the time of ex-post evaluation.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Pro	iect Purnose and	d Overall Goal
Achievement of 110	feet I uipose an	

A :	Indicators	ject Purpose and Ov	Results		
Aim					
(Project Purpose)	Indicator 1	Status of the Achievement: Achieved (Continued)			
<phase ii=""></phase>	80% of schools in all the regions	(Project Completion)			
	established CGE with members elected		ools in the country established C	-	
CGE is stabilized and	-	[Proportion of the s	schools establishing CGEs by re	egion]	
disseminated in all the		Level	Reg	ion	
regions.		100%	Kaolack, Kédougou, Fatic, Ma	itam	
		More than 90%	Kolda, Louga, Saint-Louis, Sé Ziguinchor, Kaffrine	èdhiou, Tambacounda,	
		More than 80%	Diourbel, Thiès		
		Less than 50%	Dakar		
		(Ex-post Evaluation)			
		<ul> <li>In 13 regions of CGEs.</li> <li>The 13 regions</li> </ul>	except Dakar, 7,926 out of 8,05 s except Dakar reached 96-99%		
		2019.			
	Indicator 2		vement: Achieved (Not verified	)	
	70% of communes which has organized a	(Project Completion			
	forum in all the regions establish UCGE		unes established UCGE in Fatic	ck, Kaffrine and Kaolack	
	with support of the Project.	-	anized a forum.		
		(Ex-post Evaluation			
			ble a there is no obligation for		
		-	c follow-ups for CGEs by the N		
	Indicator 3		vement: Not achieved (Achieve	ed)	
	80% of the CGE submit PAV to UCGE and	(Project Completion)			
	IEF respectively.	- 48.6% of CGEs in the country submitted PAV to IEF.			
		- More than 80% of CGEs submitted PAV to UCGE in Diourbel, Fatick and			
		Kaffrine but th	ne necessary trainings to set up	UCGE were not delivered in	
	Indicator 1	other 11 region	ns.		
		(Ex-post Evaluation	n)		
		<ul> <li>In the 13 regions except Dakar, 65% of CGEs have submitted their PAV to IEF.</li> <li>Status of Achievement: Partially achieved.</li> </ul>			
(0					
(Overall Goal 1)		(Ex-post Evaluation			
School environment and	Improvement of school environment at	According to the	by the Ministry of National		
PDEF (10 Year Program	school level (infrastructure, furniture,	Education, CGEs c	ducation, CGEs contribute to the improvement of school environment through		
of Education and	textbook, school hours,			all constructions related to the	
Training) management	motivation/capability of teachers, initiative		nclosing walls, classrooms, do		
system are improved by	of school directors, people's awareness of		chools with school canteens, sin are included in the PAV and are		
functional CGE	education, etc.)	contribution. However, it was not clearly verified whether CGEs had contributed			
		to improvement of motivation/capability of teachers, initiative of school			
			le's awareness of education oth	ner than physical improvement	
			ture and equipment.		
(Overall Goal 2)	Indicator 2: Improvement of educational				
Access and quality of	indicators (the gross enrollment rate (TBS)*	[Educational Indica			
education is reinforced.	for primary education, the gross access rate		Regions with	Regions without	
	(TBA)**, the number of students in 1st		improvement/achievement	improvement	
	grade, the repetition rate, the completion		to the sufficient level		
	rate, the certification rate for primary	TBS	7 regions: Dakar, Thiès,	7 regions: Louga, Fatick,	
	education)		Diourbel, Saint-Louis,	Kaffrine, Kaolack,	
			Kolda, Kédougou,	Matam, Tambacounda,	
	*TBS: the proportion of school age		Ziguinchor	Sèdhiou	
	population enrolled in primary school				
	**TBA: the proportion of entrance age population entered in primary school.	TBA	10 regions: Fatick, Dakar, Thiès, Diourbel, Saint-Louis,	4 regions: Louga, Kaffrine, Kaolack, Matam	
			Tambacounda, Kolda,		

	Kédougou, Ziguinchor, Sèdhiou	
No. of students in 1 <sup>st</sup> grade	12 regions: Louga, Fatick, Kaffrine, Thiès, Diourbel,	2 regions: Dakar, Sèdhiou
1 grude	Kaolack, Saint-Louis,	
	Matam, Tambacounda,	
	Kolda, Kédougou,	
	Ziguinchor	
Repetition rate*	8 regions, Lourga, Fatick,	6 regions: Kaffrine, Thiès,
(Data not	Dakar, Saint-Louis,	Diourbel, Kaolack,
available for	Matam, Kolda,	Tambacounda, Ziguinchor
2018)	Kédougou, Sèdhiou	
Completion rate	6 regions: Dakar,	8 regions: Lourga, Fatick,
_	Diourbel, Saint-Louis,	Kaffrine, Thiès, Kaolack,
	Kolda, Kédougou,	Matam, Tambacounda,
	Sèdhiou	Ziguinchor
Certification rate	All the 14 regions	None
for primary		
education		

Source : Terminal Evaluation Reports (Phase I and II), Information provided by Directorate of Planning and Education Reform (Direction de la Planification et de la Réforme de l'Education: DPRE), Monitoring Report of CGEs by the Ministry of National Education, Questionnaire survey to 5 regions of Louga, Fatick, Saint Louis, Kaolack and Kaffrine

3 Efficiency

The total project cost and the total project period exceeded the plan (ratio against the plan: 138% and 114%, respectively. The outputs were produced as planned. Therefore, the efficiency of the project is fair. 4 Sustainability

<Policy Aspect>

The decentralized management policy has been still maintained. The proof is that all the major projects implemented by the Ministry of National Education have articulated about community involvement. Dissemination of the functional CGE has been well supported by the Sectorial Policy Letter developed in 2013 which gave the main orientations of the educational policy and the sectoral program called "Program for Improving the Quality, Equity and Transparency in Education and Training (Programme d'Amélioration dela Qualité, del'Equité et de la Transparence en Education et Formation: PAQUET-EF" (2018-2030) as the operationalization framework. One of the components of PAQUET-EF remains "participatory and inclusive governance". Through the implementation of PAQEEB, the generalization of the establishment of functional CGE has been insured. Currently, as part of several projects (Project for the Improvement of Learning of Mathematics at the Elemental School/Projet d'Amélioration des Apprentissages des Mathématiques à l'Elémentaire-PAAME, (supported by JICA), Reading For All/Lecture Pour Tous-LPT (supported by USAID), Girls' Education Improvement Project/Projet d'Amélioration des Fille, Plus-PAE by Italian Cooperation, etc.) the community involvement policy is strengthened through the improvement of the PAV which has been internalized in the system and used by projects funded by other partners. Community involvement is an important part of many donor-funded projects such as "Reading for All" (LPT), like PAEF Plus financed by and so on. As part of the support provided to the CGEs, emphasis has been placed on planning with the PAV, its implementation and evaluation. At the school level, this will result in the establishment of the functional CGEs. <Institutional Aspect>

The diffusion of the model is maintained, all the public elementary schools of Senegal are required to have a CGE to be able to benefit from the funds allocated by the Government and the PAQEEB grants which affect all the elementary schools. In addition, as part of the implementation of the PAQEEB, the new CGEs of the new schools are trained in implementation and functionalization. In the same vein, each year IEFs organize capacity building training for CGEs, especially in financial management. However, there is no specific staff in charge of the CGEs in the Ministry of National Education.

At the level of the IEFs, it is the inspectors themselves who deal with issues relating to CGEs The IEF is divided into Districts. In each District there are a number of schools supervised by an inspector. The inspectors use their pedagogical supervision to monitor the functioning of the CGEs. However, even if there is one inspector in charge of a District, field supervision is done in teams of several inspectors. This is an internal organization at the level of each IEF. <Technical Aspect>

In fact, every year, the Directorate in charge of Elementary Education (DEE) and the Directorate of General Administration and Equipment (DAGE) organize, within the framework of the PAQEEB, meetings with the holding of pools of sharing and reinforcement of inspectors' ability for supervising CGEs. Although the Offices of Academic Inspection (IAs) and IEFs have sustained sufficient skills/knowledge to provide follow-ups and technical support for CGEs but not to deliver CGE trainings.

In general, the trained actors have kept their basic skills, especially with the implementation of the PAQEEB where the operation of the CGEs is annually evaluated. In this same process, the PAQEEB under the aegis of the World Bank and the MEN conducted an evaluation of the operation of the CGEs with a view to making recommendations in the direction of improving the functions of the CGEs and UCGEs. The DEE has been implementing its annual action plan works to integrate the recommendations into a strategy document which will ultimately be addressed to the capacity building trainings of the members of the CGEs.

The manuals prepared by the projects have been well used. There is now a document called "Manuel de procedures de gestion des fonds alloués par l'Etat aux écoles élémentaires" (Manual for procedures of management of fund allocated by the government to elementary school), the first part of which is a review of the guides developed by the Phase II, except for the management of financial and material resources. This is understandable because the resource management guide produced by the Phase II only took into account the resources collected by the community (endogenous resources). At the time of the Phase II, the government of Senegal had not yet started allocating funds to the CGEs. This manual of procedures that integrates the implementation guide and the planning guide is used by all actors as it is the reference document.

<Financial Aspect>

For each year, in the implementation of the PAQEEB, an annual budget for the training of CGE members has been transferred to IEFs. The amount of budget depends on size of IEF and the number of schools covered by IEF. For the improvement plan, the DEE has been working to produce a document that incorporates recommendations from the CGE Performance Assessment Report to strengthen the capacity of members of management bodies to improve their functioning. As part of the PAQEEB, the budget allocated to the activities every year and even other projects that have resources to strengthen the functional of CGEs. On the other hand, there is no budget in Senegal exclusively for the implementation of PAV. However, there is an operating budget allocated by the government of Senegal and the development partners to schools, the use of which, in principle, goes to the development and implementation of PAV. Besides that, municipalities can create specific budget lines for the functional CGEs.

#### <Evaluation Result>

In light of the above, there has been some problems in institutional and technical aspects. Therefore, the sustainability of the effectiveness through the project is fair.

#### 5 Summary of the Evaluation

The project achieved the Project Purpose and the Overall Goal 1 and partially achieved the Overall Goal 2 through the dissemination of the model of functional CGEs to improve school environments and accessibility and quality of primary education. As for sustainability, there have been some issues on the institutional and technical aspects while the educational policies have endorsed the activities to promote establishment of CGEs at primary schools. As for efficiency, the total project cost and the total project period exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

(For the Ministry of National Education)

- The Ministry of National Education needs to set up and institutionalize a monitoring system. In fact, it is important to create a directorate or division specifically in charge of monitoring CGEs at the national and regional levels (IA and IEF).
- In order to better ensure the sustainability of project results, it is important to teach the model for setting up and operating the CGEs during initial teacher training. at the level of regional centers for teacher training called the Regional Training Center for Education Staff (Centre Régional de Formation des Personnels de l'Education: CRFPE). The Ministry may make arrangements to include the training module on CGEs in the pre-service teacher training programme with a view to making the practices sustainable.
- The Ministry of National Education must put in place a mechanism to facilitate access to data related to the CGE, especially with respect to the budget.

(For IEFs)

- The IEFs need plan and implement follow-up and support the CGEs in terms of renewal, the setting up of commissions, and the regular holding of general assemblies and meetings.
- Instead of taking advantage of the pedagogical supervisions to deal at the same time with issues related to the organization and operation of the CGEs, inspectors should plan missions specifically reserved for the CGEs. This will encourage the renewal of the CGE office's bodies and monitor their functioning to ensure the sustainability of the CGE model.

(For CGEs)

• The CGEs must increasingly take into consideration the quality of education in their PAV in order to contribute to the improvement of student performance. Beyond activities related to promoting access to education, activities and initiatives that contribute to the improvement of student performance must be at the forefront, for example, the organization of reinforcement courses for weak students, sensitization of parents for the follow-up of students at home. Contributing to the improvement of student performance is a challenge to be taken up by the CGEs.

• It is necessary that a regular renewal of the (enlarged) bureau of the CGE be carried out every two years through a real General Assembly in order to avoid any weariness or lethargy harmful to the good functioning of the management body.

#### Lessons Learned for JICA:

- There are assets to be consolidated within the framework of Community involvement. Certain practices that have been in place for 5 years need to be revisited at the time of ex-post evaluation (the modality of capacity building for CGE actors, etc.) in order to draw useful lessons learned for future projects. As the Ministry of National Education should provide their leadership in the implementation of any activities in the education sector and have responsibility for taking initiatives to improve performance and for conducting evaluation of their practices. While it is up to the Ministry of National Education to take initiatives and evaluate everything that has been done with a view to deriving all good practices. it is preferable for JICA support to such initiative from the implementation stage to the ex-post evaluation stage. For example, JICA can support for a study that provides information on good practices in terms of the functionality of CGEs or difficulties and challenges, as well as formulation of strong recommendation that enables to help strengthen community participation in the management of education in order to improve quality of education.
- -Senegal should organize exchange visits with other countries such as Niger, which is well ahead of the education decentralization policy, and Madagascar, where communities are taking charge of issues related to quality of education in order to further improve the CGE model based on the good practices in other countries. JICA needs to support Senegal to realize such "knowledge sharing" among the countries with experiences of CGEs because JICA has a lot of experience in the field of community involvement for a better management of education.



Kitchen for school canteen built by a CGE

AGA. FHICKHNA. FHICKHNA. The de melden Ide Viele A & Viele A & Viele 2510/2 rolaire LOUGA THIOKHINA, PLAN NACTION A THIOKHINA, VOLANTARISTE Activity & Realized Actives Responsellas Thetics grand do Pade CGE Patrice Anne Pett du CGE Les clas Filt 119 GE tilladi 13 CGE 30/02/13. E.P. E.P 10/02/15 E.P strefto. E.P. 30/11/10 THIOKHNA Late

Action Plan of CGE

Country Name	Project for Enhancing Capacity of Public Investment Program
Lao People's Democratic Republic	Management (Phase 2 project) Project for Establishing Public Investment Plan under NSEDP (Phase 3 project)

## I. Project Outline

Background	As an organization with responsibility and authority for overall supervision and management of public investment projects, the Ministry of Planning and Investment (MPI) has a role to review the budget for public investment projects to be approved by the National Assembly, to verify the relevance of projects in each area, to conduct regular monitoring and evaluation, and to report the results to the National Assembly. However, MPI as well as the Provincial Department for Planning and Investment (DPI) and the District Planning and Investment Office (DPIO) lacked the business management monitoring capabilities of public investment projects implemented with the national budget, and they were not effectively implemented. Therefore, their contribution to achieving the goals of the National Socio-Economic Development Plan (NSEDP) was unclear. Under such circumstances, the "Project for Capacity Building in PIP Management" (the "Phase 1 project") was implemented which developed a project review tool and management supervision methods in accordance with the development budget in Laos, and had written them in manuals and handbooks. After the completion of the Phase 1 project, a technical cooperation project called "Project for Enhancing Capacity of Public Investment Program Management" (the "Phase 2 project") was implemented to support further improvement of the developed methods. Public investment projects were positioned as national institutions by the law. The implementation of project screening increased transparency and accountability of the selection of public investment projects, however, it was necessary to continue dissemination and training of the methods and forms in more ministries and provinces. In order to further improve the management of public investment projects in a medium-term planning the acacity to supervise the management of public investment projects in a medium-term planning the capacity to supervise the management of public investment projects in a medium-term planning the methods and financial m
Objectives of the Project	<ul> <li>The projects aimed at strengthening the managing capacity of MPI and its subordinate organizations on Public Investment Program (PIP), thereby contributing to the appropriate management of PIP through (i) enhancing the knowledge on PIP of officials in provinces and ministries, (ii) upgrading manuals and handbooks on PIP management, (iii) strengthening a legal framework, (iv) incorporating ODA counterpart management and District-level PIP management into manuals and handbooks, (v) drafting Mid-Term Public Investment Plan and Mid-term Public Investment Financial Management Guideline, (vi) strengthening a system for carrying out terminal and ex-post evaluation, (vii) developing a framework for ODA project information management, and (viii) strengthening district-level public investment project management.</li> <li><phase 2=""></phase></li> <li>Project Purpose: MPI and DPI process PIP projects through a new assessment procedure introduced by the Project within strict budget ceiling, and conduct monitoring and evaluation.</li> <li>Overall Goal: Sector ministries and provincial sector departments effectively and efficiently implement PIP projects on schedule and in accordance with planned budget execution under an upgraded sector program.</li> <li>Phase 3&gt;</li> <li>Project Purpose: The Ministry of Planning and Investment and its subordinate organizations manage public investment projects through a Mid-Term Public Investment Plan and a comprehensive framework.</li> <li>Overall Goal: Sector ministries, government organizations and provincial/district sector departments manage public investment projects based on the mid-term public investment</li> </ul>
Activities of the Project	framework under the NSEDP. 1. Project site: <phase 2=""> Vientiane capital, Khammouan, Oudomxay and Salavan Provinces <phase 3=""> Vientiane capital, Oudomxay Province (Pilot province), Bolikhamxai and Champasak Provinces (Monitor provinces) 2. Main activities: <phase 2=""> (i) enhancing the knowledge on PIP of officials in provinces and ministries, (ii) upgrading manuals and handbooks on PIP management, (iii) strengthening a legal framework, and (iv) incorporating ODA counterpart management and District-level PIP management into manuals and handbooks <phase 3=""> (i) drafting Mid-Term Public Investment Plan and Mid-term Public Investment Financial Management Guideline, (ii) strengthening a system for carrying out terminal and ex-post evaluation, (iii) developing a framework for ODA project information management, and (iv)</phase></phase></phase></phase>

	strengthening district-level public investi	nent project manageme	ent	
	3. Inputs (to carry out above activities)	1 5 0		
	Japanese Side	Lao Side		
	<phase 2=""></phase>	<phase 2=""></phase>		
	1)Expert: 10 persons1)Staff allocated: 8 persons			
	· ·	Local Cost: travel allowance, 2) Land and facilities: Project Office		
	rental fee of training rooms and 3) Local Cost: salary for counterpart staf			
	vehicles, communication cost, and	and others		
	translation expenses.			
	<phase 3=""></phase>	<phase 3=""></phase>		
	1) Experts: 9 persons	1) Staff allocated:		
	2) Operation cost: Lao consultants		ties: project offices, meeting rooms	
	and other staff members to	<ul><li>and training roo</li><li>3) Operation cost:</li></ul>		
	<pre>support experts <phase 2=""></phase></pre>	5) Operation cost:	partial cost for training	
			<phase 2=""></phase>	
Drainat Dariad	March 2008-August 2011 <phase 3=""></phase>		(ex-ante) 373 million yen	
Project Period	March 2012-September 2015	Project Cost	(actual) 320 million yen <phase 3=""></phase>	
	(Extended period: October		(ex-ante) 307 million yen	
	2015-September 2016)		(actual) 420million yen	
	Ministry of Planning and Investment (M	PI): Department of Eva		
Implementing Agency	Planning (MPI-DOP), and Department of	, <b>1</b>		
Cooperation Agency in Japan	IC Net Limited		()	

#### II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

 As the Phase 2 and Phase 3 projects share the common goal, the indicators for the Phase 3 project are verified to check the level of achievement of the Project Purpose and the Overall Goal.

Continuation of the project purpose was analyzed as factors to achieve the Overall Goal.

#### 1 Relevance

<Consistency with the Development Policy of Laos at the Time of Ex-Ante Evaluation >

The project was consistent with the development policy of Laos. Lao PDR set a long-term national development goal of breaking away from Least Developed Countries (LDCs) by 2020, and formulated the 6th NSEDP (2006-2010) to embody the goal. PIP was positioned as an action plan to implement this medium-term plan.

<Consistency with the Development Needs of Laos at the Time of Ex-Ante Evaluation >

The project was consistent with the development needs of Laos for improvement of public investment, as the public investment projects were not effectively implemented, as mentioned above (See background above).

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy to Laos. At the time of the Phase 2 project, improvement of administrative capacity and institutional building was one of the priority areas under the "Country Assistance Program for Lao PDR" (September 2006). At the time of the Phase 3 project, as one of the "issues to be kept in mind", "Pay attention to the necessity of improving governance such as administrative capacity, institutional building and the judicial system from the viewpoints of promoting development and raising the effects of assistance." was mentioned in the "Country Assistance Policy for Lao People's Democratic Republic" (April 2012). <Evaluation Result>

In light of the above, the relevance of the project is high.

## 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved at the project completion. The "Guideline on establishing the Vision to 2030, Ten years Social Economic Strategy (2016-2025)" was issued and the 8th National Social Economic Development Plan (2016-2020)" contained the mid-term public investment plan guideline (Indicator 1). Four terminal evaluation and three ex-post evaluation studies were conducted (Indicator 2). However, utilization of Simplified Project Information Sheet (SPIS) was somewhat limited (Indicator 3) and whether or not the number of public investment projects managed at the district level was not able to be verified (Indicator 4).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The effects of the project have partially continued. As mentioned above, the status of continuation of the project effects at the time of ex-post evaluation were taken as the part of the verifiable indicators of the Overall Goal (such as utilization of the monitoring tool) and the factors affecting the achievement levels of the verifiable indicators of the Overall Goal.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved. As for the indicator 1, many public investment projects in Laos have been monitored in a large number; however, the quality has been low. The implementation of PIP faced some problems, such as the delay of documents submission from the project owners, the changes in regulations and lack of pragmatic usage in some provinces accordingly. (Indicator 1). Nonetheless, sharing the working mechanism and principles of evaluation fostered the linkage between the central and provincial departments according to DOE. As for the Indicator 2, , it was not able to confirm that expenditure control has led to a reduction in debt because it was difficult to obtain publicly available information (Indicator 2). Annually, the capital expenditure for PIP has been managed by the Ministry of Finance and its amount has accounted for around 9-10% of the total revenue collection including providing for debt reduction. As for the performance of NSEDP (Indicator 3), DOE has not finished the summary for the Actual Performance at the time of ex post evaluation. Nevertheless, the nature of the projects has continued towards Public Investment Management (PIM) development

including upgrade of projects' tools (Indicator 3). DOE believes a range of problems on public investment projects are solved due to the benefit of utilizing good tools of evaluation which the project developed.

As for the continuation of the project effects and activities, evaluation skills of DOE's staff have been well improved. And tools (the guidelines, manuals and formats) under the projects have not been entirely updated since the Investment Law has been changed. Some parts of those publications are adjusted including formats for PIP proposals and instruction for PIP. In 2018, limited budget was provided for monitoring and evaluation, as a result, the monitoring has not been comprehensive.

<Other Impacts at the time of Ex-post Evaluation>

No impact on the natural environment has been observed.

There have been no positive/negative impacts by the project which were not expected at the time of the ex-ante evaluation <Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

		ct Purpose and Overall Goal	<b>D</b>				
Aim	Indicators		Results				
(Project Purpose)	Indicator 1. A guideline to draft Mid-Term	Status of the Achievement: Achieved					
The Ministry of Planning	Public Investment Plan 2016-2020 that is	(Project Completion)					
and Investment and its	related to the NSEDP 2016-2020 is	- MPI issued "Guideline on establishing the Vision to 2030, Ten years So				ars Social	
subordinate organizations	officially announced from the Ministry of	Economic Strategy (2016-2025) and the 8th National Social Economic					ic
manage public investment	Planning and Investment to ministries,	Development Plan (2016-2020)"	which co	ntains the	e mid-ter	m public	;
projects through a	government organizations, provinces and	investment plan guideline.					
Mid-Term Public	districts.						
Investment Plan and a	Indicator 2. Evaluation studies for	Status of achievement: Achieved					
comprehensive	completed public investment projects are	(Project Completion)					
framework.	conducted for projects to be selected by the	Four terminal evaluations and thr	ee ex-nos	st evaluat	ions wer	e conduc	ted
nume work.	relevant authorities with operation and	respectively. The operation and m	-				ieu
	maintenance plans attached.	respectively. The operation and h	lamenan	ee plans		eneu.	
		Status of achievement: Not verifi	- J				
	Indicator 3. Accuracy of information is		ea				
	confirmed through ODA counterpart fund	(Project Completion)	11 /1		1.		
	request documents that the Lao side applies,	Utilization of SPIS form develop	-				
	and the information is shared with the donor	1 1 5					1 ODA
	projects	projects including counterpart fur			ared yet	among	
		development partners and the Lac	-				
		Data to verify the achievement w	-		-	ementing	Agency
		because NSEDP (2016-2020) targ		not appro	oved.		
	Indicator 4. Increased number of projects	Status of the Achievement: Not v	erified				
	that are managed in the district levels.	(Project Completion)					
		It is not known whether the number of public investment project					-
		the district has been increased or decreased, as the number of approved					
		projects for FY 2016, after "the P	rime Min	ister's D	ecree on	Impleme	entation
		of Investment Law" was issued, w	vas yet to	be anno	unced.		
(Overall Goal)	Indicator 1: The Mid-Term Public	(Ex-post Evaluation) Partially ach					
Sector ministries,	Investment Plan 2016-2020 is utilized by	- The positive effect is that the	e guidelin	ne, manua	l and for	mat deve	eloped in
government organizations	the Lao Government in ministries,	the project were utilized for					
and provincial/district	government organizations, provinces and	the coordination between pro project proposal and project					
sector departments	districts as the standard development budget	PIP has been low and PIP ma					
-	planning and monitoring tool.	was that some critical approx					
projects based on the		pragmatic enough due to the					
mid-term public		Implementation of new proje					
investment framework		new procedure including rep		ission and	d new pr	oject pro	posal,
under the NSEDP.	Indicator2: The capital expenditure is	(Ex-post Evaluation) Not verified	1			(Unit hi	llion kip)
under the robbit.	managed in a mid-term basis and its debt is		2016	2017	2018	2019	2020
	seeing reduction	Budget for PIP	3.800	3.300	2.800	4.000	4.500
		Actual Capital Expenditure	3.300	3.300	2.800	2.450	2.600
		(PIP projects)					
		Public Debt	N/A	N/A	N/A	N/A	N/A
		Now Government of Laos is tryin	ng to limi	t the new	project	proposal	and
		prioritize the most important proj					
		There were no information on Put therefore we cannot verify the im				d to the p	oublic,
		incretore we cannot verify the Im		ie project	•		
	Indicator 3: Positive and continuous effects	(Ex-post Evaluation) Not verified	1				
	that are contributing to the achievement of	The positive and continuous effect	ts of the				
	the NSEDP targets are found in completed	including the "upgrade" of the Pu	blic Inve	stment La	aw No.72	2" in Dec	
	public investment projects that are	2015, and the MPI/Ministry/Prov					
		tools developed under the project					
	completed, operated and maintained as	further manage the projects and b	ouaget, se	lecting ap	opropriat	e project	.8.
	planned.	NSEDP target					

	Target	Actual Performance at the time of ex-post evaluation
Poverty Rate	10%	-
GNI per capita	2,354USD	2,570USD
Annual GDP growth rate	7.2%	4.8%
Revenue of GDP (%)	18.6%	N/A
Budget Revenue of GDP (%)	16.4%	N/A
Expenditure of GDP (%)	N/A	N/A
Budget deficit of GDP (%)	4.23%	N/A
Gini coefficient	N/A	N/A
Exports of goods of GDP (%)	N/A	N/A

#### 3 Efficiency

Both the project cost and project period slightly exceeded the plan (the ratio against the plan: 109%, 114%). Outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability <Policy Aspect>

Development planning and budgeting aligned though PIP rolling programme is one of the performance indicators for the outcome of sustained inclusive economic growth under the 8<sup>th</sup> NSEDP (2016-2020)<sup>1</sup>.

< Institutional/Organizational Aspect>

DOE has assigned staff in coordination for their responsibilities and their roles for PIP by establishing the Technical unit and Coordination unit responsible for the task. The total number of staff of DOE was 55 persons at the time of ex-post evaluation, which was sufficient for the assignment.

<Technical Aspect>

DOE has conducted the annual meeting every year to share the problems from the previous year and the on-going problems of the implementation. DOE has conducted the capacity building for officials to implement the investment projects and has instruction on the guidelines and manuals which were developed by the projects for central and provinces for deeper understanding in the implementation procedures.

Some staff in the provinces who received the training and improved skills and knowledge were transferred to other offices or promoted to higher position, while new staff have very limited capacity.

<Financial Aspect>

DOE has spent some budget from MPI for activities including site visiting, monitoring of the projects in provinces; however, the budget allocated has been still insufficient.

<Evaluation Result>

In light of the above, some problems have been observed in terms of the technical and financial aspects. Therefore, the sustainability of the effectiveness through the project is fair.

## 5 Summary of the Evaluation

The project partially achieved the Project Purpose, as the guideline was included in the 8<sup>th</sup> NSEDP, evaluation studies were carried out, while the information of ODA projects was not shared and the number of projects managed in the district levels was not verified. The Overall Goal was partially achieved as the monitoring of public investment projects has been carried out; however, the quality has not improved and inefficient. As for the sustainability, some problems have been observed in the technical and financial aspects. As for the efficiency, both the project cost and project period slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- To make sure that the sustainable and effective PIP continues, MPI is requested to secure budget for monitoring and evaluation of PIP projects.
- At the Provincial Offices, number of the well-trained and qualified staff were moved to other departments without transferring skills and knowledge to the new comers, therefore, it is necessary to ensure the training system to transfer appropriate skills and knowledge to new staff when implementing agencies conduct personnel changes and regular trainings. Implementing Agency should also establish work transferring system, such as making work transfer document and having a briefing work session for new comers to make sure that they understand what they have to do.
- DOE-MPI needs to secure budget for updating the guideline, manual and format, and conduct trainings for project owners in provinces, in accordance to the revision of law and regulation. In this evaluation survey, it was identified that the project owner made some mistake due to the lack of understanding of how to use the format following the new law, and the delay was caused.

Lessons Learned for JICA:

It was obvious that the Phase 2 and Phase 3 projects supported MPI and DPI by introducing the new assessment procedure for management of PIP projects. However, MPI and DPI has faced some difficulties in implementing that new assessment procedure

<sup>&</sup>lt;sup>1</sup> At the time of ex-post evaluation, the next 9th plan was under planning process and will be set early of 2021.

especially monitoring and evaluation of PIP project effectively and efficiently due to the lack of budget allocation. Therefore, from the stage of project planning, JICA should have requested MPI to include the arrangement of counterpart budget for M&E after the project completion. Or, the project should have considered ways and mechanisms to minimize the impact on the supervision of the implementation of public works projects in the case that local agencies experience budget or capacity shortages. JICA should have designed appropriate size of the project, making sure that all targeted DPI has enough budget and ability to PIP projects, and helped them to set up the on-the-job training program system and that new staff and that they can continue their work effectively.

The following three construction projects were implemented based on the tools developed under the technical cooperation projects such as guideline, manual and format in the procedure of document submission.





Education Development Institute, Ministry of Education, VTE

<image>

Irrigation Canal from mountain for farming in Cadet School, Champasack Province

Country Name		The Project for Advancing	NRW Reduction 1	Initiative (PANI) of Chittagong WASA
People's Republic of Bangl	adesh			
I. Project Outline				
Background	and Se rehabil popula (NRW) the wa aged p equipm water t	werage Authority (CWASA) litations of water treatment pl tion since the water supply c ) was around 30% and any ef ter transmission and distribu ipes, water leakage due to low nent for leakage control and p neter failures, and so on.	has been operating ants have been impl overage remained a fective countermeas tion system of pum w quality pipes, imp revention, and unde	strial city in Bangladesh, the Chittagong Water Supply water supply services. Constructions, extensions and lemented in the city in order to expand water supplied at below 50%. Besides, the rate of non-revenue water sures were not executed. There were various issues in p stations and water distribution networks, including proper pipe connection works, lack of technology and erinvoicing of water bill due to illegal connections and
Objectives of the Project       Through developing capacity to formulate NRW reduction plan and strengthening managemen techniques in implementing NRW reduction activities through pilot projects, the project aimed at enha CWASA's capability to reduce NRW, thereby contributing to reducing NRW in Chittagong City.         1.       Overall Goal: To reduce Non-Revenue Water (NRW) in Chittagong City.				
	2. Pr	oject Purpose: To enhance CV	WASA's capability to	o reduce NRW.
Activities of the Project	<ol> <li>M</li> <li>1</li> <li>2</li> <li>3. In</li> <li>Japanee</li> <li>1) E</li> <li>2) T</li> <li>3) E</li> <li>G</li> <li>et</li> </ol>	projects. puts to carry out activities. se Side xperts: 5 persons trainees received: 11 persons quipment: leak detection equi deographic Information Syster tc.	and techniques in a	on plan, implementing NRW reduction activities through pilot Bangladesh Side 1) Staff Allocated: 25 persons 2) Land and Facilities: project office 3) Local Cost: for utility of office (electricity, water, telephone) and operational cost
Project Period	-	)09 - January 2014 sion: July 2012 - January	Project Cost	(ex-ante) 240 million yen, (actual) 572 million yen
Implementing Agency	/	gong Water Supply and Sewer	age Authority (CW	ASA)
Cooperation Agency in Japan	NJS C	onsultants Co., Ltd.		
<ul> <li>II. Result of the Evaluation</li> <li>Special Perspectives Consider         <ul> <li>Realization of the project of rehabilitations of water treat phase 2 (KWSP-2) (2013-2 project. Therefore, the evaluation</li> </ul> </li> </ul>	ed in the effects, the tment pla 2022) and	heir continuation status and sus ants by the Japanese ODA loan	of "Karinaphuli Wate Chittagong City, and	ject were influenced by the constructions, extensions and r Supply Project (Phase 1) (KWSP-1) (2006-2010) and the l it's difficult to extract the sheer results of this particular
The "National Water Ma	nageme	nt Plan" (2004) set targets in	eight areas includi	aluation and Project Completion> ng water supply in large cities. The Plan targeted the r big cities including Chittagong. And the "Sector

water supply coverage of 75% by the year 2010 and 90% by 2025 for the four big cities including Chittagong. And the "Sector Development Plan" (2011-2025) for water supply and sanitation planned to reduce NRW to 20% by 2020. Therefore, the project was consistent with the development policies of Bangladesh at the time of ex-ante evaluation and project completion. <Consistency with the Development Needs of Bangladesh at the Time of Ex-Ante Evaluation and Project Completion>

Due to lack of technologies and skilled staff for leakage prevention measures, NRW of CWASA was 33% at the time of ex-ante evaluation. Also, water supply capacity was limited to 48% of water demand in the service areas of CWASA at the time of project completion. Therefore, the project was consistent with the development needs of Bangladesh at the time of ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The "Japan's Country Assistance Program for Bangladesh" (May 2006) prioritized social development with human security particularly environmental issues such as ensuring safe and stable water supply in populous urban areas. Therefore, the project was consistent with the Japan's ODA policy for Bangladesh at the time of ex-ante evaluation.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the time of project completion. The overall action plan for NRW reduction was not

finalized by the time of project completion and handed over to KWSP-2 (Indicator 1). Functions of the action teams have been incorporated into the routine works of the Maintenance, Operation and Distribution Divisions in charge of leak detection, service connection and pipe repairing (Indicator 2). While the action team members have applied techniques developed by the project, the management team has not sufficiently functioned due to frequent changes of senior management officials (Indicator 3). <Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued. The overall action plan for NRW reduction has been updated and revised in KWSP-2. The action teams keep functioning for leak detection, service connection and pipe repairing applying the techniques learned in the project using equipment provided by the project.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

According to the interviews with CWASA staff, as a result of a variety of public relations activities and service improvement including meetings with customers and establishment of customer centers, customers' awareness on the issues of water waste and resource conservation has improved and the customers have preferred meter connections to fixed billing without meter. No negative impact on natural, social and economic environment has been observed at the time of ex-post evaluation.

<Evaluation Result> Therefore, the effectiveness/impact of the project is high.

	C	ect Purpose and Overall Goal
Aim	Indicators	Results
Project Purpose:	Indicator 1:	Status of the Achievement: Not achieved (Partially achieved)
To enhance CWASA's	The overall action plan for NRW reduction	(Project Completion)
capability to reduce NRW.	is periodically updated.	The overall action plan was not finalized by the time of project completion
		due to the project's scope changes caused by the unexpectedly unreliable da
		of water supply network CWASA had and the delay of works caused by the
		frequent changes of senior management officials of CWASA.
		(Ex-post Evaluation)
		The overall action plan was updated and revised in the Japanese ODA loa
		project of KWSP-2 implemented in Chittagong City but has not bee
		periodically updated.
	Indicator 2:	Status of the Achievement: Achieved (Continued)
	The functions of the action teams are	(Project Completion)
	incorporated into the routine work of	The action teams were formed in the project and their functions have been
	CWASA.	incorporated into the routine works of the Maintenance, Operation ar
		Distribution Divisions in charge of leak detection, service connection an
		pipe repairing.
		(Ex-post Evaluation)
		The position and functions of the action teams have not changed an
		continued their works of leak detection, service connection and pip
		repairing.
	Indicator 3:	Status of the Achievement: Partially achieved (Continued)
	CWASA officers/staff apply appropriate	(Project Completion)
	techniques developed by the project on leak	While the action team members have applied techniques developed by the
	detection, service connection and pipe	project, the management team did not sufficiently function due to freque
	repairing.	changes of senior management officials and caused the delay of proje
		activities.
		(Ex-post Evaluation)
		The action teams have been applying the techniques learned in the proje
		using equipment provided by the project including listening rods, ultrason
		water leak detector.
Overall Goal:	Indicator:	(Ex-post Evaluation) Achieved
To reduce Non-Revenue	By 2016, the NRW ratio is reduced	While the NRW ratio was once reduced from 25% in 2011 to 17% in 2016,
Water (NRW) in	compared to the level at the Project	has increased to 25% in 2018. This was because the water pressure has been
Chittagong City.	completion in 2011.	increased by the project effects of KWSP-1 resulting the increase of wat
0 0	<b>A</b> -	leakage from old distribution lines. However, the old distribution lines are
		the process of replacement by KWSP-2 and NRW in the city is reducir
		again at the time of ex-post evaluation.
Source: questionnaires to a	and interviews with CWASA and project staff	s of KWSP-2.

Achievement of Project Purpose and Overall Goal

Because of the significant delay of works due to unexpectedly unreliable data of water supply network CWASA had, considerable delay of the assignment of counterparts, frequent changes of senior management officials of CWASA, and for adjusting activities to align with KWSP-2, the terminal evaluation (December 2011) recommended the extension of the project period. The project was extended according to the recommendation and, therefore, the period and the project cost were exceeded the original plan (the ratio against the plan was 239%)

<sup>3</sup> Efficiency

and 153% respectively) The outputs were produced as originally planned by the end of extension period of the project. Therefore, efficiency of the project was low.

#### 4 Sustainability <Policy Aspect>

No new policy has been formulated after the completion of the project. The "Sector Development Plan" (2011-2025) stated above for water supply and sanitation in Bangladesh planed to reduce NRW to 20% by 2020 mainly through strengthening of technology and management efficiency.

<Institutional Aspect>

CWASA has divided the city into 4 zones and placed a Maintenance, Operation and Distribution Division in each zone. The action team has been organized as a NRW reduction group in the Division and properly functioning as stated above. The number of staff assigned to the action team has been 4 from 2007 to 2018 but increased to 8 in 2019. No negative response to the questions about sufficiency of the number of staff was shown in the questionnaire and interviews. However, the activity of GIS section has been very limited because the staffs are concurrently served and occupied with other jobs. The GIS database improved by the project is outsourced for data-update to a private company at the time of ex-post evaluation.

#### <Technical Aspect>

The action teams keep using the skills and knowledge learned in the project and maintain them through their daily operations. The basic skills for GIS database operation have been transferred from the Japanese experts to the technical staff of CWASA during the extension period of the project. Training materials and handouts prepared by the project have been utilized for the works of the action teams as the manuals for operation including GIS.

<Financial Aspect>

The total revenue of CWASA increased from 641 million Bangladesh Taka (BDT) in 2013 to 1,405 million BDT in 2018 due to the service extension and the NRW reduction with the assistance of KWSP-2. Along with this, the budget for NRW reduction activities has also increased from 7 million BDT in 2013 to 10 million BDT in 2018. <Evaluation Result>

In light of the above, some problems have been observed in terms of institutional aspect of the implementing agency. Therefore, the sustainability of the project effect is fair.

#### 5 Summary of the Evaluation

The Project Purpose was partially achieved but the Overall Goal was achieved through the continuous efforts for the NRW reduction activities under the overall action plan revised with the assistance of KWSP-2 and the improved capacity of the action teams. As for sustainability, limited function of the GIS section has remained as an issue. As for efficiency, the project period and cost significantly exceeded the plan. Considering all of the above points, this project is evaluated to be partially satisfactory.

#### III. Recommendations & Lessons Learned

#### Recommendations for Implementing Agency:

- It is recommended CWASA to assign dedicated staff to the GIS section and revitalize its activities for improving monitoring and detection of water loss and leakage. Integration of GIS information with the "Supervisory Control and Data Acquisition (SCADA)" system of KWSP-2, which is the monitoring system for water supply-demand gap, water pressure requirement, and water loss and leakage, would realize the real-time geographic information provisions by SCADA. Therefore, the integration of the GIS section's activities with SCADA could be a strategy for the revitalization of the GIS section.

Lessons Learned for JICA:

- One of the causes of considerable delays of the project activities, which had resulted the extension of the project period, was the adjustment and restructuring of project scope and activities to align with related projects of KWSP-1 and 2 after the project started. In order to implement a project in efficient and timely manner, a holistic consideration on factors affecting the project implementation is indispensable to overview potentially related plans and projects, and to formulate a program<sup>1</sup> if necessary, at an initiation stage of project formulation.



Leak detection using a mobile ultrasonic flow meter



Map making using a GPS device after leak detection

<sup>&</sup>lt;sup>1</sup> A group of related projects implemented in a coordinated way to obtain benefits not available from implementing them individually.

Country Name	Project for Strengthening Capacity of Ho Chi Minh National Academy of Politics
Socialist Republic of Viet	and Academy of Public Administration in Training of Public Leaders and Civil
Nam	Servants <sup>1</sup>

## I. Project Outline

Background	Ho Chi Minh National Academy of Politics and Public Administration (HCMA; currently Ho Chi Minh National Academy of Politics (HCMA)) had a mandate to manage training program for public leaders and civil servants of director level and higher in the whole country. After the merger with National Academy of Public Administration (NAPA) in May 2007, HCMA was responsible for training of both politics and state administration and expected to be the leading training institution to implement education and training of both theories and practical skills. However, many of the trainings provided by HCMA had traditionally been theoretical in nature. It was difficult for trainees to apply the knowledge acquired in the trainings to the practice in their work. In addition, to develop capacity of strategic leaders for the 12th tenure of the Communist Party of Viet Nam (2016-2020), HCMA was assigned to implement the Training Program for Potential National Leaders, who were candidates for Central Party Committee members and would be the top leaders of central and local governments responsible for making public policy. To successfully implement this first ever training program, HCMA was expected to improve practicality of its lectures and introduce national policy issues to this important Training Program.
Objectives of the Project	<ul> <li>The project aimed to enhance framework to promote capacity development of public leaders and civil servants in HCMA and NAPA in Viet Nam through strengthening capacity of HCMA to implement and manage the Training Program for Potential National Leaders<sup>2</sup> and capacity of NAPA to formulate Master of Public Policy Program (MPP Program), thereby enhancing capacity of public leaders and civil servants after participating in Capacity Development Programs conducted by HCMA and NAPA.</li> <li>1. Overall Goal: Capacity of public leaders and civil servants is enhanced after participating in Capacity Development Programs conducted by HCMA and NAPA.</li> <li>2. Project Purpose: Framework to promote capacity development of public leaders and civil servants in HCMA and NAPA is enhanced.</li> </ul>
Activities of the Project	<ol> <li>Project Site: Hanoi.</li> <li>Main Activities: Strengthening capacity of HCMA to implement and manage Training Program for Potential National Leaders and strengthening capacity of NAPA to formulate the MPP program.</li> <li>Inputs (to carry out above activities) Japanese Side</li> <li>Experts: (long-term) 2 persons, (short-term) 55 1) Staff Allocated: 57 persons persons</li> <li>Trainees Received: 187 persons</li> <li>Local cost</li> </ol>
Project Period	May 2013-May 2016     Project Cost     (ex-ante) 277 million yen, (actual) 366 million yen
Implementing Agency	Ho Chi Minh National Academy of Politics (HCMA) and National Academy of Public Administration (NAPA) *HCMA and NAPA were separated again due to transfer of NAPA to Ministry of Home Affair (MOHA) in December 2013.
Cooperation Agency in Japan	National Personnel Agency, Japan Association for Public Human Resources Development, University of Tokyo, Waseda University, National Institute of Population and Social Security Research, and National Graduate Institute for Policy Studies (GRIPS).

## II. Result of the Evaluation

<Constraints on Evaluation>

The questionnaire survey for Overall Goal Indicator 1 (More than 75% participants of the Policy Research Modules respond in the follow-up survey that they have applied what they have learned through Policy Research Module Program.) could not be completed: most the ex-participants, who were very high-ranking officials, were very busy for preparation of the Party Congress in their organizations (this is the most important event of the Vietnam's Communist Party in every five years) so that the response rate was extremely low. Thus, qualitative information was collected and used in making evaluation judgment together with the existing information on the utilization rate of the modules conducted in Japan at the time of terminal evaluation.

<Special Perspectives Considered in the Ex-Post Evaluation>

Continuation status of the Project Purpose Indicator 1 ("Satisfaction ratings for the Policy Research Module reach average more than 85%") was verified under the Overall Goal Indicator 1 ("More than 75% participants of the Policy Research Modules respond in the follow-up survey that they

<sup>&</sup>lt;sup>1</sup> The project name was originally "Project for Strengthening Capacity of Ho Chi Minh National Academy of Politics and Public Administration in Training of Public Leaders and Civil Servants". It was changed to the current one in order to reflect organizational change of Ho Chi Minh National Academy of Politics and Public Administration (HCMA) in December 2013 and January 2014: National Academy of Public Administration (NAPA) was transferred from HCMA to Ministry of Home Affair (MOHA) and the name of HCMA was changed to Ho Chi Minh National Academy of Politics.
<sup>2</sup> Training Program for Potential National Leaders or Strategic Leadership Training (SLT) was training for senior officials conducted by HCMA under the direction of Government of Viet Nam from 2013 to 2015. SLT was composed of several modules, and the project supported one of them i.e. Policy Research Modules. Policy Research Modules consisted of training by JICA experts in Viet Nam and training in Japan.

have applied what they have learned through Policy Research Module Program"). because Policy Research Modules were completed in 2015, and their effects were designed to be verified under the Overall Goal Indicator 1.

- The target year for the Overall Goal was set to be 2019 as the Overall Goal is defined as "the positive impacts to be realized in about three years after the Project" in the English version of the terminal evaluation summary of the project.
- Overall Goal Indicator 2 ("Satisfaction ratings for NAPA's MPP program by the participants of the program will reach more than 75%"): "Satisfaction ratings for NAPA's MPP program" was defined as "Satisfaction ratings for the ten subjects prepared with the assistance from the project in NAPA's MPP program" as there are other subjects offered by the program. The satisfaction level in the latest school year completed (October 2018-October 2019) was subject to evaluation.

#### 1 Relevance

<Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, the project was consistent with the Socio-Economic Development Strategy (SEDS) (2011-2020), which highlighted improvement of "capacity and effectiveness of state administration.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, the project was consistent with the needs of Viet Nam for enhancement of framework to promote capacity development of public leaders and civil servants in HCMA as shown in "Background".

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, the project was consistent with the Country Assistance Policy for Viet Nam (2012), which included "Good Governance" in the three prioritized areas, and emphasized to support for strengthening administration, recognizing the needs to improve the capacity for policy formulation and implementation.

<Evaluation Result>

In light of the above, the relevance of the project is high.

### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose had been achieved by the time of project completion. The average satisfaction rating of the 6 Policy Research Modules of the Strategic Leader Training (SLT) by the participants was 88% for the modules in Viet Nam and 98% for the modules in Japan, which exceeded the target figure of 85% (Indicator 1). The average satisfaction rating for the training management courses conducted at all 4 regional academies of HCMA, using the draft textbooks compiled by the HCMA lecturers, was 85%, which achieved the target figure of 85% (Indicator 2). The syllabuses and materials for the 10 subjects prepared with the assistance from the project were utilized for NAPA's MPP program, which was open in December 2015 (Indicator 3).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects partially continued to the time of ex-post evaluation. After the project completion, HCMA conducted 8 training management courses to 63 provincial political schools nation-wide and training institutes of central ministries in 8 regions using the textbooks compiled through the project. Since these courses covered almost all institutions under its supervision, HCMA, from 2019, conducted the training management courses at the request of political schools and under its annual plan. In 2020, HCMA planned to organize 2 training management courses for the staff in its headquarters (HQ), thematic institutes of HCMA and the regional academies. HCMA was considering using the textbooks supported by the project. If it was to be used, the textbooks must be updated as some contents had become outdated. HCMA also continued training cycle management of the training management courses. Although the satisfaction ratings were not consolidated for all the courses<sup>3</sup>, given the available data, they were 91% on average. At NAPA, the syllabuses and materials for the 10 subjects prepared through the project were continuously used in the MPP Program until the school year 2018/19, but, not in 2019/20 as NAPA was unable to enroll the new students for 2019/20 mainly due to competition with similar master's programs at NAPA and HCMA<sup>4</sup>. It is noted that NAPA was making efforts to increase enrolment by sending information of the program to all central ministries, local governments and businesses as well as visiting some provinces to promote the program so that it could reopen the MPP Program for 2020/21.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal was partially achieveed in the target year (2019) because one of the indicators was partially achieved and the other one was achieved. The ratio of the ex-participants of the Policy Research Modules of the SLT, who responded in the follow-up survey that they had applied what they had learned, could not be calculated as the response rate of the follow-up questionnaire survey conducted for the ex-post evaluation was extremely low. To the knowledge of HCMA, many of the ex-participants of the Policy Research Modules had applied what they had learned to their work and various policies were formulated by them, including policies of the central ministries and local agencies such as Ministry of Transport, Ministry of Agriculture and Rural Development, Ministry of Natural Resources and Environment, Ministry of Transport) was formulated by the ex-participant using the ideas and experiences of the Policy Research Modules. It should be also noted that, at the time of terminal evaluation, over 90% of the ex-participants of the NAPA's MPP program by the participants was 99% according to the results of the questionnaire survey to the current MPP students conducted by NAPA for the ex-post evaluation, which exceeded the target figure of 75% (Indicator 2).

<Other Impacts at the time of Ex-post Evaluation>

Various other positive impacts were observed. The training methodology and training management model introduced by the project were adopted by the current SLT (i.e. Strategic Potential Leaders Training Program) of HCMA (2019-2020). Lecture notes provided under the project were compiled by HCMA and published as a reference book entitled "Policy Experience of Japan", which was distributed to the

<sup>&</sup>lt;sup>3</sup> According to HCMA, they distributed the questionnaires to the participants and checked all answer sheets but mainly paid attention to comments of participants in order to improve the next training courses.

<sup>&</sup>lt;sup>4</sup> According to NAPA, Master of Public Management (MPM) program of NAPA, which was launched before MPP, had a very good reputation. Moreover, MPM was a broader discipline and offers more opportunity for application, so potential participants tended to choose MPM rather than MPP. HCMA also offered an MPP program, which had some advantages over the NAPA's one thanks to the special status of HCMA. This made the NAPA's program less competitive and attractive to potential target group as compared with the HCMA's program.

participants of the above-mentioned SLT and the concerned central ministries and local agencies for their reference. The contents of the improved training management course were integrated into a 3-month training program for political schools of Lao People's Democratic Republic conducted annually at HCMA from 2018. HCMA maintained the human network between Vietnamese and Japanese high-rank officials created through the SLT under the project by (i) organizing reunion meetings and receptions together with Embassy of Japan and JICA Viet Nam Office and (ii) inviting the ex-participants and Japanese partners such as JICA, Embassy of Japan, Japan External Trade Organization, etc. to meetings, seminars, and other events. NAPA used the materials and lecturers of the 10 subjects of the MPP program developed under the project for a short-term training program targeting high-rank public officials conducted 30-50 times annually. NAPA also formulated a short-term training program targeting young public officials using the expertise and materials of the project, which was yet to open because of the Coronavirus Disease (COVID)-19 pandemic. In addition, NAPA lecturers whose capacity had been improved during the project implementation participated in compilation of case studies for training and refresher training in public policy of NAPA. In 2020, NAPA published these case studies with the active participation of these lecturers. There was a synergetic effect between this project and the subsequent technical cooperation of JICA (i.e. Advisor on training management to HCMA (2016-2019), which helped HCMA adjust and disseminate the training management methods improved under the project to provincial political schools, as a unified training management approach from HCMA HQ to provincial political schools (central to local level) was established. Meanwhile, negative impacts were not observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal

Achievement of Project Purpose and Overall Goal								
Aim	Indicators		Results					
(Project Purpose)	1. Satisfaction ratings for	Status of the Achievement: achieved						
Framework to	the Policy Research	(Project Completion)						
promote capacity	Module reach average	-The average satisfaction rating by the	participants was 88% for	the modules conducted in V	Viet Nam, and			
development of	more than 85%.	98% for the modules in Japan.	% for the modules in Japan.					
public leaders	2. Satisfaction ratings for	Status of the Achievement: achieved (c	tus of the Achievement: achieved (continued)					
and civil servants	the training management	(Project Completion)						
in HCMA and	courses delivered using	-The average satisfaction rating for all	of 4 training management	courses, delivered using th	e draft			
NAPA is		textbooks compiled by the HCMA lect						
enhanced.	compiled by the HCMA							
		-Although the satisfaction ratings were	e not consolidated for all	the courses, the average sa	tisfaction rating			
	more than 85%.	for 4 out of 8 training management of		-	-			
		through the project, was 91%.			· · · · · · · · · · · · · · · · · · ·			
	3. Syllabuses and	Status of the Achievement: achieved (p	partially continued)					
	materials for nine	(Project Completion)	artiany continueur					
	subjects prepared with	-The syllabuses and materials for the 10	) subjects prepared through	h the project were utilized	for the $NAPA'_{\alpha}$			
	the assistance from the	MPP program.	subjects prepared throug		ior the MALAS			
	Project are utilized for	(Ex-post Evaluation)						
	-		0 gubianta mara utilizad fe	an the NADA's MDD masses	n watil the			
	NAPA's MPP program.	-The syllabuses and materials for the 1	•					
		school year 2018/2019. They were not		APA was unable to enroll ne	w students			
		mainly due to competition with similar		1. 00	1			
		-NAPA was aiming to reopen the MPP	program for 2020/21 and	was making effort to prom	ote the program			
		to the potential target group.	1					
(Overall Goal)		(Ex-post Evaluation) partially achieved		( C(1 11 T	1. 1.1.			
Capacity of public	participants of the Policy			-	replied that			
leaders and civil		they had applied what they had for the						
servants is		-Application status at the time of ex-po	evaluation could not be	e verified quantitatively. Th	e questionnaire			
enhanced after	survey that they have	was distributed to 108 out of 511 ex-pa		t only one replied (the answ	er was that			
participating in		he/she applied what he/she had learned	l).		6.4			
Capacity	learned through Policy	-According to Director General of Inte						
Development	Research Module	participants of the modules conducted policies were formulated by them.	ili viet ivalli allu japali lla	u unitzeu what they had lea	inted and many			
Programs	Program.	poneles were formulated by them.						
conducted by	2. Satisfaction ratings for	(Ex-post Evaluation) achieved						
HCMA and	NAPA's MPP program	1.Number of total MPP students (curre	nt students): 17					
NAPA.	by the participants of the	2.Number of students to which questio	nnaire was distributed: 17					
	program will reach more	3.Number of students who responded t						
	than 75%.	Subject	No. of respondents who		Ratio (%)			
			completed the subject in $2018/19 = (A)$	answered they are satisfied with the subject=(B)	=(B/A)			
		1) Public Policy Formulation	14	14	100			
		2) Public Policy and Politics	14	14	100			
		3) Public Policy Process Management	13	13	100			
		4) Stakeholder Analysis	13	13	100			
		5) Economics in Public Policy	12	11	92			
		6) Public Policy and Law 7) Philosophy in Public Policy	14	14	100 93			
		8) Scenario Planning	14	14	100			
		u / 0	1					

<sup>&</sup>lt;sup>5</sup> The questionnaire was sent out to the ex-participants whose contact number HCMA had.

9) Public Policy Evaluation	14	14	100
10) Cost-benefit Analysis	14	14	100
Average			99

Source: Terminal Evaluation Report; internal documents of JICA; questionnaire and interview survey to HCMA and NAPA; questionnaire survey to 108 out of 511 ex-participants of the Policy Research Modules; and questionnaire survey to all of 17 current students of the MPP program.

#### 3 Efficiency

While the project period was within the plan, the project cost exceeded the plan (ratio against the plan: 100% and 132% respectively). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair. 4 Sustainability

## <Policy Aspect>

The SEDS (2011-2020) mentioned in "Relevance" and the Five-Year Socio-Economic Development Plan (SEDP) (2016-2020), which set forth establishment of "modern, professional, disciplined, dynamic and effective public administration", were effective. <Institutional/Organizational Aspect>

At HCMA, Training Management Department was responsible for training management of training of political leaders and civil servants, including training management courses. There were about 120 staff (around 7% of total staff) in charge of training management in total at HCMA HQ and the regional academies. At NAPA, Training Management Division of Department of Postgraduate Studies was in charge of promotion and organization of the MPP program, to which 6 staff members were allocated. In addition, Center for Examination and Training Quality Assurance at NAPA conducted activities for monitoring and evaluation of the training programs of NAPA, including the MPP program. According to NAPA, evaluation and quality assurance mechanism was functioning, but it was yet to be effective due to lack of criteria for quantitative and reliable evaluation. Both HCMA and NAPA confirmed that the necessary number of staff was allocated and no problem associated with shortage of staff was observed.

<Technical Aspect>

HCMA maintained the technical capacity to promote the improved training management by organizing training management conference at least once a year for staff in charge of training management of HCMA HQ and regional academies. The training management textbooks compiled though the project were widely utilized as stated in "Effectiveness/Impact"; however, it was not updated based on the feedback of the training participants. NAPA also sustained the technical capacity to implement the MPP program by regularly organizing internal training courses and workshops/seminar to strengthen capacity of their lecturers.

HCMA basically secured the budget to continue the improved training management courses at its HQ. It secured the budget to disseminate the improved training management courses to almost all of the training institutions under its umbrella in 2017 and 2018, which was partly supported by the succeeding technical cooperation of JICA. HCMA would need to secure additional financial support in the future for implementation of refresher courses at the training institutions under its umbrella. NAPA continuously secured necessary budget from MOHA to promote the MPP program developed under the project. MOHA also approved the scheme on development of syllabus and training materials of 5 master programs (including MPP,) and the doctoral program of public management of NAPA for the period of 2018-2020 with total amount of VND 8 billion (roughly USD 340,000).

In light of the above, slight problems have been observed in terms of institutional/organizational aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

## 5 Summary of the Evaluation

The project achieved the Project Purpose of enhancement of framework to promote capacity development of public leaders and civil servants in HCMA and NAPA. The effects of the project partially continued (i.e. the syllabuses and materials for the 10 subjects developed under the project were not used for the NAPA's MPP program in 2019/20 and it was not yet certain if NAPA could open MPP program for 2020/21) and the Overall Goal of enhancement of capacity of public leaders and civil servants is enhanced after participating in Capacity Development Programs conducted by HCMA and NAPA was partially achieved (i.e. the ex-participants of the Policy Research Moduels applied what they had learned in their work but quantitative information on the application rate was not available). Regarding the sustainability, slight problems were observed in terms of the institutional /organizational aspects (i.e. NAPA was yet to establish the criteria for quantitative and reliable evaluation of its training program, including the MPP program) but no problems were observed in terms of the policy, technical and financial aspects. As for the efficiency, the project cost exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- It is recommended that HCMA (training of trainer group or Training Management Department) update the training management textbooks based on feedback of participants of the recent training management courses by the time HCMA organizes 2 training courses on training management under its annual plan for 2020/21 so that the textbooks can be continuously used.
- It is recommended that NAPA make great efforts to promote and advertise its MPP program to not only public officials and civil servants but also other target group and make the MPP program more competitive so that the syllabuses and materials of the 10 subjects prepared though the project will be continuously used.
- It is recommended that NAPA make great efforts to improve the evaluation mechanism of MPP program with quantitative and reliable criteria so that MPP program's quality will be improved in more systematic manner and the program will become more competitive. Lessons Learned for JICA:
- NAPA was unable to enroll students in the MPP program for the school year 2019/20 mainly due to competition with the existing similar master's programs of NAPA and HCMA. During project formulation process, analysis of similar master programs of NAPA and other training institutions could have been made to identify possible risks and consider the counter measurement in advance with the Japanese project team and NAPA.



Reunion of SLT Training Ex-participants



Group Discussion Section of Training of Trainers for Provincial Political Schools

Country Name	Technical Cooperation in Capacity Development for the ASDP Monitoring and Evaluation System					
United Republic of Tan	a(The Phase 1 Project)aProject for Capacity Development for the ASDP Monitoring and Evaluation System Phase 2 (The Phase 2 Project)					
I. Project Outline						
Background	The Agricultural Sector Development Programme (ASDP) became operational in 2006, which was a long-term process designed to implement the Agricultural Sector Development Strategy (ASDS). In order to implement and further improve the ASDP, it was important to establish an effective and feasible monitoring and evaluation (M&E) framework. The ASDP M&E Thematic Working Group (M&E TWG) was established and one of the tasks of M&E TWG was to improve routine data system in the agricultural sector. Since the agricultural routine data system (ARDS) which delivers agricultural data from Local Government Authorities (LGAs) to the Agricultural Sector Lead Ministries (ASLMs) had not been functioning properly, it had hindered effective monitoring of the ASDP. Based on the success of the implementation of ARDS in pilot LGAs, it was planned to roll-out the improvement of ARDS nationwide.					
Objectives of the Project	<ul> <li>Through formulating ARDS, providing training, test implementation of ARDS in the pilot LGA and others, the project aimed at establishing ARDS and conducting M&amp;E based on it, thereby contributing efficient operation of ASDP M&amp;E in a coordinated manner.</li> <li>[Phase 1]</li> <li>Overall Goal: Agricultural Routine Data System is effectively used nationwide for Monitoring and Evaluation of the ASDP.</li> <li>Project Purpose: An effective Agricultural Routine Data System for the ASDP M&amp;E framework to be developed from village to central levels is established</li> <li>[Phase 2]</li> <li>Overall Goal: ASDP Monitoring and Evaluation (M&amp;E) is improved through interactive operation of relevant activities such as National Sample Census of Agriculture, National Panel Survey and Agricultural Routine Data System (ARDS).</li> <li>Project Purpose: ASDP M&amp;E is conducted on the basis of national agricultural data collected through</li> </ul>					
Activities of the project	<ul> <li>improvement of ARDS.</li> <li>Project site: <ul> <li>[Phase 1] 4 pilot LGAs in Morogoro and Dodoma regions</li> <li>[Phase 2] Entire Tanzania (All 133 LGAs as at ex-ante evaluation, 168 as at project completion)</li> </ul> </li> <li>Main activities: <ul> <li>[Phase 2] Entire Tanzania (All 133 LGAs as at ex-ante evaluation, 168 as at project completion)</li> </ul> </li> <li>Main activities: <ul> <li>[Phase 1] 1. Development of a ARDS model, 2. Training, 3. Revision of ASDP M&amp;E guidelines and others</li> <li>[Phase 2] 1. Conducting training on ARDS, 2. Strengthening M&amp;E TWG's backstopping activities for ARDS, and 3. Coordination of ASDP M&amp;E</li> </ul> </li> <li>Inputs (to carry out above activities) <ul> <li>[Phase 1]</li> <li>Japanese Side</li> <li>Tanzanian Side</li> <li>1) Experts: 4 persons</li> <li>2) Offices for JICA project team and arrangement of vehicle</li> <li>and others</li> <li>4) Local expenses: Operating cost, training expenses and others</li> <li>[Phase 2]</li> <li>Japanese Side</li> <li>Tanzanian Side</li> <li>1) Experts: 5 persons</li> <li>2) Trainees received: 13 persons</li> <li>2) Local cost: Training expenses and others</li> <li>3) Equipment: Cars, motorcycles, computers, 3) Local cost: Training expenses and others</li> <li>3) Equipment: Cars, motorcycles, computers, 3) Local cost: Training expenses and others</li> <li>4) Local expenses: Training expenses and others</li> </ul> </li> </ul>					
Project Period	[Phase 1] March 2008-March 2011 [Phase 2] August 2011-June 2015Project Cost[Phase 1] (ex-ante) 330 million yen, (actual) 255 million yen [Phase 2] (ex-ante) 560 million yen, (actual) 733 million yen					
Implementing Agency	<ul> <li>[Phase 1] &amp; [Phase 2]</li> <li>Agriculture Sector Lead Ministries (ASLMs) : Ministry of Agriculture, Food Security and Cooperatives (MAFC, Currently Ministry of Agriculture, MoA), Ministry of Livestock Fisheries Development (MLFD), Ministry of Industry and Trade (MIT), and President's Office - Regional Administration and Local Government (PO-RALG) (Formerly, Prime Minister's Office - Regional Administration and Local</li> </ul>					

	Government (PMO-RALG) - M&E TWG
Cooperation Agency in Japan	[Phase 1] & [Phase 2] International Development Center of Japan Inc.

### **II. Result of the Evaluation**

#### [Special perspective to be considered by the ex-post evaluation]

As objectives of the Phase 1 project and the Phase 2 project are common, the Overall Goal of the Phase 2 project is used as the common Overall Goal of the two projects. As the indicators of the Project Purpose of the Phase 1 project is embraced in the Phase 2 project, the continuation status is verified under the Phase 2 project.

1 Relevance

<Consistency with the Development Policy of Tanzania at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policy of Tanzania. Both at the time of ex-ante evaluation and project completion of the Phase 1 project as well as the ex-ante evaluation of the Phase 2 project, ASDS delineated how the agricultural sector contributes to the "National Strategy for Growth and Reduction of Poverty" (NSGRP) (2005). The project aiming to strengthening M&E institutional structure was indispensable to measure the degree of achievement of outcome of ASDP as well as that of its superior policy of NSGRP. At the time of project completion of the Phase 2 project, ARDS which was the target of the project, occupied an important position in the overall Tanzania agricultural data (statistics) system as defined in the "Agricultural Statistics Strategic Plan" (June 2014). Moreover, a program document was under preparation for ASDP 2, within which a M&E system was envisioned, including ARDS as part of the overall arrangement.

<Consistency with the Development Needs of Tanzania at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the development of Tanzania for the strengthening of M&E for agricultural sector. At the time of ex-ante evaluation of the Phase 1 project, in order to further improve the ASDP, it was important to establish an effective and feasible M&E framework. At the time of project completion of the Phase 2 project, ARDS occupied an important position in the overall Tanzania agricultural data (statistics) system as defined in the Agricultural Statistics Strategic Plan, as described above.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy to Tanzania. Growth and Reduction of Income Poverty was one of the priority areas under the "Country Assistance Program for Tanzania" (June 2008). Agriculture was one of the most important sectors under this category. <Evaluation Result>

In light of the above, the relevance of the project is high.

#### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

[Phase 1]

The Project Purpose was achieved by the time of project completion, as all indicators set to measure the effects of the project were achieved and ARDS was established.

[Phase 2]

The Project Purpose was partially achieved by the time of project completion, as "Utilization of data collected through ARDS by ASDP etc." (indicator 1) was not achieved and "A number of the DADPs (District Agriculture Development Plans) planned or revised based on the results of analyzing the data collected through the ARDS." (indicator 2) was partially achieved.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The effects of the project have partially continued after the project was completed. Submission rate of ARDS monthly reports by wards to LGAs has reached 90%. The rate has increased because of (1) improvement of ARDS web portal usability, (2) understanding of usefulness of ARDS, (3) improvement of internet access in rural area, (4) follow-up by the central government. The ARDS data submission rate and its use in LGAs level have increased last three years. However, the data utilization in the central government has not partly progressed due to government delay of establishing M&E framework. 109 out of 184 LGAs have developed DADPs. The number of LGAs which have developed DADPs has been limited because agricultural budget disbursement from the central government to LGAs have been continuously low since 2016. Therefore, many LGAs have lost their motivation to formulate DADPs. Nonetheless, most of the LGAs that developed DADPs have utilized the ARDS data.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved by the time of ex-post evaluation. Although challenges exist (e.g. limited budget, unstable working environment caused by government shift to Dodoma), established coordination around ARDS has been maintained. There were overlap among agricultural statistics (e.g. National Sample Census of Agriculture (NSCA), Annual Agricultural Sample Survey (AASS), Small Area Estimate (SAE), National Food Security Survey, etc.) with less coordination before. However, Government led by M&E TWG and stakeholders gradually understood pros and cons of each tools then finally came up with ASDP 2 Result Framework with clarifying data sources of each indicators. The meetings on ASDP M&E coordination have been regularly conducted, though less than the expected, and has discussed mainly monitoring, training planning, and area to improve. In addition, the meetings have talked about M&E overall issues such as ASDP 2 Result Framework.

<Other Impacts at the time of Ex-post Evaluation>

No negative impact on the natural environment by this project has been observed, and there has been no land acquisition and resettlement.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Achievement of Troject Turpose and Overall Goal						
Aim	Indicators	Results				
[Phase 1]	Indicator 1: Routine agricultural reports (latest	Status of the achievement: achieved				

(Project Purpose) An effective Agricultural Routine Data System for	version of Ward Agriculture Extension Officer (WAEO)/Village Agriculture Extension Officer (VAEO) format & Integrated Data Collection	(Project Completion) Agricultural reports of the pilot districts were available at each administrative level including the members of the M&E TWG (ASLMs					
the ASDP M&E framework to be	Format) at each level (pilot Regions=Morogoro and Dodoma Regions/ 4 pilot Districts/ all the village						
developed from village to central levels is established	and ward level at pilot Districts) are made available, and finally reach the central level (ASLMs officials).	Status of the achievement: achieved (Project Completion) Members of the M&E TWG were able to access th data of the pilot districts through LGMD2.					
	Indicator 1-1: ASLMs' Officials are able to access the data which are submitted by the pilot Districts through LGMD2 (Local Government Monitoring Database 2).						
	Indicator 1-2: Within the determined period, the pilot Regions check and approve the data which are submitted by the pilot Districts through LGMD2.	Status of the achievement: partially achieved (Project Completion) The pilot regions checked the data submitted by the pilot districts throug LGMD2.					
	Indicator 1-3: The 4 pilot districts check the data	Status of the achievemen	t: achieved				
	which are submitted by WAEO/VAEOs, and request respective WAEO/VAEOs to review	(Project Completion) The pilot districts checke	ed the data submitted by WAEO/VAEO and				
		-	essary. They also submitted the data to the pilot				
	data. Within the determined period, required data is	regions using LGMD2.					
	entered to LGMD2 utilizing the submitted format, and submit it to respective pilot Region in the form						
	of "Integrated Data Collection Format".						
	e	Status of the achievemen	t: achieved				
	submits data using the latest version of WAEO/VAEO format to respective District.	(Project Completion)	ot districts submitted the VAEO/WAEO format in				
	Willo, Willo format to respective District.	its latest form regularly.	i districts submitted the Vielo, wielo format m				
	Indicator 2: Progress and final results of ARDS	Status of the achievement: partially achieved					
	development is reported to Committee of ASLMs Directors, and finally submitted	(Project Completion) The improved ARDS has been approved by the M&E TWG. It was expected to be submitted to the ASLMs Committee of Directors					
	Directors, and many submitted						
		through the Chairperson	of the TWG.				
[Phase 2]	Indicator 1: Utilization of data collected through	Status of the achievemen (Project Completion)	t: not achieved (partially achieved)				
(Project Purpose) ASDP M&E is conducted	ARDS by ASDP etc.	Because the number of L	GAs that submit ARDS reports was not				
on the basis of national		sufficient mainly due to the technical problem of ARDS-LGMD2/ We portal (Web-based application developed under the project), the ARD data is yet to be used at the central level. (Ex-post Evaluation) 1) Data utilization					
agricultural data collected through improvement of ARDS.							
		Category*	Content				
		To use the data for ASDP2 monitoring	No. Result framework of ASDP2 is still not finalized, and JSR has never conducted since				
		(e.g. JSR: Joint	2015/16.				
		Sector Review)					
		To use ARDS data for	No. MoA has not been published annual				
		the MoA's annual report "Agricultural	report such as "Agricultural Basic Data" last decade.				
		Basic Data"					
		To use the data to	Yes but partially through LGA's				
		prepare a quarterly					
		agricultural sector status report					
		To use the data for	Yes. Questionnaire survey in Feb-2019				
		the work of technical	showed that 90.2% of LGAs use ARDS data				
		departments of MoA and MLFD (e.g. Crop	for reporting to management/council. In addition, 85.3%, 63%, and 54.9% of LGAs				
		Development,	are using ARDS data for food situation				
		Mechanization, and	(managed by National Food Security				
		Veterinary Services, etc.)	Department (NFSD)), GDP data (managed by National Bureau of Statistics (NBS)) and				
			Outbreak report (managed by crop				
			development department) respectively.				
		*Expected utilization at t	he time of project completion				
		2) Proportion of wards (a	round 3900 wards are in Tanzania) which timely				

		aubmitted AD	DS monthly m	monta to the	LCAs			
		submitted ARDS monthly reports to the LGAsMar 2015Mar 2016Mar 2017Mar 2018						
		21.0%	25.0%	85.9%	93.59	/0		
(Overall Goal)	Indicator 2: A number of the DADPs (District Agriculture Development Plans) planned or revised based on the results of analyzing the data collected through the ARDS	<ul> <li>Status of the achievement: Partially achieved (Partially continued)</li> <li>According to the questionnaire survey, the examples of ARDS data utilization at the LGA level are as follows:</li> <li>(Project Completion)</li> <li>For DADP preparation: 76.5%</li> <li>For validation of VADP (Village Agriculture Development Plan 67.6%</li> <li>For examination of potential crops or areas for development: 84</li> <li>For understanding present situation of the sector: 80.1%</li> <li>For examination of future state of crop and livestock: 81.6%</li> <li>(Ex-post evaluation)</li> <li>According to a questionnaire survey in July 2019, 268 out of 33 LGAs staff participating ARDS training answered they develop DADPs and 224 staff out of 268 answered they used ARDS dat DADPs formulation.</li> </ul>						
	collections including ARDS are improved through	(Ex-post Eval		5				
•	the coordination among them.	Government g	radually recog					
		then came up						
improved through		sources of eac			e indicator	s are availab	ole, but	
interactive operation of relevant activities such as		some are not of Status of Achi						
	Indicator 2: The meetings on ASDP M&E	(Ex-post Eval		eveu				
-	coordination are continuously conducted.	LA POST EVal		2015	2016	2017	2018	
of Agriculture, National		Number of n	reetings	no data	11	4	5	
Panel Survey and			licenings	no uata	11	1 4	5	
Agricultural Routine Data								
System (ARDS)								
Source : Terminal Evaluati	on reports, project completion reports, and results of	questionnaire s	survey and inte	erviews wit	n MoA			

#### 3 Efficiency

Although the total project period for the Phase 1 and Phase 2 projects was as planned (the ratio against the plan: 100%), the total project cost slightly exceeded the plan (the ratio against the plan: 111%). The outputs were produced as planned. Therefore, the efficiency of the both projects is fair.

#### 4 Sustainability <Policy Aspect>

Importance of the M&E system has been written in several government core documents for agriculture sector. ASDP 2 (June 2018), as the most important government document for the agriculture sector in Tanzania, has described ARDS as one of the important M&E tools. Furthermore, ARDS has been described as one of the principles of ASDP 2 as "need to ensure ARDS have sufficient resources in order to provide analysis and results on time". The Budget Speech of the Minister for Agriculture (May 2019) mentioned that "Every year, government discloses its last financial achievement and plan for next financial year in June, and achievement of ARDS has been continuously mentioned".

### <Institutional Aspect>

The organization structure has been well established at the national and LGA levels, and manpower has been also somehow sufficient though it has not been ideal level in LGAs. At the national level, there has been well established structure under the ASDP2 framework. M&E TWG has been well established as one of two TWGs under ASDP2, and members have been mostly continuing from M&E TWG under ASDP. TWG has discussed technical issues, then Assistant Director, and the Director of Planning Department in MoA will make a decision.

#### <Technical Aspect>

According to MoA, the skills of national level staff on data analysis and IT contract management needs to be improved. Although there have been a lot of projects supported by Development Partners around M&E, there has been no regulated government mechanism for this kind of training. Skills of some Ward Agriculture Extension Officers (WAEO)/Village Agriculture Extension Officers (VAEO) have been insufficient level but measures, including training on the ARDS data collection by Ministry of Agriculture Training Institutes (MATIs) have been already taken. There has been a mechanism in LGAs to improve skills of them, but not functioning in all LGAs <Financial Aspect>

The TWG team estimated that 5 to 7 million Tanzanian shillings (Tsh) is required for running ARDS in LGAs level. The cost consists of fuel, paper, printing, internet access, etc. Most of LGAs has managed to submit data for the last two years although cost needed for running ARDS is not reported as "cost for ARDS". This fact supports financial sustainability in LGAs level.

For national level, cost has been budgeted (=approved) but not disbursed fully due to less development budget allocation from Ministry of Finance to ASLMs last several years. However, recently, the importance of ARDS began to attract more attention than before, from high-rank government official and other DPs. It is thanks to the fact that ARDS is the only available source of comprehensive agriculture data in Tanzania, collected in a regular basis and nationwide. Therefore, more allocation of budget should be expected. In addition, one of the DPs expresses the interest to assist ARDS-related activities to complement Government efforts to strengthen M&E.

<Evaluation Result>

Therefore, as there have been some problems in the institutional, technical and financial aspects, the sustainability of the effects through the project is fair.

#### .5 Summary of the Evaluation

The phase 1 project achieved the Project Purpose while the phase 2 project partially achieved the ones by the time of project completion. The effects of the projects have partially continued, as ARDS data submission rate and its use in LGA level have been increased, however, the data utilization in the central level has not progressed. The number of LGAs which have developed DADP is somewhat limited. Nonetheless, most of the LGAs has utilized ARDS data. The Overall Goal has been partially achieved, as coordination around ARDS has kept improving, though challenges exist, and ASDP M&E coordination meetings have been conducted. As for the Sustainability, some problems have been oberserved in the institutional, technical and financial aspects. As for the efficiency, the project cost slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

#### III. Recommendations & Lessons Learned

### **Recommendations for Implementing Agency:**

- MoA, as lead ministry of ASDP, is recommended to secure and disburse necessary budget at the national level for maintaining the
  ARDS system such as fee for sub-contractor and server hosting cost. Also, President's Office, Regional Administration Local
  Government (PORALG) should improve budget allocations and disbursement for LGAs specifically to the ARDS activities by
  supporting and providing the extension officers (VAEO&WAEO) with equipment like GPS, means of transport and internet and
  disburse the fund as planned to carry out the intended activities in a timely manner.
- MoA is also recommended to improve data analysis skills as well as IT contract management skills at the national level.
- · MoA is recommended to monitor and follow-up effectiveness of ARDS lecture in MATIs
- The LGA governments are recommended to ensure enough M&E staff at the LGAs level for consistency in data consolidation from wards. Also, improving/increasing the number of extension officers at the both village and ward levels is necessary.

### Lessons Learned for JICA:

- When JICA needs to be involved specific sectors, strengthening M&E system is one of effective approach. Firstly, M&E is normally weak areas in developing country. Secondly, all stakeholders are keen to grasp quantitative data to measure development progress. Therefore, JICA can have many interactions with both CPs (incl. high rank officials) and DPs, which contribute to show presence in the sector.
- Encouraging competition among Regions and LGAs by sharing the status with figures (e.g. submission rate), contribute to rise and maintain higher submission rate. The evaluation team observed that managements seriously asked their staff to submit once they found low rate. M&E TWG applies same approach for data quality improvement by sharing rate of data within realistic range.



Log-in screen of ARDS Web-portal



Central Government counterpart discusses with LGAs staff how to improve ARDS system

conducted by Balkan Office: January, J							
Country Name		The Project for Confidence-Building in Srebrenica on Agricultural and Rural					
Bosnia and Herzego	ovina	Enterprise Development	L.				
I. Project Outline							
Background	Herzeg period, socio-e Develo	Srebrenica Municipality was one of the most seriously devastated areas during the conflict in Bosnia and Herzegovina (BiH) in the early 1990s. Since the population in 2006 remained only 27% of that of the pre-war period, and citizens were deprived of means of living even after returning, there was a strong need to restore socio-economic foundation of the municipality. JICA dispatched a long-term expert under "Community Development Project in the Srebrenica Municipality (2006-2008)", and identified the effectiveness of agricultural development for ethnic reconciliation as well as for economic recovery.					
Objectives of the Project	Thr Munici improv 1. Ov 1) 2) 2. Pro Co and	Through conducting agricultural and rural development activities for both ethnicities in Srebrenica Municipality, the project aimed to build living capacity and confidence among the targeted population, thereby improving their economic situation and promoting reconciliation among people. 1. Overall Goal: 1) The economic situation of the targeted population is improved. 2) Reconciliation of people in the target area is promoted.					
Activities of the Project	<ol> <li>Project sites: All the 19 MZs<sup>1</sup> in Srebrenica Municipality (12 MZs were originally targeted, and the project period was extended to include the remaining seven MZs for ensuring regional equity.)</li> <li>Main Activities: i) Agricultural and rural development activities for residents of both ethnicities; and ii) Information dissemination about agricultural and rural development for re-building co-existent society.</li> <li>Inputs (to carry out above activities)         Japanese Side         BiH Side         1) Staff Allocated: 5 persons         2) Office space         3) Equipment: Agricultural machinery/equipment         3) Local expenses         (tractors, a packing machine, green houses, etc.) and office equipment         4) Local expenses         4) Local expenses         5) Staff expenses         6) Staff expenses         6) Staff expenses         6) Staff expenses         7) Staff expenses         7) Staff expenses         8) Local expenses</li></ol>						
Project Period	(Extend	September 2008-November 2013 Extended period:Project Cost(ex-ante) 327million yen, (actual) 433 million yenSeptember 2011-November 2013)					
Implementing Agency	Srebrenica Municipality						
Cooperation Agency in Japan	-						

### II. Result of the Evaluation

<Constraints on Evaluation>

Due to Coronavirus Disease (COVID)-19 pandemic, the evaluation judgment was made by analyzing information obtained through a questionnaire survey to Srebrenica Municipality and a telephone interview with a municipal official engaged in the project. Neither face-to-face interviews nor site visits were conducted. Under the project, 11 NGOs were directly involved, but planned interviews with a few could not be conducted either.

<Special Perspectives Considered in the Ex-Post Evaluation >

- The subsequent project, namely "The Project for Confidence-building through Rural Development (2014-2017)", was conducted in Srebrenica Municipality and the two neighboring municipalities. Accordingly, the ex-post evaluation of this project (hereinafter referred to as "the Project"), originally planned in three years after project completion (i.e. in 2016), was extended to 2020. This ex-post evaluation hence includes the effects of the subsequent project in the aspects of i) continuation of Project Effects, ii) achievement of the Overall Goal, and iii) the Sustainability.
- Indicator 1 of the Overall Goal (An increase in income and the number of income sources of targeted population) was not able to be surveyed under the ex-post evaluation, or available in the existing statistics. Accordingly, related statistics available as well as observation by the municipality were analyzed as Supplementary Information.

## 1 Relevance

<Consistency with the Development Policy of Bosnia and Herzegovina at the Time of Ex-Ante Evaluation>

The Project was consistent with "Medium Term Development Strategy of BiH" issued in April 2004, which targeted poverty reduction as one of its goals.

<Consistency with the Development Needs of Bosnia and Herzegovina at the Time of Ex-Ante Evaluation>

The Project was consistent with development needs of restoring socio-economic foundation in Srebrenica Municipality, one of the most seriously devasted areas in BiH due to the conflict.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The Project was consistent with the basic policy of Japanese ODA for BiH. The Government of Japan (GOJ) hosted "Ministerial

<sup>&</sup>lt;sup>1</sup> MZ is the acronym of Mjesna Zajednica (Local Community) which is an administrative unit under a municipality.

Conference on Peace Consolidation and Economic Development of the Western Balkans in Tokyo 2004", and stated that GOJ would contribute to the Western Balkans on peace consolidation, economic development, and regional cooperation<sup>2</sup>. <Evaluation Result>

In light of the above, the relevance of the Project is high.

#### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project achieved the Project Purpose at the time of project completion. Aside from Srebrenica Municipality, whose capacity was still at the recovery stage, beneficiary selection and delivery of the Project were done manly by 11 NGOs and several MZs. Twenty-five (25) agricultural and rural activities were implemented under the Project. Out of the 25 activities, 15 had been already conducted on a small scale, for 850 households, under the JICA's Expert's assistance, i.e. "Community Development Project in the Srebrenica Municipality (2006-2008)", and 10 activities were added under the Project (2008-2013). The number of beneficiaries under the Project was 6,703 households: 3,875 during the original period, and 2,828 during the extended period. The cumulative 7,553 beneficiary households (2006-2013) consisted of 3,669 Serbs and 3,884 Bosniaks. Thus, "the number of agricultural and rural development joint activities by the population (Indicator)" increased for both ethnicities. It is remarkable that the terminal evaluation survey of the Project (October-November 2013) revealed the drastic increase in income of the project beneficiaries<sup>3</sup>.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The Project Effects have been partially continued till the ex-post evaluation. Out of the 25 activities under the Project, 14 are still being conducted in Srebrenica Municipality. Among them, 10 activities further assisted/strengthened by the subsequent project (2014-2017) are all continued. It is notable that joint activities by different ethnicities, such as i) operation of kindergartens, ii) sharing water sources for irrigation, and iii) sharing collection points of raspberry and milk, etc., are still being continued. On the other hand, the reason for not continuing the remaining 11 activities is not clear, which could be partially attributed to the fact that they were directly conducted by NGOs who do not work with the municipality any more, whereas the municipality played a pivotal role in the subsequent project<sup>4</sup>. <Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved. "An increase in income and the number of income sources of targeted population" (Indicator 1) was not able to be surveyed again at the time of ex-post evaluation, and such data are not available in the existing statistics. As Supplementary Information, however, the statistics of the municipality show a tendency of growth and diversification of the employment sector (including increase in the number of agricultural business entities). In addition, municipality officials observe that agricultural production has been increased and diversified, and thus income and its sources of farmers have been increased. Regarding Indicator 2, the municipality is certain that reconciliation of people has been promoted by the two projects. The change in people's consciousness can be confirmed from the fact that joint activities, such as mentioned above, are still being continued.

<Other Impacts at the time of Ex-post Evaluation>

The Project was a big challenge in terms of aiming for building confidence among ethnicities who were against each other during the conflict in BiH. Through "joint implementation" of agricultural activities, such aim was realized. According to a municipality official engaged in the Project, grassland recovery was one of the most effective activities to bring both ethnicities together. They jointly sowed abandoned meadows, and, through recovery of grassland, they shared a sense of recovery from the conflict. Despite of such challenging and sensitive project, no negative impact was observed at the time of ex-post evaluation.

Therefore, the effectiveness/impact of the Project is high.

Achievement of Project Purpose and Overall Goal									
Aim	Indicators	Results							
(Project Purpose)	The number of	Status of the Achievement: achieved (partially continued)							
Confidence among	agricultural and rural	$(\mathbf{P}_{n}, \mathbf{r}_{n}, \mathbf{r}_{n}, \mathbf{r}_{n}) / (\mathbf{E}_{n}, \mathbf{r}_{n}, \mathbf{r}_{n}, \mathbf{r}_{n}, \mathbf{r}_{n})$							
the targeted	development joint	Out of the 25 activities under the Project, 14 are still being conducted.							
population is built	activities by the								
through strengthening the	population is increased.	Under the ActivitiesUnder the Expert'sUnder the ProjectUnder 							
capacity to manage		(2006-2008) (2008-2013) (2014-2017)							
agricultural and		1. Strawberry X X							
rural development		2. Greenhouse productionXXX							
· ·		3. Providing vinyl for green house	X	X		X			
joint activities.		4. Fruits planting (apple, pear, plum)	X	Х	Х	X			
		5. Raspberry		Х	Х	Х			
		6. Blueberry		Х					
		7. Grassland recovery	Х	Х	Х	Х			
	8. Irrigation (Note) X X								
		9. Rosehip X X							
	10. BeekeepingXXX								

Achievement of Project Purpose and Overall Goal

<sup>&</sup>lt;sup>2</sup> Source: Ministry of Foreign Affairs, "ODA Country Data Book in 2008"

<sup>&</sup>lt;sup>3</sup> The survey was conducted for 268 sample beneficiaries in the originally targeted 12 MZs, and for 96 samples in the additional seven MZs. Regarding the 12 MZs, it was found that the ratio of beneficiary households with higher income (more than 6,000 convertible mark (KM)/year) had drastically increased from 2% (2008) to 54% (2013), while that with lower income (less than 1,000 KM/ year) had decreased from 48% (2008) to 2% (2013). The similar tendency was observed in the additional seven MZs. The households with annual income of more than 6,000 KM increased from 29% (2011) to 53% (2013), while that of less than 1,000 KM decreased from 12% (2011) to 0 % (2013).

<sup>&</sup>lt;sup>4</sup> The Project focused to assist organizations (NGOs and MZs) consisting of both ethnicities, which enabled communication and equity among beneficiaries. However, NGOs are often project-based and their sustainability (including relationship with local government) tends to be limited. On the other hand, the subsequent project focused on strengthening municipal capacities to ensure sustainability of Project Effects.

Dverall God)     1. The income and the number of income sources? or a or available. As Supplementary Information, however, the following table should be not available. As Supplementary Information, however, the following table should be observed in the average gross wages in Srebernica is larger than that of the target area is promoted.     1. The income and the number of income sources of the target of provide training and the average gross wages in Srebernica is larger than that of the target area is promoted.     1. The income and the number of income sources of the target of provide training and the increase in the average gross wages in Srebernica is larger than that of the target area is promoted.     1. The income and the number of income sources of the target of syntax (RS) <sup>4</sup> as a whole.) On the other hand, considering that farmers are not complexe in the subseque project.       Verail Goal (Market area is promoted.     1. The income and the number of income sources of the target of syntax (RS) <sup>4</sup> as a whole.) On the other hand, considering that farmers are necessed.     1. The income and the number of income sources of the average gross wages in Srebernica is larger than that of request trace is promoted.       Verail Goal (Market area is promoted.     1. The income and the target area is promoted.     1. The income and the number of income sources of the average gross wages (RM/month) (Market area is promoted.     1. The income and the sources are the average areas wages in Srebernica is larger than that of request trace is promoted.     1. The income average areas wages (RM/month) (Market area is promoted.     1. The income average areas that be average areas the second areased.       2. The consciousness     1. Average gross wages (RM/month) (Market area) is production of the areased.     1. Average ar							
Decril Goal)     1.     The income and the urgeted population is improved.     1.     The income and the urgeted population are increased.     1.     The income and the urgeted population are increased.       Operall Goal)     1.     The consoning situation of situation of provide.     1.     The income and the urgeted population are increased.     1.     The income and the urgeted population are increased.     1.     The consoning afficiency of growth and diversification of the employment sector, as well as increase in fruit production are increased.       2.     The consoning is promoted.     1.     The consoning afficiency of growth and diversification of the employment sector, as well as increase in fruit production income source if are not available. As Supplementary Information, however, the following table show the date sector increased.       0     population is improved.     1.     The consoning is increase and the increase in the walke population of the employment sector, as well is increase in fruit production increase source if are not available. As Supplementary Information, however, the following table show the date sector increased.       0     population is improved.     1.     The consoning is increase in fruit production increase source if are not available. As Supplementary Information, however, the following table show the date walk as a whole). On the enter band, considering that famers are no enterget at a statistic of Statistics of Sta				X			
Neerall Goal)       1.       The income and the number of statistics of Serbenica in the table) is categorized under "infrastructure development" in the subsequences of the employment sector, as well as increased in further other incomes sources "are not available. As Supplementary Information, Investor, the table of the employment sector, as well as increased in further other incomes and its statistics of Serbenica Municipality in the Employment Sector and Bruit Preduction         Pread Goal)       1.       The income and the number of the table) is categorized under "infrastructure development" in the subsequence of the target of population is are increased.         Pread Goal)       1.       The income and the number of the table of Sector and diversification of the employment sector, as well as increase in furth produce of the target of population is are increased.         Reconciliation of poppi in the target population is promoted.       1       The increased.         Statistics of Serbeneicu Municipality in the Employment Sector and Pruit Preduction.       Statistics of Serbeneicu Municipality in the Employment Sector and Pruit Preduction.         No. of Employed persons in agriculture       1.300       2.400       2.013         No. of Employed persons in agriculture       1.300       2.412       2.75         No. of employed persons in agriculture       1.300       2.400       2.013         No. of employed persons in agriculture       1.300       2.400       2.013         No. of employed persons in agriculture       1.300       2.000							
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24. Fruit liquor production       X       X       X       X         26. Blackberry       27. Outry cow       28. Outro W       X       X       X         27. Dairy cow       1       X       X       X       X       X         27. Dairy cow       1       X       X       X       X       X       X         28. Outro of Types of Activities       15       25       10       14       X							
25. Vegetable seedings       X       X       X         27. Dary cow       15       25       10       14         (Not)       Irrigation (No.8 in the table) is categorized under "infrastructure development" in the subseque project.       X       X       X         Overall Goal)       1       The income and the number of income sources of the targeted population are increased.       (Ex-post Evaluation) partially achieved", from the aspect that the exact data of "income" and "the number of income sources" are not available. As Supplementary information, however, the following table show in diversification of the employment sector, as well as increase in full production in a wohe(-) on the other hand, considering that farmers are mo self-employed, the table does not capture the whole picture. In this regard, municipality officials obse not self-employed, the table does not capture the whole picture. In this regard, municipality officials obse not self-employed, the table does not capture the whole picture. In this regard, municipality officials obse not self-employed, the table does not capture the whole picture. In the subseque farmers have been increased.         Statistics of Srebrenica Municipality in the Employment Sector and Fruit Production       Verage gross wages (KM/month)       1.317       1.346       1.426         No. of majored persons       1.300       1.334       1.344       11.2441       11.258         No. of employed persons in agriculture       138       148       135       136       1.836         No. of employed persons in agriculture							
26. Blackberry       x       x       x         Dverall Goal)       1. The income and the number of income sources of trageted population is are increased.       15       25       10       14         Situation of the number of income sources of trageted population is provided.       15       16       8. Supplementary Information, however, the following table show tendency of growth and diversification of the employment sector, as well as increase in full production has been increased and diversified, and thus income and its sources for people in the target table does on corput the whole potential is increase in that a great table does on corput the whole potential is more and its sources farmers have been increased.         Statistics of Srobenica Municipality in the Employment Sector and Fruit production has been increased and diversified, and thus income and its sources farmers have been increased.         Indicators (Unit)       2014       2016       2016       2018         Average gross wages (KM/month)       1.314       11.3441       11.3481       11.3441         No. of types resons in argueulture       13       20       242       20.7         No. of argueural business entities       20       22       22       27         No. of types rows in argueural business entities       20       22       27       20       0.5         No. of types rows in argueural business entities       21       230       244       20.7       20 <td></td> <td></td> <td></td> <td>Х</td> <td></td> <td>N.</td> <td></td>				Х		N.	
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verall Goal)       1. The income and the number of isituation of the targeted population are increased.       1. The income 'and 'the number is judged as 'partially achieved'', from the aspect that the exact data of 'Income' and 'the number of targeted population are increased.         Reconclination of people in the targeted population is promoted.       1. The income 'and 'the number of targeted population are increased.         Statistics of Srebrenics in Larger due by block picture. In this 'regard, municipality Official obset (should be not capture the whole picture. In this 'regard, municipality Official obset for should be picture. In this 'regard, municipality Official obset for should be picture. In this 'regard, municipality Official obset for should be picture. In this 'regard, municipality Official obset for most recent statistics of Srebrenica Municipality in the Employment Sector and Fruit Production is promoted.         Net the target area is promoted.       Statistics of Srebrenica Municipality in the Employment Sector and Fruit Production (following year of project 'completion)       2014 (2016 (bree year)' (year of most recent statistics 230       242 207 (No. of unproved persons in agriculturel business entities 230       1.346 1.1.344 1.1.3441       1.1.358 (No. of unproved persons in agriculturel business entities 230       2.2 2.2 2.2 2.7 (No. of unproved persons in agriculturel business entities 230       2.1 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0			(Note) Irrigation (No 8 in the table) is ca				
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The commit       the number of income sources of the target oppulation is income sources of targeted population are increased.       th's judged as "partially achieved", from the aspect that the exact data of "Income" and "the number of income sources of targeted population are increased.         Reconcilitation       are increased.       th's judged as "partially achieved", from the aspect that the exact data of "Income" and "the number of income sources of targeted population are increased.         Reconcilitation       are increased.       th's judged as "partially achieved", from the aspect that the exact data of "Income" and "the number of income sources of targeted population are increased.         Reconcilitation       of people in the target area is promoted.       the strateget area is promoted.       the strateget area is promoted.         No for people in the target area is promoted.       the target area is promoted.       2014       2016       2018         Verage gross wages (KM/month)       1.317       1.346       1.1358         No. of gricultural business entities       2.20       2.27       No. of employed persons       1.890       2.000       2.013         No. of majored persons in agriculture       1.890       2.000       2.013       1.830       -       3.00       1.830         No. of employed persons in agriculture       1.890       2.000       1.836       -       -       3.00       1.830       -       -       3.0	Overall Goal) 1	The income and					
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situation of the target oppulation is income sources of the amployment sector, as well as increase in fruit production of the amployment sector, as well as increase in fruit production are increased. If the noted that increase in the average gross wages in Srcherineia is larger than that of Republic of Srpska (RS) <sup>3</sup> as a whole.) On the other hand, considering that firmers are mo self-employed, the table does not capture the whole picture. In this regard, municipality officials obset that agricultural production has been increased and diversified, and thus income and its sources farmers have been increased. Statistics of Srebrenica Municipality in the Employment Sector and Fruit Production Statistics of Srebrenica Municipality in the Employment Sector and Fruit Production Statistics of Subset (Minonth) 1,317 1,346 (1,426 [Reference Data] RS as a whole [1,334] [1,344] [1,344] [1,358] No. of mployed persons an agriculture 138 148 [135 Production of fruits (tons) 2 2 2 2 2 [27 No. of agricultural business entities 2 2 0 2 2 2 [27 No. of agricultural business entities 2 2 0 2 2 2 [27 No. of apployed persons in agriculture 138 148 [135 Production of fruits (tons) 1 Apples 1 [1 Apples 1 2 2 0 0 753 [1 Apples 1 2 0 0 0 1 A 383 [1 Apples 1 2 0 0 0 1 A 383 [1 Apples 1 2 0 0 0 1 Apples 1 0 Apples 1			income sources" are not available. As Su	nnlementary Ir	formation	however the f	ollowing table show
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improved.       self-employed, the table does not capture the whole picture. In this regard, municipality officials obset that agricultural production has been increased and diversified, and thus income and its sources farmers have been increased.         statistics of Srebrenica Municipality in the Employment Sector and Fruit Production       2014       2016       2018         Average gross wages (KM/month)       1,317       1,346       1,426         Average gross wages (KM/month)       1,317       1,346       1,426         No. of agricultural by sources       20       22       27         No. of agricultural business entities       22       22       27         No. of agricultural business entities       230       242       267         No. of agricultural business entities       22       22       27         No. of agricultural business entities       230       242       267         No. of agricultural business entities       230       242       267         No. of agricultural business entities       230       753       11         Production of fuits (tons)       1       21       230       753         ii) Pears       14       112       282       200       1,836          Statistics of Republika Srpska Institute of Statistics (2019) "Cities and Municipality of Agriculture, Forestry an	-						
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a reconstruction of people in the target area is promoted.       farmers have been increased.         a for people in the target area is promoted.       Statistics of Srebrenica Municipality in the Employment Sector and Fruit Production         A verage gross wages (KM/month)       2014       2016       2018         Average gross wages (KM/month)       1,317       1,346       1,426         Average gross wages (KM/month)       1,317       1,346       1,426         No. of business entities       230       242       267         No. of agricultural business entities       22       22       27         No. of employed persons       1,890       2,000       2,013         No. of employed persons in agriculture       138       148       135         Production of fruits (tons)       1       21       230       753         ii) Pears       14       112       282         iii)Plums       -       300       1,836 <source/> Republika Srpska Institute of Statistics (2019) "Cities and Municipalities of Republik       Srpska", and additional data obtained from the Ministry of Agriculture, Forestry and Water Management (MOA) of the Republic of Srpska         2.       The consciousness of the target population of the Project.       Strebrenica Municipality is certain that the reconciliation of people has been promoted by this and subsequent project	-						
of people in the target area is promoted.       Statistics of Srebrenica Municipality in the Employment Sector and Fruit Production         Statistics of Srebrenica Municipality in the Employment Sector and Fruit Production       2014       2016       2018         Mark Statistics of Srebrenica Municipality in the Employment Sector and Fruit Production       after project       available)         Average gross wages (KM/month)       1,317       1,3346       1,426         Indicators (Unit)       (following year of project       available)       available)         Average gross wages (KM/month)       1,317       1,3346       1,426         Indicators (Unit)       0.00       2,000       2,001         No. of agricultural business entitics       2.2       2.2       2.7         No. of employed persons       1.890       2,000       2,001         No. of employed persons       1.890       2,000       2,001         No. of employed persons in agriculture       138       148       135         Production of fuits (tons)       0       1,836        300       1,836         Source>       Republika Srpska Institute of Statistics (2019) "Cities and Municipalities of Republika Srpska", and additional data obtained from the Ministry of Agriculture, Forestry and Water Management (MOA) of the Republic Srpska       Source>       Serbernica Municipality is cer			farmers have been increased	lereusea ana e	inversified,	, und thus moo	ine una no sources
is promoted. is pr	of people in		furmers have been mereused.				
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Indicators (Unit)       project completion)       are project completion)       recent statistics available)         Average gross wages (KM/month)       1,317       1,346       1,426         [Reference Data] RS as a whole       [1,334]       [1,344]       [1,358]         No. of business entities       230       242       267         No. of employed persons       1,890       2,000       2,013         No. of employed persons in agriculture       138       148       135         Production of fruits (tons)       0       1,836       -         i) Apples       21       230       1,830          Source> Republika Srpska Institute of Statistics (2019) "Cities and Municipalities of Republika Srpska", and additional data obtained from the Ministry of Agriculture, Forestry and Water Management (MOA) of the Republic of Srpska         2. The consciousness of the target population of the Project.       (Ex-post Evaluation) achieved Srebrenica Municipality is certain that the reconciliation of people has been promoted by this and subsequent projects. The change in people's consciousness can be confirmed from the fact that is activities, introduced by the two projects, are still being continued.         ource : Terminal Evaluation Report and other JICA documents, a questionnaire survey and a telephone interview with Srebrenica Municipality.         Efficiency       Image: Store and period significantly exceeded the plan (ratio against the plan: 132% and 175%). Although the	is promotou.						
2.       The consciousness of the target population of the target population of the target population of the project.       No. of agricultural business entities       21       230       242       267         No. of agricultural business entities       22       22       22       277         No. of agricultural business entities       230       2,42       267         No. of agricultural business entities       22       22       27         No. of agricultural business entities       230       2,42       267         No. of agricultural business entities       230       2,400       2,0113         No. of employed persons       1,890       2,000       2,013         No. of employed persons in agriculture       138       148       135         Production of fruits (tons)       1       112       282         ii) Pears       14       1112       282         iii)Plums       -       300       1,836 <source/> Republika Srpska Institute of Statistics (2019) "Cities and Municipalities of Republika Srpska, and additional data obtained from the Ministry of Agriculture, Forestry and Water Management (MOA) of the Republic of Srpska         Project.       -       -       -       -       -       -       -       -       -       -       -       - <td< td=""><td></td><td></td><td>Indicators (Unit)</td><td></td><td></td><td></td><td></td></td<>			Indicators (Unit)				
Average gross wages (KM/month)       1,317       1,346       1,426         [Reference Data] RS as a whole       [1,334]       [1,344]       [1,334]       [1,344]       [1,334]         No. of business entities       22       22       27       No. of employed persons       1.890       2,000       2,013         No. of employed persons       1.890       2,000       2,013       No. of employed persons in agriculture       1.38       148       135         Production of fruits (tons)       i) Apples       21       230       753         ii) Pers       21       230       1,836 <source/> Republika Srpska Institute of Statistics (2019) "Cities and Municipalities of Republike Srpska", and additional data obtained from the Ministry of Agriculture, Forestry and Water Management (MOA) of the Republic of Srpska         2.       The consciousness of the target population of the Project.       (Ex-post Evaluation) achieved       Statistics, introduced by the two projects, are still being continued.         Project.       Statistics, introduced by the two projects, are still being continued.       Statistics, introduced by the two projects, are still being continued.         Both the project cost and period significantly exceeded the plan (ratio against the plan: 132% and 175%). Although the achievemen e Project Purpose was confirmed at the end of the original project period, the Project was extended for covering three agricult asons, for including the remaining							
Image: service of the target population of the target population of the target population of the Broject.       Image: service of the target population of the Broject.       Image: service of the target population of the Broject cost and period significantly exceeded the plan (ratio against the plan: 132% and 175%). Although the achievement e Project Cost and period significantly exceeded the plan (ratio against the plan: 132% and 175%). Although the achievement e Project Cost and period significantly exceeded the plan (ratio against the plan: 132% and 175%). Although the achievement e Project 12 to 19 (158%); and ii) increase in beneficiary households from 3,875 to 6,703 (173%). Thus, the increase ratio target the than that of project cost but lower than that of project period. Therefore, the efficiency of the Project is fair.							
No. of business entities       230       242       267         No. of agricultural business entities       22       22       27         No. of employed persons       1,890       2,000       2,013         No. of employed persons in agriculture       138       148       135         Production of fruits (tons)       1       230       753         ii) Apples       21       230       1,836         -       300       1,836       -       300       1,836         -       -       300       1,836       -       -       300       1,836         -       -       -       300       1,836       -					-		
No. of agricultural business entities       22       22       27         No. of employed persons       1,890       2,000       2,013         No. of employed persons in agriculture       138       148       135         Production of fruits (tons)       14       112       282         ii) Apples       21       230       753         ii) Pears       14       112       282         iii)Plums       -       300       1,836 <source/> Republika Srpska Institute of Statistics (2019) "Cities and Municipalities of Republika Srpska", and additional data obtained from the Ministry of Agriculture, Forestry and Water Management (MOA) of the Republic of Srpska         2.       The consciousness of the target population of the Project.       Ex-post Evaluation) achieved         Source : Terminal Evaluation Report and other JICA documents, a questionnaire survey and a telephone interview with Srebrenica Municipality.         Efficiency         Both the project cost and period significantly exceeded the plan (ratio against the plan: 132% and 175%). Although the achievemen e Project Purpose was confirmed at the end of the original project period, the Project was extended for covering three agriculture asons, for including the remaining seven MZs to avoid "regional disparity" within the municipality. This extension resulted in: i) increase ratio uptust is higher than that of project cost but lower than that of project period. Therefore, the efficiency of the Project is fair.         Susta							
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"Strategic Plan for Rural Development of BiH (2018-2021)" is effective till 2021. Under the plan, six main goals are stated, namely:	• •						
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income stability, ii) strengthening competitiveness, iii) improving marketability, iv) sustainable management of natural resources, v) improving the quality of life, and vi) improving institutional and legislative capacities.

<Institutional/Organizational Aspect>

At the entity level of the Republic of Srpska (RS), the Ministry of Agriculture, Forestry and Water Management (MOA) has been providing financial incentives or grants and conducting training to farmers registered with the MOA. In Srebrenica Municipality, the institutional setting established by the subsequent project is still functioning. For example, selection of beneficiaries through transparent criteria under the subsequent project has been incorporated into the public calls for agricultural support. The number of staff members engaged in rural and agricultural development is four, which is considered enough by the municipality. On the other hand, the evaluator observes that agricultural support by the municipality could be further improved, such as utilizing the farmers' database developed under the subsequent project for visiting those with low income and in needs.

<sup>&</sup>lt;sup>5</sup> One of the two administrative entities of BiH

#### <Technical Aspect>

The above-mentioned four staff members sustain their skills through daily work and participating in seminars. They have kept providing technical advice to farmers, and facilitating financial incentives/grants and training by the MOA. <Financial Aspect>

The above-mentioned financial incentives, for farmers reaching a certain production amount, are funded from the MOA's Agrarian Budget (KM 75 million per annum for the total area of RS), and aside from them, the grants amounting to KM 100,000 per annum is secured specifically for agricultural entities in Srebrenica Municipality. These grants are awarded to entities in the agricultural sector, and the municipality selects applicants based on their business plans. Every year, one or two entities are awarded with a grant for activities such as raspberry/dairy production, procurement of equipment, and construction of processing facilities. On the other hand, the municipal budget for agricultural and rural activities is only KM 40,000 per annum (0.5% of the total municipal budget), which is mostly used for sowing in spring.

#### <Evaluation Result>

In light of the above, problems have been observed in terms of the institutional/organizational and financial aspects of the implementing agency. Therefore, the sustainability of the Project Effects is fair.

#### 5 Summary of the Evaluation

The Project achieved the Project Purpose (i.e. Confidence among the targeted population is built through strengthening the capacity to manage agricultural and rural development joint activities). The Project Effects have been partially continued, and the Overall Goal (i.e. The economic situation of the targeted population is improved; and Reconciliation of people in the target area is promoted.) have been achieved. Regarding the Sustainability, problems have been observed in terms of institutional/organizational and financial aspects, but no problem has been observed in policy and technical aspects. As for Efficiency, the Outputs of the Project increased, and both the project cost and period exceeded the plan accordingly.

Considering all of the above points, the Project is evaluated to be satisfactory.

#### III. Recommendations & Lessons Learned

Lessons Learned for JICA:

- The Project was a big challenge in terms of aiming for building confidence among ethnicities who were against each other during the conflict. Through "joint implementation" of agricultural activities, such aim was realized. For example, grassland recovery was one of the most effective activities to bring both ethnicities together. They jointly sowed abandoned meadows, and, through recovery of grassland, they shared a sense of recovery from the conflict. At the same time, recovered grassland produced feeds for livestock such as sheep and cows, and thus increased people's income. The Project can be a good practice for future similar projects by JICA for peace-building. An approach of joint agricultural activities can be applied to strengthen and maintaining peace in the community as well as improving economic situation of individuals.
- How to apply the above-mentioned "joint agricultural activities for peace-building" depends on the context of a project. Prior to the Project, effectiveness of such approach was verified through dispatching a long-term expert under "Community Development Project in the Srebrenica Municipality (2006-2008)". Testing a proposed approach on a small scale for designing a project would be important especially for a peace-building project, which requires special attention to the political and social climate.
- Keys to the achievement of the Project can be as follows: 1) sharing the common objective of recovery from the conflict; 2) sharing common properties; 3) delivering hope to the local people through direct and minimum support for improvement in their livelihood, and 4) involving NGOs as partners but also municipal government as an implementing agency for future sustainability.



Planting Plum Trees Assisted under the Project (Production amount of plum has been increasing largely.)



Sheep Husbandry Assisted under the Project

Country Name		The Project for Capacity Development on Transportation Planning and Database Management			
Republic of the Philippines		in the Republic of the Philippines			
I. Project Outline					
Background	The acceleration of economic activities and the concentration of population in Metro Manila and other urban areas in the Philippines caused serious social problems, such as traffic congestion, traffic accidents, and deterioration of the living environment. Planning of integrated public transportation network was, therefore, crucial in tackling not only these problems but also global warming issues. However, the Department of Transportation and Communication (DOTC) separately managed air, rail, and sea transportation and the relevant databases required for a comprehensive national transport planning were also managed by sub-sectors without sufficient accordination.				
Objectives of the Project	<ul> <li>coordination among related agencies.</li> <li>Through the development of a transportation database, preparation of public transportation network plan and its implementation strategies in the target area, and coordination among related agencies for public transportation planning for Metro Manila, the project aimed at improving public transportation planning for Metro Manila spearheaded by DOTC, thereby contributing to preparing a public transportation plan for Metro Manila by DOTC.<sup>1</sup></li> <li>Note: preparing a public transportation plan for Metro Manila denotes consideration, preparation and suggestion of a public transportation plan for strategic corridors in relation to important transportation issues in Metro Manila based on an analysis of a database developed by the project (target 2-3 years)</li> <li>Overall Goal: Public transportation plan for Metro Manila is prepared by DOTC.</li> <li>Project Purpose: to improve public transportation planning for Metro Manila, including coordination among</li> </ul>				
Activities of the Project	<ol> <li>Product Product P</li></ol>	buts (to carry out above activities)       Philippine Side         be Side       Philippine Side         aperts: 11 persons       1.       Staff allocated: 31 persons         aining in Japan: 25 persons       2.       Land and facilities: project office in DOTC         quipment: traffic analysis software, desktop       3.       Local expenses: costs for traffic survey and office equipment         becal expenses: cost for project activities       Docal expenses:       Docal expenses:			
Project Period	(Extens	ber 2011 – December 2015 ion: September 2014 – Project Cost (ex-ante) 280 million yen, (actual) 283 million yen ber 2015)			
Implementing		epartment of Transportation and Communication (DOTC was reorganized to the Department of			
Agency		ortation (DOTr) in June 2016.)			
Cooperation Agency in Japan		C Corporation l Consultants Co., Ltd.			

# II. Result of the Evaluation

1 Relevance

< Consistency with the Development Policy of the Philippines at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the Philippines' development policy of "The Philippine Development Plan" (2011-2016) aiming at "inclusive growth" through "massive investment on infrastructure", "high transparent and responsive government", human development" and "creation of employment" at the time of ex-ante evaluation and at the time of project completion.

<Consistency with the Development Needs of the Philippine at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the Philippines' development needs of development of an integrated database on air, rail, and sea transportation for solid national transportation planning in coordination with related agencies.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with "The Country Assistance Program for the Republic of the Philippines" (2008) positioning "sustainable economic growth for creation of employment opportunities", including enhancement of a policy implementation capacity as well as development of infrastructure in Metro Manila, as one of the three prioritized areas. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The project was achieved by the time of project completion. Through the project, a transportation database named MUCEP database was developed as an update version of the Metro Manila Urban Transportation Integration Study (MMUTIS) database. Two requests to use

the MUCEP database were already raised and approved in July 2015. The Database Management Manual was also prepared in November 2015. Furthermore, through trainings and pilot activities, capacity of counterpart study members from DOTC and other transportation-related agencies/institutions on transportation database, public transportation planning and update of transportation database was enhanced.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially continued since the project completion. The management system for the MUCEP has been sustained through DOTr's issuance of Department Order No. 2017-003 which provides for the guidelines related to requests for information / access to the MUCEP database. The said Guidelines stipulate the requirements and conditions for the access and use of the database. It has already been shared to different stakeholders such as government agencies, funding institutions, consultancy firms, academic institutions, etc. On the other hand, it should be noted that the database have yet to be updated since the project completion due to low prioritization of updating the database and lack of dedicated personnel.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved at the time of ex-post evaluation. According to DOTr, the MUCEP database developed by the project is continuously utilized by a wide range of organizations such as DOTr itself, the National Economic and Development Authority (NEDA), other national government agencies, consultancy firms, and academic communities. Also, several public transportation plans for Metro Manila were prepared by using the database, including DOTr's "Manila Bay Corridor Mass Transit Pre-Feasibility Study" (2017) and NEDA's "Follow-up Survey on Road Map for Transport Infrastructure Development for GCR" (2017) (Indicator 1 and 2). <Other Impacts at the time of Ex-post Evaluation>

Two positive impacts of the project were confirmed at the time of ex-post evaluation. Sex-disaggregated data and other gender-related information are included in the MUCEP database, which has largely contributed to the improvement of transportation planning and the formulation of transportation plans in order to respond to gender requirements. Furthermore, the MUCEP database has been utilized to measure the reduction of  $CO^2$  emission by transportation projects to verify the Philippines' NDC<sup>1</sup>. No other positive or negative impacts of the project were confirmed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Aim	Indicators	Results
(Project Purpose)	e ,	Status of the Achievement: Achieved (Partially Continued)
To improve public	transportation database is established by	(Project Completion)
transportation planning	2014.	• The management system for the new transportation database was
for Metro Manila,		established by the time of project completion.
including coordination		(Ex-post Evaluation)
among relevant agencies,		• The management system for the transportation database has been sustained
spearheaded by DOTr.		but the database has yet to be updated after the project completion.
(Overall Goal) Public transportation plan for Metro Manila is prepared by DOTr.	<ol> <li>Prepared public transportation plan for Metro Manila based on an analysis of the new transportation database.</li> <li>Utilization of the new transportation database.</li> </ol>	<ul> <li>Several public transportation plans for Metro Manila were prepared based on an analysis of the MUCEP database as follows.</li> <li>DOTr "Manila Bay Corridor Mass Transit Pre-Feasibility Study" (2017)</li> <li>DOTr "Feasibility Studies on Rail, Public Transport, Greenways, Por and Airport Projects throughout the Philippines" (2019-Present)</li> <li>DOTr "Point-to-Point Route Planning" (2016-2018)</li> </ul>

Achievement of Project Purpose and Overall Goal

3 Efficiency

The project cost and period exceeded the plan (ratio against the plan: 101% and 144%, respectively). The main reason for the delay for the project period was because a DOTC-funded household interview survey was also delayed by 15 months. The outputs were produced as planned. Therefore, the efficiency of the project is fair.

#### 4 Sustainability <Policy Aspect>

"The Philippine Development Plan" (2017-2022) emphasizes the importance of the transportation sector in facilitating the movement of people, goods and services in support of the performance of other productive sectors and in the provision of equitable access to basic services. As the project aimed to improve public transportation planning for Metro Manila, it has been supported by the national policy. <Institutional Aspect>

There were major changes in the institutional structure for public transportation planning for Metro Manila targeted by the project. First of all, DOTC, which was an implementing agency during the project, was reorganized to DOTr in June 2016 after the project completion. Additionally, decentralization of responsibility for the transport planning was implemented. As a result, local government units have been tasked to craft their own local transportation plans, and DOTr has played a role in providing a national policy direction for the plans,

<sup>&</sup>lt;sup>1</sup> Nationally Determined Contribution is a goal to reduce greenhouse gas emissions set by each country taking into account its domestic circumstances at 21th Conference of the Parties to the United Nations Convention on Climate Change held in Paris in December 2015.

managing the MUCEP database, and facilitating coordination with related agencies for efficient and effective public transportation planning. However, it should be noted that the Transport Planning Unit (TPU), the main unit responsible for the project, was dissolved after the project and the staff assigned to the TPU during the project was reassigned to other units while keeping some of their responsibilities in the TPU. Due to this, the staff has only spontaneously fulfilled their responsibilities on an ad hoc basis, and there is no specific unit focused on public transportation planning for Metro Manila targeted by the project. Yet, the public transportation planning has been done to some extent, taking into account that the transportation database has been managed even though not updated and the Overall Goal has been achieved at the time of ex-post evaluation. The situation is expected to continue.

#### <Technical Aspect>

The staff of DOTr has sustained the necessary knowledge and skills to perform their roles through their tasks such as preparing and evaluating of terms of reference for transport development plans even though there are no internal trainings or programs. To complement their knowledge and skills, a comprehensive course on transport is planned to be provided under financial support by the Asian Development Bank (ADB).

The manuals prepared by the project (manuals on traffic survey, manual on demand forecasting, manuals on policy formulation, etc.) are continuously utilized by DOTr, the Department of Public Works and Highways, and other government agencies. <Financial Aspect>

There is no specific budget for planning and implementation of public transportation plans for Metro Manila. The necessary budget for the planning and implementation has been allocated from the whole budget for implementation of programs/projects in the transportation sector. The budget has been provided by the

Budget of DOTr for programs/projects in a transportation sector
(Unit: Philippine Peso)

2017	2018	2019
7,221,000	433,677,652	886,778,000

Government of the Philippines almost every year after the project (the data on 2016 was not available). Considering that the management system for the transportation database has been managed even though not updated and the Overall Goal has been achieved at the time of ex-post evaluation, the necessary budget has been secured to some extent. <Evaluation Result>

Therefore, the sustainability of the effects through the project is fair.

5 Summary of the Evaluation

The project achieved the Project Purpose aiming for the improvement of public transportation planning for Metro Manila, including coordination among relevant agencies, spearheaded by the DOTr and the Overall Goal aiming for the preparation of public transportation plan for Metro Manila by the DOTr. As for sustainability, even though the project effects have been sustained and the Overall Goal has been achieved due to the efforts by the staff trained by the project, there is no specific unit directly involved in public transportation planning for Metro Manila, and there are no internal trainings or programs to sustain the staff's knowledge and skills. As for efficiency, the project cost and period exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- Regular updating of the transport database has not been sustained as there is no established dedicated unit/staff to assume the responsibilities for managing and updating the database. In order to address this situation, it is better for DOTr to decide to establish a dedicated unit with clear and focused responsibilities on transportation database management to ensure that the database (including the knowledge, skills, systems and technologies derived from it) remain relevant to the Philippines' transport planning in the future.
- Lessons Learned for JICA:
- The project included sex-disaggregated data and other gender-related information in the MUCEP database, which largely contributed to the improvement of transportation planning and the formulation of transportation plans in order to respond to gender requirements in the country. Such data and information are very basic information to transportation planning and plans. Therefore, it is better for other similar/future projects to develop a transportation database integrating such perspectives.
- Changes in the organizational structure of an implementing agency might impact the sustainability of projects such as those which introduces institutional changes. In this project, institutional change was made through the establishment of TPU in 2014 as one way to ensure the sustainability of the project particularly the updating of the MUCEP database developed by the project. However, TPU was affected by the change in organizational structure implemented by DOTr in 2016. In this regard, continued communication with counterparts even after project completion leads JICA to be informed of the developments in a timely manner and possibly make representations to the implementing agency about the sustainability concerns.



Meeting between the Consultants and Counterparts were held



A Training on the use of CUBE software is conducted for the counterparts

Country Name	The Project for Training of Frontline Officers in Community Development in
Democratic Socialist Republic	Conflict Affected Areas in Sri Lanka
of Sri Lanka	Connect Anected Areas in 511 Lanka

## I. Project Outline

3					
Background	Prolonged conflict which ended in 2009 had affected badly the Northern and Eastern part of Sri Lanka. It not only demolished houses and roads but also took thousands of lives and destroyed livelihoods including their social capitals. Whilst various kinds of supports and assistance flew into the areas and major economic infrastructures had been reconstructed, recovery of community based infrastructure and livelihood for the people in the areas had been still under slow process. In addition, some assistance or supports did not meet the needs of beneficiaries due to lack of proper facilitation. In order to deliver public service in effective manner and assure the sustainability of the supports and assistance, importance of the role of public officers at grassroots level, called frontline officers (FLOs), had been recognized. However, the capacity of FLOs was insufficient and no confidence and trust had been built between the people in the regions and administrative settings				
Objectives of the Project	<ul> <li>between the people in the regions and administrative settings.</li> <li>Through developing training modules important to facilitate community development, securing sufficient number of skilled training facilitators, delivering trainings to the priority FLOs and enabling three provincial training units (Management Development Training Units (MDTUs)) to experience PDCA (plan-do-check-action) tasks in the course of training delivery, the project aimed at improving the capacity of these training units to train FLOs, thereby improving the quality of public services in the conflict affected areas.</li> <li>1. Overall Goal: Quality of public services in the conflict affected areas improves.</li> <li>2. Project Purpose: The capacity of the three provincial training units to train frontline officers (FLOs) in facilitating community development is improved.</li> </ul>				
Activities of the Project	<ol> <li>Project Site: (1) Northern Province (Jaffna, Kilinochchi, Mannar, Vavuniya and Mullaitivu Districts), (2) Eastern Province (Trincomalee, Batticaloa and Ampara Districts) and (3) North Central Province (Anuradhapura and Polonnaruwa Districts)<sup>1</sup></li> <li>Main Activities: (1) Develop training materials in both Sinhala and Tamil medium and provide essential equipment and facilities to the target training units; (2) Develop Training of Trainers (ToT) program and materials and conduct ToT in Sinhala and Tamil medium; (3) Conduct FLO trainings and (4) Collect feedback from participants of ToT and FLO trainings, assess the post-training performance of the participants and revise training modules and materials etc.</li> <li>Inputs (to carry out above activities) Japanese Side</li> <li>Experts: 1 person (long term) and 7 persons (short term)</li> <li>Staff Allocated: 4 persons</li> <li>Project offices and facilities</li> <li>Equipment: buses, motorbikes, photocopiers, printers, 3. Local operation cost</li> <li>Local operation cost</li> </ol>				
Project Period	March 2011 – March 2016 (Extension Period: March 2014 – March 2016)Project Cost(ex-ante) 40 million yen, (actual) 284 million yen				
Implementing Agency	Ministry of Public Administration and Management (MoPA&M), Sri Lanka Institute of Development Administration (SLIDA), Management Development Training Units (MDTUs) in Northern, Eastern and North Central Provincial Councils				
Cooperation Agency in Japan	N/A				

## II. Result of the Evaluation

<Constraints on Evaluation>

Interviews with Beneficiaries] In confirming the continuation status of the Project Purpose Indicator 2 (Positive changes in performance of FLO participants are observed.) after project completion and the achievement level of the Overall Goal Indicator (At least 80% of survey respondents perceive performance of the trained FLOs improved after their participation in the training developed by the project.), interviews with supervisors of the trained FLOs and focus group discussion (FGD) with peer FLOs (colleagues of beneficiary FLOs) were conducted. However, interview/FGD with communities were not conducted, as community members are not aware of the curriculum, content or duration of the FLO training programs and they do not have any information on the respective FLOs participation. There have also been a number of government and other organization funded training programs for FLOs. Hence, community members cannot recognize the behavioral changes of FLOs specific to this project.

<Special Perspectives Considered in the Ex-Post Evaluation>

[Evaluation of Project Period] While major project activities started in March 2013, the actual project period was defined as from March 2011 to March 2016 in accordance with the evaluation criteria of JICA's Internal Evaluation.

1 Relevance

<Consistency with the Development Policy of Sri Lanka at the Time of Ex-Ante Evaluation and Project Completion> The project was consistent with Sri Lanka's development policy such as "sharing the benefits of growth across all segments of the

<sup>&</sup>lt;sup>1</sup> Originally targeted provinces in 2011 were Northern and Eastern Provinces only, and North Central Province was additionally included in target provinces based on the request from the Sri Lankan side in 2013.

population" and "rebuilding war affected areas in the North and the East" as set forth in "Mahinda Chintana (2007-2016)" and "Economic Policy Statement" (November 2015) at the times of both ex-ante evaluation and project completion.

<Consistency with the Development Needs of Sri Lanka at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Sri Lanka's development needs for trainings of FLOs, at the times of both ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy as stated in the "Country Assistance Policy to Sri Lanka" (2004), which included the "post-conflict reconstruction and improvement of lives" under the "building of a healthy and peaceful society".

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. In targeted MDTUs, their experiences gained through simultaneously organizing and conducting multiple number of 10-days FLO training programs enhanced their training capacities, including financial management of trainings. A human resource pool was also developed within MDTUs both in Tamil and Sinhala medium, not only at provincial but also at district levels. In addition, at least one master trainer, a key-officer in maintaining and developing the quality of trainings, became available at each MDTU (Indicator 1). Questionnaire surveys and interviews with trained FLOs (those who participated in FLO training programs developed under the project) as well as their supervisors were conducted under the project<sup>2</sup>. 83% of trained FLOs reported that they received feedbacks concerning their positive changes in their working attitudes from communities, colleagues, friends and family members. 96% of supervisors answered that they recognized positive changes in working performance of over 50% of trained FLOs, such as "improvement of public relationship (83%)", "collaboration with other officers (82%)" and "improvement in arranging community meetings (62%)". 74% of supervisors also answered that trained FLOs showed some achievements, such as "organization of effective community meetings (54%)" and "preparation of appropriate project proposals (45%)" (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued to the time of ex-post evaluation. SLIDA conducted two ToT programs in 2018 for 40 senior government officers in total from six other provinces where the project was not implemented and one ToT program in 2019 for 20 senior government officers in total from central government bodies. On the other hand, MDTUs in the three target provinces conducted refresher programs in 2017 for 223 trainers/facilitators (of FLO trainings) in total who were trained and developed under the project. The majority of these trainers/facilitators have taken a role as resource persons in respective MDTUs for regular and tailor-made training programs. Moreover, these trainers/facilitators are recognized as resource persons by other development partners and non-governmental organizations. MDTUs in the three target provinces also conducted 37 FLO training programs covering 1,315 FLOs from October 2016 to September 2017<sup>3</sup>. In addition, these MDTUs have conducted other capacity building programs for FLOs every year (over 1,000 FLOs per year in each MDTU), incorporating part of FLO training programs developed under the project into some other subjects required by FLOs. Consequently, MDTUs' capacities to prepare and implement FLO trainings, which were improved under the project, have been maintained after project completion. All the training arrangements, preparations and implementation in MDTUs have been conducted following the PDCA (Plan-Do-Check-Action) cycle introduced by the project. For example, at the completion of every training module, MDTUs have conducted post evaluation using pre-designed questionnaires, to collect feedbacks from participants and improve training modules (Indicator 1). Interviews with supervisors of trained FLOs were conducted for the ex-post evaluation<sup>4</sup>. All of them reported that positive changes have been observed in performance of trained FLOs, i.e. many trained FLOs have improved their communication skills, coordinated well with other FLOs, provided good leadership through coaching and mentoring their peers, and actively involved in project proposal development to obtain funds from relevant ministries for their respective communities. In addition, FGD was conducted with peer FLOs (colleagues of beneficiary FLOs) for the ex-post evaluation<sup>5</sup>. All of them reported that positive changes have been observed in performance of trained FLOs, i.e. many trained FLOs have shared their knowledge and experiences with their peers, and been able to work with communities with minimum conflicts and facilitate and mobilize communities well rather than directing or ordering communities, to increase community involvement for effective community development (Indicator 2).

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved by the time of ex-post evaluation. As stated above, all of survey respondents (interviewed supervisors and peer FLOs who participated in FGD) perceived the performance of the trained FLOs improved after their participation in the training developed by the project.

<Other Impacts at the time of Ex-post Evaluation>

According to the general statistics of the trained FLOs, the ratio of female and male officers who have participated in FLO trainings was 57% and 43% respectively. Therefore, the project balanced the gender equality in trainings. Moreover, a considerable number of officers who directly work for female communities such as women development officers, midwives and child protection officers have been trained, which enabled gender sensitive and effective service delivery to female communities. < <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

<sup>&</sup>lt;sup>2</sup> The number of trained FLOs who responded was 524 in total and the number of supervisors who responded was 69 in total.

<sup>&</sup>lt;sup>3</sup> ToT programs, refresher programs and FLO training programs (for 1,315 FLOs) stated above were conducted utilizing the project counterpart funds, the follow-up activity funds of JICA Sri Lanka office, funds of the German Agency for International Cooperation (GIZ) and so on.

<sup>&</sup>lt;sup>4</sup> The number of supervisors interviewed was eight in total (two in Jaffna District in Northern Province, four in Trincomalee and Ampara Districts in Eastern Province, and two in Anuradhapura District in North Central Province).

<sup>&</sup>lt;sup>5</sup> The number of peer FLOs who participated in FGD was 36 in total (ten in Jaffna District in Northern Province, 20 in Trincomalee and Ampara Districts in Eastern Province, and six in Anuradhapura District in North Central Province).

Achievement of Project Purpose and Overall Goal					
Aim	Aim Indicators Results				
(Project Purpose)	1. MDTUs' arrangement in training	Status of the Achievement: achieved (continued)			
The capacity of the three	preparation and implementation is	(Project Completion) MDTUs' capacities to prepare and implement FLO			
provincial training units to	improved.	trainings were improved through developing a human resource pool,			
train frontline officers		organizing a number of training programs and securing at least one master			
(FLOs) in facilitating		trainer at each MDTU.			
community development		(Ex-post Evaluation) MDTUs' capacities to prepare and implement FLO			
is improved.		trainings have been maintained through conducting 37 FLO training			
		programs covering 1,315 FLOs from October 2016 to September 2017 and			
		other capacity building programs for FLOs.			
	2. Positive changes in performance of FLO	Status of the Achievement: achieved (continued)			
	participants are observed.	(Project Completion) According to questionnaire surveys and interviews			
		conducted under the project, 83% of trained FLOs reported that positive			
		changes in their working attitudes were observed by their communities,			
		colleagues, friends and family members. 96% of their supervisors also			
		reported that they recognized positive changes in working performance of			
		over 50% of trained FLOs.			
		(Ex-post Evaluation) According to interviews with supervisors and FGD with			
		peers of trained FLOs, positive changes in performance of trained FLOs have			
		been observed by all of their supervisors and peers.			
(Overall Goal)	At least 80% of survey respondents	(Ex-post Evaluation) achieved			
Quality of public services	perceive performance of the trained FLOs	All of survey respondents perceived the performance of the trained FLOs			
in the conflict affected	improved after their participation in the	improved after their participation in the training developed by the project.			
areas improves.	training developed by the project.				
Source: Project Completion	n Report, questionnaire surveys and interview	vs with MDTU directors, interviews with supervisors, FGD with peer FLOs			
B Efficiency					

Both the project cost and the project period largely exceeded the plan (ratio against plan: 710%, 169%, respectively). Major reasons for the increased project cost were the addition of a project-target province and the necessity of allocating more budget to developing modules for ToT and FLO trainings as well as changing the specification of technical equipment. The reason for the increased project period was that, while the Record of Discussion (R/D) on the project was singed in February 2011, the Sri Lankan government requested JICA to revise the project concept, so as to make more matching concept with the condition of the conflict affected areas, and both parties agreed with the revised plan and signed the revised R/D in March 2013. The outputs of the project were produced as planned. Based on the fact that both the project cost and the project period exceeded the plan, the efficiency of the project is low. 4 Sustainability

<Policy Aspect>

The needs for capacity building of government officers to enhance people participation in the country development are stated in the "Vistas of Prosperity and Splendor" (the manifesto of the new president published in 2019, on which the government plans for next five years from 2020 to 2025 will be based).

<Institutional Aspect>

SLIDA is in charge of conducting ToT programs for trainers/facilitators as well as other training programs for public service officers in the country. It has one Director General, three Additional Director Generals, three senior academic advisors, four consultants, 11 senior consultants, 95 supporting staff and over 400 resource persons. Consultants and senior consultants are responsible for developing and upgrading modules/curriculums and lecturing in trainings. In addition, over 400 resource persons registered with SLIDA, who used to be senior government officials and/or academic staff of local/foreign universities, also conduct lecturing in trainings. According to SLIDA, the number of staff is sufficient to continuously conduct ToT programs. MDTUs are in charge of conducting FLO trainings as well as capacity building of public officers within respective provinces. The number of staff in targeted MDTUs is 22 in total in Northern Province (eight in the administration section, two in the finance section and 12 in the training section), 23 in total in Eastern Province (12 in the administration section, two in the finance section and nine in the training section) and 23 in total in North Central Province (12 in the administration section, two in the finance section and nine in the training section). In addition, over 200 resource persons are registered with each MDTU. Thus, according to MDTUs, the number of staff is sufficient to continuously conduct FLO trainings. <Technical Aspect>

Most staff for whom the skills were transferred under the project have continued working at SLIDA and targeted MDTUs. At SLIDA, all consultants and senior consultants have PhD or Masters degrees from national and/or international universities with over 15 years of experience in lecturing, training and capacity building. Moreover, as stated above, over 400 resource persons who have long years of necessary experiences are available. Thus, according to SLIDA, the skill level of its staff is sufficient to continuously conduct ToT programs. The skill level of staff in targeted MDTUs is also sufficient to continuously conduct FLO trainings, as seen in their improved capacities to prepare and implement FLO trainings, as stated above. Manuals produced under the project have continuously been utilized and updated in FLO trainings. All the equipment procured under the project has also been properly used and maintained. <Financial Aspect>

SLIDA has conducted many training programs for public service officers including ToT programs for trainers/facilitators of FLO trainings. While the data on budget allocation for ToT programs and other training programs within SLIDA was not available, according to SLIDA, it has the established network with national and provincial government organizations and development partners to obtain necessary funds<sup>6</sup>, and it has sufficient amount of budget to continuously conduct ToT programs. All of three target MDTUs have received continuous

<sup>&</sup>lt;sup>6</sup> SLIDA obtained 1.5 million LKR (from the project counterpart funds) to conduct two ToTs in 2018 and 800,000 LKR (from GIZ) to conduct one ToT in

budget allocations from respective provincial governments to conduct FLO trainings in many areas including areas covered under this project. The amount of budget allocation in each targeted MDTU was approximately six to seven million LKR both in 2016 and 2017, approximately six to eight million LKR in 2018 and approximately eight to 11 million LKR in 2019. In addition, MDTUs in Northern Province and North Central Province have invested over 50 million LKR for construction and establishment of training center facilities. Therefore, target MDTUs have sufficient amount of budget to continuously conduct FLO trainings, which is also evident from the fact that MDTUs have conducted capacity building programs for FLOs every year (over 1,000 FLOs per year in each MDTU). <Evaluation Result>

In light of the above, no problem has been observed in terms of the policy, institutional, technical and financial aspects. Therefore, the sustainability of the effectiveness through the project is high.

# 5 Summary of the Evaluation

The project had achieved the Project Purpose at project completion, and it achieved the Overall Goal at ex-post evaluation: MDTUs' capacities to prepare and implement FLO trainings were improved and the performance of trained FLOs was also improved. Regarding the sustainability, no problem was observed. Regarding the efficiency, both the project cost and the project period exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• While the capacity of target MDTUs to train FLOs has been improved through the project, an established monitoring system to monitor changes of performance of trained FLOs would be necessary to further enhance the project impact. Therefore, MoPA&M and SLIDA would consider establishing a close and systematic monitoring mechanism to capture long term changes of performance of trained FLOs.

Lessons Learned for JICA:

Participatory training methods and techniques were introduced under the project, which were significantly effective in training delivery and increased the active learning behavior and motivation of participants. Thus, participatory training methods should be employed in similar future projects. Particularly in conflict-affected areas, improvement of basic behavior and communication skills of local government officers who directly face to communities is a key for trust building. Thus, capacity development focusing on these skills is meaningful from a peacebuilding perspective.



Group activity of FLO training under the Module "Communication and Community Empowerment"



Participants of ToT conducted by SLIDA for other six provinces

Country Name	
Republic of Fiji	The Strengthening Community-Based Disaster Risk Management Project
The Solomon Island	

# I. Project Outline

Background	Island countries of the Pacific Region, including Fiji and Solomon Islands, are vulnerable against natural disasters such as cyclones, floods and tsunami because of their geographical and topographical conditions. In order to cope with the vulnerability, these countries established the emergency response system and the authorities concerning meteorological and water management had very basic knowledge and skills on weather and hydraulic observation and flood flow simulations. However, limited capacity of flood forecast and early warning. Also, they did not have any manuals for emergency response defining division of roles and specific actions to be taken by each authority concerning disaster management and evacuation drills. In addition, no evacuation drill based on the manual was conducted. Furthermore, the evacuation routes, evacuation areas as well as mutual communication system between communities and the local offices were not developed. Therefore, the people in these countries were not able to transmit timely and precise evacuation information and to obtain safety confirmation and had difficulty to evacuate safely and timely to the safety areas. Under those situations, it was essential to establish and reinforce community-based early warning system.
Objectives of the Project	<ul> <li>Through capacity building on flood forecast, establishment of flood warning system and community disaster management system, implementation of awareness raising on disaster management and evacuation drills for the communities as well as risk assessment by the communities in the pilot sites, the project aimed at establishment of appropriate evacuation system for the residents in the selected sites, and thereby contributing to establishment of appropriate evacuation system developed by the project in other sites in the two countries of the Pacific Region, Fiji and Solomon Islands.</li> <li>Overall Goal: A system in which the residents of the area(s) other than the selected community (village or settlement) is (are) able to evacuate appropriately is enhanced.</li> <li>Project Purpose: A system in which the residents of the selected community (village or settlement) area(s) is (are) able to evacuate appropriately is established.</li> </ul>
Activities of the Project	<ol> <li>Project Site: (Fiji) Ba, Northwest of Viti Levu Island, (Solomon Islands) Tamboko, Guadalcanal Province</li> <li>Main activities: (1) Capacity development of meteorological offices and water authorities for flood forecasting and strengthening flood warning system, (2) strengthening implementation system of community-based disaster management plans for the target communities and enhancement of organizational capacity for emergency response, and (3) implementation of awareness program as well as risk assessment by residents at the pilot sites.</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Experts: 15 persons (8 for Fiji and 7 for Solomon 1)</li> <li>Staff allocated: 85 persons (47 from Fiji and 38 from Solomon Islands)</li> <li>Trainees received in Japan: 20 persons (10 from 2)</li> <li>Land and facilities: project offices in Fiji and Solomon Islands</li> <li>Equipment: rain gauges, water level gauges, 3)</li> <li>Local expenses: cost for local project staffs, travel expenses; cost for consumables, etc.</li> </ol>
Project Period	October 2010 – Project Cost (ex-ante) 300 million yen, (actual) 333 million yen
Implementing Agency	<ul> <li>[Fiji] National Disaster Management Office (NDMO), Ba Provincial Office, Ba District Office, Fiji</li> <li>Meteorological Service, Hydrology Team, Water Authority of Fiji (WAF)</li> <li>[Solomon Islands] National Disaster Management Office (NDMO), Meteorological Service, Water Resources</li> <li>Division</li> </ul>
Cooperation Agency in Japan	Yachiyo Engineering Co., Ltd., Oyo Corporation

## II. Result of the Evaluation

# 1 Relevance

<Consistency with the Development Policy of Fiji and Solomon Islands at the Time of Ex-Ante Evaluation >

[Fiji]

The project was consistent with Fiji's development policies of the "Natural Disaster Management Act" (1998) stipulating reduction of disaster damages and the "Fiji National Disaster Risk Management Arrangements" (2006) focusing capacity building in disaster management for enhancement of community resilience.

[Solomon Islands]

The project was consistent with Solomon Islands' development policies of the "National Disaster Management Act" (1989) and the "National Disaster Management Plan" (revised in 2009) focusing on importance of enhancement of community disaster management. <<Consistency with the Development Needs of Fiji and Solomon Islands at the Time of Ex-Ante Evaluation >

The project was consistent with the development needs of Fiji and Solomon Islands for timely and precise transmission of evacuation information for communities for safe and timely evacuation in case of floods.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA policies for Fiji and Solomon Islands. For the Pacific Islands countries, including Fiji and Solomon Islands, the government of Japan focused on the three pillars to support including "Environment and Climate Change" and "Human Security" at the 5<sup>th</sup> Pacific Islands Leaders Meeting (PALM5) in 2009. For Fiji, one of the three priority areas for the Japan's ODA policy under the PALM 5 was "Environment and Disaster Management" including community disaster management<sup>1</sup>. For Solomon Islands, the economic cooperation policy dialogue between Solomon Islands and Japan in June, 2009 prioritized three areas including enhancement of resilience against natural disaster<sup>2</sup>.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion.

[Fiji]

100% residents evacuated when the floods occurred in January and March 2012 (Indicator 1). In total, 6 evacuation drills were conducted in 3 communities (Indicator 2).

[Solomon Island]

Although no flood occurred during the project implementation, 62% of the residents participated in the evacuation drill and evacuated at the drill in 2013 (Indicator 1). The evacuation drills were conducted in 2011 and 2013 (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially continued since the project completion.

[Fiji]

The Flood Early Warning System (EFW) in Fiji is functioning well after it is managed by the Fiji Meteorological Services (FMS). The public advisory warnings are now issued from the Hydrology Unit of FMS after it has moved from the Department of Water and Sewerage. In 2010 the Government of Fiji made some reforms to the Water Sector and established the Water Authority of Fiji (WAF) as a statutory body responsible for water and sewerage sector. Based on the flood warnings being issued by FMS, more than 60% of the residents evacuated in eastern, western and northern part of Central Division. In addition to this, in 2016, residents in Qamea and in 2018, residents in Kadavu could evacuate based on the warnings that had been issued for the flood risk associated with Tropical Cyclones and Tropical Depressions. On the other hand, all the equipment that was installed under the Project for flood monitoring is no longer in operational. The automatic rainfall gauges, simplified rain gauges, water level gauges and warning rain gauges installed at Nasolo Village, Votua Village and Nawaqarua village were all damaged by the flood and cyclone and the equipment was not repaired after it was damaged. The equipment that was handed over to NDMO, BDO, FMS is no longer in use as well due to wear and tear of the equipment and no repairs were carried out as well. WAF was supposed to monitor the equipment in the villages, however, no site inspection was carried out. Since all the equipment were damaged including the sirens, the villagers have not carried out any drills though they have quite a good knowledge on precautions to be taken at a time of any natural disasters. On the other hand, the equipment that was installed at one of the project sites (Ba River) was stolen in the same year after the completion of the Project.

[Solomon Islands]

The Water Resource Division (WRD) is responsible for flood warning and they issued warning only in 2014 but still now WRD doesn't have any capacity to issue flood warnings. And there is no good collaboration between NDMO and WRD though a new National Disaster Management Plan (2018) mentions each roles and responsibility. Currently, flood response plan has also not been developed for communities to act accordingly as soon as they receive warning from the flood/water level gauge. Although NDMO is responsible for development of the flood response plans, NDMO does not provide any support to the target village. In Tamboko village, the selected site for the project, the Flood Early Warning System was operated until year of 2015 but the equipment has not been working anymore. NDMO hasn't conducted evacuation drills in the target village after the project completed.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved by the time of ex-post evaluation.

[Fiji]

Currently, NDMO has collaborated with other communities and has continuously conducted evacuation drills because such practice has empowered the communities to take actions and to enhance their resilience towards risks from natural hazards. The community-based trainings which have been delivered by NDMO also aligns the communities to the government process and procedures, informing them of their link to NDMO through the District Office and the Divisional Commissioner. [Solomon Islands]

Some evacuation drills were conducted in other areas by NDMO with another donor funds. Evacuation drill was conducted in Guadalcanal Province under United Nations Development Programme (UNDP) Tailing Storage Facility (TSF) Project at Gold Ridge, and 31 downstream communities participated in the exercises. Many communities still need to be covered with Community Based Disaster Risk Management (CBDRM) activities. NDMO and partners would like to replicate good results from the pilot project in Tamboko Village under the JICA project to other vulnerable communities in the country.

<Other Impacts at the time of Ex-post Evaluation>

Some positive impact by the project were confirmed at the time of ex-post evaluation. [Fiji]

There are some positive impacts observed at the time of ex-post evaluation. Through the project, women participation during the drills and even in decision making have been enhanced. Some women represented in the Community Disaster Committee which allowed them to

<sup>&</sup>lt;sup>1</sup> Ministry of Foreign Affairs, "ODA Databook", (2009)

<sup>&</sup>lt;sup>2</sup> Ministry of Foreign Affairs, "ODA Databook", (2009)

address gender sensitive issues which was often neglected during emergencies and disasters such as sanitation and protection. In addition, NDMO received an allocation of annual budget from the Government of Fiji for "Maintenance of Flood EWS" which has led to the upgrading of all water level stations and rainfall stations to the telemetry system (Real Time Data). Telemetric System is now installed in 15 River Catchments in Central and Eastern Divisions, 20 Catchments in Western Division, and 8 Catchments in Northern Division. FMS has confirmed that the Government of Fiji has also allocated budget to purchase water level and rainfall instruments (Telemetry System). NDMO's stance strengthened by the project has been a driving force to continue conducting CBDRM trainings around the country. [Solomon Islands]

In Tamboko Village, the project site for Solomon Islands, individuals in the community were instilled with sense of alertness at the time of rain or flooding.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Pro	ject Purpose and Overall Goal
1 terme vermente of 1 fo	cet i aipobe and o teran oou

Aim	Indicators	ject Purpose and Overall Go		sults		
(Project Purpose)	Indicator 1	Status of the Ashievements				
A system in which the	Percentage of the residents who take on the	Status of the Achievement: Achieved. (Partially continued) (Project Completion)				
-	behavior of evacuation when the warnings	• Fiji: 100% of the residents evacuated when the floods occurred in January				
community (village or	are issued.	and March 2012.				
	(For Fiji: 95%, For Solomon Islands: 80%)	<ul> <li>Solomon Islands: 62%</li> </ul>	(130 out of	f(696) of the reside	ents evacuated at the	
able to evacuate	(1 01 1 j1. 95%, 1 01 501011011 Islands. 80%)	evacuation drill in 2013				
appropriately is			. NO 11000 10	quining evacuation (	occurred	
established.		<ul><li>(Ex-post Evaluation)</li><li>Fiji: 60-80% of the residents evacuated in the flood areas.</li></ul>				
established.		Evacuation in case of floo		ted in the nood area	5.	
		The flood area Year of No. of residents % of residents				
		The nood area	flood	evacuated	evacuated in the	
			occurred	evacuated	flood area	
		Eastern, Western,	2016	64,007	60-80%	
		Northern and parts of	2010	04,007	00-0070	
		Central Division				
		Qamea	2016	N.A.	60%	
		Kadavu				
			2018	N.A.	60%	
		Note: Incidents of flood detailed above are associated with Tropical Cycle and Tropical Depressions.				
		<ul> <li>Solomon Islands: Equipment was broken 2015 and those hasn't till now, therefore, no warnings were issued but some lo</li> </ul>			-	
			-	were issued but s	some local resident	
		evacuated in case of heavy rain.				
	Indicator 2	Status of the Achievement: Achieved. (Partially continued)				
	Cases that the residents of selected	<ul> <li>(Project Completion)</li> <li>Fiji: In total 6 evacuation drills were conducted for the communities under the cooperation with NDMO: 3 times in Nawanquarua, 2 times in Nasolo, and 1 time in Naturu</li> </ul>				
	community have evacuation drills in					
	cooperation with NDMO.					
	and 1 time in Natutu.					
			<ul> <li>Solomon Islands: 2 evacuation drills for the villagers were conducted under the conneration with NDMO in 2011 and 2013</li> </ul>			
	the cooperation with NDMO in 2011 and 2013. (Ex-post Evaluation)					
		• Fiji: NDMO and the villagers have not carried out any drills though they				
		have a good understanding on the precautionary methods required for				
		evacuation during any disasters which is acquired in the Project.				
				-	Project.	
(0 11 (0 1)		<ul> <li>Solomon Islands: No dr</li> </ul>				
(Overall Goal)	Cases that the residents of the area(s) other					
A system in which the	than selected community have evacuation	• Fiji:				
residents of the area(s)	drills in cooperation with NDMO.	> NDMO has also in collaboration with other communities and				
other than the selected		conducted evacuation drills. NDMO has continued this practice				
community (village or		because it empowers the community to take action and be resilien				
settlement) is (are) able to		toward risks from natural hazards. The training also aligns the				
evacuate appropriately is		community to government processes and procedures, informing then				
enhanced.		of their link to NDMO through the District Office and Divisiona				
		Commissioner.				
		> NDMO has no record of how many drills were carried out by the				
		villagers and whether it was replicated to another village or community.				
		<ul> <li>The villagers could not protect any equipment during the floods.</li> </ul>				
		<ul> <li>Solomon Islands: Evacuation drill was conducted in Guadalcanal Province</li> </ul>				
		under UNDP TSF Project at Gold Ridge, and 31 downstream communitie participated in the exercises.				
		participated in the exerc	cises.			

#### 3 Efficiency

Although the project period was as planned (ratio against the plan: 100%), the project cost exceeded the plan (ratio against the plan: 111%). The outputs of the both projects were produced as planned. Therefore, the efficiency of the project is fair.

#### 4 Sustainability

<Policy Aspect>

[Fiji]

The CBDRM activities enhanced by the project was endorsed by the "Natural Disaster Management Act" (1998) which is currently being revised by the Government of Fiji.

[Solomon Islands]

The CBDRM activities enhanced by the project have been endorsed by the policies of the "National Disaster Management Plan" (2018) and the "National Development Strategy" (2016-2035). In the Strategy, awareness raising of disaster and climate risk at the community level has been a part of ongoing development planning.

# <Institutional/Organizational Aspect>

[Fiji]

NDMO is responsible for delivery of CBDRM trainings and evacuation drills. For CBDRM trainings, NDMO has 5 officers, including 3 officers in charge of DRR in Central, Western and Northern Division. There are around 10 District Officers (DOs) per Division in Fiji and the number of DOs has been sufficient for ordinary period however during the cause of any disaster, additional staff from other government ministries are deployed to work with the coordination of disaster relief, collection and analysis of data on damages. Once disaster occurs, staff mainly from the Ministry of Economy and other Government Ministries are deployed to provide additional support in terms of compiling information and donor coordination for relief and humanitarian aid.

[Solomon Islands]

NDMO is responsible for coordination and implementation for promoting CBDRM. They have 18 staff for CBDRM and the number of staff has been sufficient for the ordinary period without disaster. Once disaster occur, they require additional staff from the partner organizations. The Provincial Disaster Officers (PDOs) are also responsible for coordination and implementation for promoting CBRDM at the provincial level. There are 10 PDOs and the number of PDOs has been sufficient for ordinary period but they need additional staff at the time of disaster from the partner organizations. The Solomon Islands Meteorological Service (SIMETS) is responsible for weather forecasting and monitoring of rain gauges as well as issuing of heavy rain warnings but not flood warnings in accordance with the Meteorology Act 1985. They have 4 staff members which is sufficient for their responsibility. WRD is responsible for flood monitoring and awareness of hydrological monitoring. They have 4 staff members for the duties but the number of staff is insufficient and they need for each staff to do separate duties.

Site with the Automatic Weather Station is opened in July, 2020 and equipment can be accessed by authorized personnel. It would be much easier and better if data from instrument is transmitted real time to all offices via appropriate technology either mobile phone network or satellite though the current system used (data logger) is only appropriate for climate purposes and not weather or early warnings. <Technical Aspect>

[Fiji]

NDMO has drafted a CBDRM Training Manual through Partners in Community Development Fiji (PCDF) that NDMO and other stakeholders will be able to use for guiding the communities when conducting trainings specifically on CBDRM. One or two staff trained by the project is still retained in NDMO and has sustained skills for conducting CBDRM trainings however they are now transferred to another District under the Ministry of Rural and Maritime. The manuals developed by the project is rarely used by NDMO because all the equipment installed by the project has not been in operation and no activity has been conducted as mentioned above. However, the Manual drafted through PCDF will be piloted in Kadavu and the Northern Division in February 2020.

[Solomon Islands]

The staffs of NDMO, WRD and PDO have sustained the knowledge and skills acquired through the CBDRM trainings by the project but SIMS requires more trainings. NDMO has continuously utilized the guidelines and manuals developed by the project for implementation of other CBRDM activities after the project completion. Since WRD also continues technical support to other organizations which implement similar project with other communities based on the guidelines and the manuals, they has limited manpower technical capacity and budget to implement national Flood Warning Systems in the country but would be able to continue with community early flood warning systems

<Financial Aspect>

[Fiji]

Currently, NDMO receives budget for CBDRM activities and trainings. For year 2017 and 2018, NDMO had a budget of 10,000 FJD. In addition, NDMO received financial support from NGO and other development partners for CBDRM trainings. Furthermore, NDMO has received a budget of 75,000 FJD for "Maintenance of Flood EWS" from the government of Fiji since 2015 however the budget was reduced to 60,000 FJD in 2019/2020.

[Solomon Islands]

NDMO does not have annual budget for the CBDRM activities and the main source of funds for the activities are the donor agencies, such as the European Union (EU) on the project basis. Without donors' support, NDMO is not able to ensure sufficient budget for the CBDRM activities. PDOs do not have annual budget neither. On the other hand, WRD has annual budget which has increased from 1,850 US dollars (USD) in 2014 to 8,500 USD in 2018. The increase in their budget is related to the expansion of their functions and responsibilities. However, the budget to implement monitor the target village has not been sufficient and WRD has not conducted any flood analysis since the project completion.

### <Evaluation Result>

Therefore, there are some problems in institutional, technical and financial aspect of the implementing agencies, and the sustainability of the project effects the project is rated fair.

5 Summary of the Evaluation

The project achieved the Project Purpose for establishing the CBDRM system in Fiji and Solomon Islands and partially achieved the

Overall Goal for extending the CBDRM system in other areas in the countries in order to enhance resilience of the communities against disasters. As for sustainability, there have been some problems in the institutional, technical and financial aspects. As of efficiency, the project cost slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

### III. Recommendations & Lessons Learned

### Recommendations for Implementing Agency:

### [Fiji: for NDMO]

The Government of Fiji should setup a mechanism for monitoring of community-based projects. It should have resources such as personnel and budget to carry out regular monitoring of these projects. It should enhance communities setting up of committee in taking care of community projects. In addition, the Government of Fiji should have standard operating procedures (SOPs), which assist sustainability of projects where high staff turnover is an issue, for bi-annual reviews of projects and the project to have an exit strategy. It is recommended that the Government of Fiji should ensure sustainability of the project effects through the enhanced mechanism for community project

### [Solomon Islands: for NDMO]

The Government of Solomon Islands should make more smooth coordination among the stakeholders such as the Meteorological Services, WRD and the communities, and to secure human resources and budget for conducting regular monitoring. In particular, coordination amongst technical divisions need to be strengthened as well as resource capacitating. Responsibilities should also be clearly defined and tasked according to technical mandate to avoid confusion on roles and responsibilities considering project sustainability. WRD and SIMETS need to collaborate in maintaining national flood warnings and community flood warning systems Also, they need to enhance promotion for the communities through implementation of periodic evacuation drills in order to facilitate proper evacuation by the local people in the case of emergency disaster. In addition, it is recommended to ensure the sustainability of the project effects through those efforts.

Lessons Learned for JICA:

[Fiji]

CBDRM requires continuous follow ups including strong commitments and clear divisions of roles among the relevant government authorities. In addition, for Fiji, BDO does not have any regulation or policy to promote community-based disaster projects therefore it was very difficult for BDO to sustain the activities introduced by the project. NDMO also had lack of resources including budget to sustain the activities introduced by the project as well. Therefore, it is essential to carefully consider the institutional structure and the available resources for CBDRM in the target country at the time of project planning and design.

On the other hand, there are difficulties to manage community-based project activities in the two different countries. Therefore, it is desirable to conduct follow up support for the two different countries after the project completion in order to sustain the CBDRM activities in the target sites at least. In addition, it is preferable to consider components to establish a monitoring system for FWS and to formulate an extension plan for CBDRM in other sites at the time of project preparation/design in order to ensure sustainability of CBDRM.

There is a very high turnover of staff in the Pacific, therefore JICA needs to continue its relationship with the relevant authorities even after the completion of the Project in order to make the new comers understand the model and/or the activities introduced by the project for sustain the project effects

## [Solomon Islands]

CBDRM requires a strong commitment by the relevant government authorities and continuous follow-ups under clear divisions of responsibilities. In Solomon, the Water Resource Division, a responsible government authority in charge of flood monitoring and analysis, did not have sufficient technical skills for flood analysis and had difficulties to conduct analytical activities including data collection. Also, NDMO had lack of necessary resources including budgets, as similar to Fiji. Therefore, it is essential for JICA to carefully consider institutional aspects and available resource for CBDRM in the target countries at the time of project planning/design. In addition, it is essential to assess technical capacity and available resources including infrastructure of the responsible organizations. Also, selecting suitable site for piloting and installation of project equipment and early warning systems should have been based on local research findings, local recommendations and knowledge about high-risk and flood prone areas with larger than thousands people population catchment.





(Solomon Islands) Manual siren installed by the project in Tamboko Village



(Fiji) Damaged equipment at Nasolo Village

(Solomon Islands) Water gauge damaged by heavy rain in Tamboko Village



(Fiji) Damaged Water Gauges at Nawaqarua Village

Country Name	Technical Cooperation in Strengthening the Backstopping Capacities for the DADP Planning and
United Republic of	Implementation
Tanzania	Project for Strengthening the Backstopping Capacities for the DADP Planning and Implementation
	under the ASDP Phase 2

# I. Project Outline

Background	In Tanzania, the Agricultural Sector Development Program (ASDP), which adopted a Sector Wide Approach (SWAp) for the agricultural sector, was fully operated in July 2006. In line with the decentralization policy, 75% of the ASDP basket fund was allocated to the development budget to the district government in accordance with the District Agricultural Development Plan (DADP) formulated by each district every year. However, the plans made by districts needed to improve quality in order to meet the requirements of the central government. From 2009 to 2012, JICA implemented a technical cooperation project of "Technical Cooperation in Strengthening the Backstopping Capacities for the DADP Planning and Implementation" (Phase 1 project). The project supported areas such as formulation and update of formats and guidelines, monitoring of budget execution and project progress, and improvement of DADP operations and quality, as well as strengthening the capacity of central and local government officials who engaged in DADP planning and implementation. However, challenges for making DADP more comprehensive plan were recognized from the second half of the Phase 1 project: Necessity to enhance strategic nature of DADP, such as mid to long-term planning and identifying suitable inputs for priority crops considering their value chain; Enhancement of resource mobilization not relying solely on the ASDP budget but also other government funds and private investment including							
Objectives of the Project	<ul> <li>non-governmental organizations (NGOs).</li> <li>Through (i) strengthening of capacity for backstopping activities for the planning, implementation and monitoring of DADP, (ii) supporting pilot Local Government Authorities (LGAs) to prepare strategic and comprehensive DADP, the project aimed that LGAs effectively plan and implement (strategic) DADPs, thereby contributing to achieving the higher productivity, profitability, and farm incomes</li> <li><phase 1=""></phase></li> <li>1. Overall Goal: LGAs effectively plan and implement their DADPs</li> <li>2. Project Purpose: DADP planning and monitoring are improved with strengthened operation of the DADP Planning and Implementation Thematic Working Group (DADP P&amp;I TWG), the Agricultural Sector Unit of Prime Minister's Office - Regional Administration and Local Government (PMO-RALG) currently President's Office - Regional Administration and Local Government (PO-RALG)and Regional Secretariats (RSs) for backstopping LGAs.</li> <li><phase 2=""></phase></li> <li>1. Overall Goal: Higher productivity, profitability, and farm incomes are achieved.</li> <li>2. Project Purpose: LGAs effectively plan and implement strategic DADPs.</li> </ul>							
Activities of the Project	<ol> <li>Project site:</li> <li><phase 1=""> Tanzania Mainland</phase></li> <li><phase 2=""> Tanzania Mainland, Pilot Districts (Kilor</phase></li> <li>Main activities:</li> <li><phase 1=""> (i) strengthening of capacity for bastrengthening of capacity for monitoring activities</phase></li> <li><phase 1=""> (i) improving the backstopping activities</phase></li> <li><phase 2=""> (i) improving the backstopping activities</phase></li> <li>DADP, and (ii) supporting pilot LGA to prepare stra</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li><phase 1=""></phase></li> <li>1) Expert: 4 persons</li> <li>2) Training in Japan: 10 persons</li> <li>3) Equipment: Computer, backup UPS, fax, printer, photocopier, projector and others</li> <li>4) Local Cost: general operating expenses</li> <li><phase 2=""></phase></li> <li>1) Experts: 12 persons</li> <li>2) Training in Japan: 25 persons</li> <li>3) Equipment: Vehicle, motorcycles, computers, projector, photocopier and others</li> <li>4) Operation cost: general operating expenses</li> </ol>	ckstopping activitie for the planning, in tegic and comprehen Tanzanian Side <phase 1=""> 1) Staff allocated 2) Land and faci 3) Local Cost: transportation <phase 2=""> 1) Staff allocated 2) Land and faci</phase></phase>	es for the planning of DADP and (ii) nplementation and monitoring of strategic nsive DADP d: 24 persons dities: Project office training and workshop expenses, for field trip and others d: 68 persons dities: Project offices st: pilot activities, transportation for field					
Project Period	(4) Operation cost: general operating expenses (4) Operation cost: general operation cost: g	Project Cost (6 < (6	Phase 1> ex-ante) 232 million yen actual) 223 million yen Phase 2> ex-ante) 523 million yen actual) 581million yen					

	- Ministry of Agriculture, Food Security and Cooperatives (MAFC, Currently Ministry of Agriculture, MoA)
	Agriculture Sector Lead Ministries (ASLMs): MoA, Ministry of Livestock Fisheries Development (MLFD),
Implementing	Ministry of Industry and Trade (MIT), and Prime Minister's Office - Regional Administration and Local
Agency	Government (PMO-RALG) (Currently President's Office-Regional Administration and Local Government :
	PO-RALG)
	- DADP Planning & Implementation Thematic Working Group (DADP P&I TWG)
Cooperation Agency in Japan	International Development Center of Japan Inc.

# II. Result of the Evaluation

<Constraints on Evaluation>

- Due to the COVID-19 pandemic, site visit could not be conducted to collect information. Therefore, the information was collected through questionnaires, telephone interviews.
- < Special Perspectives Considered in the Ex-Post Evaluation >
- As the Phase 1 and Phase 2 projects share the common goal, the indicators for the Phase 2 project are verified to check the level of achievement of the Project Purpose and the Overall Goal.
- The status of continuation of the project effects at the time of ex-post evaluation were taken as the part of the verifiable indicators of the Overall Goal and the factors affecting the achievement levels of the verifiable indicators of the Overall Goal.

## 1 Relevance

<Consistency with the Development Policy of Tanzania at the Time of Ex-Ante Evaluation >

The project was consistent with the development policy of Tanzania. "National Strategy for Growth and Reduction of Poverty" (NSGRP) (2005) prioritized agriculture sector development as a driver for economic growth. ASDP was set as an implementation framework. Development budget in the agricultural field were allocated to the" district agricultural development plan (DADP) "through the ASDP basket fund.

<Consistency with the Development Needs of Tanzania at the Time of Ex-Ante Evaluation >

The project was consistent with the development needs of Tanzania for strengthening DADP planning and implementing capacity. Although DADP formulated by each district was a basis for the development budget allocation under ASDP, the quality lacked strategic and comprehensive aspects.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA policy to Tanzania. Agriculture including small-scale irrigation was one of the priority areas under the "Country Assistance Program for the United Republic of Tanzania" (2008). Also, the "Country Assistance Policy for the United Republic of Tanzania" (2012) emphasized the importance of agriculture for economic growth towards poverty reduction. <Evaluation Result>

In light of the above, the relevance of the project is high.

## 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The project purpose was partially achieved at the time of project completion. In 2016/17, 64% of DADPs scored 60 points or higher in quality check by RSs (Indicator 1). On the other hand, in 2015/16, only 23% of DADP interventions applying the good practice(s) was implemented (Indicator 2). The partial achievement can be attributed to the following two factors. Both factors were due to the transition from ASDP 1 to ASDP 2. The ASDP basket fund, which used to be the major source for implementing DADPs, was not fully disbursed from the central government since 2013/2014. The backstopping/information dissemination were not fully undertaken for LGAs. <Status of Continuation of the Project Effects>

The continuity of the project effects at the time of the ex-post evaluation cannot be verified. This is because the central government does not have all the information on the implementation of the DADP, which makes it impossible to verify the indicators of the Overall Goal, and it was confirmed that the continuity of the project is not verifiable.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal was not verified. This is because to what extent the indicator is achieved is not clear, as the central government does not maintain entire information on the implementation of DADP nationally. It seems that the Policy and Planning Division of Ministry of Agriculture (DPP) and PO-RALG have worked on the DADP backstopping whenever budget is available, thought the budget is very much limited.

On the other hand, positive impacts have been observed in the pilot districts. During the project implementation period, the project supported value chain development on rice (in Kilombero), horticulture (in Lushoto) and coffee (in Mbozi). After the project was completed, coffee production increased in Mbozi District. For example, the production was 11,555 tons in 2019/20 while it was 7,681 tons in 2016/2017. In addition to the increase in the production, the availability of seedlings improved due to the district initiative including mobilizing funds from private coffee production companies after the project. Also, farmers were capacitated by financial knowledge and business plan and linked to financial institution and private companies to access loans resulted in the production. In Kilombero, farm gate price of rice increased to Tsh135,000~172,000/kg from Tsh50,000/kg. Also, the utilization of the storage in the warehouse increased five times (2bags to 10bags per farmer), which shows that the productivity of the farmers increased. In Lushoto, after the project was completed, the District took following initiatives under the collaboration with African Development Bank funded project, Marketing Infrastructure, Value Addition and Rural Finance (MIVARF), for which the project encouraged the collaboration during the project period : (i) it facilitated the formulation of farmers groups (Agricultural and Marketing Cooperative Society; AMCOS) of producers of vegetables mostly Irish potatoes; (ii) facilitated financial and market linkage and, (iii) infrastructure development. The infrastructure development reduced transport cost as well as increased the storage ability of farmers. Furthermore, district office facilitated to connect private input suppliers to those farmers groups so that the producers could improve their production skills and technologies.

Some positive impacts have been observed. From the gender perspective, in Lushoto, women have been involved in the market survey or

have taken leadership in farmers groups after the project, which had not been the cases before the project. This is because the projects promoted gender-sensitized training by encouraging women's participation in field management, farmer group management and market survey with men jointly. There have been some synergistic effects between the project and other JICA's ASDP related projects. For example, by using the Agricultural Routine Data System (ARDS) which was strengthened under a JICA project, the districts could identify crops produced in several villages and this makes easier for them to make decision on what village they can go for further dissemination of project knowledge. Also, in Lushoto, the project facilitated some farmers to obtain Certificate of Customary Right of Occupancy (CCRO) which was equivalent to certificate of land occupancy enabling to increase their loan accessibility.

According to the implementing agencies, no negative impact on the natural environment by this project has been observed, and no land acquisition and resettlement occurred.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project	Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose)	Indicator 1: 50% of DADPs scores 60	Status of the Achievement: achieved (not verified)
Project Purpose: LGAs	points or higher in terms of strategy,	(Project Completion)
effectively plan and	comprehensiveness and private sector	(1) For 2016/17, 64% DADPs scored 60 points or higher in quality check by
implement strategic	involvement	RSs.
DADPs.		(2) There was significant improvement in the quality status of DADPs for
		2015/16, 37% of which gained 60 points or higher.
		(Ex-post evaluation)
		Verified as factors affecting the achievement levels of the verifiable
		indicators of the Overall Goal
	Indicator 2: 50% of DADP interventions	Status of the Achievement: not achieved (not verified)
	which apply at least 1 of the following good	(Project Completion)
	practices are implemented:	(1) In DADPs for 2015/16, only 23% of DADP interventions applying the
	□ Activities using the existing resources	good practice(s) was implemented.
	(e.g. farmers' groups and physical	(2) For details, it was identified that 216 interventions applied the good
	infrastructures);	practice(s) among DADPs for FY2015/16. Out of them, 50 have been
	□ Activities for understanding market needs	implemented with LGAs own budget or off-budget funds, which means 21
	including buyers, price, and quality (e.g.	of the implementation ratio (50/216).
	market survey and study tours);	(Ex-post evaluation)
	□ Facilitation by LGAs for linking farmers	Verified as factors affecting the achievement levels of the verifiable
	with service providers (public and private	indicators of the Overall Goal
	institutions)	
	(e.g. for cost-sharing or contract-farming);	
	□ Strengthening farmers' organizations	
	(e.g. in terms of financial management, title	
	deeds, audit report, group management	
	skills, record-keeping,	
	establishing by-law and business plan.)	
(Overall Goal)	Indicator: Within three years after the	(Ex-post Evaluation) not achieved (not verified)
Overall Goal: Higher	termination of the Project, 50% of DADP	The control concerns does not have an auch information on (1) the
productivity, profitability,	projects has achieved their project purpose	- The central government does not have enough information on (i) the number of projects planned (cumulative), (ii) the number of projects
and farm incomes are	in terms of productivity, profitability, and	implemented (cumulative) and (iii) the number of projects that achieve
achieved.	farm incomes	the targets, nationally.
Source : Responses to que	stionnaires by the pilot districts and DPP.	

#### 3 Efficiency

Although the project cost slightly exceeded the plan (the ratio against the plan: 106%), the project period was as planned (the ratio against the plan: 100%). Outputs were produced as plan. Therefore, the efficiency of the project is fair. 4 Sustainability

<Policy Aspect>

There has been policy support for the sustainability of the project effects. ASDP 2 (June 2018 - 2028) continues to be implemented through fund from the central government and districts' own funds. However, lack of fund for the implementation has been an obstacle. < Institutional/Organizational Aspect>

The organizational structures both at the central level (ASLMs structure) and district level (at the pilot districts) have been unchanged and functioning after the project was completed. DADP Projects & Implementation TWG, which was expected to play a lead role for promoting backstopping activities are still existing and operating, however, they are less active than the project period. This follows that the Ministry of Agriculture does not supervise the LGAs directly following requirement of the Government Policy of Decentration. The decentralization reqires all activities to be implemented at Local Government Level while the Ministry of Agriculture remain with the responsibilities of monitoring implementation and provide technical advice. Instead, the PO-RALG is in the position of supervising and to directing all LGA's to obtain budget to disseminate the model. The budgeted fund for the DADP implementation was not fully disbursed. Low disbursement of fund in the implementing Ministries (Ministry of Agriculture and PO-RALG) and insufficient number of staff from district, ward and village level limited implementation of some activities. Furthermore, some of the project staffs were retired and took time for new staff who replacement them to gain momentum in the implementation.

<Technical Aspect>

Technical staff of the project team are in the ASLMs and LGA's, therefore, they have trained new staff members on the DADP planning and implementation. Also, at the district level, they have disseminated the knowledge to other villages whenever they obtain budget from own source. The Project team have utilized the manuals (Business Plan, Strengthening Farmers Organization, Public and Private Partnership, Project Management, Warehouse management, Market-Oriented Horticulture, and Coffee Quality Improvement) to train farmers groups in several villages.

<Financial Aspect>

ASDP 2 was launched in 2018, however the Government of Tanzania and Development Partners (DPs) was yet agreed on pooled fund instead both finance the interventions of the project basing on their priorities. However, LGA's have utilized own source of fund and sometimes collaborate with private sector like coffee producers who distribute coffee seedlings to the producers, or provide loans to the farmers to implement the activities. Therefore, the funds have not been enough to finance the planned activities. < <Evaluation Result>

In light of the above, some challenges have been observed in terms of the policy, institutional/organizational, and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

### 5 Summary of the Evaluation

The Project Purpose was partially achieved as it achieved the target for the scores for DADPs while the application of good practices was limited. The Overall Goal was not verified, as the implementation of DADPs has been minimum level in nation-wide, while good practices have continued in the pilot districts. As for the sustainability, some challenges have been observed in terms of policy, institutional/organizational, and financial aspects. As for the efficiency, both project cost and project period slightly exceeded the plan. Considering all of the above points, this project is evaluated to be partially satisfactory.

## III. Recommendations & Lessons Learned

### Recommendations for Implementing Agency:

• Government of Tanzania (Ministry of Agriculture, Po-RALG through Sector Coordination Division and Regional Secretariat and districts through LGA) should the following:

- i. To continue allocating fund (budget) and more experienced technical staff in the pilot projects to attract more investment for the effective DADP implementation and monitoring in order to achieve the set objectives and targets
- ii. should continue utilizing the available resources (budget, staff, technical skills and knowledge) to undertake backstopping to DADPs;
- iii. To continue planning for DADP backstopping components and allocate budget when formulating future projects and joint implementation by DPs and private companies could be an option; and
- iv. To contunue guiding the investment in particular area using already observed model from Lushoto project that was coordinated by MIVARF project.

## Lessons Learned for JICA:

In case of projects with pilot project sites and in cases where it is difficult to secure a governmental budget for the sustainability of the project, mobilizing resources outside the government budget is important. The project motivated the pilot districts to mobilize other DPs' fund to enhance the project sustainability, such as the case of mobilizing MIVARF funds to construct roads and warehouses which benefited the project targeted farmers in reducing transport cost as well as increasing the storage capacity of their produces. In case of selecting pilot projects, the existence of other DPs in the same area of the pilots may also increase the probability of the project sustainability. If there are other projects or DPs targeting the same location, their intervention may have a complementary impact on the project target people (farmers), such as the MIVARF case.



Cropping calendar which visualizing the peak demand seasons and cropping timing of the target varieties. (By field visit to Lushoto as a part of kick-off session under a succeeding project in February 2019)



erviewing the farmers group which formulated an organization (AMCOS) for accessing loan for horticulture production. (By field visit to Lushoto as a part of kick-off session under the same project)

Country Name	
Federal Democratic Republic	The Programme for Emergency Water Supply for Addressing Climate Change
of Ethiopia	

## I. Project Outline

Background	Ethiopia has semi-arid climate and frequently faces severe droughts. The population with access to safe water was limited to 22%. In addition, impacts by climate change in recent years brought about serious droughts and floods interchangeably. In the areas affected by the floods and the droughts, the water supply and sanitation became aggravated. In fact, in March 2008, there were reports of degradation of hygiene, food shortage, malnutrition, deaths of livestock, outbreak of infectious diseases including acute watery diarrhea (AWD) and osteomyelitis in some parts of regions, including Oromia, Tigray, Southern Nations, Nationalities and People (SNNP), Amhara, Afar, and Somali. On the other hand, in December in the same year, massive floods caused by heavy rains even in the dry season damaged the population of 640,000 with aggravated living conditions in some parts of those regions.						
Objectives of the Project	To supply safe water for the populations in the target areas damaged by droughts and floods as well a affected by AWD, to mitigate flood damages, and to expand the water supply coverage by expansion of existing water supply facilities, through procurement of emergency water supply equipment, materials and equipment fo expansion and rehabilitation of the existing water supply facilities, thereby contributing to improvement of hygienic environment in the target areas.						
Contents of the Project	<ol> <li>Project Site: Regions of Tigray, Oromia, Afar, Amhara, Somali, and SNNP</li> <li>Japanese side:         <ul> <li>(Procurement of equipment)</li> <li>The 1st batch: water purification chemicals, mobile water purifiers and plastic tanks</li> <li>The 2nd batch: water tank trucks, bulldozers, heavy equipment transport vehicle, equipment for drilling wells (drilling rig, truck with high pressure air compressor, cargo truck with crane, and service rig), equipment for rehabilitation of wells and construction of elevated tanks</li> <li>Additional procurement: water purification chemicals</li> </ul> </li> <li>Ethiopia side:         <ul> <li>Construction works of water supply facilities</li> </ul> </li> </ol>						
Project Period	E/N DateApril 23, 2009Completion DateMay 14, 2015 (The final date of handovG/A DateApril 23, 2009Completion DateMay 14, 2015 (The final date of handov						
Project Cost	E/N Grant Li	mit / G/A Grant Limit: 800 millio	on yen, Actual Gran	t Amount: 800 million yen			
Executing Agency		Vater, Irrigation and Electricity (N		<i>4</i>			
Contracted Agencies	Main Contra	Main Contractors: Toyota Tsusho Corporation, Nishizawa Limited, Endeco S.p.A Agent: Japan International Cooperation System					

# II. Result of the Evaluation

<Special Perspectives to be considered at the ex-post evaluation>

Although "a reduction in the incidence of water-borne diseases" was set as the project effect at the time of ex-ante evaluation, it had to be down as impact of the project. This is because the project's content is to procure and grant the equipment and materials for emergency water supply as well as expansion and rehabilitation of existing water supply facilities and this is not a direct cause of "a reduction in the incidence of water-borne diseases". Thus, this ex-post evaluation rearranged and verified "achievement status of water supply and dredging work using the procured equipment and materials" as the project effect and "a reduction in the incidence of water-borne diseases" was set at the time of ex-ante evaluation, "achievement status of water supply and dredging work using the procured equipment status of water supply and dredging work using the procured equipment status of water supply and dredging work using the procured equipment and materials" does not have its baseline data and target value due to the previously-mentioned rearrangement.

# 1 Relevance

<Consistency with the Development Policy of Ethiopia at the Time of Ex-Ante and Ex-Post Evaluation>

The project was consistent with Ethiopia's development policies of "The Universal Access Programme" (2006-2011) aiming at increasing the water supply rate up to 98% in rural areas and 100% in urban areas by 2012 at the time of ex-ante evaluation as well as "The National five years strategic plan" (2015/2016-2019/2020) and "Growth and Transformation Plan II" (2015/2016-2019/2020) also focusing the improvement of rural water supply coverage and access of the rural population to the safe water at the time of ex-post evaluation. <Consistency with the Development Needs of Ethiopia at the Time of Ex-Ante and Ex-Post Evaluation >

The project was consistent with Ethiopia's development needs of the improvement of accessibility of safe water in case of drought and flood.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with "The Country Assistance Policy for Ethiopia" (2008) focusing on supports to "Management of domestic water" and "Sanitation" among the six priority areas.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Effectiveness>

The project has achieved its objective by the time of ex-post evaluation. As illustrated in the table of "Quantitative Effects", in Tigray region, Oromia region, and SNNP region, the water supply volume and the population served have dramatically increased since the project

completion and became four-fold over a period of time, 2015-2019. This is because the equipment procured by the project to the regions has continued to be utilized. In addition, the regions have allocated more budgets to enhance their capacities of operation and maintenance (O&M) of the equipment, to increase the number of the equipment, and to procure necessary spare parts in order to take measures against recurrent droughts. Furthermore, in all of the regions, water tank trucks procured by the project have been dispatched in case of emergency. For example, Oromia region has dispatched the trucks 14 times so far and supplied water at 1,700,000 liter in total, and Amhara region has done that 2 times and the total amount of water supplied is 200,000 liters. Apart from the above, Afar region has undertaken dredging works 50 times between 2015 and 2019 as measures for areas affected by recurrent flood, using the equipment procured by the project such as bulldozer and heavy equipment transport vehicle.

As a qualitative effect, it was confirmed that the quality of water supplied using the equipment procured by the project has improved. The reasons for the improvement are as follows: 1) the water source was changed from unsafe surface water to safe groundwater (Oromia, Tigray, and Somali regions), and 2) the source water is purified by the procured equipment and chemicals (all regions). The water quality is maintained to meet a water safety management guideline and a water safety plan developed by World Health Organization and MoWIE.

The mortality rate of under-five year children from acute diarrhea (the rate of the mortality of under-five year children from acute diarrhea to the population of the children) is confirmed to have improved in all of the target regions because the number of equipment for water supply procured by the project has increased and the level of awareness on water safety has risen through implementation of water safety plans described above.

No other positive or negative impacts of the project were observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

## Quantitative Effects<sup>1</sup>

Actual Actual Actual Actual Actual 2016 2015 2017 2018 2019 Baseline Target Indicators (2009)(2011)1 Year after 3 Years after Completion 2 Years after (Ex-post Year Completion Completion Completion Evaluation) Tigray region Indicator 1 40 water 10 15 20 30 supply volume (L/day/person) Indicator 2 210,000 315,000 420,000 630,000 840,000 Population served (persons) Oromia region Indicator 1 10 15 20 30 water supply volume 40 (L/day/person) Indicator 2 750,000 1,500,000 3,000,000 1,125,000 2,250,000 Population served (persons) SNNP region Indicator 1 water volume 10 15 20 30 40supply (L/day/person) Indicator 2 210,000 315,000 420,000 630,000 840,000 Population served (persons) Source : Preparatory Study Report, Interview and questionnaire with MoWIE and regional water bureaus

3 Efficiency

Although the project cost was within the plan (ratio against the plan: 100%), the project period significantly exceeded the plan (ratio against the plan: 614%). The reasons for the significant delay were because 1) some of the bids were unsuccessful, 2) deliveries of some of the procured equipment were delayed, and 3) some regional bureaus were not ready to accept the procured equipment. The outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Institutional Aspect>

In Ethiopia, each region has their bureau responsible for water supply, and each bureau takes responsibilities for O&M of the respective equipment procured by the project: Tigray Water Resource Mines and Energy Bureau (TWRMEB) for Tigray region, Oromia Water Resource Bureau (OWRB) for Oromia region, Afar Water Resource Bureau (AWRB) for Afar region, Amhara Water Resource Development Bureau (AWRDB) for Amhara region, Water Resource, Mining and Energy Development Bureau (WRMEDB) for Somali

The mortality	rate of under-five	e year children	from acute diarrhea

		-			J)	Jnit: %)
Region	Baseline (2009)	Target 1 year after project completion	2015	2016	2017	2018
Tigray	2.2	2.0	2.0	1.8	1.7	1.5
Oromia	2.4	2.2	2.2	2.0	1.8	1.6
Afar	2.7	2.5	2.4	2.3	2.2	2.0
Amhara	2.3	2.2	2.2	2.1	2.0	1.8
Somali	2.8	2.5	2.5	2.3	2.2	2.0
SNNP	2.5	2.3	2.3	2.1	2.0	1.8

<sup>&</sup>lt;sup>1</sup> The table represents only the regions where water supply facilities were developed by using the procured drilling rigs (Oromia region and Tigray region) and groundwater production equipment (SNNP region).

region, and Southern Nation, Nationalities, and People's Water Resource Development Bureau (SNNPWRDB) for SNNP region. According to the interviews to those organizations, the sufficient numbers of staff have been assigned at the time of ex-post evaluation (TWRMEB: 12, OWRB: 24, AWRB: 20, AWRDB: 12, WRMEDB: 10, SNNPWRDB: 10). In the country, the demand for the services provided by the bureaus has been increasing, and in response to the demand, the bureaus hired more staff. Taking this into account, the sufficient number of staff is expected to be secured in the future. However, it is confirmed through the field survey in this ex-post evaluation that management skills of AWRB and WRMEDB are poor and problems including a high level of turnover and the poor staffing has been taking place.

<Technical Aspect>

The Staff of TWRMEB, OWRB, AWRDB, and SNNPWRDB have sustained the necessary knowledge and skills for the O&M and able to carry out it without major problems. This is because a number of projects in water supply were carried out and enhanced the staff's capacity and Ethiopian Water Technology Institute (EWTI) and the United Nations Children's Fund (UNICEF) have provided refreshment trainings to the staff on a regular basis. Thus, the capacity of these bureaus for the O&M is expected to be sustained. On the other hand, the knowledge and skills of staff of AWRB and WRMEDB are limited as the management skills of the bureaus are poor as described above. There is less outlook to improve the situation.

<Financial Aspect>

Each of the bureaus has secured a certain amount of budget for O&M and also received financial supports from donors such as the United Nations Children's Fund (UNICEF), the World Bank, the Department for International Development of the United Kingdom (DFID), and so on. However, the current budgets have not been sufficient since the demands for other sectors including health and education have been growing and some of the budget have been distributed to the sectors, which has constrained necessary O&M activities from time to time. This trend is considered to continue in the future. Particularly, as mentioned below, Afar region and Somali region have lacked a budget to procure spare parts.

Budget for	0&M	of the e	equipment	procured	by the	project	
					(Unit:	Thousand	Birr)

				(0	mt. mou	sand Dill)
Region	2015	2016	2017	2018	2019	2020
Region	2013				(Plan)	(Plan)
Tigray	1,500	2,000	1,000	750	900	1,000
Oromia	5,000	7,000	10,000	15,000	15,000	15,000
Afar	1,500	2,000	1,000	750	900	1,000
Amhara	3,000	5,000	7,000	10,000	10,000	12,000
Somali	1,500	2,000	1,000	750	900	1,000
SNNP	5,000	7,000	10,000	15,000	15,000	15,000

<Current Status of Operation and Maintenance>

The conditions of the equipment procured by the project have been fine in Tigray region, Oromia region, Amhara region, and SNNP region while poor in Afar region and Somali region. The reason for the poor is attributed to the poor management skill of the bureaus in the regions as described above. Also, the equipment procured to Tigray region, Oromia region, Amhara region, and SNNP region has been maintained one time almost every year, but the one procured to Afar region and Somali region has been maintained only 1 or 2 times after the project.

In terms of spare parts for the equipment, the regions which have regularly maintained the equipment has procured the spare parts along with the maintenance. On the other hand, other regions have not procured them even at once due to the low capacity of the staff and the lack of the budgets.

## <Evaluation Result>

In the light above, there have been some issues of the O&M agencies from the institutional, technical and financial aspects. Therefore, the sustainability of the project effect is fair.

5 Summary of the Evaluation

The project has achieved its objectives through improvement of the safe water supply in the target regions. As for sustainability, in Tigray region, Oromia region, Amhara region and SNNP region, the sufficient number of staff has been allocated, the staff has the sufficient knowledge and skills for O&M, and the maintenance of the equipment procured by the project has been appropriately conducted. On the other hand, in Afar region and Somali region, the management skills of the bureaus have been poor, their staff have not had the sufficient knowledge and skills for O&M, and the necessary budgets for O&M have been lacked. As for efficiency, the project period significantly exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

# III. Recommendations & Lessons Learned

Recommendations to Executing Agency:

- The regions that have been evaluated to be insufficient in technical and O&M aspects (Afar and Somali regions) should consult with EWTI for restructuring their O & M resources and programs and build a partnership with EWTI to train more operators and technicians of the equipment of water facility.
- The information about supply chains for spare parts in the regions where O&M is properly executed should be shared with Afar and Somali regions. The information sharing will help strengthen and expand the supply chains, and will in turn make the O & M easier, faster and cheaper in all regions.
- Lessons Learned for JICA:
- In Afar region and Somali region, O&M of the equipment procured by the project has almost not been conducted. For effective and continuous use of the procured equipment even after the project completion, it is recommended that emergency water supply responses would be better to be planned to be integrated into regular water supply services at the stage of project planning.
- When equipment is delivered to multiple regions or organization, it would be better for a project to include a soft-component program in which networks to share O&M skills and information about supply chains for spare parts and repair are built to promote mutually-interactive development and sustainable performance among the regions or organizations.
- Equipment delivery projects would be better to be packaged with a soft-component and follow-up training programs provided by existing institutions such as EWTI. Such an integrated scheme is expected to enhance the activities of both the equipment users and the training institutes.



Functional well service rig for continuous water supply due to O&M



Non-functional water truck due to lack of spare parts

Country Name	Strengthening Environmental Management and Linkages among
Kingdom of Thailand	Central, Regional, Provincial and Local Levels

I. Project Outline				
Background	Thailand has been making efforts to mitigate environmental stresses since the 1980s, while the administrative power over natural resources and environment management was gradually transferred to Local Administrations (LAs) by the Decentralization Act 1999. At the regional level, Regional Environmental Offices (REOs) were responsible for preparing Regional Environmental Quality Management Plans (R-EQMP), and there were concerns over delays in preparation, quality and effectiveness of the plans as well as the implementation of the plans due to insufficient technical and financial capacities of related organizations. The Eighth Regional Environmental Office (REO8) was in charge of five provinces in environmentally sensitive areas, and it was necessary to strengthen environmental management in the areas.			
Objectives of the Project	<ul> <li>Through developing a model for an environmental management mechanism in the R-EQMP of REO8, promoting public awareness on environmental management issues utilizing guidelines based on the R-EQMP of REO8, and identifying and sharing recommendations and lessons learned for promotion of Regional and Provincial EQMPs (P-EQMPs), the project aimed at developing capacity of REO8 and the five PONREs* in environmental management, thereby promoting continuous execution of Plan-Do-Check-Action (PDCA) cycle of R-EQMP of REO8 as well as improving environmental management in Thailand through the replication of the model to other REOs.</li> <li>*PONRE: Provincial Office of Natural Resources and Environmental management, PDCA cycle of R-EQMP of REO8, such as participatory planning, implementation, monitoring, evaluation, revising plan, is continuously executed through linkages among the central, regional, provincial, and local levels under REO8's jurisdiction.</li> <li>2) Environmental management in Thailand is improved through the replication of the model to other REOs.</li> <li>2. Project Purpose:</li> <li>Capacity of REO8 and five PONREs on environmental management particularly in planning, implementation, monitoring/evaluation of R-EQMP and pilot project implementation.</li> </ul>			
Activities of the Project	<ol> <li>Project Site: Bangkok, and five provinces in the jurisdiction of REO8 (Ratchaburi, Kanchanaburi, Samut Songkram, Petchaburi and Prachub Kirikhan)</li> <li>Main Activities:         <ol> <li>Analysis of existing environmental conditions, local resources and stakeholders in REO8, Formulation of the REO8 R-EQMP (2013) with coordination with the Central Regional EQMP (2013-2016), etc.</li> <li>Identification of major environmental management issues as well as tools and resources for raising the awareness of the public, Development of simplified guidelines for public awareness to be utilized by LAs), etc.</li> <li>Selection of regionally cross-cutting environmental management issues, Design and implementation of pilot project(s), Conduct of workshops to share progress and lessons learned of pilot projects, etc.</li> <li>Inputs (to carry out above activities)</li></ol></li></ol>			
Project Period	4)     Local expenses       December 2012 – December 2015     Project Cost     (ex-ante) 280 million yen, (actual) 244 million yen			
Implementing Agency	Office of National Environment Board (ONEB) under the Office of Natural Resources and Environmental Policy and Planning (ONEP), Ministry of Natural Resources and Environment (MNRE) Eighth Regional Environmental Office (REO8) Five Provincial Offices of Natural Resource and Environment (PONRE) under REO8's jurisdiction (Ratchaburi, Kanchanaburi, Samut Songkram, Petchaburi and Prachub Kirikhan)			
Cooperation Agency in Japan	Oriental Consultants Global Co., Ltd.			

## **II. Result of the Evaluation**

<Special Perspectives Considered in the Ex-Post Evaluation>

- Indicators 2 and 3 of Project Purpose are those to examine the status to be completed during the project and the status at the project completion is not necessarily expected to continue after the project completion. Therefore, the continuous status of the Project Purpose at the time of ex-post evaluation will be examined mainly based on the utilization of the project.

1 Relevance

<Consistency with the Development Policy of Thailand at the Time of Ex-Ante Evaluation and Project Completion>

At the time of the ex-ante evaluation and the project completion, in the 11th National Economic and Social Development Plan (2012-2016), management of natural resources and environment toward sustainability was one of the six strategies.

<Consistency with the Development Needs of Thailand at the Time of Ex-Ante Evaluation and Project Completion>

REOs were expected to provide technical advice to PONREs and LAs, and the capacity of officials needs to be further and continuously improved. No change in the needs was observed at the time of project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

According to the Japan's Economic Cooperation Program for the Kingdom of Thailand (2006), one of the two priority areas in Japanese assistance policy in Thailand in terms of technical cooperation was response to issues that emerge with maturing of society, including measures for environmental management.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the project completion. The planning process of R-EQMP and P-EQMP was clarified, and the minutes of discussions were developed and compiled into the Technical Planning Manual for R-EQMP and distributed. The R-EQMP (2013-2016) was completed and published in January 2015, and the progress of R-EQMP and P-EQMP was released to the public to some extent. The technical services and support provided by REO8 to PONREs and by PONREs to LAs were improved.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have partially continued to the time of ex-post evaluation. In the two pilot sites, the activities introduced by the project have still been continued, and positive effects have been clearly observed in Tha Yang Sub-District Municipalities (SDMs). In addition, REO8 and PONREs have been continuously providing improved technical services to LAs and the public, including regular water quality monitoring (by REO8), pollution inspection (jointly by REO8 and PONREs) and awareness raising campaigns (by PONREs). Moreover, those participated in the training in Japan have taken more leading roles in sharing knowledge and experience as lecturers in seminars and initiating new environmental activities such as waste segregation in community and production of materials for awareness raising and environmental education. However, due to the change in the planning process of environmental management plan by the Thai government, the R-EQMP for the following period was not formulated in REO8 and other REOs. Instead, the Regional Strategic Plan for Natural Resources and Environmental Management (NREM) was formulated at a cluster level (among REO 8 and other four REOs), so that the regional planning is integrated to cover wider regional areas. At the provincial level, the P-EQMPs still serve as a framework for environmental management.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved. Although the R-EQMP for the following period (2017-2021), which was expected to be formulated reflecting the evaluation results of the R-EQMP (2013-2016), was not formulated due to the change of the planning process as mentioned above, it is described in the Regional Strategic Plan that a review and analysis of the implementation progress of the R-EQMP in the region was carried out at the planning stage. Therefore, it is considered that a certain part of the results of the R-EQMP has been referred to in the planning of the Regional Strategic Plan, as well as the application of PDCA cycle during the planning stage. Several environmental activities were initiated by REO8, five PONREs and LAs after the project, such as introduction of Quantum GIS (QGIS) software and production of awareness raising materials. After the Project completion, ONEP and REO8 had distributed the R-EQMP and shared the outputs of the project to the other REOs and relevant agencies such as LAs in REO8 jurisdiction. Even though no seminar or meeting targeting on distributing the outcomes of the R-EQMP were organized by ONEP, REO8 had shared knowledge and experiences to other REOs during REOs meeting for establishing the Regional Strategic Plan for Natural Resources and Environmental Management as their mandate. Therefore, the dissemination of the project outcomes to other REOs is limited ... However, the general concept of PDCA cycle is widely recognized and utilized as common tools for successful project management at all REOs.

No negative impact has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Aim	Indicators	Results
(Project Purpose)	(Indicator 1) Through	Status of the Achievement: achieved (continued)
	implementing pilot	(Project Completion)
Capacity of REO8	projects, problems at the	· The project selected two environmental issues, namely solid waste management and
and five PONREs on	project site are improved.	community-based environmental management as a pilot case in Tha Yang and Pak Tho SDMs. The
environmental		project achieved most of major expected results.
management		(Ex-post Evaluation)
particularly in		• In Tha Yang SDM, through the Action Plan formulated during the project, the amount of waste has
planning,		decreased from 36 ton/day in 2015 to 25 ton/day in 2019, and the garbage collection rate achieved
implementation,		100%. In Pak Tho SDM, some activities of the pilot project have been continued, such as production of
monitoring/evaluation		organic compost and oil separation tanks.
	(Indicator 2) Process of	Status of the Achievement: achieved (partially continued)
developed through the	planning of Regional and	(Project Completion)
process of REO8	Provincial EQMP are	• The planning process of R-EQMP and P-EQMP was clarified and the minutes of discussions were
<b>e</b>	clarified and the minutes	developed and compiled into the Technical Planning Manual for R-EQMP. It was published and
pilot project	of discussion during the	distributed not only to REO8 and PONREs but also to other 15 REOs.
implementation.	planning process are	(Ex-post Evaluation)
	developed.	• The process for developing the subsequent R-EQMP for 2017-2021 was changed from regional
		planning where each REO developed its own R-EQMP to a cluster system where all REOs are
		geographically grouped into four clusters in all Thailand. REO8 and four other REOs developed one
		single "Regional Strategic Plan for NREM for Central/East/West Regions (2017-2021)". Therefore, the
		manual was not directly utilized in developing the subsequent regional plan but used as a reference by
		individual.

	(Indicator 3) Progress and	Status of the Achievement:	partially achieved (partially continued)	
	· · ·	(Project Completion)		
	of REO8 and Provincial EQMP are published to		(6) was completed in October 2014 and was published in January 2015. The vere utilized in the formulation and implementation of the P-EQMP as a	
	the public.	-	ental management in the region. However, monitoring and evaluation	
		-	and P-EQMP were not sufficiently conducted, although the progress o	
			vas released to the public to some extent through regular meetings and	
		newsletters.		
		(Ex-post Evaluation)	cia Blan for NBEM for Control/East/Wast Decions (2017 2021)" has been	
		-	gic Plan for NREM for Central/East/West Regions (2017-2021)" has beer is not utilized as expected but still serves as a framework for environmen	
		-	, and in principle, the R-EQMP and the P-EQMP have been continuously	
		utilized by REO8 and the f	ive PONREs, based on their organization mandate <sup>1</sup> .	
	(Indicator 4) Quality of	Status of the Achievement:	achieved (continued)	
	technical services which	(Project Completion)	shills and housed days beyond the surface and showed her the	
	REO8 and PONREs provided to LAs and the		skills and knowledge learned through the project was observed by the as and support provided by REO8 to PONREs and by PONREs to LAs, not	
	<b>^</b>	•	er quality improvement and solid waste management issues but also in the	
	as water quality		environmental management in the jurisdiction of REO8.	
	improvement or solid	(Ex-post Evaluation)		
	waste management.		water quality monitoring and frequent ad-hoc on-site inspections. REO8 also	
		-	role with other stakeholders in a smooth and professional manner. PONRE	
		· ·	ited to participate in relevant activities organized by LAs such as knowledge on 3Rs (Reduce, Reuse, Recycle).	
(Overall Goal)	(Indicator 1-1) Reflecting	(Ex-post evaluation) partial		
1) For the purpose of	the evaluation results of	• Due to the change of planning process, the R-EQMP (2017-2021) was not formulated. However		
improving	the Regional EQMP	-	implementation progress of the R-EQMP in the region was carried out in the	
comprehensive		-	ey by REO8 at the planning stage of the current Regional Strategic Plan to	
environmental	EQMP (2017-2021) is	reflect the results of R-EQMP (2012-2016).		
management, PDCA cycle of Regional	developed and being implemented.			
	(Indicator 1-2) Improved	(Ex-post evaluation) achiev	ved	
as participatory	and increased	Activities were initiated by	REO8, five PONREs and LAs after the project. Examples of environmenta	
planning,	environmental activities		8 and five PONREs are as follows:	
implementation, monitoring,	initiated by REO8 and LAs.	REO8	The staff have been sharing knowledge and teaching other stakeholders	
evaluation, revising	LAS.	Samut Songkram and	to utilize QGIS. The QGIS software introduced by JICA experts are utilized in	
plan, is continuously		Ratchaburi PONRE	environmental conservation planning.	
executed through		Ratchaburi PONRE	A new set of user-friendly brochures and awareness raising materials	
linkages among the			was produced and distributed to schools and the public.	
central, regional, provincial, and local		Petchaburi PONRE	Increased numbers of seminars and training have been organized in the province, with PONRE officers as lecturers	
levels under REO8's		Prachub Kirikhan	PONRE officers who participated in training in Japan have been	
jurisdiction. 2) Environmental		PONRE	working with LAs to improve disposal sites in the province	
management in		Tha Yang SDM	More activities in solid waste management have been implemented	
Thailand is improved	(Indicator 2-1) The	(Ex-post evaluation) partial	following JICA experts' recommendations.	
through the	outcome of the Regional		EQMP is shared among officials concerned, although the dissemination	
replication of the	-		ficially conducted as planned. After the project completion, ONEP did no	
model to other REOs.	among other regions.	organize any relevant activ	vities to share the outcome of the R-EQMP, and outcome sharing activities	
			ther informal way, as opportunities to share individual experience among	
			the formulation of the "Regional Strategic Plan for NREM for	
	(Indicator 2-2) PDCA	Central/East/West Regions (Ex-post evaluation) partial		
	cycle of Regional EQMP		e project outcomes to other REOs has been limited. However, the general	
	in other REOs is		widely recognized as common tools for successful project management and	
	strengthened.	is utilized as one of organizational key performance indicators (KPI) of all REOs, although the extent		
		of the contribution of the pr	•	
	uation Report, Completion	Report, Questionnaires and	interviews to ONEP, REO8 and PONREs	
3 Efficiency				

<sup>&</sup>lt;sup>1</sup> At the provincial level, only Petchaburi PONRE and Prachuab Kirikhan PONRE are legally required to formulate annual P-EQMP as the two provinces are designated as environmental protected areas.

Both the project cost and the project period were within the plan (ratio against the plan: 87% and 100%, respectively). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is high.

### 4 Sustainability <Policy Aspect>

In the Policy and Prospective Plan for Enhancement and Conservation of National Environmental Quality (2017-2036), formulation of relevant mid-term master plans and action plans for natural resources and environmental management is mentioned. However, while it is stipulated that formulation of National EQMP and P-EMPQ is legally obligated, the formulation of R-EQMP is not legally required, and the formulation/implementation process of the EQMP has been changed from time to time.

<Institutional Aspect>

At ONEP, the current organization structure and manpower are sufficient for formulation and dissemination of environment plans, although actual implementation depends on budget allocation and implementing agencies, as the role of ONEP is mainly planning. At REO8, there is a chronical shortage of manpower, especially of skilled staff in its planning section currently as one person resigned and one is newly assigned. At PONREs, the environment section is responsible for planning, implementing and monitoring & evaluation of the P-EQMP, as well as other related tasks in their provinces such as environmental quality promotion and pollution control, and the current manpower is rather limited to promote environmental management comprehensively, although the situations vary in each PONRE, depending on area size, issues, and the number of staff members.

## <Technical Aspect>

Quite a large part of the staff members involved in the project are still working at REO8 and the five PONREs, and those participated in the project have sufficient knowledge and technical level to carry out their work, adopting and utilizing the knowledge gained through the project in their daily work. The staff at MNRE, REO, and PONREs have good coordination skill, one of the most important skills in environmental management because there are always many stakeholders involved. As for other technical skills, there are opportunities and mechanisms to improve the capacity of the staff, e.g., internal knowledge management sessions, external training courses/seminars/workshops, MNRE's manuals to formulate P-EQMP and other operation manuals/guidelines. Nevertheless, knowledge and skills obtained during the project tend to belong to individuals and cannot be easily transferred to others, thus continuous learning and capacity development are still necessary as well as sharing of knowledge and skills among staff.

Each relevant organization receive annual budget to carry out the tasks as outlined in their mandate, although the budget for implementation of environmental management activities comes from several sources depending on the nature of the projects/activities, such as provincial development budget, LAs' own revenue and

Budget allocated for environmental management through P-EQMP				
			(Unit: T	housand Baht)
Year	2015	2016	2017	2018
ONEP	688.229	3,106,581	1.740.939	1,989,648

contributions by the private sector (CSR activities), etc. The budget is sufficient only to implement regular duties but not sufficient to implement some additional works to improve environment. The budget allocated through P-EQMP to LAs is the supporting budget from ONEP, which is to be transferred to the selected LAs to invest only in construction of wastewater treatment or municipal solid waste management facilities<sup>2</sup>, but not for other issues and not for every LA.

<Evaluation Result>

In light of the above, some difficulties have been observed in terms of the policy, institutional, technical and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

## 5 Summary of the Evaluation

The project achieved the Project Purpose of capacity development of REO8 and five PONREs on environmental management. At the time of the ex-post evaluation, due to the change in the planning process of environmental management plan, the R-EQMP for the following period was not formulated in REO8<sup>3</sup>, although REO8 and PONREs have been continuously providing improved technical services to LAs and the public. Therefore, the project effects have been partially continued. The Overall Goal of improving comprehensive environmental management through PDCA cycle in REO8 and in Thailand has been partially achieved as the concept of PDCA cycle is recognized, although dissemination of the results of the project has not been actively implemented. As to the sustainability, some difficulties have been observed in the policy, institutional, technical and financial aspects, because the policy of the environmental management plan has been changed. As to the efficiently, both the project cost and the project period were within the plan Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

It is recommended that ONEP and REO8 further utilize the knowledge and experiences acquired through the project, by capacity development of concerned staff as well as securing budget. Although the process and requirement for current planning at the regional level has changed, there are certain outputs that can be utilized, including the Public Awareness Guidelines and the Technical Planning Manual for R-EQMP. Moreover, it is desirable that the successful model for pilot implementation of the improvement of solid waste management system is recognized and further replicated in other SDMs.

Lessons learned for JICA:

At the project formulation stage, JICA should pay more attention to the delay that may affect the project contents or planned outputs. In this case, the period of the R-EQMP developed by the project was reduced one year, from 2012-2016 to 2013-2016, while the R-EQMP developed by the project was finalized and publicized as late as in 2015.

<sup>&</sup>lt;sup>2</sup> Interested LAs have to work with PONREs to incorporate a project proposal in the annual P-EQMP to request for the supporting budget from ONEP.

The selection criteria are very strict and there are not many LAs applying and receiving the budget annually.

<sup>&</sup>lt;sup>3</sup> With the change in the planning process of environmental management plan, no REOs formulate the R-EQMP.

In the project design, JICA should consider emphasizing more on sustainable/transferable outputs and activities, rather than a plan itself which is effective only in a certain timing. In this case, the utilization of the knowledge, experience, skills, and manuals derived from the process of developing the R-EQMP could have been more emphasized and disseminated to other related organizations. Although the initiative of the implementing agency is essential, it may be effective if JICA expert team plays a more active role in dissemination and facilitation among related organizations, especially coordination among those at the different levels. Also it may be effective to select two or more targeted agencies so that exchange of experiences can be promoted among the target agencies.

The R-EQMP developed by the project was not fully utilized due to the change in planning process. At the project implementation stage, when unexpected changes occur, JICA and the JICA expert team, together with the counterparts, should carefully consider how to tackle with the changes properly. JICA side should be flexible to modify the Project Design Matrix (PDM, a matrix to describe the project framework) and come up with new outputs that are more appropriate. Revision of PDM will provide opportunities to have a common understanding of the situation and the project among those involved in the project

It is preferable to define specific indicators so that objective judgment can be made at the time of evaluation, for example, with clarification of the actual status that can be considered as "improved".



Hazardous waste collection spot at Hua Thung – Thung Prao Pattana Community, Tha Yang SDM, Petchaburi Province (former pilot site), with garbage bin distributed during the project



Kid-friendly awareness raising materials produced by the officials of Ratchaburi PONRE after attending the training in Japan

Country Name		The puriest for promotion of municipal colid moste recursling	
People's Republic of China		The project for promotion of municipal solid waste recycling	
I. Project Outline			
Background	With rapid industrialization and urbanization in China, the volume of municipal solid waste was drastically increased, while the establishment of comprehensive system for waste recycling and appropriate system for waste disposal was dropped behind. Consequently, the drain of pollutant and the inappropriate recycling of municipal waste had increasingly put the citizen's health and the environment at risk. For the sustainable development, it was imperative to achieve the perfect balance between the increase in economic productivities and the quality improvement of the environment. Under such circumstance, Chinese Government had a progressive attitude toward minimization and recycling of resources with further development of circular economy under "Outlines for Eleventh Five-Year National Economic and Social Development Plan (2006-2010)", which aimed in the balanced sustainable and steady growth, indicating the policy shift from the previous "extensive" approach of prioritizing the economic growth with expanded inputs. In order to develop circular economy, it was crucial to construct the appropriate system of municipal solid waste recycling to meet the current needs of China.		
Objectives of the Project       In the target areas (Jiaxing City, Qingdao City, Guiyang City, Xining City and the Municipality of Beijin China, the project aims to enhance the establishment of a national policy and legal system for municipal waste recycling through information research and data collection on municipal solid waste recycling in and China and implementing the pilot projects, thereby promoting the municipal solid waste recycling in China.         1.       Overall Goal: Municipal solid waste recycling is promoted in China.         2.       Project Purpose: The establishment of national policy and legal system for municipal solid waste recycling is promoted in China.			
Activities of the Project	<ol> <li>Project Site: The Municipality of Beijing (Operating Base) Target Cities: Jiaxing, Qingdao, Guiyang, Xining</li> <li>Main Activities<sup>1</sup>: i) information research and collection on municipal solid waste in and out of China, ii) polir research implementation and documentation, iii) information exchange through workshop seminars, i implementation of pilot projects at target cities, and v) compilation of outcomes</li> <li>Inputs (at the time of Terminal Evaluation) Japanese Side         <ul> <li>Experts: 47 persons; (Long-term) 2 persons, 1. Staff allocated: 33 persons (Short-term) 45 persons, 2. Local expenses</li> <li>Researchers dispatched 15 persons (members of Japanese Advisory Committee)</li> <li>Trainees received: 74 persons</li> <li>Local expenses</li> </ul> </li> </ol>		
Project Period	October	r 2010 – January 2015 Project Cost (ex-ante) 850 million yen, (actual) 908 million yen	
Implementing Agency Department of Resource Conservation and Environmental Protection (DRCEP), National Development & R Commission, P. R. China * Researchers at universities and research institutes on waste policy, members of Development & Commission of the target cities and concerned departments of local governments as cooperating agencies			
Cooperation Agency in Japan	-	se Advisory Committee (Sophia University, Kanazawa University, etc.) ai Kogyo Co., Ltd., etc.	

#### **II. Result of the Evaluation**

<Constraints on Evaluation>

• Affected by the spread of the novel coronavirus (COVID-19), no field visits to the project sites were conducted. The evaluation study was carried out based on the limited information obtained through questionnaire surveys and interviews with implementing agency.

<Special Perspectives Considered in the Ex-Post Evaluation>

(Evaluation of achievement status of the Overall Goal)

• To assess the achievement level of the Overall Goal "Municipal solid waste recycling is promoted in China", one indicator is set in the project plan, namely, "National policy and legislation for municipal solid waste recycling is enacted". However, with this indicator, it is not sufficient to examine the achievement level on whether the municipal solid waste recycling has actually been progressed. Therefore, "By utilizing the project effects (such as the system and human resources developed through the project), the extent which municipal solid waste recycling has been continuously progressed in the areas other than the target cities" was examined as supplementary information.

1 Relevance

<Consistency with the Development Policy of China at the Time of Ex-Ante Evaluation and Project Completion>

At the time of ex-ante evaluation, the project was consistent with "Eleventh Five-Year Plan (2006-2010)" by the State Council, which states the importance of steady economic growth, the social structure with resource-saving and narrowed gap between the rich and the poor as well as the prevention of increase in environmental pollution, etc. At the time of project completion, the project was consistent with the policies, such as "Twelfth Five-Year Plan (2011-2015)" and "Report of Plenary Session for the Eighteenth Communist Party Congress (2012)", which maintains the value to promote the municipal solid waste recycling.

<sup>&</sup>lt;sup>1</sup>The project dealt with food waste, packaging waste and waste tire. Items of target waste for each city were as follows: food waste and packaging waste for Jiaxing City, food waste and waste tire for Qingdao City, food waste and packaging waste for Guiyang City, and food waste and waste tire for Xining City.

<Consistency with the Development Needs of China at the Time of Ex-Ante Evaluation and Project Completion >

As described in "Background" above, the project was consistent with the development needs for promotion of municipal solid waste recycling at the time of ex-ante evaluation. At the time of project completion, under "Twelfth Five-Year Plan (2011-2015)" described above, it was required for directly-administered municipalities, provincial capitals by 2015 that municipal solid waste should be made harmless and discarded. Since then, such needs continued with notices and regulation of this kinds being issued and implemented. <Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The agreement was made between Japan and China when "Joint Statement on the Further Enhancement of Cooperation for Environmental Protection" in April 2007 and "Joint Communique on Promotion of Cooperation in the field of Environment and Energy" in December 2007 were announced. In the field of waste management and circular economy, it was agreed between two countries (i) to actively promote the concept of circular economy, (ii) proactive implementation of technical cooperation and proceeding the dialogue on solid waste management and  $3R^2$ , (iii) Implementation of training in the field of environment and energy for the total number of 10,000 people in three years from 2008.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

By the time of project completion, the Project Purpose, "The establishment of national policy and legal system for municipal solid waste recycling is enhanced" was achieved. By using the outcomes of pilot projects as references, the proposal documents in national policy and legal system for municipal solid waste recycling were developed (Indicator 1). During the pilot projects, various recycling options were examined, such as to recycle food waste for the animal feed, for farmyard compost or for production of methane gas, etc. Findings through pilot projects were incorporated into the draft of "Ordinance of Food Waste Management and Recycling" as well as the proposal documents in national policy and legal system for municipal solid waste recycling (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

After the project completion, the project effects have continued. By incorporating the method by reference which was exercised in pilot projects in four target cities, in order to identify the quantitative material flow from waste generation to its disposal, a macro perspective evaluation method at the national level, namely "Evaluation Indicator System for Developmental Circular Economy (2017)" was developed. It was confirmed that the contents of "Policy Framework" which reflect the outcomes of pilot projects have been incorporated into the several policies and regulations at national level.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal, "Municipal solid waste recycling is promoted in China." was achieved. As a national policy and legislation for municipal solid waste recycling, "Leading Plan for Cyclic Evolution" was enacted in April 2017. This plan is equivalent to the "Thirteenth Five-Year Plan (2016-2020)" in the field of circular development (Indicator 1). According to the interview with implementing agency, the promotion of recycling development is considered as one of priorities under the "Fourteenth Five-Year Plan (2021-2025)" as well. In addition, the "Notice on construction of model city for circular economy No. 2154 (2015)" and the "Notice on construction of model city for segregation of recyclables (first phase) No.19 (2015)" were enacted. According to the interview with implementing agency, the "Notice on construction of model city for segregation of recyclables (first phase) No.19 (2015)" have made practiced in the non-targeted cities (99 model cities), so that food waste segregation and treatment activities have started with the financial support from Chinese Government. (Detailed information was not available.)

<Other Impacts at the time of Ex-post Evaluation>

According to the interview with implementing agency, it was identified at a certain city that waste reduction eventually reduced the burden for the municipality on the environmental sanitation, and which caused no waste being disposed at the landfill. As a result, the landfill was closed and was made the environmentally protected area. With a green and ecologically beautiful landscape appearing surrounding the cities, it was identified that the so-called NIMBY phenomena<sup>3</sup>, shown by citizens who are against the aversive facilities like landfill managed by the village enterprises to be constructed in the vicinities of their houses, were disappeared. It was also identified that through the pilot project for food waste recycling in Qingdao City, the collaboration mechanism between research institutes and trade organizations, between researchers and local governments and private corporations, have been newly established.

Therefore, the effectiveness/impact of the project is high.

 $<sup>^2\,</sup>$  3R represents an abbreviation for Reduce, Reuse and Recycle.

<sup>&</sup>lt;sup>3</sup> NIMBY phenomena represent, "Not in My Backyard" meaning no construction of certain types of facilities in my own area, though not against the construction itself. The waste processing facility is considered as so-called "troublesome facility" or "aversive facility". People understand the needs of such facility, but they are against it if it happens in the vicinities of their houses.

			Achievement of Pro	ject Purpose and Overall	Goal	
Aim	Indicators			]	Results	
Project Purpose: The establishment	Indicator 1: The proposal documents		nievement States: Ach	ieved (continued)		
of national policy	of national policy and legal system for nunicipal solid vaste recycling is enhanced.			the project, the proposa nicipal solid waste recycles solid waste recycling, (ii) of recyclables, (iv) promo- ers of both Japan and Chotion of waste tire recyclin bollowing five proposals li	both Japan and China, reflecting the outcomes of pilot al documents as "Policy Framework" in national policy ing were developed. Proposals include items, such as (i) promotion of food waste recycling, (iii) implementation tion of packaging waste recycling, (v) the establishment tina on EPR policy, <sup>4</sup> (vi) legalization of waste disposal ng. sted in the "Policy Framework" developed by the project m for municipal solid waste recycling.	
			Proposals listed in the "Policy Framework" developed by the project	Referred policies and regulations (month/year)	Contents reflected	
		1	Promotion of food waste recycling	"Leading Plan for Cyclic Evolution (April 2017)" -equivalent to the National Five-Year Plan on circular economy	Publication of "Technical Guideline for food waste recycling" is announced under "Leading Plan for Cyclic Evolution". The guideline sets out the policy not only on technical issues, but also on the management of entire process, from collection of food waste to its disposal.	
			2	Promotion of packaging waste recycling	EPR Promotion Policy (December 2016) -First-ever National Plan in China on EPR promotion	Upon the proposal "Expert Report on packaging waste with compulsive recovery" on which the project summarized the requirement to establish the EPR, the beverage containers were selected as the main target for EPR promotion. Practical policy goals were determined to deal with four major items (electric and electronic equipment, lead battery, paper container for beverage).
		3	Implementation of policy for segregation of recyclables	Draft of Implementation plan of segregation of household recyclables (March 2017)	It was announced that the segregation of recyclables starts in 46 cities (the total population of 380 million) including 4 directly-administered municipalities (Beijing, Shanghai, Chongqing, Tianjin) Since 2019, the segregation of recyclables expanded to those cities over prefectural level. In Shanghai, the implementation started from July 2019, in Beijing the implementation with strict conditions including the household waste started from May 2020.	
	Indicator 2: The outcomes generated through pilot projects implemented in target cities are incorporated into the proposal documents in national policy and legal system for municipal solid waste recycling.	(Pro • R prop (Ex • E ordo eval Eco befo	eferring to the outcon posal document to the -post Evaluation) By incorporating the n er to identify the quan luation method at the momy (2017)" was de ore. It was confirmed	nes through the pilot proje government in the final r nethod by reference which titative material flow from national level, namely "E eveloped. Material flow o that the contents of "Polic	ects in the four target cities, "Policy Framework" and the report was developed. In was exercised in pilot projects in four target cities, in in waste generation to its disposal, a macro perspective evaluation Indicator System for Developmental Circular f this detailed level has never been prepared in China cy Framework" which reflect the outcomes of pilot blicies and regulations at national level.	

<sup>&</sup>lt;sup>4</sup> EPR: Extended Producer Responsibilities represents a way of thinking that producers have a certain level of responsibilities for the environmental burden of the products throughout its entire life cycle (from selection of materials, manufacturing process, usage and to disposal)

Overall Goal:	Indicator 1:	(Ex-post Evaluation) Achieved		
Municipal solid	National policy and	Policy (Law)	Date enacted	Contents
waste recycling is promoted in China.	legislation for municipal solid waste recycling is enacted.	Leading Plan for Cyclic Evolution	April 2017	This is the equivalent to the National Five-Year Plan (Thirteenth Five-Year Plan) in the field of circular economy. The contents of "Policy Framework" prepared by the project were reflected on food waste and EPR policy in this policy.
		Notice of Construction of Model City for Circular Economy No. 2154, 2015 Notice of Construction of Model City for Segregation of Household Recyclables (first phase) No.19, 2015	September 2015 April 2015	This notice was issued with the purpose to promote in all cities on municipal waste recycling including food waste and packaging waste. In respond to "Notice on Implementation of Model City for Segregation of Recyclables (March 2014)", 26 model cities were selected under the phase 1. Guiyang City and Xining City were selected.

Source: JICA documents, Questionnaire and interview with implementing agency

#### 3 Efficiency

While the project period was as planned, the project cost exceeded the plan (ratio against the plan: 100% and 107%, respectively). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

In the "Guidance on construction of resource recycling site (2017)", the priority issues are the collection of lower value waste, such as housing waste, food waste and waste tires. According to DRCEP, the promotion of recycling-based development will be included in "Fourteenth Five-Year Plan (2021-2025)". In Jiaxing City and Qingdao City assisted by the project, the promotion of recycling-based development is one of the most important issues. The policy aspect of sustainability is said to be secured. <Institutional Aspect>

Department of Resource Conservation and Environmental Protection (DRCER) is responsible for the policy formulation based on the results of pilot projects implemented by themselves for the purpose of recycling the waste. Under DRCER, Ecology Department provides the services for environmental management and prevention of pollutant, Commercial Department is responsible for the construction of solid waste management facilities, Construction of Housing Department provides the services of recycling for food waste, municipal pollutant and construction waste, and Finance Department manages the financial assistance on waste management, etc. The roles of those departments at the central level are well defined and each department has the linkage with respective department under the local governments, such as Development and Reform Commission on Environment, Center of Ecology of the City, Commercial and Trade of the City, Construction and Landscape of the City/Segregation of Waste of the City, and Finance of the City. In the Cities of Jiaxing and Qingdao which provided the information, the manpower of each organization is reportedly sufficient. Considering the current status of policy promotion at each city, it is unlikely that they have any serious problems. It is reported that through the collaboration network on the municipal solid waste recycling between Japan and China established by the project, inviting those Chinese officials from China, the introduction session, the intercommunication among enterprises and seminars on the Japanese system on vehicle recycling and electric appliances recycling were held in Japan in March 2018.

<Technical Aspect>

In Jiaxing City, those in charge of solid waste management have been engaged in each field, such as resource recycling, segregation of household recyclables, collection of recyclables, for long-term basis, thus they have been well trained. In Qingdao City, the project examined the required technical level for those in charge of waste management and trained them well. Therefore, it can be concluded that the technical level of those in charge of solid waste management at both cities has been secured. No information is available for other two cities. It is confirmed by the study that with the purpose of promoting the recycling of municipal solid waste, trainings organized by DRCEP for those officers in government and research institutes have been carried out on a timely basis. This is to maintain the technical capacity for those of implementing agency.

<Financial Aspect>

No detailed information has become available through the study. However, judging from the fact that multiple policies have become effective with the government funds, it is likely that the budget amount to some degree has been secured.

<Evaluation Result>

Through sufficient information was not available to judge the technical and financial aspects, it was confirmed that a certain level of conditions to maintain the project effect has been secured. Therefore, the sustainability of the project effects is fair.

# 5 Summary of the Evaluation

The Project Purpose, "The establishment of national policy and legal system for municipal solid waste recycling is enhanced" was achieved. The effects of the project have continued at the time of the ex-post evaluation, and the Overall Goal, "Municipal solid waste recycling is promoted in China" has been achieved. Regarding the sustainability, no problem was found in policy and institutional aspects. With limited information to judge the technical and financial aspects, a certain level of conditions has been secured in those aspects. As for efficiency, project cost exceeded the plan.

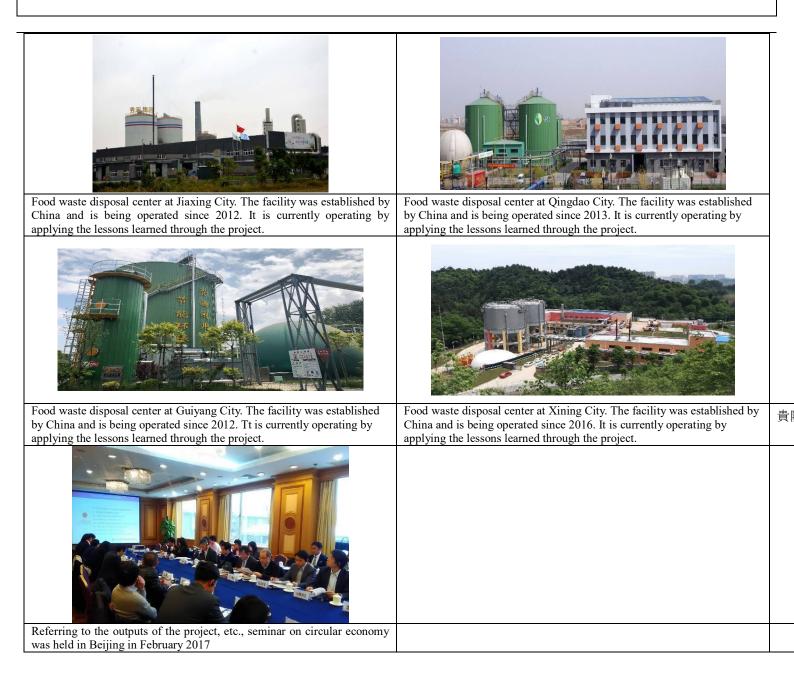
Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

Lessons Learned for JICA:

• In terms of the formulation and implementation of the project, the right combination of the counterpart agency and the Japanese experts is a key to effectively and efficiently generate the outcome.

"National Development & Reform Commission, P. R. China", the counterpart agency of the project, assumes the overall responsibility to develop the national policy and the national plan in China. Those who worked together in the project are the Japanese specialists and other members of Advisory Committee with advanced and sophisticated knowledge of relevant fields. The project was proceeded through the discussions in the form of working groups among all those concerned, which has eventually led to the development of "Policy Framework" reflecting the status of China as well as to make them incorporated into the national policy and legal system in China.



# Internal Ex-Post Evaluation for Technical Cooperation Project (SATREPS)<sup>1</sup>

Country Name Republic of Indonesia		Project for Climate Variability Study and Societal Application through Indonesia-Japan "Maritime Continent COE"- Radar-Buoy Network Optimization for Rainfall Prediction		
I. Project Outline	esia	Continent COE - Radar-Budy Network Optimization for Rainfail Frediction		
Background	Indonesia was the world 3 <sup>rd</sup> largest emitter of the Greenhouse Gas (GHG) following China and the United States with the emission of 3,143 million CO2 tons, including the CO2 emission from peatlands (the Wetlands International Annual Report). On the other hand, in December 2007, the government of Indonesia announced "the National Action Plan for Climate Change" for implementation of comprehensive mitigation and countermeasures against climate change at the United Nations Framework Convention on Climate Change (UNFCCC) 13 <sup>th</sup> session of the Conference of the Parties (COP13) in Bali. Under such situation, the government of Indonesia has promoted integrated management of observation data on climate change (Nusantara Earth Observation Network: NEONET). Also, Indonesia has complied research performance on global earth observation based on weather radar and ocean observation buoy as a member country of the Global Earth Observation System of Systems (GEOSS). However,			
Objectives of the Project	<ul> <li>development of optimum observation network for short term climate change was still limited in Indonesia.</li> <li>Through preparation of institutional framework for the Maritime Continent Center of Excellence (MCCOE), establishment of technologies for observation and prediction of short-term climate variations, buoy construction and operation as well as observation and development of technologies for quality control of observation data, and publishing research papers, the project aimed at promotion of research and development for improving predictability of extreme weather/climate variation and utilization of observation data compiled, thereby contributing to preparation of strategies to mitigate rainfall disasters.</li> <li>1. Expected Overall Goal: None</li> <li>2. Project Purpose: By optimizing atmospheric and oceanic observation networks and utilizing observational data, research and development for improving predictability of extreme weather/climate variations and</li> </ul>			
Activities of the Project	<ol> <li>drawing up strategy to mitigate rainfall disasters are promoted, and the outcomes are published internationally</li> <li>Project site: Padang, Serpong, Pontianak, Manado, and offshores of north western Papua and southwester Java</li> <li>Main activities: 1) Preparation of institutional frameworks for MCCOE, 2) Establishment of technologies for observation and prediction of short-term climate and rainfall variations through optimized radar-profile network, 3) development of technologies for buoy planning, construction, operation and observation, 4 development of technologies for quality control, archiving and analysis of observation data, 5) development of research paper and other research outputs including hazard maps</li> <li>Inputs (to carry out above activities) Japanese Side</li> <li>Experts: 18 persons</li> <li>Trainees in the third country: 4 persons (in Germany)</li> <li>Equipment: Buoy system and equipment, Mobile Parameter Radar (MPR), Trailer, Acoustic Releaser, etc.</li> <li>Local cost: travel cost, fee and honorarium for</li> </ol>			
Project Period		n-staff members, etc. D10 – March 2014 Project Cost (ex-ante) 390 million yen, (actual) 415 million yen		
Implementing Agency	Agency for Assessment and Application of Technology (BPPT)         Agency for Meteorology Climatology and Geophysics (BMKG)         National Institute of Aeronautics and Space (LAPAN)			
Cooperation Agency in Japan	Japan A	gency for Marine-Earth Science and Technology (JAMSTEC)		

#### II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

[Assessment of achievement level of the Expected Overall Goals]

For this SATREPS project, no Overall Goal was set forth in the Record of Discussion (R/D). "Utilization of the research outcomes by the project for mitigation and adaptation to climate change" can be an "expected Overall Goal" since the project activities addressed utilization of the research outcomes and distribution of information related climate change. In this ex-post evaluation, the following issues were verified to assess achievement level of the expected Overall Goal as one of the expected positive impacts.

- Practical use of technologies developed by the project, including "SIJAMPANG" (the radar real time rainfall observation system), InaTRITON (climate observation) buoy, and Buoy data real time quality control system

- Utilization of research outcomes for the society, including utilization of the observation data for international joint research such as GEOSS and WCRP (the World Climate Research Plan) as well as for the world weather maps and climate observation by transmitting to the Global Telecommunication System (GTS), data distribution to the public through SIJAMPANG.

<sup>&</sup>lt;sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development

#### 1 Relevance

<Consistency with the Development Policy of Indonesia at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the Indonesia's development policies to cope with climate change, including the "National Action Plan for Climate Change" (2006-2009), "National Midterm Development Plan (RPJMN)" (2010-2014) and the "National Action Plan: Indonesia Responses to Climate Change" issued in 2007 from Ministry of Environment (KLH), in order to implement comprehensive measures for mitigation and countermeasures against climate change.

<Consistency with the Development Needs of Indonesia at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the Indonesia's development needs for research activities on climate change because climatic and meteorological phenomena which cause abnormal weather adversely affected the country surrounding oceans.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project consistent with the Japan's ODA policy for Indonesia prioritizing support for development of democratic and fair society, including environmental protection, which was set in "the Country Assistance Program for Indonesia" (2004). <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the time of project completion. Establishment of an organizational mechanism of MCCOE was commenced but not completed within the project period (Indicator 1). The buoy ocean observation data collected by the project were used for global climate variation and the radar observation data collected by the project were used for local rainfall observation, in particular at the time of the extreme flood in Jakarta in January 2013 (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued by the time of ex-post evaluation. MCCOE was established on 13th November 2013 with 8 personnel and has been functioning for the research activities on climate/weather technologies and disaster alert. The observation data collected by the observation system which had been installed by the project have been utilized by BMKG for climate/weather mitigation and intensive monitoring in the Greater Jakarta Area since 2015. Also, the data collected by the buoy ocean observation system has been utilized. The buoy number 1 deployed in the Papua waters had stopped transmitting the signal in January 2013. Although it had been transmitting its location for a while, no vessel could collect it because it went too far then finally the battery died and it could not be found. Therefore, the actual reason was not able to be identified. It can be assumed that an unexpected accident may have occurred and it may have drifted to the Pacific Ocean The major research outputs of the project, such as the climate database at 200 points, the extreme event maps, the forecasting of potential rainfall and hazard maps associated with development phase of ENSO (El Niño-Southern Oscillation) and IOD (Indian Ocean Diploe mode), have been continuously developed and updated by BPPT, BMKG, and JAMSTEC though the Quantitative Precipitation Forecast (QPF) has not. In addition, BPPT and BMKG have collaborated to deploy the Indonesia Tsunami Early Warning System (Ina-TEWS) a mandate program from the President of Indonesia for the period between 2019 and 2020 utilizing buoy number 1 applying the improved technology based on the training in Japan under the SATREPS project. The Ina-TEWS, which has been funded by the national budget of Indonesia, has been taken place in Sunda Strait (for Krakatau eruption causing Tsunami in Banten Province) and Palu shore (for Tsunami in Palu).

Also, the major research equipment, such as the Climate Observation Buoy (Ina TRITON), X-Band Doppler Radar and Mobile Parameter Radar (MPR) have been continuously utilized by BPPT. There was an incident damaging the important part of X-Band Doppler Radar and make it out of order for two years though the other parts of MPR equipment have been well preserved. BPPT has purchased new spare parts costly as much as 200million Indonesian Ruphia to replace the broken part, but it has been still waiting for a German technician to repair and install the spare parts.

<Status of Achievement for Expected Overall Goal at the time of Ex-post Evaluation>

Since the Expected Overall Goal was not set forth for this SATREPS project, this ex-post evaluation verified "utilization of the research outcomes by the project". The utilization of the research outcomes by the SATREPS project has been progressed through utilization by the implementing agencies as well as the other government authority. After the project completion, the major technologies developed by the project have been utilized the BPPT and BMKG as well as the National Agency for Disaster Management (BNPB). SIJAMPANG has been a base for development of the Early Warning System by BNPB. Ina TRITON has been used by BPPT and BMKG for their research activities. Also, the buoy data real time quality control system has been utilized by BPPT for research on further development of Ina-TEWS. Furthermore, the seasonal prediction system using SINTEX-F<sup>2</sup> has been applied for agriculture by the Ministry of Agriculture and BMKG.

<Other Impacts at the time of Ex-post Evaluation>

There are some positive impacts of the project confirmed at the time of ex-post evaluation. BPPT and BMKG have improved their ability of data quality control, observation, radar operation, and data analysis. In addition, BPPT is now able to detect not only rainfall but also other parameters, such as smoke by using MPR. Also, BPPT enables to produce a buoy for Ina TRITON. BMKG has installed weather radar nationwide because of the increased radar operation capacity and analytical capacity of radar data.

No negative impact by the SATREPS project has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement	of Project Purpose	e and Overall	Goal

	A chile venient of 1 toje	et i uipose and overan doar
Aim	Indicators	Results
(Project Purpose)	(Indicator 1)	Status of the Achievement: Not achieved (Achieved)
By optimizing	Institutional organizational mechanism of	(Project Completion)
atmospheric and oceanic	MCCOE is functioned.	• The newly constructed building of MCCOE was opened in November

<sup>2</sup> A supercomputer model for seasonal prediction developed under the joint cooperation between Europe and Japan.

observation networks and		2013.
utilizing observational		• The organizational mechanism of MCCOE was not functioned since the
data, research and		establishment was just commenced but not completed by the project
development for		completion
improving predictability		(Ex-post Evaluation)
of extreme		• MCCOE has been functioning for the research activities on
weather/climate variations		climate/weather technologies and disaster alert.
and drawing up strategy to	(Indicator 2)	Status of the Achievement: Achieved. (Continued)
mitigate rainfall disasters	Societal Application of research and	(Project Completion)
are promoted, and the	development on climate variations is newly	• The buoy ocean observation data were used for global climate variations.
outcomes are published	introduced in Indonesia.	• The radar observation data were used for local rainfall observation, in
internationally.		particular at the time of the extreme flood in Jakarta in January 2013.
		(Ex-post Evaluation)
		• The observation data collected by the observation system which had been
		installed by the project has been utilized by BMKG for climate/weather
		mitigation and intensive monitoring in the Greater Jakarta area since
		2015.
Source : Terminal Evaluat	ion Report, Data and information provided by	BMKG and BPPT

### 3 Efficiency

Although the project period was within the plan (the ratio against plan: 92%), the project cost slightly exceeded the plan (the ratio against plan: 106%). The project outputs were produced as planned. Therefore, the efficiency of the project is fair. 4 Sustainability

## <Policy Aspect>

"The Ministerial Regulation No. 40 Year 2018 on National Research Priorities of 2017-2019" focuses disaster management as one of the priorities by the Ministry of Research and Technology (RISTEK). Also, BNPB, BMKG and BPPT issued "Tsunami Mitigation" (2012-2015) for implementation of roadmap of tsunami mitigation. These policies and regulation have promoted utilization of research outcomes, such as the observation system installed by the project.

#### <Institutional Aspect>

BPPT has sustained the organizational setting to continue observation data collection. Under BPPT, the Center for Technology on regional Resources Development (PTPSW) has 10 researchers/staff to be engaged in research and technology on weather and climate in order to support awareness raising and cautions toward natural disaster of the people and the Grand Center for Weather Modification Technology (BTMC) has more than 70 staff to be engaged in the central government programs related to weather modification technologies. The personnel of PTPSW and BBTMC has been sufficient for collecting observation data collection. MCCOE, which was established by the project, has been responsible for research on weather and climate technology and awareness raising on disaster warning. PTPSW of MCCOE has 7 researchers and 3 administration staff for the research activities. No information about BMKG and LAPAN is available.

For maintenance of the research equipment installed by the project, BPPT has been responsible for maintenance of Ina TORITON, X-ban Doppler Rader, C-band Doppler Rater and Multi parameter Rater (MPR).

<Technical Aspect>

The most of skills and knowledge on the rainfall observations and forecasts, including rainfall observation and buoy data collection with less errors, have been sustained by the research staff of BPPT, BMKG and MOCCOE. In particular, the researchers have skills for operation of the observation equipment. In addition, the researchers involved in the SATREPS project have continuously improved their research capacity through the higher academic education, international research cooperation, training in foreign countries. For example, some researchers have continued their academic course of Ph.D. Other researchers have made international collaborative researches with JAMSTEC and other foreign researchers.

<Financial Aspect>

For the maintenance of research equipment, BPPT has secured the budget for operational cost for MPR and XDR amounting around 2 million Indonesian Rupiah (IDR) per month to cover costs of electricity and internet, and also purchasing new spare parts for the broken X-Band Doppler Radar. BMKG and LAPAN have continuously allocated the budget for the Wind Profiler Rader (WPR) since the project completion in 2014. For the Buoy observation system has not required budget so far since the Ina TORITON, which upgrades the Ina TEW, has not been launched yet. MOCCOE submitted a research proposal of 300 million Indonesian Rupiah to the Ministry of Research Technology and Higher Education in 2017 and 2019 for the research topics of "Coastal Tomography Acoustic to Detect Sub-marine Vessel" (2017) and "Development of Jakarta Flood Monitoring System based on Weather Radar Technology and River Tomography Acoustic" (2019).

#### <Evaluation Result>

In the light above, there were only few of information collected from BMKG and LAPAN regarding its institutional aspect during the ex-post evaluation period. Therefore, the sustainability of the effects through the project is fair.

### 5 Summary of the Evaluation

The project was achieved the Project Purpose after the project completion and the utilization of the project outcomes through the further research and development activities for the Tsunami warning system based on the observation data collected by the SATREPS project. As for sustainability, there have been unclearness of resource allocations for the maintenance of the research equipment by the implementing agencies. As for efficiency, the project cost slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

# III. Recommendations & Lessons Learned

Recommendation to Implementing Agency:

In this SATREPS project, the oceanographic observation buoy was installed in the adjacent waters of the northwest of Papua Island but the buoy was lost as it was drifted away to Pacific Ocean due to accident. Since the research equipment is essential for the project activities under the SATREPS project, it can affect the research activities. In order to avoid such accident in other similar activities, the project has to take appropriate measures with responsibility and authority under such occasion when deploying equipment in the ocean.



"Magnetron" is a new purchased spare part for the X-Band Doppler Radar that attached to the Mobile Parameter Radar"

Country Name		Project on Integrated Coastal Ecosystem Conservation and Adaptive Management under Local and
Republic of Philipp	oines	Global Environmental Impacts in the Philippines (SATREPS)
I. Project Outline		
Background	became growth, change. increase informa	he Philippines, destruction of ecosystems and deterioration of living environment in the coastal areas serious issues due to worsening water and sea water pollution associated with poverty and economic unplanned tourism development, illegal fishing activities and impacts of natural disasters and climate The degradation of coastal ecosystems has adverse effects on livelihoods of local communities and also are the vulnerability of coastal areas against natural disasters. Unfortunately, necessary basic scientific tion had not been compiled for policy and decision making in order to balance economic development with ation of coastal ecosystems.
Objectives of the Project	Thi adaptiv at devel 1. Ex 2. Pro- ma	ough developing scientific and socio-economic knowledge for coastal ecosystem conservation and e management, utilization of such knowledge and capacity development of stakeholders, the project aimed oping a supporting basis for coastal ecosystem conservation and adaptive management. bected Overall Goal: N.A. ject Purpose: The supporting basis is developed for coastal ecosystem conservation and adaptive magement.
Activities of the Project	Bo Lag 2. Ma dan Suj gui cor org 3. Inp Japanes 1. Ex 2. Tra 3. Lor 4. Pro Res Cu qua bot Mo Sal 5. Lor	ject sites: Municipality of Bolinao (Pangasinan Province), Puerto Galera (Oriental Mindoro Province), racay Island (Aklan Province), Banate Bay (Iloilo Province), Laguindingan (Misamis Oriental Province), guna Lake (Metro Manila) in activities: 1) development of database on environmental factors and biodiversity in coastal ecosystems, nage potential map, Continuous and Comprehensive Monitoring System (ICCMS) and Integrated Decision oport System (IDSS) for policy making, 2) piloting CCMS and IDSS at project sites and development of delines for coastal ecosystem conservation and adaptive management, 3) trainings on coastal ecosystem servation and adaptive management and development of networks among stakeholders including overseas anizations. uts (to carry out above activities) e Side perts: 26 experts inees received in Japan: 57 persons rg-term trainees in Japan: 4 persons vision of machinery and equipment: Electric istivity Meter, vehicles, Acoustic Doppler vision of machinery and equipment: Electric istivity Meter, vehicles, Acoustic Doppler vision of machinery and equipment: Electric istivity Meter, vehicles, Acoustic Doppler vision of machinery and equipment: Electric istivity Meter, vehicles, Acoustic Doppler vision of machinery and equipment: Electric istivity Meter, biving PAM (Pulse Amplitude dulated), Dissolved Oxygen (DO) meters, inometer, etc. al operation costs: Travel expenses, cost for al consultants, etc.
Project Period		y 2010-February 2015 Project Cost (ex-ante) 300 million yen, (actual) 409 million yen
Implementing Agency	Univers	ity of the Philippines Diliman (UPD), UP Visayas (UPV), Mindanao State University (MSU)
Cooperation Agency in Japan	Univers	nstitute of Technology, Kochi University, Hokkaido University, University of Tokyo, Nagasaki University, ity of the Ryukyus, Japan Agency for Marine-Earth Science and Technology, Okinawa Prefectural ment, and LEAD-JAPAN

< Special Perspectives Considered in the Ex-Post Evaluation >

The Master Plan and Plan of Operation attached to the Record of Discussion (R/D) mainly specified the project activities and statements of Outputs and Project Purpose but not the corresponding indicators. In order to evaluate the project, the Terminal Evaluation Team in September 2014 identified indicators for each Output statement and Project Purpose. Based on those indicators, the Terminal Evaluation Team assessed the project performance and concluded evaluation judgments. The ex-post evaluation uses the indicators identified by the Terminal Evaluation in 2014.

1 Relevance

<Consistency with the Development Policy of Philippines' at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the Philippines' policies focusing on conservation and rehabilitation of the environment such as "The Philippine Development Plan (PDP)" (2011-2016).

<Consistency with the Development Needs of Philippines' at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the Philippines' development needs for improving local economy, industry and livelihoods of coastal communities while developing coastal ecosystem conservation and adaptive management.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

<sup>&</sup>lt;sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development

The project was consistent with the "Country Assistance Program for the Philippines" (2008) prioritizing assistance for the empowerment of the poor and improvement of living conditions of the poor. <Evaluation Result>

In light of the above, the relevance of the project is high

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. The project successfully established the supporting basis for coastal ecosystem conservation and adaptive management in the Philippines through development of the IDSSs compiling results of analyses; development of simulation models and establishment of CCMSs. Scientific and socio-economic knowledge basis was developed by researchers and the knowledge basis was disseminated in close communication and involvement of local stakeholders such as in the development of CCMS.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially continued since project completion. Some of the research outputs have been utilized such as the CCMS-Naawan for continuous monitoring of specific water parameters for further research. On the other hand, other CCMS (such as those in Bolinao, Banate Bay, Puerto Galera) are not utilized due to non- maintenance and malfunction of the sensors, and so on. In areas where there are sensors that are still functional, UPD decided to pull it out due to the fear of being stolen and no research project to use the sensors. Although IDSS has been used by UP MSI and UP Department of Geodetic Engineering (UP DGE) for their researches, most of IDSS installed at the pilot Local Government Units (LGUs) have not been used because of technical constraints including poor internet connectivity and limited human resource capacity of LGUs due to transfer of former personnel involved in the project to other work stations and some of IDSS have not been in functional conditions since they have been broken by typhoon. On the other hand, the results of the simulation models were utilized by LGUs and relevant organizations, including UP MSI and Laguna Lake Development Authority (LLDA) for assessment of ecological conditions of water bodies to improve their environment management strategies. The Damaged Potential Map developed by the project have been utilized as reference materials for disaster mitigation at the study sites and used for two projects (the Blue Carbon Project and Phil-LiDAR 2 [Light Detection and Ranging] Coast Map Project). The data on Boracay Island green tide has been used for ecological monitoring. In addition, the advocacy materials developed have been used for enhancement of the Biosphere Reserve by UNESCO and LGUs.

On the other hand, some organizations started new researches based on research outputs produced by the project. Also, there were researches related to the outputs generated which are continuously conducted or recently completed. CCMS have been used for two new research projects of UPD (a study on effect of coastal acidification and a research on remote sensing of Laguna Lake water quality). Furthermore, the Integrated Assessment and Modelling of Blue Carbon Ecosystems for Conservation and Adaptive Management (IAMBlueCECAM)<sup>2</sup> which is ongoing program, has been utilizing the Laguna Lake hydro-dynamic and water quality model.

The Guidebook: The Coastal Ecosystem Conservation and Adaptive Management (CECAM) Approach: An Innovation of Existing Integrated Coastal Zone Management (ICZM) Frameworks (or CECAM Guidebook for short) was disseminated to LGUs and other partner organizations. The CECAM Guidebook contains abstracts and summary of key findings of researches completed. But most municipalities have not used the guidelines because its technical contents were not simplified and there was no follow-up explanation or presentations by the researchers after the project due to both manpower and financial constraints of UP. Also, UPD, UPV and MSU were not able to explore applicability among LGUs in terms of policy decisions related to coastal resource management due to the lack of budget.

Some of the major facilities or equipment such as sub bottom profiler, diving PAM, fluorometer, ADCPs Turbidity-meter, DO-meter, Multi-parameter, Salinometer, Current meter have been continuously utilized by UP MSI Bolinao Marine Laboratory (BML), UP Institute of Civil Engineering, and Training Center for Applied Geodesy and Photogrammetry (UP TCAGP) since project completion. <Status of Achievement for Expected Overall Goal at the time of Ex-post Evaluation>

Expected utilization of research outcomes of this SATREPS project was not clearly achieved at the time of ex-post evaluation. There was no instance that LGUs have prepared policies, programs or countermeasures to reduce or mitigate environmental stress and conserve ecosystem based on scientific analytical results using the project's IDSS. However, it can be reasonably presumed that the SATREPS project has somehow contributed to policy making of LGUs. According to UPD, some data produced by the SATREPS project were used by Malay Municipality in drafting their Environment Code, which was enacted into law by said municipality. Also, according to UPD and representatives of the Philippine Chamber of Commerce and Industry- Boracay Chapter, the data produced by the SATREPS project were used in the Senate legislative discussions that led to the closure and rehabilitation of Boracay Island in Malay Municipality in 2018. <Other Impacts at the time of Ex-post Evaluation>

There have been some positive impact confirmed at the time of ex-post evaluation. Research capacities of researchers involved in the project have improved or enhanced in the areas of: (a) use of methodology for other water parameters; (b) coastal resource mapping; (c) primary data gathering and data analysis; and (d) numerical modeling.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose)	Indicator 1:	Status of the Achievement: Achieved (Partially Continued)
The supporting	The supporting basis with	(Project completion)
basis is developed	various scientific and	The results of analysis and simulation using various models developed by the project were
for coastal	socio-economic knowledge and	incorporated in IDSSs which were installed in 15 sites. The database to compile monitoring data
ecosystem	their integrated tools like IDSS	from the networked CCMSs was developed and integrated in the Network
conservation and	combined with CCMS is	The project team successfully developed and established CCMSs at all prioritized 6 project
adaptive	developed and implemented for	sites.

<sup>2</sup> IAM*Blue*CECAM program is led by Dr. Ariel C. Blanco, UPD and with funding support from the Department of Science and Technology - Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST-PCIEERD)

management.	coastal ecosystem conservation and adaptive management with the establishment of cooperative partnerships and networks among local communities (LGUs), academic	developed based on c (Ex-post evaluation) The following researc were not.	larification of coastal e		conservation policies was luding CCMS and IDSS,
	institutions and governmental organizations.	Research Outputs of the Project	Utilizing Organization	How Utilized	For What Purpose
		CCMS-Naawan	UP MSI, MSU-Naawan, LLDA, Tokyo Institute of Technology Blue Cares Project <sup>3</sup>	For continuous monitoring of specific water parameters using data-logging sensors	Research development and model input generation
		Simulation models developed by the project	UP MSI, LLDA, Tokyo Institute of Technology IAMBlueCECAM Program	For assessing the ecological condition of water bodies under varying environmental stressors	Research development and management of the water body under consideration
			DGE, Study sites	Reference material	Understanding coastal phenomena
		IDSS	UP MSI, DGE	Research, Instruction	Enhancement of research and instruction
		Damage Potential Map	Study sites	Reference material	In disaster mitigation
(Expected Overall Goal) Utilization of research outcomes.	-	systems have not be	and donated IDSS to een utilized by any LO	GU in generating, analyzir	r project completion, these ng and producing scientific r implementing programs o
Source: Terminal I Private Sector	Evaluation Report, Project Comp	countermeasures that	reduce or mitigate envi	ronmental stresses and cons	serve ecosystems.

3 Efficiency

Although the project period was as planned (the ratio against plan:100%), the project cost exceeded the plan (the ratio against plan: 136%). The project outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability <Policy Aspect>

Before the project, the municipality of Bolinao and neighboring coastal towns (Alaminos-Bolinao-Bani-Anda or ABBA cluster) already had a collective agreement concerning promotion of coastal ecosystem or marine environment. The Banate Bay municipalities through the Banate Bay Resource Management Council, Inc (BBRMCI) also had a collective agreement to promote conservation of coastal resources long before the SATREPS project. While the Environment Code of the Municipal Government of Malay was drafted using some data generated by the research activities of the project, CECAM or JICA was not cited as basis or reference. Other than the Municipality of Malay, there was no policy made by any of the other LGUs that was based on the scientific and analytical results of IDSS to promote conservation of coastal ecosystems. <Institutional Aspect>

Although there was no formal organizational or institutional arrangement concerning utilization of project outputs between UP Diliman, UP MSI BML, UP Visayas and MSU, the organizational arrangements to continue research activities related to the monitoring of coastal resources and to extend new research activities based on the SATREPS project have been sustained at the research institute level... The Memorandum of Agreement (MOA) executed by the project and Malay LGU and some private sector groups and NGOs did not explicitly specify such arrangement as of May 2014.

Also, although there was no formal organizational/institutional arrangement for the utilization of research outcomes between government authorities and researchers, most LGUs covered by the project had already collective institutional arrangements with neighboring municipalities concerning promotion, protection, conservation and management of communal coastal resources e.g., Bolinao (ABBA cluster), Banate Bay (BBRMCI), and so on. LGUs and other partner organizations were also provided with the CECAM Guidebook through the local chief executives but was not generally shared with the concerned staff and therefore not utilized for any decision-making. On the other hand, research papers of previous students and professors have been used as references by new students.

The operation and maintenance of IDSS was reported to have been turned over to LGUs and LLDA (for CCMS) but there was no formal agreement (e.g., MOA on O&M) or related document signed by LGUs and the project counterparts to this effect. Some LGUs inspect the CCMS platforms through their "Bantay Dagat" (Sea Watch) program (e.g., Bolinao).

<Technical Aspect>

Only a few of the 27 former project counterparts (10 researchers and 17 research assistants) remain working for coastal ecosystem research. On the other hand, researchers who have remained with UP have sustained their skills and knowledge by continuously conducting primary data gathering and data analysis. The availability of various monitoring sensors and equipment in areas where these items are still functional makes data gathering and analysis

<sup>&</sup>lt;sup>3</sup> Comprehensive Assessment and Conservation of Blue Carbon Ecosystems and Their Services in the Coral Triangle (Blue CARES), an ongoing SATREPS project.

deeper and more complete. Also, numerical modeling has become faster and more efficient using advanced computational tools and software.

While staff of UP and MSU were able to sustain skills and knowledge, support to LGUs and local stakeholders through trainings, seminars or workshops has stopped after project completion. Some LGUs however are still being visited as part of the activities of new researches. These include Banate Bay in Iloilo Province by UP Visayas and Boracay Island in Aklan Province by UPD and UP MSI. Nevertheless, follow-up trainings to sustainably operate IDSS and CCMS have not been provided.

After project completion, 11 students finished their researches (thesis, dissertation papers) using research results of previous students involved in the project (2016-2019). In future, some of these students may become government officials and decision-makers of private sector groups who may continue working for integrated coastal ecosystem conservation and adaptive management.

While policies and programs to promote coastal ecosystem had already been in place in most of the LGUs before the SATREPS project, awareness and scientific knowledge of LGU staff involved in the project was enhanced to a certain extent through seminars, training, workshops and presentations in local conferences. However, there is no policy or program formulated or implemented at LGU levels using research outputs of the project, although there may be informal understanding between and among universities i.e., UPD, UPV, MSI-BML, and MSU, about utilization of facilities and equipment including completed research papers by new students, professors and researchers. <Financial Aspect>

UPD and MSU-Naawan have continuously exerted efforts to secure funding for related researches using project research outputs. UPD and MSU completed 6 researches until 2018 and have 5 ongoing researches until 2021. Funding for these researches come from various sources such as: Australian Centre for International Agricultural Research (ACIAR), Commission on Higher Education (CHED), Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR), Department of Science and Technology- Philippine Council for Industry, Energy and Emerging Technologies Research and Development (DOST-PCIEERD) and DOST-Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARD), Department of Environment and Natural Resources (DENR) and from an NGO (Foundation for Philippine Environment or FPE). These enabled university researchers to visit some LGUs and use some CCMS platforms. UPD (UPV and MSU) have tried to secure enough budget for the operation and maintenance of project facilities and equipment (e.g., sensors, IDSS at UPD, laboratory, etc.) but were so far unsuccessful. Costs for operation and maintenance of project facilities and equipment were assumed to be covered by UP's annual budget on "Maintenance and Other Operating Expenses/MOOE" but there is no specific budget allocation for CECAM's facilities and equipment. Hence, the absence of sufficient funds explains the non-calibration of most equipment provided by the project, for instance and therefore non-utilization.

Government agencies cited above providing grants to academic researches acknowledge the relevance and necessity for such research activities and therefore continuously provide grants to research proposals from state universities. However, the process of approval takes a long time and procedures are quite tedious.

<Evaluation Result>

In light of the above, there have been challenges encountered by the implementing agencies from the policy, institutional, technical and financial aspects. Therefore, the sustainability of the effects through the project is fair.

## 5 Summary of the Evaluation

The project achieved the Project Purpose through developing and disseminating scientific and socio-economic knowledge as basis for coastal ecosystem conservation and adaptive management, as well as capacity development. However, the utilization of research outcomes have not been fully maximized at the LGU/community levels though research outputs have been utilized for other and new research undertakings. As for sustainability, there have been challenges to promote scientific evidences for policies and program formulation for coastal conservations by LGUs while the research institutes and universities have sustained their research activities on ecological systems in the coastal areas. As for efficiency, the project cost exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency (UPD MSI and LGUs):

It is recommended that UPD MSI undertake the following actions to enhance the sustainable use of IDSS and CCMS as well as the CECAM Guidebook developed by the SATREPS project:

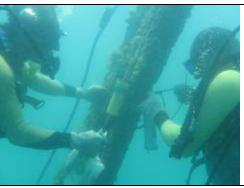
- Upload and make available the CECAM Guidebook in the UP website
- Prepare draft project sustainability agreement between UP and pilot LGUs containing UP's provision of necessary trainings to LGU staff in-charge of IDSS, simplified presentation of research findings to local executives and decision-makers of LGUs; and LGU's responsibility to properly operate and maintain IDSS and CCMS including data generation, monitoring and analysis, among others
- Secure organizational approval of the draft project sustainability agreement
- Make an action plan to conclude and implement the project sustainability agreement, and
- Conduct dialogues; practical hands-on trainings for the operation and management of IDSS as well as CCMS; organize workshops to understand research findings; and advocate for policy/program formulation on sustainable coastal resource management to LGU chief executives and concerned officers

Lessons Learned for JICA:

- For this SATREPS project, utilization of research outputs and outcomes has not been fully understood and utilized by LGUs and other local stakeholders as their involvement was limited only to assisting the research activities of main project researchers. Additionally, at the onset, the project design failed to set clear project objectives and strategies for promotion of utilization of the research outputs for ecological conservation in the coastal areas. Defining indicators in the beginning of project implementation can provide proper guidance to Project Team in aligning research activities to achieve development results and eventual adoption of policy recommendations at the LGU and community levels. JICA may also consider providing support in organizing workshops for relevant stakeholders after project completion to partly address dissemination of research outputs and hopefully adoption of policy recommendations.
- It is important to consider possibilities of local procurement for research-related equipment under SATREPS projects to ensure proper maintenance, efficacy and cost-effectiveness. A well-planned procurement plan should also be developed in consultation with stakeholders that will rationalize the required equipment items and timing of procurement of such items.



Water Sample Processing



Banate Bay Sensor Deployment

Country Name			aternal and Ne	wborn Care through Midwifery Capacity
Kingdom of Camboo	lia	Development		
I. Project Outline				
Background	and chi (NMCF was les care wa Ministr priority	Id health service system throug IC) and the technical cooperation is than what was required. This was as questionable as training for r y of Health (MOH) in Cambodi	ch construction n projects. Howe as especially so nidwife was no a had set up a ives in rural are	ment of Cambodia for establishment of the maternal of the National Maternal and Child Health Center ever, the number of skilled and experienced midwives in rural areas. Furthermore, quality service in delivery ot satisfactory in quality. To tackle these issues, the policy to increase numbers of midwives. MOH gave eas, and enhancement of the quality of in-service and tals.
Objectives of the Project	NMCH contribut 1. Ove incre 2. Proj	C and in the target provinces, th uting to increase in midwifery ser rall Goal: The utilization of an eased.	e project aimed vices focused or d access to ma ining system is	of pre-service and in-service trainings for midwives in d at strengthening midwifery training system, thereby n evidence-based quality care. aternal and newborn care provided by midwives is s strengthened for enabling provision of midwifery
Activities of the Project	Tho 2. Mai train guic (iv) strai 3. Inpu Japanes 1) Exp 2) Tra 3) Tra 4) Equ mod deto and 5) Loo	m, Prey Veng, Svay Rieng) n activities: (i) Training on eviners in NMCHC, Kampong Ch lelines and training materials, (iii integration of issues and less regies/ programs. ats (to carry out above activities)	dence-based mi nam Provincial ) sharing of the ons learned in ) ns (in Brazil) delivery art rate ment (e.g. PC	<ul> <li>Kampong Cham Region (Kampong Cham, Kampong idwifery care for normal birth practice for midwife Hospital and a model region, (ii) development of project experience and issues with other regions, and midwifery capacity development into the national</li> <li>Cambodian Side <ol> <li>Staff allocated: 59 persons</li> <li>Land and facilities: Office space in NMCHC and in Training Building of Kampong Cham Provincial Hospital, and office furniture</li> <li>Local cost: Maintenance cost for office space and furniture</li> </ol> </li> </ul>
Project Period		2010 - August 2015 ion Period: March 2015 – 2015)	Project Cost	(ex-ante) 420 million yen (actual) 435 million yen
Implementing Agency	Provinc			Child Health Center (NMCHC), Kampong Cham incial Referral Hospital, Kampong Cham Regional
Cooperation Agency in Japan	None			

1 Relevance

<Consistency with the Development Policy of Cambodia at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Cambodia's development policies of "the National Strategic Development Plan (NSDP)" (2006-2010), "NSDP 2014-2018", "the Health Strategic Plan" (2003-2007 and 2008-2015) emphasizing the importance of maternal and child health.

<Consistency with the Development Needs of Cambodia at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Cambodia's development needs for skilled and experienced midwives, especially in rural areas, and satisfactory quality service in delivery care.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with "the Country Assistance Program for Cambodia" (2002) putting priority on strengthening the provision of services of basic human needs (BHN) including the basic medical service as an assistance for socially vulnerable people. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. Practice of evidence-based midwifery care which is useful and should be encouraged was increased (Indicator 1), and practice of evidence-based midwifery care which is harmful and ineffective was

decreased in the two target hospitals (Indicator 2). Proportion of women who felt themselves treated client-centered care was increased from 53% to 100% in NMCHC, and 53% to 87% in Kampong Cham Provincial Hospital (Indicator 3). Also it was confirmed that students' knowledge on evidence-based MW care was increased (Indicator 4). Kampong Cham Provincial Hospital conducted 51 trainings on midwifery care, out of which 37 were fully supported by the Training Unit (TU) (Indicator 5).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued after the project completion. In this ex-post evaluation, the actual data for five indicators of the project purpose after the project completion could not be obtained as it was difficult to conduct the follow-up survey by applying the same methodologies used in the baseline and endline surveys. Alternatively, the continuation status of the training systems introduced by this project was examined based on the premise that if the training system continues, the project effects should be maintained. The midwifery training system for midwifery services with evidence-based quality care has been maintained after the project completion. The four-week in-service midwifery training and one-month Basic Emergency Obstetrics and Newborn Care (BEmONC) training introduced by the project have been provided in NMCHC and Kampong Cham Provincial Hospital continuously.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved by the time of ex-post evaluation. The percentage of deliveries attended by skilled birth attendants was increased from 53% in 2008 to 85.2% in 2015 in NMCHC and 88.95% in 2015 in Kampong Cham Provincial Hospital, which met the target value (Indicator 1). Also, the percentage of deliveries performed at health facilities increased from 35% in 2008 to 80.4% in 2015 in NMCHC and 88.95% in 2015 in Kampong Cham Provincial Hospital, which met the target value (Indicator 2). Furthermore, the above two indicators have maintained over 80% after 2015. However, the actual values of two indicators exceeded 80% in 2013, and it was considered that the Overall Goal was already achieved in 2013. This expansion in access to delivery services could rather be explained by many changes brought to the Cambodia maternal and child health sector over the past decade. Among them, major contributing factors include 1) promotion of facility-based deliveries through midwife incentives, 2) allocation of more midwives to health facilities, 3) improved physical access to health facilities, both in number of functional health facilities and in availability of transportation, 4) improvement in capacity to provide BEmONC services at public hospitals, and 5) mass media campaign promoting safe deliveries. On the other hand, although there are other contributing factors besides this project that promoted the achievement of the Overall Goal, the improvement of capacity of midwives and midwifery service by the project also contributed to maintain the high ratio of deliveries attended by skilled birth attendants and deliveries performed at health facilities in the target two hospitals after the project completion. <Other Impacts at the time of Ex-post Evaluation>

No other positive or negative impacts of the project were confirmed at the time of ex-post evaluation.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Aim	Indicators		Results	
(Project Purpose)	Indicators 1	Status of the Achievement: ach	hieved (continued)	
The midwifery training	Practice of evidence-based	(Project Completion)		
system is strengthened	midwifery care which is useful and	• In comparison with the rest	ults of baseline and endlin	e surveys, the
for enabling provision of	should be encouraged is increased.	implementation of useful p	ractices for midwifery car	e was increased in 8 out of
midwifery services with		8 practices in NMCHC and	l Kampong Cham Provinc	ial Hospital.
evidence-based quality		_		_
care.		(Ex-post Evaluation)		
		(1) NMCHC		
		Training course	No. of training session	No. of midwifes received the training
		Four-week in-service midwifery training	3	60
		One-month BEmONC		
		training	10	219
		Note: Target period is from M	farch 2015 till 2018 (This	target period includes the
		extension period of the project		
		1 1 5	·	,
		(2) Training Unit (TU) of Kan	npong Cham Provincial He	ospital
		Training course	No. of training session	No. of midwifes received the training
		Four-week in-service	This training was integr	
		midwifery training	training	
		One-month BEmONC	18	65
		training	-	
		Note 1: BEmONC (Basic Em		
		Note 2: Target period is from extension period of the project		
	Indicator 2	Status of the Achievement: acl	hieved (continued)	
	Practice of evidence-based	(Project Completion)		
	midwifery care which is harmful	• In comparison with the res	ults of baseline and endlin	e surveys, the
	and ineffective is decreased.			out of 12 practices NMCHC,
		and in 9 out of 12 practices	in Kampong Cham Provi	ncial Hospital.
		(Ex-post Evaluation)		
		<ul> <li>Same as the Results of Indi</li> </ul>	icators 1.	
	Indicator 3	Status of the Achievement: acl		
	Proportion of women who felt	(Project Completion)	× /	

Achievement of Project Purpose and Overall Goal

	themselves treated client-centered care is increased.	• Increased from 53% to 100% in NMCHC, and 53% to 87% in Kampong Cham Provincial Hospital (baseline and end-line survey result)
		(Ex-post Evaluation)
		• Same as the Results of Indicators 1.
	Indicator 4 Students' knowledge on evidence-	Status of the Achievement: achieved (continued) (Project Completion)
	based midwifery care is increased.	<ul> <li>More than 70% of students answered correctly for 9 out of 12 questions asked.</li> </ul>
		<ul><li>(Ex-post Evaluation)</li><li>Same as the Results of Indicators 1.</li></ul>
	Indicator 5	Status of the Achievement: achieved (continued)
	Number of Midwifery training conducted in Kampong Cham	<ul> <li>(Project Completion)</li> <li>Kampong Cham PH conducted 51 training on midwifery care, out of which 37 were fully supported by the TU.</li> </ul>
		<ul> <li>(Ex-post Evaluation)</li> <li>Refer to the Results of Indicators 1 at the ex-post evaluation.</li> <li>After the project completion, Kampong Cham PH continued the provision of midwifery care training, and conducted the one-month BEmONC training for 4-5 times a year from 2015 to 2018 targeting existing and newly recruited</li> </ul>
		midwives.
(Overall Goal)	Indicator 1	(Ex-post Evaluation) achieved
The utilization of and	The percentage of deliveries	(1) Percentage of Delivery attended by Skilled Health Staff (NMCHC):
access to Maternal and Newborn care provided	attended by skilled birth attendants (SBA) is increased from 58%	2015 2016 2017 2018
by midwives is	(NHS2008) to 80% (NHS2015	85.2 85.0 89.0 87.3
increased.	target) and over 80% is maintained	(2) Percentage of Delivery attended by Skilled Health Staff (Kampong Cham
	in 2018.	Provincial Hospital):
		2015 2016 2017 2018
	*NHS2008: National Health	88.9 83.0 80.6 83.1
	Survey 2008 *NHS2015: National Health Survey 2015	<ul> <li>The target value of 80% was achieved in 2015 and was maintained until 2018 due to increase in number of skilled birth attendants (midwives) with skills on maternal and newborn care, decrease in delivery by traditional midwives, community health education, BEmONC training, Midwifery Coordination</li> </ul>
		Alliance Team (MCAT) meetings.
	Indicator 2 The percentage of deliveries	<ul><li>(Ex-post Evaluation) achieved</li><li>(1) Percentage of Deliveries performed at Health Facilities (NMCHC)</li></ul>
	performed at health facilities is	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$
	increased from 39% (NHS2008) to	80.4 80.5 85.4 84.0
	70% (NHS2015 target), and over 70% is maintained in 2018.	(2) Percentage of Deliveries performed at Health Facilities (Kampong Cham
		Provincial Hospital)
		2015 2016 2017 2018
		88.9 83.0 80.6 83.1
		• The target value of 70% was achieved in 2015 and was maintained until 2018 due to increase in number of skilled midwife allocation and number of health center infrastructure development.
Source: Terminal Evaluat	ion Report. Data provided by NIS. Ou	estionnaire and Interview with NMCHC.

#### 3 Efficiency

Both the project cost and the project period exceed the plan (ration against plan: project cost 104%, project period 110%). The outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability <Policy Aspect>

"The Fast Track Initiative Road Map for Reducing Maternal and Newborn Mortality" (2016-2020) and the "EmONC Improvement Plan" (2016-2020) established by the Ministry of Health promotes the reduction of maternal and newborn mortality by leveling up the maternal and newborn care system in the country. The above policies support the project effects on midwifery capacity development <Institutional Aspect>

There has not been any change in the institutional structure for trainings for pre-service and in-service trainings for midwives in NMCHC. NMCHC, which is a top referral hospital in Cambodia specialized in the department obstetrics and gynecology and the department of newborn baby as well as a national training center for the experts of maternal and child health, is in charge of planning and implementation of midwifery training including four-week in-service midwifery training and one-month BEmONC training introduced by the project. The Training Unit of Kampong Cham Provincial Hospital is responsible for nursing and midwifery training in the reginal level. On the other hand, the Department of Human Resource Development (HRDD), MOH administrates (i) health workforce planning and management, (ii) training, and (iii) quality improvement of health workforce. 36 out of 37 core trainers and 82 out of 87 midwifery trainers educated by the project have been working continuously at their respective medical institutions. .

<Technical Aspect>

Although a frequency of implementation of the four-week in-service training was decreased, one-month BEmONC trainings has been conducted on regular-bases continuously with the technical and financial support from the United Nations Population Fund (UNFPA), which enable core trainers and midwifery trainers to maintain the training skills and knowledge.

NMCHC has supported provincial health departments of Battambang, Takeo, and Kampot with the support from the German Corporation for International Cooperation (GIZ) to establish Training Unit (TU) in addition to Kampong Cham province. According to MOH, the newly established TU in the three provinces functions well. The training manuals and guidelines developed or revised by the project have been utilized by NMCHC and Kampong Cham Provincial Hospital continuously. <Financial Aspect>

The budget for the four-week in-service training, and particularly BEmONC trainings have been continually allocated with the financial support from UNFPA since the project completion. The actual budgets allocated for the midwifery training at NMCHC were USD 69,798 (2015), USD 66,820 (2016), USD 62,526 (2017), USD 89,241 (2018) and USD 131,353 (2019). The budget disbursement and a significant increase in budget allocation were witnessed. According to NMCHC, they secured a budget for midwifery training for 2020. On the other hand, it was found that the counterpart agency did not have a systematic budget planning and management practice based on the training needs, which could be underscored by the project as an exit strategy. NMCHC has been discussing the future resource mobilization plan in order to secure a sufficient amount of budget from the Cambodian government as well as funding from the development partners. <Evaluation Result>

Therefore, the sustainability of the effects through the project is high.

#### 5 Summary of the Evaluation

The project achieved the Project Purpose and the Overall Goal to improve the accessibility to maternal and newborn care provided by midwives. In terms of sustainability, no major problems have been observed in the policy, institutional, technical, and financial aspects. As for efficiency, both the project cost and the project period exceed the plan.

Considering all of the above points, this project is evaluated to be highly satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• BEmONC training and the four-week in-service midwifery training have been provided mainly at NMCHC and TU at Kampong Cham Provincial Hospital Hospital. Thanks to this, Kampong Cham Provincial Hospital has become to play a significant role not only as a training center for midwifery staffs under its regional coverage, but also provision of quality service delivery. Therefore, MOH is recommended to expand the opportunities for BEmONC training and the four-week in-service midwifery training to the other medical institutions nationwide in the future.

Lessons Learned for JICA:

• In order to secure the budget for trainings introduced by technical cooperation project, the sustainable funding mechanism in consideration with the institutional capacity of counterpart agency on training need-based financial planning, training management, supervision and training delivery should be discussed with the project counterparts and relevant stakeholders during the project implementation.



Exterior Structure Training Unit of Kampong Cham Provincial Hospital



BEmONC Training at Training Unit of Kampong Cham Provincial Hospital

Country Name Kingdom of Cambodi	a	Strengthening Human Resources Development System of co-medicals in Cambodia
I. Project Outline		
Background	influen absolut and the Unde was sta project schools courses mechar profess training	ambodia, the medical and health care system was underdeveloped throughout the country under the ce of civil war, and the country faced many challenges relating to the medical personnel such as e shortage of medical workers, underdevelopment of basic national system including the medical law national examination for registration system. er the above circumstances, a technical cooperation project in the field of Co-medical education system arted as "Project for Human Resources Development for Co-Medicals" (2003-2010) by JICA. The contributed to develop regulations on the "school approval criteria" and "guidelines for approved s" for co-medicals (Nurse, Laboratory technician, Physiotherapy and Radiology) with short refresher for school teachers in Cambodia. However, some issues still remained, i.e. lack of systematic nism for capacity building of teaching staff, insufficient regulations for controlling the quality of health ionals, and difficulties in harmonization and alignment among partners on pre-service and in-service gneeds.
Objectives of the Project	teacher nursing 1. Ov 2. Pro	rough drafting Nursing and Midwifery Regulations and improving quality of nursing/midwifery s, the project aimed at improving the educational basis for quality co-medicals (mainly s/midwifery human resources), thereby contributing to production of quality co-medicals. verall Goal: Quality co-medicals are produced through the human resource development system oject Purpose: The educational basis for quality co-medicals (mainly nursing/midwifery human sources) is improved by enhancement of HRDD management capacity
Activities of the Project	1.         Product           2.         Manuary           1.         Product           3.         Inp           Japanee         1)           2.         Tra           3.         Equation	bject site: Cambodia nationwide ain activities: (i) drafting Nursing and Midwifery Regulations and (ii) improving quality of rsing/midwifery teachers through dispatching nurses and teachers to Bachelor of Science in Nursing SN) bridging course at Saint Louis College (SLC) in Thailand. puts (to carry out above activities)
Project Period	June 20	010-June 2015 Project Cost (ex-ante) 380 million yen, (actual) 262 million yen
Implementing Agency		Resources Development Department (HRDD), Ministry of Health (MOH) al Maternal and Child Health Center (NMCHC)
Cooperation Agency in Japan	Nationa	al Center for Global Health and Medicine

#### 1 Relevance

<Consistency with the Development Policy of Cambodia at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Cambodia's development policies of "the National Strategic Development Plan (NSDP)" (2006-2010 and 2014-2018) and, "the Health Strategic Plan" (2003-2007 and 2008-2015) emphasizing the importance of capacity building and human resource development in the health sector for improving health services.

<Consistency with the Development Needs of Cambodia at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with development needs of Cambodia for improving the educational basis for quality co-medicals as described in "Background" at the time of ex-ante evaluation. These needs had continued at the time of ex-post evaluation. Furthermore, the requirement from ASEAN Economic Community (AEC) to comply the mutual recognition arrangement has been acknowledged. As a result, this project approach to urgently develop a National Licensing System has been relevant to the development needs of Cambodia at the time of ex-post evaluation.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with "the Country Assistance Program for Cambodia" (2002) putting priority on strengthening the provision of services of basic human needs (BHN) including the basic medical service as an assistance for socially vulnerable people. <Evaluation Result>

In light of the above, the relevance of the project is high

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the time of project completion. As the Law on Health Professionals was not enacted during the project period, the National Nursing Licensing System was not started at the project completion (Indicator 1). On the other hand,

the reports from the medical schools were summarized and reported by HRDD/MOH in the Annual Health Sector Review (Indicator 2). The reports of returned teachers from the Bachelor Bridging Course<sup>1</sup> were shared among nursing/midwifery teachers in Cambodia through the workshops (Indicator 3). The number of classes taught by the graduates from the Bachelor Bridging Course in Thailand increased (Indicator 4). Through the sampling survey, more than half of the Saint Louis College (SLC) graduates interviewed during the terminal evaluation reported that they either increased the number of subjects and/or increased the number of teaching hours. <<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially continued after the project completion. The Law on Regulation of Health Practitioners was enacted by the National Assembly on November 22, 2016, and the national registration and licensing system for health professionals was introduced in Cambodia. However, the draft of Joint Prakas on School Accreditation has remained in draft due to the fact that there have been concerns over the process of administration procedure for opening new health educational training program and challenge of financial support for its implementation. The school accreditation is a system to assure the qualification of medical school graduates, and it is one of the essential legal frameworks to support functionalizing the national registration and licensing system for health professionals. In this regard, it is considered that the national registration and licensing system is still incomplete at the time of ex-post evaluation. On the other hand, the Annual Health Sector Review has been conducted by HRDD continuously. As described in the technical aspect of sustainability, the SLC graduates have held seminars and workshops every year to share their technical knowledge and skills learned through their experience studying in Thailand. Although the number of classes taught by the SLC graduates was not confirmed at the time of ex-post evaluation, SLC graduates have taught for five bachelor or associate degree courses in the teaching institutions. Among these five courses, the Bachelor of Science in Midwifery (BSM) and the Bachelor of Nursing-Midwifery (BNM) were upgraded in 2016 with the contribution and lectureship by SLC graduates.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved by the time of ex-post evaluation. The number of certified nurses/midwives under the new system increased by more than twice from 8,280 in 2016 to 19,429 in 2018 (Indicator 1). In addition, the number of graduates of the public medical schools such as University of Health Science (UHS) and regional training centers who had studied the academic course of Associate Degree in Nursing (ADN) increased constantly from 613 in 2016 to 628 in 2017 and 734 in 2018. While, the number of graduates of the public medical schools who had studied the academic course of Associate Degree in Midwifery (ADM) were 675 in 2016, 497 in 2017, and 511 in 2018.

<Other Impacts at the time of Ex-post Evaluation>

No other positive or negative impacts of the project were confirmed at the time of ex-post evaluation.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

(mainly nursing/ midwifery human resources) is improved by enhancement of HRDD management capacity.started.firm hired by MOH just before the end of the project. However, this law was enacted by the project completion, therefore, the National Nursing Licensing System was not started.(Ex-post Evaluation)(Ex-post Evaluation)• The Law on Regulation of Health Practitioners was enacted by the National Assembly on November 22, 2016 based on the draft sub-decree on nursing regulation.• All five health professional councils (Note), including the Cambodian Council on Nurses started the national registration and licensing system within 12 month obliged duty following enactment of the law in 2016.• The national registration and licensing system using the online platform was established based on the condition and criteria set up by the Cambodian Courci of Nurses with support of the United State Agency for International	Aim	Indicators	Results
quality co-medicals (mainly nursing/ midwifery human resources) is improved by enhancement of HRDD management capacity.System (registration-licensing) is started.• The Law on Health Professionals was prepared and submitted to MOH by a la firm hired by MOH just before the end of the project. However, this law was enacted by the project completion, therefore, the National Nursing Licensing System was not started.(Ex-post Evaluation)• The Law on Regulation of Health Practitioners was enacted by the National Assembly on November 22, 2016 based on the draft sub-decree on nursing regulation.• All five health professional councils (Note), including the Cambodian Council of Nurses started the national registration and licensing system within 12 month obliged duty following enactment of the law in 2016.• The national registration and licensing system using the online platform was established based on the condition and criteria set up by the Cambodian Cour of Nurses with support of the United State Agency for International	(Project Purpose)	Indicator 1	Status of the achievement: not achieved (Partially achieved)
(mainly nursing/ midwifery human resources) is improved by enhancement of HRDD management capacity.started.firm hired by MOH just before the end of the project. However, this law was enacted by the project completion, therefore, the National Nursing Licensing System was not started.(Ex-post Evaluation)(Ex-post Evaluation)• The Law on Regulation of Health Practitioners was enacted by the National Assembly on November 22, 2016 based on the draft sub-decree on nursing regulation.• All five health professional councils (Note), including the Cambodian Council on Nurses started the national registration and licensing system within 12 month obliged duty following enactment of the law in 2016.• The national registration and licensing system using the online platform was established based on the condition and criteria set up by the Cambodian Courci of Nurses with support of the United State Agency for International	The educational basis for	The National Nursing Licensing	(Project completion)
midwifery human resources) is improved by enhancement of HRDD management capacity.enacted by the project completion, therefore, the National Nursing Licensing System was not started.(Ex-post Evaluation) • The Law on Regulation of Health Practitioners was enacted by the National Assembly on November 22, 2016 based on the draft sub-decree on nursing regulation.• All five health professional councils (Note), including the Cambodian Council of Nurses started the national registration and licensing system within 12 month obliged duty following enactment of the law in 2016.• The national registration and licensing system using the online platform was established based on the condition and criteria set up by the Cambodian Cour of Nurses with support of the United State Agency for International	quality co-medicals	System (registration-licensing) is	• The Law on Health Professionals was prepared and submitted to MOH by a law
resources) is improved       System was not started.         by enhancement of       (Ex-post Evaluation)         HRDD management       • The Law on Regulation of Health Practitioners was enacted by the National Assembly on November 22, 2016 based on the draft sub-decree on nursing regulation.         • All five health professional councils (Note), including the Cambodian Council of Nurses started the national registration and licensing system within 12 month obliged duty following enactment of the law in 2016.         • The national registration and licensing system using the online platform was established based on the condition and criteria set up by the Cambodian Council of Nurses with support of the United State Agency for International	(mainly nursing/	started.	firm hired by MOH just before the end of the project. However, this law was not
<ul> <li>by enhancement of HRDD management</li> <li>capacity.</li> <li>(Ex-post Evaluation)</li> <li>The Law on Regulation of Health Practitioners was enacted by the National Assembly on November 22, 2016 based on the draft sub-decree on nursing regulation.</li> <li>All five health professional councils <sup>(Note),</sup> including the Cambodian Council of Nurses started the national registration and licensing system within 12 month obliged duty following enactment of the law in 2016.</li> <li>The national registration and licensing system using the online platform was established based on the condition and criteria set up by the Cambodian Court of Nurses with support of the United State Agency for International</li> </ul>	midwifery human		enacted by the project completion, therefore, the National Nursing Licensing
HRDD management       (Ex-post Evaluation)         capacity.       • The Law on Regulation of Health Practitioners was enacted by the National Assembly on November 22, 2016 based on the draft sub-decree on nursing regulation.         • All five health professional councils <sup>(Note),</sup> including the Cambodian Council of Nurses started the national registration and licensing system within 12 month obliged duty following enactment of the law in 2016.         • The national registration and licensing system using the online platform was established based on the condition and criteria set up by the Cambodian Court of Nurses with support of the United State Agency for International			System was not started.
<ul> <li>capacity.</li> <li>The Law on Regulation of Health Practitioners was enacted by the National Assembly on November 22, 2016 based on the draft sub-decree on nursing regulation.</li> <li>All five health professional councils <sup>(Note),</sup> including the Cambodian Council of Nurses started the national registration and licensing system within 12 month obliged duty following enactment of the law in 2016.</li> <li>The national registration and licensing system using the online platform was established based on the condition and criteria set up by the Cambodian Courci of Nurses with support of the United State Agency for International</li> </ul>	by enhancement of		
<ul> <li>Assembly on November 22, 2016 based on the draft sub-decree on nursing regulation.</li> <li>All five health professional councils <sup>(Note),</sup> including the Cambodian Council of Nurses started the national registration and licensing system within 12 month obliged duty following enactment of the law in 2016.</li> <li>The national registration and licensing system using the online platform was established based on the condition and criteria set up by the Cambodian Courcil of Nurses with support of the United State Agency for International</li> </ul>	HRDD management		(Ex-post Evaluation)
<ul> <li>regulation.</li> <li>All five health professional councils <sup>(Note),</sup> including the Cambodian Council of Nurses started the national registration and licensing system within 12 month obliged duty following enactment of the law in 2016.</li> <li>The national registration and licensing system using the online platform was established based on the condition and criteria set up by the Cambodian Council of Nurses with support of the United State Agency for International</li> </ul>	capacity.		The Law on Regulation of Health Practitioners was enacted by the National
<ul> <li>All five health professional councils <sup>(Note),</sup> including the Cambodian Council of Nurses started the national registration and licensing system within 12 month obliged duty following enactment of the law in 2016.</li> <li>The national registration and licensing system using the online platform was established based on the condition and criteria set up by the Cambodian Council of Nurses with support of the United State Agency for International</li> </ul>			Assembly on November 22, 2016 based on the draft sub-decree on nursing
<ul> <li>Nurses started the national registration and licensing system within 12 month obliged duty following enactment of the law in 2016.</li> <li>The national registration and licensing system using the online platform was established based on the condition and criteria set up by the Cambodian Cour of Nurses with support of the United State Agency for International</li> </ul>			
<ul> <li>obliged duty following enactment of the law in 2016.</li> <li>The national registration and licensing system using the online platform was established based on the condition and criteria set up by the Cambodian Court of Nurses with support of the United State Agency for International</li> </ul>			
• The national registration and licensing system using the online platform was established based on the condition and criteria set up by the Cambodian Cour of Nurses with support of the United State Agency for International			
established based on the condition and criteria set up by the Cambodian Cour of Nurses with support of the United State Agency for International			
of Nurses with support of the United State Agency for International			
Development (USAID)			
			Development (USAID).
• The Government of Cambodia decided to authorize the Ministry of Health to			
			control technical aspects of health educational training. However, the draft of
			Joint Prakas on School Accreditation has remained in draft due to the fact that
there have been concerns over the process of administration procedure for			
opening new health educational training program and challenge of financial			
support once the Joint Prakas is endorsed.			support once the Joint Prakas is endorsed.
(Note) The five councils of doctor, nurse, midwife, pharmacist, dentist are			(Note) The five councils of doctor nurse midwife pharmacist dentist are
mandated to operationalize registration and licensing for respective health			
professions. They are public administration institutions with self-autonomy.			
Indicator 2 Status of the achievement: achieved (continued)		Indicator 2	
Reports from the schools are (Project completion)			
			<ul> <li>The reports were submitted by the public medical schools and some of private</li> </ul>
HRDD in the Annual Health Sector medical schools and reported by HRDD.		1 P	

Achievement of Project Purpose and Overall Goal

<sup>&</sup>lt;sup>1</sup> The Association of Southeast Asian Nations (ASEAN) signed the Mutual Recognition Arrangement (MRA) in 2015 as part of its free trade policy. The MRA aims to (i) facilitate the movement of professionals within the ASEAN region, (ii) exchange and share information on regulations and qualifications among member countries, (iii) adopt best practices, and (iv) provide opportunities for capacity development and training and education for professionals. In this circumstance, this project conducted a dispatch of Cambodian nurses and teachers to BSN bridging course in Thailand as an example of cooperation among ASEAN member countries to harmonize education and qualification systems in the field of nursing.

		1				
	Review.	(Ex-post Evaluation)				
		The Annual Health Sector Review	v has been	conducted	by HRDD co	ntinuously
	Indicator 3	Status of the achievement: achieved				ininaoasiy.
	The reports of returned teachers	(Project completion)	•	<u>_</u>		
	from the Bachelor Bridging Course	• The two workshops were organiz	ed in Janu	ary and May	2015 for de	briefing
	are shared among nursing/	from the graduates of Bachelor B	ridging Co	ourse and th	eir reports w	ere shared
	midwifery teachers in Cambodia.	among stakeholders.				
		(Ex-post Evaluation)				
	Indicator 4	• The SLC graduates have held sen Status of the achievement: achieved	ninars and	worksnops	every year.	
	The number of classes taught by	(Project completion)	(continued	<u>1)</u>		
	the graduates from the Bachelor	<ul> <li>All of the SLC graduates success</li> </ul>	fully comp	leted their b	oridging cour	se and
	Bridging Course in Thailand is	returned to school to teach or be				
	increased.	training. Therefore, the number o	f classes ta	aught by Ba	chelor holder	's is
		increased.		10 001 0		
		• Through the sampling survey, mo				
		during the terminal evaluation rep of subjects and/or increased num				
		institutions and hospitals).		ining nours (		aennig
		• In addition, all of SLC graduates	were prom	noted to high	ner positions.	
			1	e	1	
		(Ex-post Evaluation)				
		• Although the number of classes t				
		ex-post evaluation was not confir			bjects and te	aching hours
		<ul><li>were increased upon their return :</li><li>SLC graduates teach for five back</li></ul>			ee courses in	the teaching
		institutions. Among these five con				
		(BSM) and the Bachelor of Nursi				
		with the contribution and leaders	hip by SLC	C graduates.		
		Syllabus of all subjects including			bus were dev	eloped and
		available at public health training	; institutior	ns.		
		A and amin a summary tought bu SI C am	advataa			
		<ul> <li><u>Academic courses taught by SLC gra</u></li> <li>Associate Degree in Nursing (AD</li> </ul>				
		<ul> <li>Associate Degree in Nulsing (AL)</li> <li>Associate Degree in Midwifery (A)</li> </ul>				
		Bachelor of Science in Nursing (				
		Bachelor of Science in Midwifer				
		• Bachelor of Nursing-Midwifery (		udents study	ADN for 3	Years and
(Overall Goal)	Indicator 1	continue Midwifery specialty for (Ex-post Evaluation) achieved	1 year)			
Quality co-medicals are	Number of certified nurses/	No. of certified nurses/midwives un	nder the ne	w National	Nursing Lice	nsing
produced through the	midwives under the new system	System				8
human resource			Befor		After	
development system			2016		017	2018
		No. of certified nurses		,680	12,461	13,041
		No. of certified midwives Total		,600	6,015 18,476	6,388 19,429
		Source: Health Professional Counci				
		Performance Monitoring Report, N		, 0.57 mD		J C
	Supplemental information	(Ex-post Evaluation) achieved				
	Number of graduates of the public	1) No. of graduates who studied AD	DN course	5.0		
	medical schools who studied nursing/ midwifery		ŀ	Before 2016	Af 2017	2018
	nursing/ indwitery	University of Health Science (UH	(21	192	2017	149
		Regional Training Center in Kg. (		93	105	224
		Regional Training Center in Rg. C		137	130	130
		Regional Training Center in Kam		119	109	139
		Regional Training Center in Stung		72	54	92
		Total		613	628	734
		Source: Annual Health Progress Re	port 2016,	2017, 2018		
		2) No. of graduates who studied AD	M course			
		2) NO. OF graduates who studied AL		Before	Af	ter
			-	2016	2017	2018
		University of Health Science (UH	IS)	2010	163	99
		Regional Training Center in Kg. (		102	113	157
		Regional Training Center in Batta	umbang	142	103	101
		Regional Training Center in Kam		133	100	99
		Regional Training Center in Stung	g Treng	91	18	55
		Total	0016	675	497	511
		Source: Annual Health Progress Re Note: It should be noted that the nu				d year by
		year. And the number of students pa				
	1	jean ring the number of students p	asonig nau	Shar CAR CA	are arso v	arrea in ullo

			aspect.	
	Source: Terminal Evaluation	on Report, Questionnaire and Interview	w with MOH and NMCHC.	
2	Efficiency			

#### 3 Efficiency

Both the project cost and project period are within the plan (69% and 100% against plan respectively), and the outputs were produced as planned. Therefore, the efficiency of the project is high.

#### 4 Sustainability <Policy Aspect>

The Human resource development of co-medicals under the National Nursing Licensing System has been prioritized in the existing health sector policies in Cambodia such as "the Health Strategic Plan III" (2016-2020) and "the Health Workforce Development Plan" (2016-2020).

#### <Institutional Aspect>

There has not been any change in the institutional structure for human resources development system of co-medicals in Cambodia. The Human Resources Development Department (HRDD), MOH is responsible for policy planning for human resource development of health workers, formulation of training master plan and program, and registration and certification of health workers. Under MOH, there are public educational schools and institutions for medical field in Cambodia such as the University of Health Science (UHS) and the 4 Regional Training Center in Kg. Cham, Battambang, Kampot, and Stung Treng. Following the enactment of Law on Regulation for Health Practitioners, the health professional councils including the Cambodian Council of Nurses (CCN) and the Cambodian Midwives Council (CMC) have been in charge of establishment of necessary umbrella legal framework to operationalize registration and licensing system. Upon return from Thailand, majority of 32 SLC graduates (27 nurses, 5 midwives) have been promoted to responsible positions in both teaching and health service management at their respective workplaces, and they have been serving continuously. <Technical Aspect>

The SLC graduates have shared and disseminated their technical knowledge and skills to other teachers, nursing and midwifery staffs and students in the respective schools and medical institutions through seminars and workshops every year. They have contributed to developing the syllabus of nursing and midwifery science related subjects including clinical practice for the public health training institutions. On the other hand, there has been a challenge in regular monitoring of quality of health education due to insufficient monitoring tools, lack of technical capacity and financial constraints to functionalize the HRD Database System necessary for the above monitoring activities.

### <Financial Aspect>

The registration and licensing system of health professionals has been mandated under the authority of health professional councils. However, the health professional councils have faced limitation in financing its operation costs by themselves. There is no national budget allocation to the councils due to its basically autonomous institutional structure, and weak financial foundations with little external financial supports to sustain the operation. Sending teachers and preceptors, who hold Associate Degree, to the academic programs of Bachelor in Nursing and Midwifery Science at the overseas health educational institutions is critical in order to upgrade their educational levels and expertise in their respective fields. Although there is limitation of national budget for meeting this demand, opening of academic programs for Bachelor in Nursing and Midwifery Science are becoming widely available in the country. In this respect, financial contributions from development partners have been required.

<Evaluation Result>

Therefore, the sustainability of the effects through the project is fair.

## 5 Summary of the Evaluation

The project partially achieved the Project Purpose and archived the Overall Goal to produce quality co-medicals through the improvement of human resource development system for health workers. In terms of sustainability, no major problems have been observed in the policy and institutional aspects, but there is a concern about a regular monitoring of quality of health education by HRDD/MOH due to insufficient operation of the HRD Database System as well as a weak financial foundation of the health professional councils.

Considering all of the above points, this project is evaluated to be satisfactory

## **III. Recommendations & Lessons Learned**

## Recommendations for Implementing Agency:

- As there is an uncertainty in budget planning to continue capacity development of teachers and preceptors for co-medical professionals, it is recommended that MOH develop clear strategic direction with secured budget plan on strengthening technical capacity of core teachers and staffs in the area of nursing and midwifery profession.
- The Joint Prakas on School Accreditation required for implementation of the National Nursing Licensing System in Cambodia is one of the important legal frameworks for strengthening the standard quality of health educational institutions. Therefore, in order to obtain the approval of the Joint Prakas on School Accreditation as soon as possible, it is recommended that MOH continue to make their efforts to cope with challenges such as how to regulate administration procedure for opening new health educational training program and how to secure necessary financial sources for implementation of the system.

Lessons Learned for JICA:

• Upon their return from Thailand, the core team of SLC graduates demonstrated a meaningful contribution to improve quality of education through sharing their knowledge and experience in public platforms as well as lectureship and health service management for betterment of nursing and midwifery field in particular. Therefore, an approach of capacity development focusing on the capacity of core nursing/midwifery teachers and preceptors, who are playing key role in training, lectureship, and clinical practice management, through dispatching to overseas higher educational schools for obtaining a degree in respective subjects and fields could be a good reference to explore for subsequence planning of JICA project on strengthening quality nursing and midwifery education.



Annual Nursing Conference by SLC Graduates



Compilation of Legal Frameworks for Health Sector

Country Name		Project for Improvement o	f the Ouality	of Human Resources in the Medical
Socialist Republi	c of	Service System	r ene Quanty	
Viet Nam		-		
I. Project Outline				
Background	since in have re urban a matter, (MOH)	nplementation of the Doi Moi poli mained such as widening the region reas. Under such circumstances, d which could serve to upgrade the was implementing the reforms an	cy in 1986. How onal differences i levelopment of h overall quality o d revisions of rea	reatly contributed to improvement of health indicators vever, new problems emerged and some critical issues in health service quality, especially between rural and uman resources for health was an urgent and rational of medical services. Therefore, the Ministry of Health gulations and policies on human resources of medical ty of health staff in different levels nationwide.
Objectives of the Project	materia resource 1. Ov 2. Pro hos Me *Three o	Is with focus on Continuous Medic es improvements, thereby improvin erall Goal: The quality of health can oject Purpose: Activities for huma spitals, and the targeted hospitals edical Services System developed by core hospitals include Bach Mai Hospit	al Education (CM g the quality of here re services in Mec an resources imp * based on hum y MOH. al (BMH) in North	ent Plan, standardized training curricula and teaching (E), the project aims to implement activities for human ealth care services in all over Viet Nam. dical Services System in Viet Nam is improved. rovements are implemented by the MOH, three core an resources development policies and strategies in Region, Hue Central Hospital (HCH) in Central Region and environmented by the service and strategies and strategies in the service service and strategies and strategies in the service service and strategies and strategies in an environmented by the service service and strategies
	hospitals	s nationwide according to the defined li		ospitals mainly include central and provincial level general
Activities of the Project	<ol> <li>Ma and ma (D0 Dev hos</li> <li>Inp Japanes</li> <li>Exp (Lc</li> <li>Tra</li> <li>Equitable</li> </ol>	I teaching materials with focus on 0 nagement staff for Medical Service OHA)-Training Center, (4) Manag velop Monitoring and Evaluation spitals and other targeted hospitals outs (to carry out above activities)	CME for human n e Administration ge training activit (M&E) methods Vietn 1) 7 persons	evelopment (HRD) plan, (2) Revise training curricula resources, (3) Improve capacity of trainers and training (MSA) and Direction Office of Health Care Activities ties in the essential fields by 9 training subjects, (5) s, (6) Conduct M&E regularly in MOH, three core namese side: Staff allocated: 100 persons (MOH/MSA 12, BMH 32, HCH 29, CRH27) Provision of facilities Local Expenses
Project Period	July 20	10 - July 2015	Project Cost	(ex-ante) 550 million yen, (actual) 418 million yen
Implementing Agency	Training		n Department (IC	(MSA), Administration of Science Technology and D), Department of Legislation and Department of pital, Cho Ray Hospital
Cooperation Agency in Japan	Ministr	y of Health, Labor and Welfare; Na	tional Center for	Global Health and Medicine

<Constraints on Evaluation>

• Due to the time constraints of the ex-post evaluation study, there was a limitation of data collection. The study was based on the data collected from selected hospitals (3 core hospitals, 7 provincial hospitals and one central hospital).

<Special Perspectives Considered in the Ex-Post Evaluation>

Evaluating Continuation Status of Project Purpose after the Project Completion (Continuation status of achievement for Project Purpose)

• Since it was not possible to collect the data in the same way as what was done by the project and there was no planned data after the project completion, the data comparison with the one at the project completion is not possible. Therefore, the ex-post evaluation study focused on the continuity of trainings by applying the supplementary information. In order to examine whether the trainings of all nine subjects introduced by the project have been continued, "the implementation status of trainings courses conducted at the target hospitals" is used as Supplementary Information 1, and "the status of participation of training courses, whether the target hospitals" as Supplementary Information 2. Furthermore, in order to examine the qualitative aspect of training courses, "whether the targeted hospitals have continuously applied the standardized monitoring and evaluation methods since the project completion" is used as Supplementary Information 3.

Evaluating Achievement Status of Overall Goal

• In order to verify the achievement status of Overall Goal, "The quality of health care services in Medical Services System in Viet Nam is improved", it is necessary to examine the technical aspect of health care service quality from the administrator's view on whether the health care service quality at targeted hospitals have been appreciated by those administrators at MOH. The Hospital Quality Evaluation Indicators introduced in 2013 (MOH Decision No. 4858) was also used as the Supplementary Information 4 since the information was considered appropriate to objectively verify the quality of medical services by the hospitals.

1 Relevance

<Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion>

At the time of ex-ante evaluation, this project was consistent with "Ten-Year Social Economic Development Strategy (2001-2010)", in which the Vietnamese government set the priority for improvement in quality of medical services. Under the Master Plan for the medical service system for the year 2010, the government set a policy to improve and standardize the capacity of healthcare professionals. The policy aimed to enforce the Law on Examination and Treatment in which qualifications of medical doctors and nurses, professional technical levels as well as the requirement of health care providers were clearly defined. At the time of project completion, the project was consistent with the development policy of the country, "Five-Year Health Sector Development Plan (2011-2015)", which pursued both qualitative and quantitative improvement in human resources for health as one of the critical issues.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion>

At the time of ex-ante evaluation, this project was consistent with Viet Nam's development needs in the quality of medical services and for improvement of health professionals as described in "Background" above. At the time of project completion, there were continuing needs to further improve the medical service quality and capacity of health professionals.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

According to the "Country Assistance Program for Viet Nam (2009)", the Japanese government committed to support the four pillars of priority areas. One of them was "Improvements in Living and Social Conditions and Corrections of Disparities", and under this pillar, "Improving Basic Social Services" was focused such as providing support to further improvements in medical services and their accessibility.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

At the time of project completion, the project partially achieved the Project Purpose, "Activities for human resources improvements are implemented by the MOH, three core hospitals, and the targeted hospitals based on human resources development policies and strategies in Medical Services System developed by MOH". According to the data collected through the questionnaire survey conducted by the project at the terminal evaluation study, both the number of training courses and the number of trainees specified under Indicators 1 and 2 were achieved their targets respectively. However, it was identified by the ex-post evaluation study that the evaluation judgement was made based on the data for limited number of subjects. This was due to that the training courses for six out of nine training subjects started at the later stage because of the delay in training curriculum and training material approval. Furthermore, the data collected through the questionnaire survey included informal training cases, such as oral reporting or knowledge sharing among colleagues. The ex-post evaluation study identified that the definition of the indicators as well as their data collection processes should have been clearly defined at the time of terminal evaluation.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

After the project completion, the project effects have partially continued. It was confirmed by the study, all of nine subjects of training curriculum and training materials were officially approved and the trainings of those subjects except one (Referral System) have been carried out since project completion. Questionnaire survey for 11 selected hospitals which account for 14% of targeted hospitals revealed that training courses of eight subjects have been mostly continued since project completion (Supplementary Information 1) The average number of trainings per year for all subjects combined was recorded as 112 training courses. Likewise, the participation of training courses of those eight subjects have been mostly continued (Supplementary Information 2). In average per year 5,869 participants have continuously received training for the same period. According to the interviews with core hospitals, some of training courses have still been held by trainees of trainings by the project. Interview with MSA and 7 hospitals including core hospitals revealed that all hospitals except Cho Ray hospital responded that they had continuously applied the standardized monitoring and evaluation methods since the project completion (Supplementary Information 3). This implies that the qualitative aspect of human resources capacity has been well monitored by the method introduced by the project.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

It is observed that the project has achieved its Overall Goal, i.e. "The quality of health care services in Medical Services System in Viet Nam is improved". Patient satisfaction for all 11 hospitals has shown the improving trend up to the year 2018 when the satisfaction level achieved above 80% (Indicator 1)<sup>1</sup>. It was also confirmed by the study that the health care service quality at targeted hospitals had been appreciated by administrators of MOH. Furthermore, according to the report of MOH, the in-patient satisfaction for the 11 hospitals has been improving except CRH and the Hospital Quality Evaluation Result during 2015 to 2018 described on the above "Special Perspectives" has also shown the improving trend for most of 11 hospitals after the project completion (Supplementary Information 4). Three core hospitals have been certified as "Special grade hospitals" and have played critical roles in provision of technical support and training for provincial and lower level hospitals in each region through the 'Satellite Project<sup>2</sup>' and the '1816 Project<sup>3</sup>' initiated by MOH. <<Oth>

Some ripple effects were identified during the ex-post evaluation study. Having been developed under close collaboration among MOH, three core hospitals and provincial hospitals, the training materials have been made as the national standardized materials for all hospitals to refer. The Training of Trainers (TOT) introduced by the project and TOT curriculum developed by the project along with the Decisions and Circulars issued by MOH have made the proper TOT system available for the hospitals nationwide. Under the Circular 22/2013/TT-BYT guiding CME activities for health professionals, it has become a rule that only trainers who have received trainings in medical teaching and learning methods are now allowed to train other health professionals, which may contribute to maintaining and further improving the quality of medical services.

<sup>&</sup>lt;sup>1</sup>At the ex-post evaluation, only the data for in-patient satisfaction, which is often quoted as an important evidence of the improved quality, was available. <sup>2</sup>"Satellite Project": Approved in 2013 with an aim to enhance examination and treatment capabilities of provincial hospitals in 5 priority fields of oncology, trauma care, cardiology, obstetrics and pediatrics. Under this project, 9 central hospitals under MOH and 5 hospitals under Ho Chi Minh City DOH are playing the central role as "nuclear hospitals", which provide training and technical transfer to 45 provincial hospitals nationwide. <sup>3</sup>"1816 Project": Approved in 2008 by Decision 1816 / QD-BYT under the title "Sending on rotation professional staff from upper hospitals (35 centrals under MOH, 25 under DOH in Ha Noi and Ho Chi Minh City) to lower hospitals for supporting in enhancing quality of medical service".

# <Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Aim	Indicators			Result	S		
Project Purpose)	Indicator 1:	Status of the Achievement: pa	rtially achieve	ed (partially	continued)		
Activities for	Number of the	(Project Completion)					
numan resources mprovements are	training courses that		er of trainings	s conducted	by trainees		
mplemented by	are conducted by the	Training Subject <sup>(1)</sup>	Р	lanned		Actual	(2)
he MOH, three	trainees of training	1 TOT					968
ore hospitals, and	courses organized by the Project (expected	2 Nursing Management					107
he targeted	270 training courses)	3 NIC					238
uman resources	270 training courses)	Tota	.1		270		1,313
levelopment policies and trategies in Medical Services System developed		Note: (1) Data was limited to (2) The figures include colleagues. (Ex-post Evaluation) Implementation status of	informal train	nings, such	as oral rep	_	
by MOH.	Information 1)	Training subjects	2016	2017	2018	2019 Up to Oct.	Average
		1 TOT	12	4		4 10	· · ·
		2 Nursing Management	3	1	12		7.3 1 4.2
			27	14			
				14		-	
		4 Training Management	3	0	/ 4	4	1 2.0
		5 Hospital Quality Management	3	5			5.2
		6 Patient Safety	9	19			8 11.0
		7 Comprehensive Care	4	0		-	1 1.7
		8 Emergency	41	42	2 6	8 8	1 58.0
		9 Referral system	2	C	) (	0 (	0.5
		Total	104	85	5 13	3 12	8 112.5
		Note: (3) Targeted hospitals in (4) Average number of trainin	g courses per	year is show	7 provincial vn as refere	hospitals and nce for the in	d one central hospital. nplementation status of
	Indicator 2: Number of trainees who received trainings organized by the participants of trainings of the Devices (corrected	<ul> <li>(4) Average number of training the training courses conducted planned data for project period</li> <li>Status of the Achievement: pa (Project Completion)</li> <li>Number of participation</li> <li>Training Subjects <sup>(5)</sup></li> <li>1 TOT</li> </ul>	g courses per l after the proj d of 5 years (2 rtially achieve ants of training	year is show ject comple 270) shown ed (partially	7 provincial vn as referent tion. Those under the In continued)	hospitals an nce for the in figures are n ndicator 1.	d one central hospital. nplementation status of ot comparable with the ect $1^{(6)}$ 35,026
	Number of trainees who received trainings organized by the participants of	<ul> <li>(4) Average number of training the training courses conducted planned data for project period.</li> <li>Status of the Achievement: participation (Project Completion)</li> <li>Number of participation</li> <li>Training Subjects <sup>(5)</sup></li> <li>1 TOT</li> <li>2 Nursing Management</li> </ul>	g courses per l after the proj d of 5 years (2 rtially achieve ants of training	year is show ject comple 270) shown ed (partially gs conducte	7 provincial vn as referent tion. Those under the In continued)	hospitals annee for the in figures are n ndicator 1.	d one central hospital. nplementation status of ot comparable with the ect 1 <sup>(6)</sup> 35,026 1,993
	Number of trainees who received trainings organized by the participants of trainings of the Project (expected	<ul> <li>(4) Average number of training the training courses conducted planned data for project period Status of the Achievement: participation (Project Completion)</li> <li>Number of participation</li> <li>Training Subjects <sup>(5)</sup></li> <li>1 TOT</li> <li>2 Nursing Management</li> <li>3 NIC</li> </ul>	g courses per l after the proj d of 5 years (2 rtially achieve ants of training	year is show ject comple 270) shown ed (partially gs conducte	7 provincial vn as referention. Those under the In continued) d by trainee	hospitals annee for the in figures are n ndicator 1.	d one central hospital. nplementation status of ot comparable with the ect 1 <sup>(6)</sup> 35,026 1,993 16,563
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		Total	, ,	,671 7,706	5,013	5,8		
		Note: (7) Targeted hospitals includes 3 core hospitals, 7 provincial hospitals and one central hospital.						
		(8) Average number of participants in training courses per year is shown as reference for the status						
		participation of training cours			-	-		
		comparable with the planned dat	a for project perio	d of 5 years (1,35	0) shown under t	he Indicator 2.		
Overall Goal) The quality of	Indicator 1: 80% of hospitals are	(Ex-post Evaluation) achieved	-4:	. f	:4-1-			
nealth care	improved in the result	In-p Name of the hospital	2015	n for 11 targeted h 2016	2017	2018		
services in Medical Services	of patient satisfaction study.	Ivanie of the hospital	Project Completion	2010	2017	2018		
System in Viet Nam is improved.		Bach Mai Hospital (BMH)	N/A	84%	88%	93%		
vani is improved.		-Ninh Binh Hospital	N/A	79%	81%	84%		
		-Yen Bai Hospital	92%	88%	100%	100%		
		Hue Central Hospital (HCH)	N/A	90%	97%	96%		
		-Quang Nam Central Hospital	N/A	N/A	80%	89%		
		-Da Nang C Hospital	N/A	94%	96%	97%		
		-Quang Tri Hospital	N/A	N/A	87%	92%		
		Cho Ray Hospital (CRH)	84%	85%	81%	85%		
		-Can Tho General Hospital	82%	87%	90%	88%		
		-Ben Tre Hospital	99%	90%	90%	95%		
		-Tien Giang hospital	N/A	82%	89%	89%		
		Hospital Quality Evaluation Result <sup>(7)</sup> of 11 targeted hospitals during 2015-2018 <sup>(9)</sup>						
	(Supplementary Information 4)	Name of the hospital	2015	2016	2015 2015 2015	2018		
		Ivanie of the hospital	Project Completion	2010	2017	2010		
		Bach Mai Hospital (BMH)	4.19	4.01	4.10	4.17		
		-Ninh Binh Hospital	3.38	3.08	3.28	3.31		
		-Yen Bai Hospital	N/A	3.32	3.67	3.73		
		Hue Central Hospital (HCH)	3.94	4.01	4.03	4.17		
		-Quang Nam Central Hospital	3.32	3.18	3.54	3.85		
		-Da Nang C Hospital	N/A	3.69	3.79	4.16		
		-Quang Tri Hospital	N/A	3.36	3.39	3.59		
		Cho Ray Hospital (CRH)	4.10	3.91	4.06	3.92		
		-Can Tho General Hospital	3.26	3.28	3.50	3.60		
		-Ben Tre Hospital	3.67	3.40	3.61	3.69		
		-Tien Giang hospital	3.92	3.75	4.17	4.21		
		Note: (9) Hospital Quality Evaluation Results show the quality assessment according to 83 criteria s by the Ministry of Health and examined with the scale of 5 levels.						

Source: Terminal Evaluation Report, JICA documents, Questionnaires and interviews with 11 targeted hospitals, MOH report

3 Efficiency

Both the project cost and the project period were within the plan (ratio against plan: 76% and 100%, respectively). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is high.

# 4 Sustainability

<Policy Aspect>

Under "Five-Year Health Sector Development Plan (2016-2020)", the Ministry of Health states that the quality of medical services should be urgently improved to cope with increasing needs for the people. In response to this, the MOH has issued several decisions, circulars and so on to further enhance the capacity development of medical professionals, such as "Circular 22/2013/TT-BYT" which is guiding compulsory medical knowledge updating through CME for health professionals.

<Institutional Aspect>

Medical Service Administration (MSA) under MOH consists of 9 departments and 2 units. According to the interviews with MSA, it is confirmed that the organizational settings and its manpower are sufficient to improve the medical services as well as to strengthen the capacity of health professionals. As for the training of health professionals, the Training Center of MSA has 15 staff to organize training in the fields of Nursing Management, Comprehensive Care, Hospital Quality Management, Infection Control, Patient Safety and Patient Referrals. There is a specific section in charge of training for each core hospital with 26 to 47 staff. BMH has 2,007 trainers of which 200 were trained by the project. HCH has 1,211 trainers of which 192 were trained by the project. No data on trainers is available for CRH. All three core hospitals have been organizing hundreds of training courses for health staff coming from provincial hospitals in 50 to 60 fields. According to the interviews with these core hospitals and MSA, the current structure and manpower in charge of training are relatively sufficient. However, during Ex-Post Evaluation study, there were some concerns on the handover work from those training managers who retired, to their successors on JICA related training activities should have been made better not to leave some vacancies, but to properly maintain the institutional memory.

## <Technical Aspect>

At MSA and BMH, nearly half of the counterparts worked for the project were retired. As for HCH and CRH, the data is not available.

Most of equipment provided by the project has still been in operation except LCD Projectors that are left broken in the storage of three hospitals. Currently, the Visual Communication Systems have not been in use because they were replaced by TV conference system newly installed by themselves. As for the training in Hospital Quality Management and Patient Safety which are quite new fields, there are only some trainers in central hospitals, and no trainers available in many provincial hospitals. Therefore, MOH organizes training courses for these two fields at three regions every year for supporting training activities in provincial hospitals.

Though the total amount of MOH budget is not available, MOH allocates the total amount of 150 billion VND for specific projects every year with an aim to improve technical capacity to all hospitals focusing on priority fields such as cardiology, oncology, trauma surgery, pediatrics, obstetrics, intensive care, laboratory, hematology, blood transfusion and infectious diseases. Generally, budget for training is depended on the decision of management board and the allocated budget is given to priority areas, thus the amount allocated to the trainings in essential fields that have been focused by the project may fluctuate. Furthermore, if health professionals want to attend professional training in a specific specialty, they need to bear the cost by themselves.

Budget amounts of projects related to the training for health professionals conducted by MOH

	Categories	Amount
1	Satellite Project (2013-2020) approved by MOH	App 100 billion VND. No exact amount
		is mentioned in the Decision.
2	1816 Project	App 35 billion VND. No exact amount
		is mentioned in the Decision.
3	North East and Red River Delta Regions Health System Support Project	157 million USD
	(NORRED- WB Financed Project with an aim to increase the efficiency and equity in the use	2013-2020
	of hospitals services in 13 selected provinces of North East and Red River Delta.)	

<Source: Interview with MSA/MOH >

<Evaluation Result>

In light of the above, some problems have been observed in terms of the technical and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

The project partially achieved the Project Purpose "Activities for human resources improvements are implemented by the MOH, three core hospitals, and the targeted hospitals based on human resources development policies and strategies in Medical Services System developed by MOH". The effects of the project have continued and further progressed after the project completion. The Overall Goal "The quality of health care services in Medical Services System in Viet Nam is improved" has been achieved. As for the sustainability, there are some problems in the technical and financial aspects but no problem in policy and institutional aspects.

Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency: MOH and 3 core hospitals

- The appointment of key counterparts for the Project should be considered to ensure continuation of the Project's activities at least 5 years to cover the term of assignment. In addition, the substitute persons should be appointed to the vacant position to ensure the institutional aspect of the sustainability of the Project.
- The budget for implementing the training of essential fields in the hospitals should be constantly allocated by the Ministry of Health, Departments of Health Services and the leaders of hospitals even though it is unavoidable to adjust the budget by priority.

Lessons Learned for JICA:

• Due to the broad interpretation of "trainings" in some indicators, the collected data at the terminal evaluation ended up containing the informal type of training cases, which were not eligible to examine the achievements of the project. This was due to that some indicators had not been clearly defined and the data collection process had not been properly identified in the logical framework. Therefore, it is strongly recommended that the indicators to examine the achievement of the project should be clearly defined in terms of quantitative and qualitative aspects and their data collection processes should be available at the ex-post evaluation stage as well.



Emergency first-aid training on simulation for nurses in Tien Giang Hospital



TOT Training in Cho Ray Hospital

Country Name					
Islamic Republic of	Urban Health System Strengthening Project				
Afghanistan					

## I. Project Outline

Background	The Government of Afghanistan was promoting the Basic Package of Health Services (BPHS) as the minimum requirement of healthcare services. While the BPHS coverage was increasing in rural areas with financial support from development partners, urban healthcare services had not been supported because of relatively better health indicators compared to those of rural areas. However, urban health care services had specific problems such as high population density and mobility of the population, considerable disparity among households, and the growing urban poor including internally displaced people.						
Objectives of the Project	Through interventions to selected health facilities and strengthening of management capacity (planning and budgeting, monitoring and evaluation (M&E), and data collection and analysis) of the Kabul Provincial Health Directorate (KPHD), the project aimed at strengthening the urban health system in Kabul, thereby having urban health services effectively and efficiently provided in Kabul. 1. Overall Goal: Urban health services are effectively and efficiently provided in Kabul. 2. Project Purpose: The urban health system is strengthened in Kabul.						
Activities of the Project	<ol> <li>Project Site: Urban Kabul (17 districts)</li> <li>Main Activities: (1) Interventions to strengthen the urban health system, namely, (i) improving Maternal and Child Health (MCH) service at Comprehensive Health Center (CHC) with Delivery (CHCwD), (ii) expanding immunization coverage (EPI) using Public and Private Partnership (PPP), and (iii) piloting Community Health Workers (CHWs) for community-based health care (CBHC) in urban Kabul; (2) Management capacity development of the KPHD (training, improvement of reporting, etc.)</li> <li>Inputs (to carry out above activities)<sup>1</sup></li> <li>Japanese Side</li> <li>Afghanistan Side</li> <li>Experts: 25 persons (Short-term)</li> <li>Staff allocated: 40 persons</li> <li>Equipment: Medical equipment, essential drugs, 2. Land and facilities: Project office at KPHD and medical supplies for CHCs, etc.</li> <li>Operation cost</li> </ol>						
Project Period	December 2009 – December 2012 Project Cost (ex-ante) 380 million yen, (actual) 387 million yen						
Implementing	Ministry of Public Health (MoPH)						
Agency	Kabul Provincial Health Directorate (KPHD)						
Cooperation Agency in Japan	System Science Consultants, Inc.						

## II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

- The project did not set a target value for the Project Purpose Indicator 2, "No. of female and under five children visited out-patient department of Urban-BPHS facilities." This ex-post evaluation judged this indicator in the following way:
  - Status by the time of project completion: judged as achieved if an increase in the actual values during the project implementation period is confirmed.
  - Status of continuation by the time of ex-post evaluation: judged as continued if the actual values during the post-project period did not worsen.
- The project did not set a target value for the Overall Goal Indicator, "Proportion of health facilities with the scores above national average in the balanced score card survey." Also, the said "proportion" could not be calculated as scores of individual health facilities surveyed were not available. Therefore, this ex-post evaluation compared the average score of Kabul to the national average.

### 1 Relevance

<Consistency with the Development Policy of Afghanistan at the Time of Ex-Ante Evaluation and Project Completion>

Both at the time of ex-ante evaluation and project completion, the project was consistent with the Afghanistan National Development Strategy (ANDS) (2008-2013), in which expansion of basic health services was one of the priorities of the health sector development. Consistency with the Development Needs of Afghanistan at the Time of Ex-Ante Evaluation and Project Completion>

At the time of ex-ante evaluation, the project was consistent with the needs for improving urban health care services as described in "Background" above. No drastic changes in the project context were observed during the project period; thus, the mentioned needs seem to have continued to the time of project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

This project was consistent with "basic living condition" including education and health, one of the four priority fields of assistance that the Japanese government confirmed with the Economic Cooperation Policy Agreement in Afghanistan in July 2009.<sup>2</sup>

<Evaluation Result>

In light of the above, the relevance of the project is high.

### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. As a result of the capacity development of the KPHD officers, the

(JSDF) of the World Bank, provided financial cooperation to support part of the training and intervention activities of this project.

<sup>2</sup> Japan's ODA Databook 2009.

<sup>&</sup>lt;sup>1</sup> Besides the inputs described below, the "Kabul Urban Health Project (KUHP)," in April-December 2012 using the Japan Social Development Fund

number of M&E visits to urban health facilities increased and the implementation rate of the plan reached 100% in 2012 (Indicator 1). Among the interventions to the urban health system, strengthening of MCH services at CHCwD and of CHWs on CBHC proved effective, and 24hour delivery service started at the four CHCwD (in four districts) that received renovation and other support (such as promotion of Information, Education and Communication (IEC)) by the project. Regarding CHW on CBHC, community members recognized CHW and were satisfied with their activities. As a result of these interventions, the number of female and under-five children's visits to outpatient departments of urban BPHS facilities increased, while many of them were still in short of staff and supply to be regarded to be providing a full BPHS due to lack of budget (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued to the time of ex-post evaluation. While the number of planned M&E visits by the KPHD was reduced and the implementation rate fluctuates after project completion due to lack of transportation facilities and officers being busy in other works such as meetings and training, the average rate in past three years is on the same level as that of the project period. The number of female and under-five children's visits to outpatient departments of urban BPHS facilities is increasing. The 24-hour delivery and IEC have continued at the mentioned four CHCwD, which received further facility improvement and other support by projects funded by other donors as well as continued support of the services by MoPH's own operation budget after project completion. The total number deliveries at these CHCwD increased from 118 in 2012 to 1.293 in 2018. Other nearby districts also benefit from the CHCwD services. Regarding support of CHWs on CBHC, on the other hand, the MoPH and the KPHD have not integrated the activities in the KPHD's routine operation and budget. A total of 65 CHWs were trained before and during the project, and 80 other CHWs were trained after that. According to the KPHD, only 120 out of those CHWs are partly active, and the active CHWs do not receive any kit or refresher training recently. <Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved by the time of ex-post evaluation. The proportion of health facilities with the scores above national average in the balanced score card survey (the performance measurement and management tool for the BPHS in Afghanistan) in Kabul Province reached the target in 2018, but the score of urban Kabul only (i.e., excluding rural Kabul, where the BPHS has been supported by development partners) is not available (According to the results of the 2018 balanced score card survey, financial system in Kabul Province has improved, resulting in the score way above national average. However, "client counseling index" and "time spend with clients index" showed lower scores than those of national averages). Nevertheless, the KPHD commented that this project had started a wave of improvements in the services that were being further strengthened, although not fully built upon the outcomes of this project, by projects funded by other donors and by consistent operation of the KPHD.

<Other Impacts at the time of Ex-post Evaluation>

No negative impacts of the project were observed. As a positive impact on gender, access of women to MCH services has been improved as already mentioned.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal										
Aim	Indicators	Results								
(Project Purpose)	1. Proportion of	Status of the Achieveme	ent: ach	nieved (cor	tinued)					
The urban health	monitoring and	(Project Completion) (E	Ex-post	Evaluation	1)					
system is strengthened	evaluation (M&E)	Planned and actual num	ber of	M&E visit	s to urban	healthcar	e facilitie	s by KPI	łD	
in Kabul.	visits implemented as		1	Apr 2010-	Apr 2011	- Apr 20	12- 2	2016	2017	2018
	planned.		]	Mar 2011	Mar 201	2 Aug 20	012			
		Planned [A]		24	13	33	116	100	100	100
		Actual [B]		23	4	59	116	74	69	100
		Implementation rate [B	B/A]	96%	44	% 10	0%	74%	69%	100%
		Average			80%				81%	
	2. No. of female and	Status of the Achieveme	ent: ach	nieved (cor	tinued)					
	under five children	(Project Completion) (Ex-post Evaluation)								
	visited out-patient	Number of female and u	under-f	ive childre	n visited o	outpatient	lepartme	ents of ur	ban BPHS fa	cilities in
	department of Urban-	Kabul (Note: These faci	ilities d	lo not nece	ssarily pro	vide full I	BPHS.)	-		
	BPHS facilities.	2009 2010 2	2011	2012	2013	2014	2015	2016	2017	2018
		85,748 124,740 17	76,401	200,655	250,621	263,928	296,876	5 268,36	64 284,973	371,522
(Overall Goal)	Proportion of health	(Ex-post Evaluation) pa	-							
Urban health services	facilities with the	The scores of the 2018	balance	ed score ca	rd survey	was as fol	ows.			
are effectively and	scores above national	National average: 59.3								
efficiently provided in	average in the	Kabul Province average	e: 59.7 (	(including	both urba	n and rura	Kabul)			
Kabul.	balanced score card									
	survey*.									
Source: Terminal Evalu	•									
* Balanced score card survey: External evaluation in the form of the random sampling survey supported by Johns Hopkins University Bloomberg School										
of Public Health and Indian Institute of Health Management Research. As the performance measurement and management tool for the BPHS, it evaluates										
the quality of service pe	erformance at primary ca	are facilities.								

3 Efficiency

While the project period was within the plan, the project cost slightly exceeded the plan (ratio against the plan: 100% and 102%, respectively). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair. 4 Sustainability

<Policy Aspect>

No specific policy for urban health has been drafted. One package of urban health<sup>3</sup> was drafted based on which the MoPH implemented some initiatives, but it has not been endorsed as a policy yet. <Institutional Aspect>

The KPHD clearly defines and assigns personnel to urban health-related tasks. It has the Urban Health Unit with 47 officers besides the rural health section. The KPHD also has sections specialized in particular services, but some areas such as EPI have enough staff (8 officers) and other areas such as Reproductive Health and CBHC have a fewer number of staff members (2 officers and 1 officer, respectively). Supervision in such areas is conducted by other officers that visit health facilities. For rural Kabul, the shortage of staff has been covered by the outsourcing of BPHS with external support, but for urban Kabul, the MoPH is still planning to implement the urban health package as mentioned above. Personnel are assigned for Kabul CBHC but they are mostly busy with rural Kabul, as there is no budget to support CBHC; the focus of staff is not on urban CBHC. Each heath facility has a Community Health Supervisor (CHS) but they use it as a nurse of health facility rather than CHS.

### <Technical Aspect>

According to the KPHD, the staff used to receive training on management, monitoring and other aspects of expanding the health care system in Kabul in the past, and the MoPH used to implement many programs to strengthen the urban health system in Kabul urban areas (although those were ad hoc and vertical interventions, for example, nutrition, EPI, RH etc. rather than a full package for urban Kabul). At the time of ex-post evaluation, the KPHD has no specific plan to conduct capacity building of staff mainly due to lack of resources, while for rural Kabul area, the BPHS implementers (NGOs supported by external projects) conduct their own training. Nevertheless, about 80% of the personnel of the KPHD who received technical transfer under this project still work on the urban health system in Kabul.

According to the KPHD, the current fund comes from the operation budget of the MoPH which covers salaries, transportation, house rent (for some clinics), renovation, medicine and supplies, stationary, and maintenance heating. As already mentioned, the budget seems not sufficient, but detailed information is not available.

<Evaluation Result>

In light of the above, some problems have been observed in terms of the policy/institutional/technical/financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

#### 5 Summary of the Evaluation

The project achieved the Project Purpose of strengthening of the urban health system in Kabul and partially achieved the Overall Goal of providing urban health services effectively and efficiently. Regarding the sustainability, some problems were observed in the policy, institutional, technical, and financial aspects mainly due to insufficient arrangements specifically for urban healthcare. As for the efficiency, the project cost slightly exceeded the plan. Considering all of the above points, this project is evaluated to be partially satisfactory.

### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- The KPHD is recommended to work with the MoPH either to increase the funding through operational budget or find a donor to upgrade the urban health services at the level of full BPHS.
- There is a potential to improve the quality of services in urban health as qualified staff can be hired, access to health facilities are good and literacy and access to information is better. The KPHD is recommended to pay more attention to make use of such advantages to improve primary health services to improve the quality and avoid underutilization of primary health services and over utilization of tertiary services at the national hospitals.<sup>4</sup>
- The KPHD is recommended to keep the balance between urban and rural Kabul by paying more attention to and increasing efforts for the urban Kabul. The rural Kabul BPHS is contracted out to NGO which has better funding for Monitoring and capacity building and the staff of KPHD is more interested to work in rural Kabul rather than urban Kabul.

Lessons Learned for JICA

- Detachment and lack of follow up from JICA side let to diluting of project achievements. While such detachment was inevitable due to
  difficulties in rolling out activities as the security situation in Afghanistan deteriorated rapidly after project completion, JICA should
  have continued engagement, though even at the low level, including follow-up actions whenever appropriate to make sure the project
  funded by other donors such as the World Bank have built up on the outcomes of the project. Thus, the continuation of engagement after
  the termination of a project should be well considered to ensure the project outcomes be maintained and even expanded.
- The project activities were mostly done by the project staff and consultants and so were the similar interventions by other donors. As a
  result, there exists no sense of ownership by KPHD and MoPH. In order to increase sustainability, the project should have engaged
  KPHD and the MoPH staff, who should take charge of the activities after project completion, as the actual implementers of the project
  activities. As such, projects should be designed so as to ensure the ownership of a partner country.
- Given the fact that MPH has yet to draft a policy for urban health, the project should have included drafting of policies for urban as part of its activities. If there is weak institutional framework, assistance to policy making should be included to secure sustainability of a project.

<sup>&</sup>lt;sup>3</sup> The package means a full package of type and level of services, the type of equipment, number of staff, types of medicine and supplies. It can be used as the specification for procuring services from NGOs as MoPH does in rural areas.

<sup>&</sup>lt;sup>4</sup> The referral system should work in a way that if patients need normal services like normal delivery services, the lower level primary health care

services should provide it and difficult cases should be referred to the specialized hospitals. However, due to low quality and lack of confidence in primary health services, patients prefer to go to specialized hospitals which makes the hospitals very busy and they cannot focus on difficult cases. This needs to be changed.



Delivery room of Kasaba CHC with delivery



Waiting area of Hoodkhil CHC with delivery

	conducted by Morocco Office: August 2020					
Country Name	Capacity Development of Fisheries Resources Monitoring for Sustainable Management of Small Pelagic					
Kingdom of Morocc	Resources in the Kingdom of Morocco					
I. Project Outline						
Background	In Morocco, fisheries were one of the most important industries to earn foreign currency and to provide means of livelihoods for many coastal communities. However, in recent years, fish production showed a decreasing trend. The Government of Japan had undertaken a series of cooperation to Morocco for capacity enhancement of fishery resources management. These included, inter alia, the construction of a research vesse "Al Amir Moulay Abdallah" in 2001 for the National Institute of Fisheries Research (INRH) and a dispatch o experts to strengthen INRH's capacity for operation and maintenance of acoustic fishery resources monitoring and assessment based on the knowledge and skills obtained through the above-mentioned cooperation among others technical issues were still remained with small pelagic resource monitoring/assessment due to highly migratory and naturally fluctuating nature of these resources. In order to improve the accuracy and reliability of the small pelagic resources through improving accuracy of acoustic survey and analysis along with integration or supplemental information.					
Objectives of the Project	<ul> <li>Through technical transfer to INRH on improving accuracy of acoustic survey and analysis along with integration of supplemental information, the project aimed at strengthening INRH's capacity on comprehensive assessment of the small pelagic resources, thereby contributing to realization of appropriate management measures for small pelagic resources in Morocco.</li> <li>1. Overall Goal: Appropriate management measures for small pelagic resources are formulated and implemented based on the comprehensive assessment.</li> <li>2. Project Purpose: Comprehensive assessment of the small pelagic resources<sup>*</sup> is continuously implemented by INRH.</li> <li>*Target Species are (i) Sardina pilchardus, (ii) Scomber spp. (Scomber japonicus and Scomber scombrus), (iii) Trachurus spp. (Trachurus trachurus and Trachurus trecae), (iv) Sardinella spp. (Sardinella aurita and Sardinella maderensis), (v) Engraulis encrasicolus</li> </ul>					
Activities of the Project	<ol> <li>Project site: Atlantic Part of the Moroccan Waters</li> <li>Main activities: (i) development of a Target Strengths database for the five target species, (ii) review and implementation of acoustic survey, (iii) collection and integration of supplemental data for resources assessment, (iv) review and implementation of analysis and assessment of status of the target species by revised protocol, and (v) sharing of the project outcome with domestic and international stakeholders.</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Experts: 13 persons</li> <li>Trainees received: 17 persons</li> <li>Equipment: Acoustic processing equipment, acoustic analysis software, gIS software, workstation, database server, vehicle, etc.</li> </ol>					
Project Period	July 2010 – June 2015Project Cost(ex-ante) 350 million yen, (actual) 286 million yen					
Implementing Agency	National Fisheries Research Institute (Institut National de Recherche Halieutique: INRH)					
Cooperation Agency in						

Cooperation Agency in Japan Ministry of Agriculture, Forestry and Fisheries (MAFF)

## II. Result of the Evaluation

1 Relevance

<Consistency with the Development Policy of Morocco at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Morocco's development policies of "Plan Halieutis (Fishery Plan)" (2009-2020) emphasizing on promotion of sustainable fisheries resources management on a commercial and quota basis as a natural heritage.

<Consistency with the Development Needs of Morocco at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Morocco's development needs of strengthening INRH'S capacity on comprehensive assessment of the small pelagic resources for appropriate management of fisheries resources in Morocco.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA policy for Morocco at the time of appraisal in 2010 putting priorities on (i) assistance for development and promotion of agricultural and fisheries sectors and (ii) assistance for environmental protection for sustainable development<sup>1</sup>.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<sup>&</sup>lt;sup>1</sup> Source: Ministry of Foreign Affairs, Japan, "ODA Country Data Book 2010".

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the time of project completion. Although, at least 2 sets of new parameters were not incorporated for the resource assessment (Indicator 1), a comprehensive database for small pelagic resources was being established by the project completion (Indicator 2). A required budget for the assessment was approved within the INRH (Indicator 3), and an institutional mechanism for the assessment report was established (Indicator 4). An annual assessment report of the small pelagic resources was planned to be submitted to MAFF at the time of project completion (Indicator 5).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued after the project completion. Among the 4 parameters used in the project, three parameters such as Recruit per Spawner (RPS), Acoustic Data Analysis Methods (Echoview), Design Survey were incorporated for the resource assessment. The comprehensive database for small pelagic resources was established, and it has been used to the extent possible. Total 4 annual assessment reports were prepared between 2015 and 2018 and were submitted to MAFF. A certain amount of budget is approved within the INRH for the assessment, but it is limited. On the other hand, four implementation plans proposed at the 6th Joint Coordination Committee (JCC) on 11 March 2015, and INRH has carried out three out of four implementation plans such as (i) Plan of the Regional Program to disseminate the project outcome to reginal partners of Morocco, (ii) Implementation Plan of the Improved Resource Assessment to improve the resource assessment report, and (iii) Implementation Plan of the Socio-Economic Studies after the project completion.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved by the time of ex-post evaluation. The resource management measures applied for small pelagic species are: (i) Fishing limitation (determine a certain type of species to be caught), (ii) Catching sizes (allowing only a certain size to be caught), and (iii) Seasonal closing of fishing areas to preserve sensitive areas (biological rest).

<Other Impacts at the time of Ex-post Evaluation>

No other positive or negative impacts of the project were confirmed at the time of ex-post evaluation.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement	of Project	Purpose	and Overall	Goal

Aim	Indicators	Results
(Project Purpose)	Indicator 1:	Status of the Achievement: not achieved (achieved)
Comprehensive	At least 2 sets of new parameters	(Project Completion)
assessment of the small	are incorporated for the resource	Specific parameters were not newly incorporated into the resource assessment
pelagic resources is	assessment.	from the Project yet, due to the necessity for INRH to scientifically,
continuously		administratively validate new parameters, and build comprehensive consensus
implemented by INRH.		from multidisciplinary perspectives as a national scientific research institute.
		• Application would be made based on the implementation plan after the activities
		of resource assessment methodology sector in 2014.
		• Adequacy of the parameters and applying methodologies would be satisfactorily
		made by INRH based on the developed capacity through the Project in timely
		manner along the developed implementation plan.
		(Ex-post Evaluation)
		• Among the 4 parameters used in the project, RBS (Ratio of Biomass
		Estimation), Acoustic Data Analysis Methods (Echo view), Design Survey were
		incorporated for the resource assessment.
		• Regarding Target Strength (TS), it is not fully used as INRH does not have
		enough experience and they consider that the collected data related to TS is not
		sufficient to ensure the operational aspect of this parameter.
		• However, INRH has been organizing several events and seminars to discuss this
		TS parameter with the sector's operators to examine its relevance and the way
		forward to optimize its use within Morocco as well as other African countries in
		consultation with the African Maritime Institutes.
	Indicator 2:	Status of the Achievement: partially achieved (continued)
	Comprehensive database for small	(Project Completion)
	pelagic resources is established	• An integrative database was under development by INRH. The Project's
	and in use.	analytical database was developed in each research action then integrated as
		MDB file (a file-extension used in certain versions of Microsoft Access
		databases), compatible with GIS and the other common database software. The
		database had been kept upgrading as the analyses and would be transferred to
		the developing INRH integrative database.
		(Ex-post Evaluation)
		Comprehensive database for Biological Parameters, Size Frequencies, AS
		Density (Absolute Salinity), Oceanography, etc. was fully established.
		• The database has been used to the extent possible under the current institutional
		arrangement of INRH.
	Indicator 3:	Status of the Achievement: achieved (partially continued)
	Required budget is approved	(Project Completion)
	within the INRH for the	• Sufficient budget was approved for resource assessment with improvement. The
	assessment.	improvement activities of the resource assessment would be carried out with the
		2015 implementation plan of the Project outcomes. Furthermore, relevant
		surveys for small pelagic fishes was conducted by INRH on their own budget.
		(Ex-post Evaluation)
		• A certain amount of budget is approved within the INRH for the assessment, but
		it is limited (Also see Financial Aspect of "4. Sustainability").
	Indicator 4:	Status of the Achievement: achieved (continued)

	Institutional mechanism is established for the assessment report.	<ul> <li>(Project Completion)</li> <li>Institutional mechanism was established for the assessment reporting with necessary improvements. With the Project outcomes, obtained approaches and methodologies and experiences as integrative team for the assessment or associated research questions the mechanism would be reinforced with necessary improvements in the practices from 2015.</li> <li>(Ex-post Evaluation)</li> <li>The assessment reports prepared by INRH was submitted to a validation mechanism, then presented to the Steering committee as well as to the Board members of INRH</li> </ul>
	Indicator 5: Assessment report of the small pelagic resources is annually submitted to the Ministry.	<ul> <li>Status of the Achievement: partially achieved (continued)</li> <li>(Project Completion)</li> <li>Annual routine of developing and submitting assessment report was established. The report in 2014 was submitted based on the improved capacity through the Project activities. With the implementation activities of the project outcomes with aforementioned improvements in the institutional mechanism, C/Ps would start submitting the reports, beginning from 2015, on a yearly basis.</li> <li>(Ex-post Evaluation)</li> <li>4 annual assessment reports have been prepared between 2015 and 2018 and were submitted to MAFF.</li> </ul>
measures for small pelagic resources are formulated and implemented based on the comprehensive assessment.	Indicator 1: Resource management measures for small pelagic species are in place.	<ul> <li>(Ex-post Evaluation) achieved</li> <li>The resource management measures applied for small pelagic species are: <ul> <li>Fishing limitation (determine a certain type of species to be caught).</li> <li>Catching sizes (allowing only a certain size to be caught).</li> <li>Seasonal closing of fishing areas to preserve sensitive areas (biological rest).</li> <li>Control of fishing efforts (Fixing a certain limit of the catch volume per each fisherman or fishing company).</li> </ul> </li> </ul>
3 Efficiency	on Report, Answer to the questionnair	e by inkn.

Both the project cost and project period are within the plan (ratio against plan: 82% and 100% respectively), and the outputs were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability <Policy Aspect>

The existing "Plan Halieutis (Fishery Plan)" (2009-2020) addresses on promotion of sustainable fisheries resources on a commercial and quota basis as natural heritage. In addition, several thematic meetings and seminars with different partners and industries have been held frequently to structure the sustainable resource management activities of small pelagic species. <Institutional Aspect>

There has not been any change in the institutional structure for the fisheries resource management in Morocco. INRH is the only research institution in the fisheries sector in Morocco and its headquarters is in Casablanca with 6 regional centers. Agadir Regional Center (INRH Agadir) has 42 staff including 30 researchers and possesses 7 laboratories including the Acoustic Laboratory, the Sclerochronology Laboratory for process of age assessment, and the Economics Laboratory for socio-economic monitoring of small pelagic sectors. Even though INRH has been trying to maintain consistent actions for the project sustainability, however, the lack of staff within INRH due to the small size of the Institute itself and its limited resources, as well as the unavailability of a dedicated organization planning for the project activities due again to the multitasking of most of INRH's personnel to work on several projects and in several laboratories at the same time, remains as a challenge. Acoustic analysis activities and workshops are organized occasionally but still INRH can reinforce their actions by speeding up the pending procurement of two new submarine for acoustic survey. <Technical Aspect>

INRH maintains the skills and knowledge transferred by the project through self-training, internal and external training, and exchange with other partners as well as through practice. The equipment procured by the project such as acoustic processing equipment, acoustic analysis software, software, workstation, database server, and so on. have been maintained sufficiently except Geographic Information System (GIS) software. <Financial Aspect>

INRH received approximately 173-204 million Moroccan dirham for its annual budget during the period form 2015 and 2018, and approximately 17-30% of the operation budget are used for a comprehensive assessment. It is not fully sufficient to conduct a

· · · · · · · · · · · · · · · · · · ·	0	(Unit:	Millions	of MAD)
Item	2015	2016	2017	2018
Operation Budget	104.0	107.0	104.8	108.3
- Budget for comprehensive assessment	23.0	18.0	31.0	26.0
- Maintenance budget for project equipment	-	-	-	-
Investment Budget	69.0	97.0	87.0	92.0
Total	173.0	204.4	191.8	200.3

Budget for INRH

comprehensive assessment of the small pelagic resources as well as to maintain the project equipment and software appropriately. <Evaluation Result>

Therefore, the sustainability of the effects through the project is fair.

5 Summary of the Evaluation

The project has partially achieved the Project Purpose and achieved the Overall Goal to formulate and implement the appropriate management measures for small pelagic resources based on the comprehensive assessment through strengthening INRH's capacity. Regarding the sustainability, INRH has a room for improvements in organization capacities, setting up of necessary equipment such as submarine stars and budget allocation for operation and maintenance of a comprehensive assessment of the small pelagic resources as well as the project equipment and software. On the other hand, no major problems have been observed in the policy aspect.

Considering all of the above points, this project is evaluated to be highly satisfactory.

## III. Recommendations & Lessons Learned

## **Recommendations for Implementing Agency:**

- Setting up of a clear organizational planning including an appropriate allocation of researchers/laboratories along with INRH's organizational priorities can contribute to improve the sustainability of the project impact in the upcoming years. Therefore, INRH is recommended to setup a task team that will be in charge of monitoring of development of the planning as well as considering some training sessions for its staff.
- INRH has cumulated a sufficient experience in acoustic surveys and analysis, and is able to share its experience with other African countries through a South-South cooperation program.

#### **Lessons Learned for JICA:**

• Given that the executing agency may face continued challenges on limited personnel, it's essential to develop technical manuals, monitoring and post-project planning during the project implementation period to support the work of new staff and to ensure sustainability.

Internal Ex-Post E	valuation	for Technical Cooperati	on Project (SAI	TREPS <sup>1</sup> ) conducted by Ghana Office: April 202		
Country Name		Studies of Anti-viral and Anti-parasitic Compounds from Selected Ghanaian Medicinal				
Republic of Ghana		Plants (SATREPS)				
I. Project Outline						
Background	facilities a not progr developm (considered Due to the treatment 1,000 acti were not pharmaco traditional	rural areas in Ghana, despite of the number of people suffering from HIV/AIDS, access to modern medical es are geographically and economically limited, and anti-retroviral therapy (ART) against HIV/AIDS was ogressing. In addition, effective medicines for persistent and latent infections were inadequate, and pment of more effective medicines was therefore needed. Besides HIV/AIDS, regarding trypanosomiasis <sup>2</sup> dered as a neglected tropical disease (NTDs) <sup>3</sup> ), control and therapies against the diseases were not developed. It he limited access to modern medical facilities, people in rural areas have been taking traditional medical ent which utilizes Ghana-original herbs. In Ghana, more than 3,000 kinds of herbs grow naturally, of which active ingredients have been identified, but verification of their efficacy and safety or functional analysis not sufficiently conducted. Herbal medicine and plants-derived compounds having a very strong acological effect had been found, and strong political concern was given to providing scientific evidence for onal medicine. There were needs for research on the safety of novel compounds extracted from Ghana-al herbs and anti-HIV/anti-parasitic active compounds.				
Objectives of the Project	Through collaborative research activities with Japanese research institutes, the project aimed at improving research and development capacity of Ghanaian research institutes for Ghanaian medicinal plants-derived anti-viral and anti-parasitic compounds, thereby contributing to continuous studies for pre-clinical and clinical trial of					
Activities of the Project	Project sit 1. Main a trypane purific prepara 2. Inputs Japanese 1) Expert 2) Trainin 3) Equipr liquid etc.	te: Accra (Greater Accra Reg activities: i) Establishment of osomal activity, ii) establis ation of novel compounds, i ation of the Standard Operati (to carry out above activities	the safety of crude hment of bio-ass ii) analysis of acting Procedure (SOI ) high-performance ace microscopes,	e extract and isolated compounds with anti-HIV and ant say <sup>4</sup> systems of crude plant extracts, separation an ive compounds with their structure-activity relationship		
Project Period	April 201	0 to March 2015	Project Cost	(ex-ante) 430 million yen, (actual) 481 million yen		
Implementing Agency	Noguchi Memorial Institute for Medical Research (NMIMR), Centre for Scientific Research into Plant Medicine (CSRPM)					

Cooperation Agency

[Special Perspectives Considered in the Ex-post evaluation]

- Though the Overall Goal was not set at the ex-ante evaluation, the terminal evaluation tells that the Expected Overall Goal would be continuous research for drug development (pre-clinical and clinical trials) on the compounds which had activity and safety in in-vitro experiment during the project period. At the ex-post evaluation, continuation status of this research was verified as the Expected Overall Goal.

1 Relevance

in Japan

<Consistency with the Development Policy of Ghana at the time of ex-ante evaluation and project completion>

Tokyo Medical and Dental University, Nagasaki International University

HIV/AIDS control was considered as an important issue following malaria in the "Ghana Poverty Reduction Strategy II" (2006-2009) and also in the "National Strategic Framework II" (2006-2010). At the time of the project completion, the Ministry of Health (MOH) put a priority on development of medicinal plants-derived pharmaceuticals as well as evidence-based traditional herbal medicine. <Consistency with the Development Needs of Ghana at the time of ex-ante evaluation and project completion>

<sup>&</sup>lt;sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development.

<sup>&</sup>lt;sup>2</sup> Trypanosomiasis is a zoonotic disease transmitted by tsetse flies.

<sup>&</sup>lt;sup>3</sup> NTDs are communicable diseases that prevail in tropical and subtropical conditions in 149 countries. As of February 2020, eighteen diseases are specified as NTD by WHO, including Dengue, Rabies, and Trachoma.

<sup>&</sup>lt;sup>4</sup> Bio-assay is a method for examining effects of chemical substances using microorganism and experimental animals.

HIV prevalence rate was 1.9% (2007), and the rate among the youth increased from 1.9% (2003) to 2.6% (2007). Some existing drugs for trypanosoma brought serious side effects, and development of safe and effective drugs were needed. Also, MOH had needs for acquisition of patent on the science and technology research outcomes from the viewpoint of the intellectual property protection and biodiversity conservation.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

In the "Country Assistance Program for Ghana" (2006), one of the Strategic Objectives was improvement of basic social services in deprived areas. Related to this objective, infectious disease control focusing on HIV/AIDS and parasitic diseases including malaria is one of the priority areas.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the project completion. Research and development capacity of NMIMR and CSRPM were partially improved through collaborative research activities with Japanese research institutes, as the indicators show. As anti-HIV compounds, procyanidin trimer (procyanidin C1) demonstrated the strongest activity amongst isolated multimers, but it was not determined as a final candidate compound. (Indicator 1). Regarding anti-trypanosomal compounds, three novel compounds were determined, one of which demonstrated an acceptable level of efficacy in animal testing was considered as a candidate anti-trypanosomal compound (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have partially continued. Attempts have been made to identify other compounds from cacao shell, although no candidate for an anti-HIV so far has shown the required effect due to lack of collaboration between the two institutes such as further joint research and technical support.

Both NMIMR and CSRPM have continued research on medical plant-derived compounds based on the project outputs. NMIMR has screened 113 medicinal plant extracts. Also, NMIMR has got a cell line panel for cancer and normal cell. In addition, it has tested the toxicity of compounds utilizing the experience obtained from research. CSRPM, in collaboration with NMIMR, has conducted structural modification of determined compounds, research on further detailed mechanism of action analysis in vitro, verification of in-vivo efficacy and safety, pharmacokinetic and pharmacodynamic analysis, and so on.

Most pieces of research equipment provided by the project have been utilized and majority are still functional and in use except the automated analyzer for screening cells.

<Status of Achievement for the Expected Overall Goal at the time of Ex-post Evaluation>

The Expected Overall Goal was not achieved. As of the time of ex-post evaluation, no trials have been conducted on candidate compounds for both anti-HIV and anti-trypanosomal. For anti-HIV therapeutic products, although a compound that activates latently infected HIV provirus was identified, there was no evidence to show the therapeutic effect and hence no need to go ahead to perform clinical trials. As for anti-trypanosomal compound, some level of activity was confirmed in the in-vivo analysis. However, the effects of the identified compounds were not concluded, so there has not been motivation for NMIMR to proceed to pre-clinical and clinical trials. Both institutes would proceed to do pre-clinical and clinical trials if they identify any compound with the required effects in-vivo. <Other Impacts at the time of Ex-post Evaluation>

Firstly, based on the project experience, approximately 20 articles have been generated by the Clinical Pathology Department of the University of Ghana, and three international articles have been published by researchers in NMIMR in collaboration with TMDU and Nagasaki International University (NIU). Also, researchers from NMIMR together with TMDU and NIU made 15 poster presentations at conferences of the Biomedical Society in Japan and four oral presentations at international conferences such as the Annual Biomedical Convention in Japan organized by the Biomedical Society. Secondly, US and international patents on the identified compounds that had been applied during the project period was approved in 2016. However, US patent renewal has been suspended since 2017. This is because required studies for renewal have not been conducted. However, a domestic patent on the already identified compounds through the project, was obtained in 2017 and the renewal has been continued by NMIMR. No biohazards from research on anti-HIV and trypanosomal compounds have been confirmed at CSRPM or NMIMR.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of the Project Pulpose and Overall Goal					
Aim	Indicators	Results			
(Project Purpose)	1. At least one candidate	Status of achievement: Partially achieved (Not continued.).			
Research and development	anti-HIV compound is	- Procyanidin trimer (procyanidin C1) was purified from Theobroma cacao and identified			
capacity of Ghanaian	determined for pre-clinical	as a compound that activates latently infected HIV provirus. However, it was unclear			
research institutes for	trial.	whether a therapeutic product with such a mechanism of action would be clinically			
Ghanaian medicinal plants-		effective for HIV latent infection.			
derived anti-viral and anti-		(Ex-post evaluation)			
parasitic compounds are		- No new compound has been found.			
improved through	2. At least one candidate	Status of achievement: Achieved (Continued).			
collaborative research	anti-trypanosomal	- Three novel compounds (one with a novel basic structure and two with its derivatives)			
activities with Japanese	compound is determined for	with anti-trypanosomal activity from the Ghana-native plant were determined,			
research institutes.	pre-clinical trial.	demonstrating efficacy and safety in vitro experiments.			
		(Ex-post evaluation)			
		- Studies were conducted on some compounds on anti-trypanosome effect to get a point			
		where further analysis (isolation) was performed.			
Source: Terminal Evaluation Report, JST Completion Report, interview with CPMR and NMIMRIHH.					
3 Efficiency					

Achievement of the Project Purpose and Overall Goal

Although the project cost exceeded the plan due to inflation, the project period was as planned (ratios against the plan: 112% and 100%, respectively). Outputs were produced as planned. Therefore, the project efficiency is fair.

#### 4 Sustainability <Policy Aspect>

Development of anti-HIV drugs has been prioritized in the "National HIV/Aids Strategic plan" (2016-2020). In addition, prevention of NTDs has been prioritized in programs of the Ministry of Health and other Ministries like the Ministry Gender and Social Welfare. <Institutional Aspect>

There has been no institutional arrangement for utilization of research outcomes for collaboration among the two institutions, pharmaceutical companies, and government agencies, because of unstable outcomes from clinical tests.

On the other hand, CSRPM has sustained an appropriate organizational structure for research activities such as the Board of Directors where key stakeholders can make high-level management decisions for the center. The center is also equipped with a laboratory and instrumentation room sufficient for research activities. After the embargo on public sector employment was lifted, CSRPM has been in the process of recruiting approximately 65 research and support staff. NMIMR has departments and laboratories dedicated to specific activities, and it has established a center for proof of concept for diagnosis and treatment, which gives technical advice to NMIMR on research activities. NMIMR has utilized research outputs for the training of students and conduct of related research works for drug development. For operation and maintenance of the research facility and equipment installed by the project, CSRPM has had in-house technicians who manage instrumentation rooms and laboratory. Major repairs are outsourced. NMIMR has the Laboratory Manager and facility coordinators. It has also prepared protocols for those without proficiency in using the equipment as part of preventive maintenance practices.

#### <Technical Aspect>

At CSRPM, two Research Assistants who were hired for the project got employed permanently. CSRPM has annual conferences such as the Annual Biomedical Convention where scientists discuss and share information on new innovations and findings, in order to sustain research capacity. Also, at NMIMR, young researchers who worked with the project have continued their studies. Research assistants have completed or been about to complete a Ph.D. in virology, drug development, and parasitology. In addition, two of the temporal Research Assistants hired by the project have been employed at NMIMR.

<Financial Aspect>

CSRPM has signed the minutes of understanding with the Morehouse School of Medicine of the University of Georgia of the United States to secure necessary research funds on plant medicine for sickle cell, HIV and other areas. It has conducted analysis for the private sectors on commercial terms and also has generated income from sales of the center's own plant medicines. These funds have used also for maintenance of the facility. In addition, CSRPM has received a grant from the West African Health Organization to refurbish laboratories. NMIMR has received financial support from the Research Development and Innovation Division of the University of Ghana to conduct research activities including those based on the project outputs.

<Evaluation Result>

Therefore, the sustainability of the effects is high.

5 Summary of the Evaluation

The Project Purpose was partially achieved by the project completion. Although any final candidate compound was not determined as anti-HIV compounds, a candidate anti-trypanosomal compound was identified. Even since the project completion, both NMIMR and CSRPM have strove for research activities in order to reach pre-clinical or clinical trials for anti-HIV and anti-trypanosomal compounds. As for the efficiency, the project cost exceeded the plan, but the project period was as planned.

Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

Recommendations for Implementing agency:

- It is recommended to both NMIMR and CSRPM to collaborate with each other to identify a candidate compound for anti-HIV through joint research and knowledge sharing.

Lessons learned for JICA:

- No candidate of anti-HIV compound has not been identified until the time of ex-post evaluation. In a project for drug development, it takes quite a lot of time from Basic research to pre-clinical and clinical trials, if some outputs are difficult to be produced during the project period, it should be necessary to start to develop a collaboration system with the private sector or universities in terms of conducting joint research or getting financial support before the project completion, so that the research could be sustained for producing the planned outputs.



Microplate reader (Infinite 200 pro)



Automated analyzer for screening cells (EasyCyte 5HT)

Country Name Republic of South Africa		Prediction of Climate Variations and Its Application in the Southern African Region			
I. Project Outline					
Background	Abnormal weather has been partly attributed to the phenomena of different sea surface temperatures between two areas – the Indian Ocean Dipole Mode (IOD) and El Niño/La Niña in the Pacific Ocean. For instance, when record rainfall adversely affected South Africa, there was speculation of an impact on the subtropical IOD. South Africa has been establishing a unique research center in Africa through observation research based on geological characteristics bordering between the Indian Ocean and the Pacific Ocean, and simulation research by regional models, though simulation research for interpreting results of climate observation had not been sufficiently conducted. On the other hand, country reports for Sub-Saharan Africa produced by the United Nations Framework Convention on Climate Change (UNFCCC) revealed weak capacity of scientific observation and forecast. Given this, it was clear that research has been essential to clarify mechanisms of climate change phenomena, to establish forecast models for simultaneous simulation of climate change and weather phenomena, and to apply simulation results to an early warning system.				
Project Objectives	<ul> <li>Through clarification of the mechanism of the Sub-tropical Dipole Mode and long-term climate change mechanism, development of the Scale Interaction Experiment-Frontier (SINTEX-F1) as an ocean-atmosphere coupled general circulation, development and improvement of a prototype of an early prediction system as well as networking of scientists involved in climate variation research, the project aimed at enhancing the capacity of seasonal climate prediction in South Africa, thereby contributing to the application of seasonal climate prediction for management of environmental problems in the Southern African Region.</li> <li>1. Expected Overall Goal: N/A</li> <li>2. Project Purpose: Capacity of seasonal climate prediction in South Africa is enhanced so that it can be applied to management of environmental problems in the Southern African Region.</li> </ul>				
Project Activities	<ol> <li>Project Site: Cape Town and Pretoria</li> <li>Main Activities: i) clarification of mechanism of the Sub-tropical Dipole Mode and long-term climate change mechanism, ii) development and deployment of SINTEX-F1, iii) development and improvement of a prototype of an early prediction system, and iv) networking of scientists involved in climate variation research</li> <li>Inputs (to carry out above activities):</li> <li>Japanese Side</li> <li>Experts: 68 persons</li> <li>Equipment: Automatic weather stations (AWSs), computer cluster and peripheral equipment, disk Array and peripheral equipment</li> <li>Operational Cost</li> <li>South African Side</li> <li>Staff: 55 persons</li> <li>Land and Facilities: Project Office at the Centre for High Performance Computing (CHPC) in Cape Town, and the Council for Scientific and Industrial Research (CSIR) in Pretoria</li> <li>Operational Cost</li> </ol>				
Project Period		2010 – March 2013 Project Cost Ex-ante: 300 million yen Actual: 222 million yen			
Implementing Agencies	Department of Science and Technology (DST) (DST was changed to the Department of Science and Innovation in 2019), Alliance for Collaboration on Climate and Earth Systems Science (ACCESS), University of Pretoria (UP), University of Cape Town (UCT), Council for Scientific and Industrial Research (CSIR), South African Weather Service (SAWS), and Agricultural Research Council (ARC)				
Cooperation Agency in Japan	Japan Agency for Marine-Earth Science and Technology (JAMSTEC), and University of Tokyo				

Course More

< Special Perspectives Considered in the Ex-Post Evaluation >

[Expected Overall Goal and Utilization of Research Outcomes]

For this SATREPS project, no expected Overall Goal was set forth at the time of project design. However, since the Project Purpose is "Capacity of seasonal climate prediction in South Africa is enhanced so that it can be applied to management of environmental problems in the Southern African Region". Therefore, it can be interpreted that expected utilization of the research outcomes, which could be an expected Overall Goal, is "Seasonal climate prediction in South Africa is applied to management of environmental problems in the Southern Africa Region". In addition, in the Terminal Evaluation Report, the use of outputs from the improved climate prediction systems was attempted to produce tailored indices in agriculture, such as the number of rainy days, drought indices by analyzing rainfall and temperature changes. Therefore, the status of application of seasonal climate prediction by SINTEX-F was verified as "Envisaged Overall Goal" as part of the expected positive impact by this SATREPS project at the time of ex-post evaluation.

1 Relevance

<Consistency with the Development Policy of South Africa at the Time of Ex-Ante Evaluation and Project Completion>

The Project was consistent with South Africa's policies to prioritize science and technology to global change such as the "10-Year Innovation Plan" (2008-2018) covering grand challenge areas including global change science, with a focus on climate change, and presenting a vision for South Africa in 2018 to be a world leader in climate science and the response to climate change.

<Consistency with the Development Needs of South Africa at the Time of Ex-Ante Evaluation and Project Completion>

The Project was consistent with South Africa's development needs for enhancement of the capacity of seasonal climate prediction in

<sup>&</sup>lt;sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development

order to clarify mechanisms of climate variability, to establish forecast models to simultaneously simulate climate change and weather phenomena, and to apply simulation results to an early warning system.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The Project was consistent with Japan's ODA Policy for South Africa prioritizing human resource development for growth strategy, including the scientific and technology/climate change programme, and as policy support for the "Accelerated and Shared Growth Initiative of South Africa (ASCISA)" and the "Joint Initiative on Priority Skills Acquisition (JIPSA)", agreed to at the policy dialogue between South Africa and Japan in November 2008, and the 9<sup>th</sup> Japan-South Africa Partnership in January 2009<sup>2</sup>. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved at the time of project completion. Climate prediction results from SINTEX-F included in the pre-existing system and disseminated through the website, South African Risk and Vulnerability Atlas (SARVA) (Indicator 1). <Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued since project completion. SINTEX-F outputs have formed part of an ensemble of forecasts for seasonal climate forecasting. Calibration of bias in data produced by seasonal climate forecasting, which is part of this SATREPS project's research outputs, has been a standard part of data processing by seasonal climate prediction. ARC has provided the data to the SATREPS project's participants, and it has been used for various projects, including another SATREPS project titled "Development of Infectious Diseases Early Warning System for Southern Africa incorporating Climate Predictions (iDEWS Project)" (2014-2019). The iDEWS Project has benefited from this SATREPS project, and the system was developed for Limpopo.

The seasonal climate prediction data is not available on all websites, but the new system was replaced and it's now available on request and is being placed on the Climate System Analysis Group (CSAG)'s website via the File Transfer Protocol (FTP). Out of the 25 AWSs initially installed by the project, 21 are still operational and receiving positive feedback from data recipients. AWSs are being managed by ARC, who is experiencing some difficulties with budget and staff shortages. The AWS network has been maintained and valuable data has been collected from the network though four stations are not in use due to vandalism and theft, and they have not been replaced<sup>3</sup>. <Status of Achievement for Expected Overall Goal at the time of Ex-post Evaluation>

The Expected Overall Goal was achieved at the time of the Ex-Post Evaluation. Climate services are being developed for all scales of weather to climate change time scales. SINTEX-F is continuously being included in ensemble products and remains an important model. There are several ongoing activities where work is applied, including the iDEWS Project for establishing the system for malaria as mentioned above. A few papers were jointly written by South Africa and Japan, named "Seasonal forecasts of the SINTEX-F coupled model applied to maize yield and streamflow estimates over north-eastern South Africa", and "Dynamical seasonal prediction of Southern African summer precipitation".

<Other Impacts at the time of Ex-Post Evaluation>

There are some positive impacts of the Project confirmed at the time of the Ex-Post Evaluation. As mentioned above, the weather station network with AWSs has been expanded by 21 additional AWSs installed after project completion. ARC researchers are constantly making use of weather data. The project improved the capacity of several scientists by offering training in SCP technology and research opportunities for higher degrees.

The SATREPS project improved various projects in ARC, and private consultants are making use of the weather data. Not only related government entities, but also broader scientific literacy has been improved. The weather station network created for students and farmers an awareness of climate and its influences in daily life. In particular, farmers have used the weather data for their daily planning and farming activities and started to support the maintenance of AWSs.

The project improved networking amongst South African researchers as well as enhancing relations with Japanese counterparts. The project was helpful in establishing a stronger and wider network between South African and Japanese researchers. The project was a useful opportunity for the creation of a SCP fraternity in South Africa, and for connecting colleagues who otherwise would not be working together.

<Evaluation Result>

Therefore, both the effectiveness and impact of the project is high.

Aim	Indicators	Results
(Project Purpose)	Dynamical climate prediction results are	Achievement Status: Achieved (Continued)
Capacity of seasonal	included in the existing environmental data	(Project Completion)
climate prediction in	dissemination system for societal as well as	• Climate prediction results from SINTEX-F are included in the
South Africa is enhanced	scientific use.	pre-existing system and disseminated through the website (SARVA).
so that it can be applied to		(Ex-Post Evaluation)
management of		• SINTEX-F is part of an ensemble product for seasonal climate
environmental problems		forecasting. Bias correction is also a standard part of data processing.
in the Southern African		• Regarding new research projects based on the SATREPS project's
Region.		research outputs, all iDEWS Project participants utilized the outcomes
		of this initiative for the successful development of a system for malaria.
		• The seasonal climate prediction data is not available on a website, but
		the new system was replaced and is now available on request, and it is

Achievement of Project Purpose and Overall Goal

<sup>&</sup>lt;sup>2</sup> Ministry of Foreign Affairs, "ODA Country Databook 2009"

<sup>&</sup>lt;sup>3</sup> One AWS in Limpopo was stolen and replaced, but the replaced one was vandalized and moved to another site. One AWS in Mpumalanga and the ones in Western Cape were destroyed by a veldt fire. One AWS in the Western Cape was vandalized.

	Expected Overall Goal)Seasonal climate prediction by SINTEX-FApplication of seasonalis applied to management of environmentalclimate prediction inproblems in the Southern Africa RegionSouth Africa tonanagement ofnanagement ofenvironmental problemsn the Southern AfricanRegion.Source : Terminal Evaluation Report, Questionnaires and interviews with	<ul> <li>being placed on CSAG's website via FTP. Out of the 25 AWSs initially installed, 21 are still operational and receiving positive feedback from data recipients. Four AWSs located in remote areas have been destroyed or stolen. The weather station network has been expanded and valuable data have been collected from the network.</li> <li>(Ex-Post Evaluation) Achieved</li> <li>There are several ongoing activities where work is being applied, including the iDEWS Project for establishing the early warning system for malaria.</li> <li>Climate services are being developed for all weather scales to climate change time scales.</li> <li>A few papers jointly written by South Africa and Japan, named "Seasonal forecasts of the SINTEX-F coupled model applied to maize yield and streamflow estimates over north-eastern Southern Africa", and "Dynamical seasonal prediction of Southern African summer precipitation". This covered Agriculture as one of three themes identified by the project.</li> </ul>
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#### 3 Efficiency

The project period and the project cost were within the plan (with the ratios against the plan being 100% and 74%, respectively). The project outputs were produced as planned.

Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspects>

"The Draft National Climate Change Adaptation Strategy for South Africa", announced in May 2019 by the Minister of Environmental Affairs, will enable the country to plan and better respond to intensified impacts of climate change. The Department of Environmental Affairs (DEA) has developed substantially, including the application of SCP to various sectors. The Limpopo Department of Health (LDOH) has adopted the system for malaria. The National Department of Health (NDOH) has monitored and has been considering a national adoption of the system for malaria adopted by LDOH under the iDEWS Project.

The Strategic Cooperation Framework (SCF) for application of the seasonal prediction data, including the iDEWS Project, has been continuing under the network amongst UP, CSIR, SAWS, ACCESS and others. In addition, as mentioned above, in Limpopo Province, the system for malaria established by using the seasonal prediction data has been adopted by LDOH. The latter will set up the iDEWS Bureau for sustained application of the research outcomes.

As for maintenance of equipment installed by the project, all equipment was formally transferred to the appropriate entities for integration into their maintenance plans. The ownership (and regular maintenance responsibility) was transferred to counterparts; the SINTEX-F to the CSIR, and AWSs to ARC. Most AWSs have been regularly maintained as part of the overall weather station network maintenance plan, and data is being collected and processed daily by ARC. On the other hand, ARC has been requiring additional staff for general maintenance and expansion of the weather station network, however, the personnel for ARC has not been replaced in the last 6 years.

For utilization of research outcomes, the high turn-over of government staff remains a challenge.

<Technical Aspects>

SAWS and ARC have retained well-trained staff for operating AWSs and collecting weather data for the seasonal prediction data. Since SINTEX-F has not been used, and with the next generation SINTEX-F2 replacing it, researchers/scientists have not been using the SINTEX-F manuals.

For AWSs operation and maintenance (O&M), ARC staff has sufficient technical knowledge and skills. The AWSs' O&M has been incorporated in the routine work of ARC.

### <Financial Aspects>

ARC has been maintaining AWSs based on the maintenance plan, although no additional budget has been allocated to AWSs installed by the SATREPS project. ARC is also experiencing budget shortages for extending the weather station network and the personnel and budgetary constraints has been an ever worsening situation.

ACCESS, who greatly contributed to the success of the iDEWS Project, has been advocating for the iDEWS Bureau, as agreed among the South African side, including SAWS, National Institute for Communicable Diseases (NICD), ACCESS/CSIR, South African Medical Research Council (SAMRC), the Limpopo Provincial Department of Health and DSI, and the Japanese side, including Nagasaki University, JAMESTEC and JICA. The Bureau was scheduled to be launched at a side event during the South African Science Forum in December, 2019. DSI will allocate the project budget from the iDEWS Project. For the seasonal prediction, DSI has not allocated budget to ACESS after the completion of this SATREPS project. However, after starting the iDEWS project, DST has allocated the project budget for the iDEWS Project to ACESS.

<Evaluation Result>

In light of the above, some challenges were observed with institutional and financial aspects. Therefore, the sustainability of the effects through the Project is fair.

## 5 Summary of the Evaluation

The project has achieved the Project Purpose and Overall Goal through utilizing the seasonal climate prediction in South Africa developed by this project to manage environmental challenges in the South Africa Region. As for sustainability, although the implementing agency has been experiencing personnel and budget shortages for the expanding weather station network, the strategic cooperation framework has been maintained for the application of the seasonal climate prediction data and the equipment installed by the project has been properly maintained. Considering all of the above points, this project is evaluated to be highly satisfactory.

### III. Recommendations & Lessons Learnt

# Recommendations for Implementing Agency:

- DSI should encourage the submission of proposals for advancing project outcomes, especially with Agriculture and Water, and utilizing research outcomes.
- Lessons Learnt for JICA:
- Through the implementation of the SATREPS project, the strategic cooperation network among the government authorities, universities and research institutes was promoted and the network has been sustained even after the project's completion. The project researchers, particularly both countries' leaders, endeavored to establish a trusting relationship among the stakeholders by having continuous communication between the South African and Japanese sides. Examples of this include organizing lectures by young Japanese researchers to South African students, motivating the project's members by closely supervising the manuscripts of their collaborative research's outcomes, and holding international symposiums, seminars and workshops by both countries' senior researchers. Obtaining approval for the 2<sup>nd</sup> phase SATREPS project (iDEWS), which applies this project's outputs/outcomes toward the infectious diseases field, was also considered as helping to sustain the cooperation network.



One of the 6 automatic weather stations acquired for the SATREPS project on Seasonal Climate Projection.



Colleagues from SATREPS project on Seasonal Climate Projection science meeting in Pretoria

Country Name					conducted by reparonnee. March 2020		
Federal Democratic Rep	oublic	The Project for the Improvement of Community Access					
of Nepal							
I. Project Outline							
Background	kground Infrastructure development in Nepal had been particularly behind in South Asia, partly due to effects of the domestic conflict lasting for about 10 years until 2006. An estimated 36% of the populat walk for at least two hours to access all-weather roads, and 15 out of 75 districts were unable to r district capital by car. In addition, about 60% of the main roads and most of the local roads were le impassability in the rainy season due to unpaved roads and undeveloped bridges. The regional infrastructure improvement was also an urgent issue from the perspective of redu domestic disparities, which were considered to be the cause of conflict.				06. An estimated 36% of the population must out of 75 districts were unable to reach the and most of the local roads were long-term oped bridges. issue from the perspective of reduction of		
Objectives of the Project	To secure traffic throughout the year by constructing suspension bridges, truss bridges, reinforced concrete bridges, and continuous box bridges at crossing river points that were located on 11 rural roads along the Sindhuli Road in the Central Development Region of Nepal and had suffered from road closure for a long time due to flooding in the rainy seasons, thereby contributing to securing access of the local population to basic services and markets						
Contents of the Project	<ol> <li>Project Site: 32 bridges in five districts along Sindhuli Road (Mahottari, Sindhuli, Ramechhap, Kavrepalanchowk and Sindhupalchowk)</li> <li>Japanese side: Construction of river-crossing structures composed of suspension bridges, truss bridges, reinforced concrete bridges and continuous box bridges.</li> <li>Nepali side: Site clearance following the compensation of private residents along the right-of-way, tree-cutting works at the site including transportation and management, relocation of affected public utilities on-ground/overhead and those buried below the proposed road and others</li> </ol>						
Project Period	d E/N D G/A D		March 5, 2010 March 19, 2010	Completion Date	March 31, 2016		
Project Cost	E/N C	/N Grant Limit / G/A Grant Limit: : 990 million yen			Actual Grant Amount: 990 million yen :		
Executing Agency	Department of Local Infrastructure Development & Agricultural Roads (DOLIDAR), Ministry of Feder						
Contracted Agencies	Main Contractor(s): 12 local companies Main Consultant(s): NIPPON KOEI CO., LTD Agent: Japan International Cooperation System (JICS)						

< Special Perspectives Considered in the Ex-Post Evaluation >

Regarding the quantitative effects, In the ex-ante evaluation, the target value set to be 2013 which is one year after the completion of the project. However, the project period was significantly extended and the project was completed in March 2016, so the target year was confirmed in 2017 which is one year after completion

1 Relevance

<Consistency with the Development Policy of Nepal at the Time of Ex-Ante and Ex-Post Evaluation>

The project has been consistent with the development policy of Nepal. At the time of ex-post evaluation, rural infrastructure development planned under the "Interim Three-Year Plan (2007 to 2010)" included improvement of rural roads (7,000km), construction of bridges (11km) and suspension bridges (1,000 bridges). At the time of ex-post evaluation, balanced development and expansion of road network is one of the goals of the "15th Plan Approach Paper" (2019/20-2023/24) for the road transport sector.

<Consistency with the Development Needs of Nepal at the Time of Ex-Ante and Ex-Post Evaluation >

The project has been consistent with the development needs of Nepal for the community road development. At the time of ex-ante evaluation, access to the all-weather roads were very limited in the rural areas as described in the background above. At the time of ex-post evaluation, the road density in the target areas has been still far behind the more urbanized areas, and the number of bridges has been still limited.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA Policy to Nepal. Socio-economic infrastructure development including transportation is one of the prioritized areas of ODA to Nepal<sup>1</sup>.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Effectiveness>

The project has achieved its objectives. The project attained the target of quantitative effect, although precise data is not available. The number of days for road closure during the rainy season has decreased for almost all the roads where the bridges were constructed. The total average number of closures as based on the interviews with local people for 2018 is around 18 days, which is less than the targeted one month.

<sup>&</sup>lt;sup>1</sup> Source: ODA Country databook 2010

As to the expected qualitative effect, traffic and safety have improved, according to the local people and officials of the Infrastructure Development Office (IDO) of the provincial government. Especially in rainy season, since the locals used to be forced to directly across the rapidly streaming rivers before the construction of the bridges by the project, which posed danger. After the construction of the bridges, the river crossings in the rainy season has been safer due to the reduction of the possible wash away of the vehicles and people during crossing the river.

From the completion until the time of ex-post evaluation, the constructed bridges have been in good conditions and utilized properly, though one bridge was washed away by heavy flood. The bridges have been utilized as the traffic increased according to the local people who reside on the road alignment. However, future utilization for the 14 bridges in Sindhuli district are questionable, as two-lane bridges will be those 14 bridges. April 2016, the Government of constructed just near In Nepal decided to upgrade Dharan-Chatara-Gaighat-Katari-Sindhuli-Hetauda as a road having 15 meter + 15 meter highway (2 lane) and upgraded from rural road to Strategic Road Network (SRN)<sup>2</sup>. Then, at the time of ex-post evaluation of the project, Department of Roads (DOR) was constructing double lane bridges just near the 14 one-lane bridges constructed under the project. According to DOR and DOLIDAR, there was no formal handover of the bridges under the project from District Development Committee (DDC)/DOLIDAR to the DOR. Similarly, the DOR also did not share the construction plan of the two lane bridges with JICA. <Impact>

Positive impacts on better access to education, health services and markets have been observed according to the interviews with the local people and the IDO officials. Children have benefitted from better access to their schools due to the opening of the road. It has been very convenient for the people to access the hospitals as the villages do not have hospitals but only health centers. Even during the rainy season, people have easier access to hospitals in the nearby towns/cities or to Kathmandu. According to the local people, the transportation of agriculture products has improved. With the better access, some of the people who previously migrated to the cities and to foreign employment are returning back for farming, livestock production and small road-side business.

No negative impact on natural environment was observed, according to IDO. Although most of the interviewed local people think that the safety has improved, in some bridges, some local people claimed that the protection work (retaining wall, protection to the bridge and the surrounding areas by gabion boxes) was not enough. There were some land acquisition done in four bridge sites. However, issues on land acquisition and resettlement did not occur under this project. The land was provided by the landowners voluntarily. DDC at that time was involved in the negotiation with the local people. And after coming to consensus, the landowners donated the land. The project gave some part of the petty works to the affected people and also provided jobs. As there is no DDC after federalization in Nepal, further information was not available with Department of Local Infrastructure (DOLI) or IDO.

Positive impacts have been observed in terms of gender aspect. The life of the women has become easier as it is convenient for them to send their children to schools, take their family members to hospitals and health posts. Similarly, the access to the market for their agricultural products and for their daily essential needs like salt, spices, clothing has become easier. Most of the roadside shops are owned and operated by women. In this respect, they had more income generation opportunities. Some of the men who had migrated returned home so that the women could be with their husband and family members.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Quantitative Effects

	Baseline	Target	2016	2017	2018
	(2009)	(2013)	Year of	1 Year after	2 Years after
	Baseline Year	1 Year after Completion	Completion	Completion	Completion
Number of days for road closure during	417 days	Less than one month	NA	~20 days	~18 days
the rainy season (Total of 11 roads)					

Source: Interviews with 10 local users/residents in target five roads, IDO officials and DOR officials. As it is not based on actual data, there could be some minor differences.

3 Efficiency

Although the project cost was as planned (the ratio against the plan: 100%), the project period significantly exceeded the plan (the ratio against the plan: 345 %). The strict time schedule designed by the consultant and the low capacity of the local contractor was the reason for the delay in the construction work. As for outputs, although construction of 32 bridges were the number of bridges finally agreed to construct, the project was terminated with four bridges unfinished, due to the earthquake which hit Nepal in April 2015. Nepali side took over the construction of four bridges. Among them three bridges were completed by using the materials procured under the project in October 2018, and one is still under construction.

Therefore, the efficiency of the project is fair.

4 Sustainability

<Institutional Aspect>

Although DDC was expected to be responsible for Operation and Maintenance (O&M) of the bridges constructed under the project, DDC has been dissolved after the federalization of Nepal. Instead, the Ministry of Physical Infrastructure Development (MOPID) at the provincial level and the IDO under the provincial government at the district level (each IDO looks after around 2 districts) is responsible for O&M of the bridges. However, they are new organizations and the organizational structure of IDO is not clear about O&M. Therefore, O&M system needs to be strengthened, which the MOPID and IDO are considering to do in the future. Each IDO generally has four engineers have and six sub engineers under the Senior Divisional Engineer. As each IDO has to look after two districts.

Although some technical staff is assigned, their nature is more of civil engineers and not experts on bridges. As the bridges have been new,

<sup>&</sup>lt;sup>2</sup> SRN are National Highways and Feeder Roads managed by the Department of Roads under the Ministry of Physical Infrastructure and Transport, and are the main road transport arteries.

there has been not much maintenance and repairing needs to be done at this moment. There were no training system or maintenance manual at the time of ex-post evaluation. However, as IDO is a new organization and in a very premature stage, further policy and strategy to strengthen the technical capability of IDO is on-going.

<Financial Aspect>

Budget has been allocated to maintenance for roads including bridges (There is no classification of budget specifically allocated bridges). The budget is basically calculated based on the road length. Overall, the finance for maintenance has not been a problem as the provincial government will be supporting IDOs as per the need. However, if there are damages to the bridges due to disaster and other reasons, then, additional budget might be necessary.

### Budget of road maintenance allocated to IDO

					(1	init: Nepali rupee)
	MOPID/IDO	Mahottari	Sindhuli	Ramechhap,	Kavrepalanchowk	Sindhupalchowk
Fiscal	year					
2018/	2019 Budget	7,500,000	3,737,684	3,737,684	13,600,000	13,300,000

<Current Status of Operation and Maintenance>

There has been no inspection system existing at the time of ex-post evaluation, as the organization is new. However, the MOPID/IDOs will be considering the formulation of the maintenance system soon.

<Evaluation Result>

As the organizations are still new, some uncertainties have been observed in terms of the institutional, technical and financial aspects. Therefore, the sustainability of the project effect is fair.

5 Summary of the Evaluation

The project has achieved its objectives, as the project attained the target of quantitative effect of "the number of days for road closure during the rainy season". As impacts, access to education, health services and market has improved. As for the sustainability, slight problems have been observed in terms of the institutional, technical and financial aspect. As for the efficiency, although the project period significantly exceeded the plan, the project cost was as planned.

Considering all of the above points, this project is evaluated to be satisfactory.

# III. Recommendations & Lessons Learned

Recommendations to Executing Agency:

- MOPID and IDOs are recommended to develop Operation and Maintenance system including financing provision, prepare operation and maintenance manual, assess the staff requirement based on the operation size of the specific IDOs, and build the capacity of the staff through trainings and OJTs.
- The change of the Government policy on the status of the Rural Roads to SRN for the two roads where 14 bridges were constructed under the project was decided. However, the construction of the two-lane bridges (along the existing JICA supported bridges constructed under the project) which was designed by DOR was not timely informed to JICA. DOR, DOLI and Ministry of Finance (MOF) need to share the information on new projects, which will affect the existing projects supported by JICA. And furthermore, the DOR and IDO needs to coordinate with JICA to mitigate the negative effects on the usage of the existing bridges by construction of the two-lane bridge. At the same time, the DOR and IDO are recommended to maintain the existing JICA supported bridges properly and keep them in good condition in order to utilize them.

Lessons Learned

The projects implementation took much longer time than estimated. The project construction duration was estimated based on the contractor with high level of skills and determination. Therefore, the assessment of the local contractors' ability was not efficiently analyzed. For new projects, which mobilize local contractors, consultant's recommendation and plan should be carefully assessed by JICA and the counterparts considering the local situation like the capacity of local contractors, realistic construction plan based on the seasonal variation and cultural and social aspects.



Dhamile Khola Bridge (Sindhuli) linking Sindhulimadi and the rural areas



Sukhajor Khola Bridge (Ramechhap) linking Manthali, Ramechhap and the western part of Okhaldhunga district

Country Name The Project for Introduction of Clean				gy by Solar Electricity Generation			
Republic of Malaw	~	stem					
I. Project Outline							
Background	there was MW (201 power gen	About 99% of Malawi's power was provided by hydropower. When the water level was low in the dry season, there was a shortage of power, with the total available capacity of 288 MW against the maximum demand of 347 MW (2010). Therefore, diversification of energy sources was an issue, and renewable energy, including solar power generation, was expected to support its introduction as an energy source that would realize a stable supply of power while suppressing greenhouse gas emissions.					
Objectives of the Project	To increase power generation capacity diversify power sources and raise awareness of people of Malawi on the use of renewable energy by procurement of photovoltaic (PV) system and related equipment in the Project Site as well as technical assistance for capacity building of technical personnel, and thereby contributing to demonstration of Japan's initiatives for promoting collaborative efforts by both developed and developing						
Contents of the Project	<ul> <li>countries against climate change.</li> <li>1. Project Site: Kamuzu International Airport</li> <li>2. Japanese side <ul> <li>(1) 830 kWp grid-connected PV generation system (PV modules, watt hour meter, junction box, collecting box, power conditioner, transformer, 11kV switchgear, cables, data management and monitoring system, display board and others) and PV system spare parts and maintenance tools</li> <li>* The generation capacity was increased from the originally planned 450 kW by procuring additional PV modules and related equipment.</li> <li>(2) Technical assistance (soft component): Training on grid connected PV system including basic knowledge, inspection and maintenance, and emergency response</li> </ul> </li> <li>3. Malawi side: Securing and clearing of land, construction of related facilities such as fences, gates, roads and drainage, obtaining power and water distribution lines to the site, providing telephone trunk to the Main Distribution Frame, providing general furniture, obtaining power generation license, etc.</li> </ul>						
Project Period	E/N Date	<b>, , , , , , , , , ,</b>	Completion Date	September 13, 2013 (Completion of Soft Component)			
Project Cost	E/N Grant Limit / G/A Grant Limit: 660 million yen, Actual Grant Amount: 647 million yen						
Executing Agency		evelopments Limited (ADL)	• •	*			
	Main Con	ntractor(s): Nishizawa Limited					
Contracted Agencies							

< Constraints on Evaluation >

As the executing agency was busy with response to the COVID-19 epidemic, it was difficult to collect additional information for clarification of the initial answers provided by them. Therefore, we could not clarify the detailed factors behind the trends in the indicator values.

< Special Perspectives Considered in the Ex-Post Evaluation >

The ex-ante evaluation sheet of this project set 2012 as the target year for the quantitative effects indicators, explaining that year 2012 as "3 years after project completion." However, that it seems to be a mistake considering that the planned project period was from February 2010 to December 2011. Since the actual project completion was September 2013, we set 2016 as the target year for this ex-post evaluation.

1 Relevance

<Consistency with the Development Policy of Malawi at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, the project was consistent with the "National Energy Policy" (2003), which aimed to reduce the proportion of biomass energy (especially firewood and charcoal) to 50% by 2020 while increasing renewable energy from 0.2% to 7%. <Consistency with the Development Needs of Malawi at the Time of Ex-Ante Evaluation >

At the time of ex-ante evaluation, there was a need for the development of renewable energy, including solar power generation, as mentioned in "Background" above.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The government of Japan introduced a scheme of "Program Grant Aid for Environment and Climate Change" in 2008 to support developing countries that lack implementation capacity and funds for balancing between a reduction of CO2 emission and economic growth to promote global efforts against climate change effectively. The project was implemented under this scheme as a mitigation measure through the introduction of clean energy.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Effectiveness>

The project's objective, namely, "to increase power generation capacity, diversify power sources, and raise awareness of people of Malawi on the use of renewable energy," has been achieved. Regarding the quantitative effects, the power generation volume at transmission end (Indicator 1), the estimated reduction of CO2 emission (Indicator 2), and the estimated reduction of electricity cost for the airport facilities (Indicator 3) were all achieved above the target in 2016, the target year. After that, the figures show a slight downward trend with time, reportedly as the solar panels have become dirty despite daily cleaning and as the power generation is lowered while some

components are under repair. Even so, the facility has been functioning and able to generate more than the airport's energy requirement, which is 500 kWp while the facility generates 831 kWp. The excess energy is channeled to the national grid.

Regarding the qualitative effects, the effects of the soft component have been partially reflected in the O&M of the facility, particularly in terms of one of the trained staff still practicing what he had learned and the manuals being utilized (see "Sustainability" below for more information on O&M). Public awareness activities about the solar power generation by the PV system have been conducted - ADL receives visits from schools and interest groups at least once every two months. So far, 24 solar users and 240 non-users have shown interest in the facility after getting some awareness of its effectiveness.

<Impact>

The expected impact of this project, namely, "Contribution to a demonstration of Japan's initiatives for promoting collaborative efforts by both developed and developing countries against climate change," has not manifested. However, there has been a positive impact related to gender. The PV solar panels require daily cleaning. Since this task can also easily be done by women, ADL hired 50% of its cleaning personnel in the form of women. Guarding services (especially during the day) have also accommodated women. Through the project, therefore, the welfare of women has been uplifted.

Besides, unexpected positive impacts brought by the project include the following. (a) Public Relations for the Kamuzu International Airport has improved as it receives a good number of interest groups that come to learn and appreciate how the facility works. (b) For ADL, which now has the mandate to plan and manage the developments of other airports in Malawi, the facility is serving as a model power back up. ADL will endeavor to ensure that future airports or other existing airports should have a similar facility as power backup. No adverse impacts have been observed.

### <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

# Quantitative Effects

	Baseline 2009	Target 2016 <sup>(1)</sup>	Actual 2016	Actual 2017	Actual 2018	Actual 2019	Actual 2020 (-March)
Indicators	Baseline	3 Years after	3 Years after	4 Years after	5 Years after	6 Years after	7 Years after
	Year	Completion	Completion	Completion	Completion	Completion	Completion
Indicator1: Power generation volume at transmission end (MWh/year)	0	661.0	1,292.6	1,149.5	1,121.6	1,053.0	258.7
Indicator 2: Estimated reduction of CO2 emission (ton/year) <sup>(2)</sup>	0	367.0	406.5	361.9	352.7	331.9	89.9
Indicator 3: Reduced electricity cost for the airport facilities (equivalent million yen/year) <sup>(3)</sup>	0	1.78	8.44	5.91	6.39	4.05	N.A.

Source: Ex-ante Evaluation Report; ADL

Note: (1) The target values were calculated as follows.

<Indicator 1> The estimated average power output was calculated by average irradiation (kWh/m<sup>2</sup>-day) x system efficiency (0.7) x output of PV (kWp) =  $5.7 \times 0.7 \times 456.3 = 1,810.0 \text{ kWh/day} = 661.0 \text{ MWh/year}.$ 

<Indicator 2> The annual CO2 emission reduction was calculated by emission reduction unit x Annual power output =  $0.555 \text{ kg-CO2/kWh} \times 661.0 \text{ x } 10^3 \text{ kWh/year} = 366,855 \text{ kg-CO2/year} \approx 367 \text{ ton/year}.$ 

<Indicator 3> The reduced electricity cost was calculated by unit electricity tariff (Category Scale III) × annual energy output

=  $4.0923 \text{ MWK/kWh} \times 661.0 \times 10^3 \text{ kWh/year} = 2.70501 \times 10^6 \text{ MWK/year} \approx 1.78 \text{ million yen/kWh} (1 \text{ MWK} = 0.658 \text{ yen}). * \text{ MWK: Malawian Kwacha}$ 

(2) For the actual values of Indicator 2, ADL indicated that it used the same calculation method as the one used for the target value. However, it appears that a different coefficient (0.314) was used than the coefficient used to calculate the target value (0.555).

(3) The original data was provided by ADL based on credit notes from Electricity Supply Commission of Malawi (ESCOM) in Malawian Kwacha. The evaluator converted the amount to Japanese yen using the following exchange rates: 0.157 yen (2016), 0.155 yen (2017), 0.157 yen (2018), and 0.151 yen (2019).

3 Efficiency

While the project cost was within the plan, the project period significantly exceeded the plan (ratio against the plan: 98% and 191%, respectively). The project implementation was delayed as there were serious economic problems in Malawi between 2011 and 2012 such as low supply of foreign currency, and serious fuel shortages. Due to that, government operations, including those for this project, were brought almost a standstill. Therefore, the efficiency of the project is fair.

4 Sustainability

<Institutional/Organizational Aspect>

The ADL's O&M structure<sup>1</sup> for the PV system installed by this project is robust enough, and ADL reported that they have a sufficient number of people to carry out the operation. However, some issues for the future have been observed, although they have not undermined the sustainability so far. First, under the soft component, this project trained technical staff from the Department of Civil Aviation (DCA) and ADL to handle O&M issues of the facility so that the DCA staff could provide technical support and cooperation on the switchgear and transformer. However, such an arrangement did not materialize since, according to the actual institutional arrangement, it is ADL that is primarily involved in the operation of the facility, and DCA does not take a frontline role in handling the facility. Second, when ADL wants to buy spare parts directly from manufacturers, they are told that the manufacturers only deal with certified dealers, and a third party like

<sup>&</sup>lt;sup>1</sup> The O&M team has two groups, namely (a) Electrical (four staff members) (b) Refrigeration (two staff members). Besides, there are eight cleaners. The two teams work hand in hand. The two team reports to the Technical Team (three staff members), headed by the Engineering Manager, who in turn reports to management.

ADL is not one of them. Also, there are some components of the equipment which ADL personnel are forbidden to touch. These restrictions make ADL helpless and entirely dependent on the consultants, which attracts costs when problems occur. This will create a problem of eternal dependency on the consultants, and ADL will not be able to stand alone in the future. <Technical Aspect>

The current members of the O&M team of ADL can operate the facility and manage and analyze the data such as CO2 emission, solar radiation, and energy generation. However, the departure of two of the three officers trained by the project poses another problem for the future if the remaining staff members leave, as the other members of the current O&M team do not have the opportunity to be trained.<sup>2</sup> In addition, there are some more technical issues over spare parts and repair works, although they have not much affected the operation of the facility so far. First, due to the evolution of technology, the market no longer has spare parts for the model that was installed by this project. Although ADL has been able to manage O&M so far with the spare parts provided by this project, there is a fear that in the future, all spares may not be available. Second, some components of the equipment are labeled in Japanese, and all instructions of such components are in Japanese. This makes it impossible for ADL staff or outsourced technicians from Malawi to conduct O&M. Third, for some parts that need replacement, ADL personnel are requested to invite consultants alone to come and fit them (i.e., ADL's technicians are forbidden to touch these parts). However, ADL cannot know how many Man Hours with how many technicians will be required to fix a particular problem.

#### <Financial Aspect>

ADL sets aside MKW5 million annually for all O&M as well as maintenance activities of the facility. So far, it has barely managed to keep the facility running. As it ages, however, the amount may not be enough as we expect more breakdowns entailing higher costs (including the cost for travel, accommodation, and allowances to be paid to invite consultants for repair works). The amount will have to be adjusted upwards.

<Current Status of Operation and Maintenance>

Although not all operators were trained as planned, the PV power system has been operated and maintained to the level that can continue power generation. The facility is inspected three times a day (morning, noon, and evening). If they notice something unusual, the relevant team is deployed to work on it. The PV system components are in good condition except for the following: among the nine inverters (power conditioners), one broke down, was replaced by a spare, and is currently operating again; another power conditioner will be repaired in the near future, according to ADL.

All spare parts and consumables are well kept and utilized. ADL has replaced eight solar panels from a stock of solar panels that were left by the project. However, the emerging problem of spare parts mentioned above poses a threat to future maintenance of the equipment. <Evaluation Result>

In light of the above, some problems have been observed in terms of the institutional, technical, and financial aspects of the executing agency. Therefore, the sustainability of the project effect is fair.

### 5 Summary of the Evaluation

The project achieved the objective of increasing power generation capacity, diversifying power sources, and raising awareness of people of Malawi on the use of renewable energy, with the grid-interconnected PV system installed at the Kamuzu International Airport. Regarding the sustainability, some problems are found in the institutional, technical, and financial aspects of the O&M of the PV system such as the dependence on consultants, unavailability of some spare parts, and the decreasing number of trained personnel, which might lead to the degradation of the facility in the long-term. However, the solid O&M structure has enabled ADL to operate and maintain the facility in good condition. As for the efficiency, the project period significantly exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

# III. Recommendations & Lessons Learned

Recommendations to the Executing Agency:

1) ADL is recommended to facilitate easier access to and maintenance of the equipment by allowing ADL personnel unfettered access to repair any part of the equipment within their competency. This will assist in reducing time leading to repair of a component as they will not have to wait for consultants to find convenient time to come and carry out repairs.

2) ADL is recommended to retain the staff member who received training in this project to the O&M of the project facility. Also, it is desirable that ADL request cooperation from DCA to augment the technology transfer with the DCA staff trained under this project.

#### Lessons Learned for JICA:

1) It is needed to confirm parts procurement conditions during the detailed planning survey stage and to confirm language of the manual and labels during equipment inspection whether in English or any others that can be understood locally.

2) In future projects to procure solar electricity generation equipment, the O&M personnel's accessibility to any parts of the equipment should be confirmed before procurement.

3) When a soft component is to include training for personnel from other organizations than the O&M agency, JICA should make sure that such personnel will be actually involved in O&M in the practical institutional setting.

 $<sup>^2</sup>$  The transfer of knowledge and skills on O&M of the facility has not been smooth because the only remaining member who was trained was not trained in Training of Trainers. As a result of this, the new staff has mastered the art of operating and maintaining the facility through manuals left by the project and previous experience from elsewhere. However, there is no way to be sure that the technology they are using is sufficient in the medium to long term.



PV modules (the solar panels)



Power conditioners in the energy conversion room



Display board indicating the energy amount being generated by the facility

Country Name Federal Republic of Nig	orio	The Project for Introduction of Clean Energy by Solar Electricity Generation System						
I. Project Outline								
Background	Nigeria is one of the world's largest oil producing countries, however, there had been limitations on sustainable energy supply depending on fossil fuels. On the other hand, the power generation volume of the hydropower plant of the country, one of the country's major power sources, had lowered because of adverse effects by climate change such as a decrease in the flow of the Niger River system was a concern. As it became difficult to secure sustainable energy supply and energy security, there was growing interest in shifting from conventional fossil fuel-based energy policies.							
Objectives of the Project	utiliza Usuma thereb	To increase power generation capacity, diversify power sources, and raise awareness of people of Nigeria for utilization of renewable energy by procurement of photovoltaic (PV) system and related equipment in the Lower Usuman Dam Water Treatment Station as well as technical assistance for capacity building of technical personnel, thereby contributing to demonstration of Japan's initiatives for promoting collaborative efforts by both developed and developing countries against climate change						
Contents of the Project	1. Pro 2. Japa 1) 9 12) 2 13 13. Nig	E/N limit amount)						
Project Period	E/N D G/A D				January 12, 2017 (Completion of installation)			
Project Cost			A Grant Limit: : 980 million ye		Actual Grant Amount: 980million yen			
Executing Agency			Power (FMOP)					
Contracted Agencies	Main ( Main (	Main Contractor(s): Toyota Tsusho Corporation Main Consultant(s): Yachiyo Engineering Co., Ltd Agent: Crown Agents						

< Special Perspectives Considered in the Ex-Post Evaluation >

• The target year for conducting ex-post evaluation is generally set to 3 years after the completion of the project, and the target year for this project was set to 2019 at the time of the ex-ante evaluation; however, the completion of this project was delayed to 2017, so the target year would be 2020. On the other hand, since the PV system can be operated immediately after installation, in this ex-post evaluation, the degree of achievement of the target was verified using the data of 2018 and 2019.

• As mentioned in 3 Efficiency below, the project delayed significantly (the ratio against the plan: 258%). The reasons are related to security issues and installation of additional system. Due to the deteriorating security situation in the region, the initial project site Umaru Musa Yarádua University in Katsina State in Northwest Nigeria was relocated to Usman Dam Water Treatment Plant in Abuja.

1 Relevance

<Consistency with the Development Policy of Nigeria at the Time of Ex-Ante Evaluation>

The project was consistent with the development policy of Nigeria. Nigeria ratified the United Nations Framework Convention on Climate Change and the Kyoto Protocol, and was actively working on climate change countermeasures. The Energy Commission of Nigeria (ECN) formulated the "Renewable Energy Master Plan" in 2005 (revised in November 2012), and it aimed to diversify the country's energy sources through promotion of renewable energies such as PV, wind, small hydro and biomass based on the plan.

<Consistency with the Development Needs of Nigeria at the Time of Ex-Ante Evaluation >

The project was consistent with the development needs of Nigeria for clean energy, as Nigeria had been dependent on fossil foil and also power generation volume of hydropower had declined, as noted above ("Background").

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy to Nigeria. Basic infrastructure development was one of the priority areas under the "Country Assistance Policy to Nigeria" (December 2012), and increasing and stabilizing the power generation volume was emphasized. . Also, the Government of Japan introduced a scheme of "Program Grant Aid for Environment and Climate Change" in 2008 aiming at support for developing countries with lack of implementation capacity and funds for balancing between reduction of CO2 emission and economic growth in order to effectively promote global efforts against climate change. The project was implemented under this scheme as a mitigation measure through introduction of clean energy.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Effectiveness>

The project partially achieved its objectives as the actual results of quantitative effects did not reach the targets. The net power generation

volume (indicator 1) has been less than 80% of the target after the project was completed. The project targeted to generate 1,459 MWh/year in 2019 by the original 975 kWp PV system alone, and the actual power generation volume is estimated to be 70% (2017), 82% (2018) and 70% (2019) of the target volume<sup>1</sup>. One of the reasons of not reaching to the target was that the grid-connected solar power generation system installed by the project needed to stop power generation due to the daytime outages, which occurred often, in the power distribution grid operated by Abuja Electricity Distribution Company (AEDC). Part of the generation data were missing from the data log as a result of failure of the data management system in parts of 2017 and 2019. The data management system was fixed twice- first time in 2017 and the second time in 2019. The system was working well at the time of ex-post evaluation. The CO2 Reduction (indicator 2), which was calculated based on the power generation volume, has not reached the target either. The conditions of the both systems have been well, as all modules (3,696 PV modules and 784 PV modules for respective system) have been functioning and the capacities of the systems have been maintained.

The project implemented the soft-component for capacity enhancement for operation and maintenance (O&M). The capacity has been maintained as the installed equipment has been properly maintained and a sufficient number of staff has been assigned.

Public awareness about the installed solar power generation systems has increased among the stakeholders including; the State Water Boards, universities, secondary schools, professional associations, investors in power generation, state ministries of power, and others. For example, students of Government Secondary School Ushafa, a neighboring community to Lower Usuma Dam, who are studying sciences were in Usman Dam to see how a solar panel and power plant operates and they were happy at the end of the day. Delegation of Sokoto and Kano State Water Board were in Usuma Dam to see the solar facilities with a view to replicating the same in their agencies. Staff of Nigeria Bulk Electricity Trading Company was in Usuma Dam to see the solar facilities and were satisfied. Students of higher institutions of learning including military schools have been coming to see the solar facilities, likewise corporate organizations and professional associations. Also, the project site received more than 1,500 visitors a year. It is therefore, important to say that with the number of visitors trooping here on daily basis to either see or make enquiries about the solar power plant, Nigerians have been more aware of solar system and awareness has been created since the project completion.

There has been an effect that the grid connected PV system brings in savings in electricity bills. <Impact>

Although it was expected that Japan's initiative for promoting measures climate change both by developed and developing countries is publicized, it was unable to confirm a case which introduced the project as a model case at symposiums and other occasions by the time of ex-post evaluation.

According to Federal Capital Territory Water Board (FCTWB), an agency who carries out Operation and Maintenance (O&M), no negative impact on natural environment was observed. No land acquisition and resettlement occurred under this project.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

#### Quantitative Effects

	Baseline	Target	Actual	Actual	Actual
	(2014)	(2019)	(2017)	(2018)	(2019)
	Baseline	3 year after	Year of	1 year after	2 years after
	Year	Completion	completion	Completion	Completion
Indicator1: Power generation volume at transmission end (MWh/year) (for original 975 kWp system) * 1	0	1,459	1,027.47	1,194.70	1,023.10
Indicator 2: CO2 Reduction (ton/year) (for original 975	0	723.5	509.57	592.51	507.40
kWp system) *2					

\*1 Total power generation volume of both original and additional system was 1,245.615MWh (2017), 1,448.34MWh (2018) and 1,240.31MWh (2019) respectively. The volume of the original 975 kWp system is estimated based on the ratio of its capacity (975), relative to the total capacity (975+207.76). CO2 Reduction (indicator 2) is estimated in the same manner. The total CO2 reduction is 617.76 ton (2017), 718.31 ton (2018) and 615.13 ton (2019).
\*2 CO2 reduction is calculated at the time of ex-ante evaluation as follows:

Offset amount of thermal generation [GJ/year] × Emission factor [tC/GJ] × 44/12

Hence, the annual reduction of greenhouse gases is calculated to be 723.5 t as follow:

 $14,195.7 \times 0.0139 \times 44/12 = 723.5 t$ 

(Offset amount if thermal generation is calculated as follows: Power generation  $[MWh/year] \times 3,600 [GJ/(1000MWh)] \div$  Thermal efficiency of generation) \*3 The Indicators 1(1,204.67 (MWh/y) and 2(597.38 (t/y)) to be compared with Target(2019) 3 year after Completion were estimated assuming that the available actual data of the first half of the year 2020 (730.58MWh) is applied to the one of the second half and correcting the difference between

the volume of the original 975 kWp system and additional system in the same manner as \*1

Source : FCTWB 3 Efficiency

Although the project cost was as planned (the ratio against the plan: 100%), the project period significantly exceeded the plan (the ratio against the plan: 258%). The project period exceeded the plan partly because of installation of additional system and partly because of change in project site due to deteriorating security situation in the region after signing G/A. Outputs were produced as planned. Therefore, the efficiency of the project is fair.

# 4 Sustainability

<Institutional/Organizational Aspect>

O&M of the facilities under the project has been carried out by FCTWB. The Electrical and Mechanical Unit of FCTWB has been responsible for the O&M of the power plant. The total number of workers attached to the power plant has been 12 members. Four members

<sup>&</sup>lt;sup>1</sup> As the Federal Capital Territory Water Board (FCTWB), an O&M agency did not have the breakdown of the power generation volume for the 975 kWp original system and additional 207.76 kWp system, therefore, the power generation volume for the original system was estimated based on the ratio of capacity of each system relative to the total capacity.

each have been assigned to operation, maintenance, and cleaning. The number of staff has been sufficient. <Technical Aspect>

The staff has had sufficient technical skills and knowledge to conduct proper O&M, as the soft component, during the project implementation, was used to transfer the necessary skills for O&M. There might be needs for the refresher training, especially for young engineers recruited, for the long-term purpose. The manuals provided by the project have been utilized. <Financial Aspect>

According to FCTWB, the necessary budget has been secured for O&M through annual budget appropriation of the Federal Capital Territory Administration (FCTA).

			(	unit: Naira)
	2017	2018	2019	2020
O&M Budget	50,000,000	50,000,000	30,500,000	30,000,000

O&M Budget of FCTWB

<Current Status of Operation and Maintenance>

The installed equipment and spares have been in excellent condition. Routine maintenance activities have been carried out and some of which include; (i) Daily inspection of PV system and monitoring of power generation; (ii) Weekly inspection of Junction and Collection boxes including wiring system; (iii) Washing of PV panels every two weeks, and others.

<Evaluation Result>

No major problems have been observed in the institutional/Organizational, technical, and financial aspects. Therefore, the sustainability of the project effect is high.

### 5 Summary of the Evaluation

The project partially achieved its objectives as the net power generation has not reached the target due to the power outage. Nonetheless, the project strengthened the O&M capacity and raised the public awareness towards the renewable energy. As for the efficiency, although the project period significantly exceeded the plan, the project cost was as planned.

Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

Recommendations to Executing Agency:

- FCTWB should work further closely with the power distribution company (Abuja Electricity Distribution Company) to increase availability of day time supply to close 100%. This will promote impact of the project and reduce C02 emissions from thermal power generation. In addition, it is desirable that FCTWB takes measures such as establishing a system for appropriate maintenance and operation of system to minimize the outage part of panels when accidents occur and to ensure quick recovery.
- FMOP should work with JICA to create awareness of renewable energy technologies and widely publicize the effects of the project.
- FCTWB is recommended to conduct capacity building workshops/trainings periodically to promote sustainability of the project.
- Lessons Learned for JICA:
- For grid connected PV systems, a net meter is important to measure energy import and export to the grid. Since no net meter is installed under this project, it is difficult to measure energy import and export accurately and therefore energy exports to the grid during periods of low demands (from the water treatment plant) are unaccounted for and FCTWB is not compensated accordingly. When installing grid connected PV systems in a project, it is important to examine the necessity of a net meter.



PV modules installed under the project

# Internal Ex-Post Evaluation for Technical Cooperation Project

	conducted by Timor-Leste Office: March 2020							
Country Name	The project for Capacity Development of Teaching Staff in the Faculty of Engineering, the							
	National University of Timor-Leste (CADETES)							
Timor-Leste	The project for Capacity Development of Faculty of Engineering. Science and Technology, the National University of Timor-Leste (CADEFEST 1)							
	the National University of Timor-Leste (CADEFEST 1)							
I. Project Outline								
	The shortage of highly skilled human resources was one of the important national issues for Timor-Leste. In							
	order to cope with this issue, the Ministry of Education aimed at training competent engineers who were able to							
	respond to the needs of the labor market through upgrading the Polytechnics to the Faculty of Engineering of the							
Background	National University of Timor-Leste (UNTL). JICA supported UNTL for rehabilitation of facilities and equipment by an emergency grant aid (2003) and capacity development of its teaching staff by the "Project for Capacity							
	Development for Teaching Staff in the Faculty of Engineering" (2006-2010). As a result, skills and knowledge of							
	the teaching staff for education and research were improved. Yet, further strengthening of their capacities was							
	needed.							
	Through improved educational environment, practical graduation research and improved faculty management							
	of the Faculty of Engineering, Science and Technology of the National University of Timor-Leste, the projects							
	aimed at provision of excellent education under appropriate management and operation, thereby contributing to development of highly skilled human resources who would contribute to the society.							
	[CADETES]							
Objectives of the	1. Overall Goal: The quality of education in the Faculty of Engineering, UNTL is improved.							
Project	2. Project Purpose: Basic teaching capacity of teaching staff in the Faculty of Engineering, UNTL is improved							
	through practical activities.							
	[CADEFEST 1]							
	1. Overall Goal: The Faculty of Engineering, Science and Technology produces high-skilled human resources who can contribute to the society.							
	<ol> <li>Project Purpose: The Faculty provides excellent education under appropriate management and operation.</li> </ol>							
	1. Project Site: Dili							
	2. Main Activities:							
	[CADETES] i) Review and development of curriculum and syllabus, preparation of lecture notes and job							
	sheets, ii) training of teaching staff on basic mathematics and physics, fundamental engineering subjects,							
	teaching methods, etc.							
	[CADEFEST 1] i) Review of curriculum and syllabus, practical and research-based thesis, ii) capacity building of the faculty on management, etc.							
	<ol> <li>Inputs (to carry out above activities)</li> </ol>							
	Japanese Side Timor-Leste Side							
	[CADETES] [The Project 2006-2010]							
Activities of the	1) Experts from Japan: 22 persons       1) Staff Allocated: 64 persons         2) Experts from Japan: 22 persons       1) Staff Allocated: 64 persons							
Project	<ol> <li>2) Training in Japan: 19 persons</li> <li>3) Equipment: Educational and research equipment, etc.</li> <li>2) Land and Facilities: Office space, equipment, etc.</li> </ol>							
	<ul> <li>4) Local cost: Cost for invitation of other university</li> <li>3) Operation cost: Cost for workshops, etc.</li> </ul>							
	professors, seminars, research materials, books, etc. [The Project 2011-2016]							
	[CADEFEST 1] 1) Staff allocated: 102 persons							
	1) Experts from Japan: 40 persons2) Land and facilities: Office space, electricity							
	2) Training in Japan: 31 persons charges, etc.							
	3) Equipment: Educational and research equipment, 3) Operation cost: Cost for travels, site visits, etc. books, etc.							
	4) Local cost: Cost for seminars, research materials,							
	books, etc.							
	[CADETES]							
	April 2006 to March 2010 (Extended period: [CADETES]							
Project Period	April 2009 to March 2010) Project Cost (ex-ante) 290 million yen, (actual) 371 million yen							
	[CADEFEST 1] February 2011 to March 2016 (Extended (extended (ex-ante) 270 million yen, (actual) 440 million yen							
	period: February 2015 to March 2016)							
Implementing								
Agency	National University of Timor-Leste, Ministry of Education							
Cooperation Agency	Nagaoka University of Technology, Yamaguchi University, Gifu University							
in Japan								

# **II. Result of the Evaluation**

< Special Perspectives Considered in the Ex-Post Evaluation >

- As what was aimed as the Overall Goal of CADETES and what was aimed as the Project Purpose of CADEFEST1can be considered as common, the two projects can be interpreted as a continuous intervention. At the ex-post evaluation, the two projects were evaluated as one intervention. For verification of effectiveness/impact, objectives and indicators of CADEFEST1 were used.

### 1 Relevance

<Consistency with the Development Policy of Timor-Leste at the Time of Ex-Ante Evaluation and Project Completion>

The projects were consistent with Timor-Leste's development policies, such as "Sector Investment Plan" (2004) prioritizing the education sector including higher education, and the "National Education Policy" (2007-2012) setting higher technical education and university education as one of the policy goals. Moreover, the "Strategic Development Plan (SDP)" (2011-2030) set human resource development including development of high-level engineers who could meet market needs as one of the three thrusts for the immediate goal during the period from 2011 to2015.

<Consistency with the Development Needs of Timor-Leste at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Timor-Leste's development needs for an increase in the labor force with higher education and production of labor force with professional skills so that these jobs, which are mostly taken up by foreigners, would be fulfilled by national labor force.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy toward Timor-Leste supporting education, capacity building, and institution building as one of four priority areas confirmed by the policy dialogues between the government of Timor Leste and the government of Japan in January 2005and June 2008<sup>1</sup>. Those priority areas sustained by the ODA Taskforce.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the time of project completion. 77.8% of the students satisfied with the education provided by the Faculty (Indicator 1). The graduation rate of the Faculty was not verified by the time of project completion (Indicator 2), because at that time the Faculty did not have the definition of the graduation rate, that is, it was not clear whether the denominator should be the number of the enrolled students in the first grade, the registered students in the fourth grade, or the students who started the graduation research. All the subjects of the Faculty got 70% of satisfaction on average in the last two years of the project period (Indicator 3). Based on the achievement of CADETES, CADEFEST1 aimed at the capacity development of the Faculty by strengthening the faculty management system. The annual action plan was developed at each department, and the activities were implemented based on the plan. <<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have partially continued since the project completion. The Faculty started the online satisfaction survey in 2016, students' satisfaction with the lecturers has been on a decreasing trend. This may be because the crowded classrooms may have affected the teaching environment, according to the Vice Dean. The number of students increased from 152 in 2016 to 309 in 2018. On the other hand, their satisfaction with the course contents has been sustained since the project completion. Thus, it is presumed that the project effects on the classes have been sustained. Regarding the graduation rate of students (4-year bachelor) decreased. A main reason is that some students leave without formal procedures before their graduation, because they have to wait one more semester before graduation, if they finish defending their final thesis beyond the due in the previous semester. Other students drop out because they get job before completing the bachelor.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved by the time of ex-post evaluation. For the three departments of Mechanical, Civil Engineering, and Electrical and Electronics, the total number of graduates after the project completion reached 300 in the 1<sup>st</sup> semester in 2019 (Indicator 1). One of the reasons for the delay of attainment was that, on many occasions, students had to wait until the next semester for graduation although they finished defending their final thesis within ongoing semester period. Another reason was that, due to the limited availability of devices and materials for final thesis projects in Timor-Leste, they had to be ordered and purchased abroad. In a particular case, some students who have jobs do not perform actively to graduate within the time, while, drop out system has not been implemented strictly in UNTL. 60% of the graduates have got job related to their study field (Indicator 2).

<Other Impacts at the time of Ex-post Evaluation>

No other impact has been confirmed at the ex-post evaluation.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Aim	Indicators	Results
Project Purpose	1. More than 70% of the students are	Status of Achievement: Achieved (Partially continued)
The Faculty provides	satisfied with the education provided by	(Project Completion)
excellent education under	the Faculty.	- Students' satisfaction reached 77.8%, and the rate was increasing.
appropriate management		(Ex-post Evaluation)
and operation.		- No data available on students' satisfaction with the faculty education.
		- The percentage of the students who answered that they were "very
		satisfied" or "satisfied" with the lecturers were 69% in 2016, 53% in
		2017 to 51% in 2018.
	2. Graduation rate of the Faculty is	Status of Achievement: Not verified (Not achieved)
	improved.	(Project Completion)
		- No data was available, because of no established definition of the
		graduation rate.
		(Ex-post Evaluation)
		- The graduation rate of the Faculty students (4-year bachelor) decreased
		from 78% in 156 to 53% in 2018.

Achievement of Project Purpose and Overall Goal

<sup>&</sup>lt;sup>1</sup> Ministry of Foreign Affairs, "ODA Databook" (2006), "ODA Databook" (2011).

	3. As a result of class evaluation, every						
	subject gets more than 60 points (60% of	(Project Completion)					
	satisfaction) on average.	- All subjects got 70% on av	erage in	the last tw	o years.		
		(Ex-post Evaluation)					
		- The class evaluation of all	subjects	reached 7	0% in 201	9.	
(Overall Goal)	1. Number of students graduated from the	Status of Achievement: Achievem	ved				
The Faculty of	Faculty with licensure (4-year bachelor)	(Ex-post Evaluation)					
Engineering, Science and	degree exceeds 300 by 2018.	- The total number of graduate	ates in 3	departme	nts for the	e three-yea	ar period
Technology		from 2016 to 2018 was 233	3.				
(UNTL-FEST) produces		Table: Number of graduate	s in 3 de	partments			
high-skilled human			2016	2017	2018	Total	
resources who can		Mechanical	16	17	32	65	
contribute to the society.		Civil	48	39	29	116	
		Electrical and Electronics	10	29	23	62	
		Total	74	85	84	233	
		- In addition, 67 students gra	aduated	from the I	Faculty in	the 1st ser	nester in
		2019 and the total number			•		
	2. More than 60% of the students						
	graduated from the Faculty get job related						
	to their field of study.	- 60% of the graduates have got job related to their study field within one					
	, , , , , , , , , , , , , , , , , , ,	year from graduation (surv				-	
Source : Terminal Evaluat	tion Reports, Project Completion Reports, Info		2	/			

#### 3 Efficiency

The total project cost and the total project period of the two projects exceeded the plan (ratio against the plan: 145% and 112%, respectively). The outputs of both projects were not fully produced as planned. Therefore, the efficiency of the project is fair. 4 Sustainability

<Policy Aspect>

In SDP, UNTL is positioned as a critical institution that is fundamental for building the country's human capital and contributing to the national development. It also mentions that UNTL would be adequately funded to allow it to effectively perform its functions. <Institutional Aspect>

The Faculty has an appropriate structure with four departments consisting of (1) Academic Affairs, (2) Administration and Finance Affairs, (3) Students Affairs, and (4) Research and Cooperation Affairs managed by a dean and four vice deans, to promote faculty development and practical graduation research. The 4-year bachelor curriculum has been based on the national standard, and the syllabus has been developed for all subjects based on the 4-year bachelor curriculum. The Faculty has a sufficient number of teaching staff at each department such as 73 permanent staff and 1 contracted teaching staff at the Civil Engineering Department. The improvement of academic and management capacity has been continued by conducting students' satisfaction surveys, class evaluation, and research on the region needs based on the research plan. The Faculty has its own pedagogic and scientific council to improve academic capacity, and it has its own directive council to improve management capacity. The Faculty revises the curriculum and syllabi every two years. The final thesis guideline has been produced, and the curriculum revision process was undergoing as of 2019.

<Technical Aspect>

All teaching staff in the Faculty have been specialized in certain fields of study in their previous master and doctoral study which are necessary to conduct researches on regional needs and to provide guidance for graduation researches. Some management staff has limited knowledge and skills necessary for operating the faculty, according to the Faculty. Therefore, recruitment and training for new staff are proposed to UNTL by the Faculty. Training and scholarship opportunities have been provided by partners including JICA and the Camões Institute of Portugal.

<Financial Aspect>

The budget for the Faculty is not enough for research and educational activities. Budget allocation increased from 11,959 US dollars (USD) in 2015 to 51,260 USD in 2016. However, the budget decreased to 34,560 USD in 2017 and 10,880 USD in 2018. In 2019, the budget allocation has increased to 47,000 USD, since the number of the students increased. However, most budgets are allocated for staff personnel and fuel for generators.

<Evaluation Result>

Therefore, there are some challenges in the technical aspect and in the financial aspect of UNTL, and the sustainability of the project effects is fair.

# 5 Summary of the Evaluation

The Project Purpose was partially achieved, and the project effects have partially continued. Students' satisfaction has been improved, while the graduation rate has decreased. As for sustainability, UNTL has sustained its activities to teach students and to support the graduates to get employment related to their field of study with sufficient number of teaching staff and sufficient teaching capacities, but it has still had needs for improvement of some management capacity, and it has faced budget constraints that limit their research and education activities. As for efficiency, both the total project cost and the total project period of the two projects exceeded the plan. Considering all of the above points, this project is evaluated to be partially satisfactory.

# III. Recommendations & Lessons Learned

# Recommendations for Implementing Agency:

- It is recommended to the Faculty to collect information from students at the graduation and post-graduation (six months and one year after the graduation) in order to create a concrete database on the number of students from the registration up to the graduation. The current online survey system can be developed to cover these survey items.



Interview with the Vice Dean of FEST



Interview with the Vice Dean of FEST

Country Name					Conducted by Manaysia Office. Sandary, 2021		
Malaysia	,	Project for Development	t of Low Carb	on So	ciety Scenarios for Asian Regions		
I. Project Outline							
Background	With rapid economic growth, urban environmental issues became increasingly significant and the amount of emissions of greenhouse gases (GHG) increased in Malaysia. As means to achieve reduction of GHG emission, the Government of Malaysia emphasized on development of low carbon society (LCS) with innovative technologies as its core <sup>2</sup> . In order to realize the LCS that could also address urban environmental issues, it was necessary to promote change of energy consumption and lifestyle patterns. Meanwhile, in Iskandar Development Region (Iskandar Malaysia: IM) in Johor Province State, large-scale development was ongoing. In order to realize the LCS in IM, it was necessary to adopt social engineering methods in Iskandar regional development.						
Objectives of the Project	The p the rese appropr co-bene arranger and Asi methodd implem 1. Exp 2. Pro	The project aimed to develop and apply methodology to create LCS scenarios <sup>3</sup> in Malaysia and to disseminate the research findings to Asian countries, through developing a methodology to create the LCS scenarios which is appropriate for Malaysia, creating and utilizing the LCS scenarios for policy development in IM, quantifying co-benefit <sup>4</sup> of the LCS policies on air pollution and on recycling-based society in IM, and preparing organizational arrangement of University of Technology Malaysia (UTM) to conduct training on the LCS scenarios for Malaysia and Asian countries and establishing a network for the LCS in Asia, thereby contributing to application of the methodology to create LCS scenarios to other areas in Malaysia (i.e. areas other than IM) and Asian countries and implementation of the LCS scenarios and policies in IM towards realization of the LCS. 1. Expected Overall Goal: N.A.					
Activities of the Project	<ol> <li>Pro</li> <li>Ma</li> <li>LC</li> <li>pol</li> <li>con</li> <li>for</li> <li>Inp</li> <li>Japanes</li> <li>Japanes</li> <li>Exp</li> <li>per</li> <li>Tr</li> <li>Equ</li> <li>mo</li> <li>pan</li> <li>hig</li> <li>soft</li> </ol>	oject site: Iskandar Malaysia (IM in activities: 1) Development of S scenarios for policy develop lution and on recycling-based aduct training on the LCS scenar LCS in Asia. buts (to carry out above activities	(), Malaysia methodology to c ment in IM; 3) society in IM; 4 rios for Malaysia (as of Terminal 1 (short-term) 13 tem, air quality & electronic top atic calorimeter,	Quantif Prepa nd Asi Evaluat Malay 1) S J 2) L e A 3) L	he LCS scenarios; 2) Creation and utilization of the fication of co-benefit of the LCS policies on air ration of organizational arrangement of UTM to ian countries as well as establishment of a network cion in October 2015) rsian Side Staff allocated: 27 persons (UTM (18), IRDA (6), PBD (3)) Land, building, office: An office for a long-term expert in UTM; facilities of UTM-Low Carbon Asia Research Center (LCARC) Local cost for Project's administrative expenses, equipment transportation charges etc.		
Project Period			Project Cost	(ex-an	te) 204 million ven (actual) 207 million ven		
Implementing Agency	Univers Departn	June 2011 – June 2016Project Cost(ex-ante) 204 million yen, (actual) 207 million yenUniversity of Technology Malaysia (UTM); Iskandar Regional Development Authority (IRDA); Federal Department of Town and Country Planning Malaysia (JPBD)**Abbreviation was changed to PLANMalaysia after the project completion.					
Cooperation Agency in Japan	Kyoto U	University; National Institute for	Environmental St	udies (	NIES); Okayama University		

< Special Perspectives Considered in the Ex-Post Evaluation >

For this SATREPS project, the Expected Overall Goal was not identified in the logical framework. Meanwhile, in the Terminal Evaluation Report, expansion of outputs, more specifically methodology to create LCS scenarios, to other areas in Malaysia and Asian countries as well as implementation of the LCS scenarios in IM, was mentioned as a major impact. Therefore, it was assumed that expected impact at the time of terminal evaluation, which could be deemed as "Expected Overall Goal", was "Application of the methodology to create the LCS scenarios is expanded to other areas in Malaysia (i.e. areas other than IM) and Asian countries and the LCS scenarios and policies are implemented in IM towards realization of the LCS".

• In view of the above, application status of the methodology in other areas in Malaysia and Asian countries as well as implementation status of the LCS scenarios and policies in IM was confirmed as an indicator for the Expected Overall Goal in this evaluation. In line with the framework of

<sup>&</sup>lt;sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development

<sup>&</sup>lt;sup>2</sup> Source: Terminal Evaluation Report of the project attached to the Minutes of the Meeting (25/10/2015).

<sup>&</sup>lt;sup>3</sup> "LCS scenario" indicated a set of "LCS vision" and "policy roadmap". "LCS vision" was a vision of the LCS described quantitatively for the future target year by adopting the integrated model of socio-economic, disparity and GHG emission assessment. "Policy roadmap" was a long-term schedule (up to 20 years or above) prepared by adopting the back-casting model for implementing the LCS-related policies as well as for actions of the concerned stakeholders in order to achieve the LCS Vision, as is LCS Blueprint in IM.

<sup>&</sup>lt;sup>4</sup> "Co-benefits" are the added benefits we get when we act to control climate change, above and beyond the direct benefits of a more stable climate. They are sometimes referred to as "multiple benefits" or "synergies". They do not include the direct benefits of climate policy arising from a more stable climate.

ex-post evaluations of SATREPS projects, confirmed results were described in the evaluation report under <Status of Achievement for Expected Overall Goal> and assessment of achievement status of the Expected Overall Goal was tried. It should be also noted that the achievement status of the Expected Overall Goal was considered as a part of expected positive impact.

### 1 Relevance

<Consistency with the Development Policy of Malaysia at the Time of Ex-Ante Evaluation >

At the time of ex-ante evaluation, the project was consistent with the 10th Malaysia Plan (2011-2015), which aimed at economic growth that could meet challenges from the climate change.

<Consistency with the Development Needs of Malaysia at the Time of Ex-Ante Evaluation >

As stated in "Background", the project was consistent with the development needs of Malaysia for development of LCS scenarios suitable for the country.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Country Assistance Program for Malaysia (2009), which highlighted "assistance for climate change related issues" under "Environment and energy aspect" of one of the priority areas i.e. "Overcoming Challenges Caused by Rapid Growth" as well as "Japan-Malaysia Cooperation Initiative for Environment and Energy" (2010), which stipulated "Formulating a road map of measures for LCS based on LCS Scenarios so that usefulness and effectiveness of the scenario through implementation process would be enhanced".

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The project achieved the Project Purpose at the time of project completion. As many as 87 publications on the LCS by researchers in Malaysia were published and 80-time conference presentations on the LCS were made by researchers in Malaysia (Indicator 1). Research activities on the LCS scenarios were carried out by eight research groups from Asian countries (e.g. Indonesia, Thailand, Viet Nam, and Nepal) after participating in the symposiums organized by the project (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects were continued at the time of ex-post evaluation. UTM continued 3 research activities and started 3 new research projects based on the research outputs of the project. In IM, IRDA started a new research project using the research outputs of the project, and Institute Sultan Iskandar continued the related research in collaboration with a Japanese institute. (To the knowledge of UTM, at least 4 publications and 21-time conference presentations by researchers in Malaysia were made.) As far as UTM was aware, research activities using the research outputs of the project, were continued or newly started in 3 other Asian countries (i.e. Indonesia, Viet Nam and Thailand). LCARC of UTM, founded under the project, continuously conducted/coordinated training on the LCS scenarios, targeting researchers, local council members, senior officers of local governments, etc., using the technical guides developed under the project. All the equipment provided by the project was utilized by UTM for training and research related to the LCS scenarios. UTM and IRDA continuously utilized networks with International Conference for Low Carbon Asia (ICLCA) and Low Carbon Asia Research Network (LoCARNet)/Institute for Global Environmental Strategy (IGES), established through the project, for knowledge sharing, etc. As for application status of the methodology to create LCS scenarios and implementation status of the LCS scenarios/policies in IM developed under the project, please see <Status of Achievement for Expected Goal> below.

<Status of Achievement for Expected Overall Goal at the time of Ex-post Evaluation>

The Expected Overall Goal was achieved at the time of ex-post evaluation. Application of the methodology to create the LCS scenarios was expanded to 8 additional cities/districts in Malaysia, in which 10 scenarios were created or being created (for reference, 3 were already approved and 2 of them were already at implementation stage). In addition, to the knowledge of UTM, the methodology was expanded to at least 2 other Asian countries, in which 2 scenarios were created (for reference, both were approved). (Indicator 1). Through the project, the LCS scenarios and policies for IM and its local authorities were developed and approved (i.e. "LCS Blueprint for IM (LCSBPIM) 2025", "Roadmap towards Low carbon IM 2025", "Actions for A Low Carbon Future" with 10 Actions for IM, including Eco-Life Challenging Program, a modified version of the program with the same name in Kyoto City, and LCS Action Plans for 5 local authorities). All of them were implemented by the relevant authorities except for 2 out of 10 Actions for A Low Carbon Future for IM, which were not proceeded mainly due to financial infeasibility (Indicator 2).

<Other Impacts at the time of Ex-post Evaluation>

Various other positive impacts were observed. For example, the research capacity of UTM was improved through the project, which was reflected in accreditation of LCARC as Regional Center of Expertise on Education for Sustainable Development (RCE) by United Nations University at organizational level, and promotion of 5 project participants to professors and completion of post-graduate degrees by 5 other project participants at individual level. Scientific literacy and awareness of the related government organizations and policy makers about LCS was improved through participating in the project both at the planning and implementation stages, which contributed to implementation of the LCS programs after the project completion. In IM, many of community works based on the LCS scenarios and policies developed under the project, such as "LCSBPIM 2025" and "Actions for A Low Carbon Future" involved significant female participation. In addition, there was a synergetic effect with a JICA's Technical Cooperation for Grassroots Human Security Project for "Capacity Building & Community Development for Low Carbon Society" (2016-2018), which supported implementation of Eco-challenging Program in IM and whose experiences were reflected in Pengerang LCSBP 2030. Meanwhile, no negative impacts were observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal					
Aim	Indicators	Results			
(Project Purpose)	1. Number of	Status of the Achievement: achieved (continued)			

	11' 4' 1						
Methodology to create	publications and conference presentation	(Project Completion)					
LCS scenarios is	on LCS scenarios by	-	ns were published and 80- time conference presentations were	e made on the			
developed and applied	researchers in Malaysia.	-	esearchers in Malaysia.				
in Malaysia, and the	5	(Ex-post Evaluation)					
research findings are			the LCS scenarios were continued in Malaysia. To the knowl	-			
disseminated to Asian		at least 4 publications	were published and 21- time conference presentation was mad	le by the			
countries.			a after the project completion.				
	2. Research activities on	Status of the Achieven	ent: achieved (continued)				
	LCS scenarios by	(Project Completion)					
	researchers in Asian	-Eight research groups	from other Asian countries (e.g. Indonesia, Nepal, Thailand,	and Viet Nam)			
	countries.	created or started to create the LCS scenarios.					
		(Ex-post evaluation)					
		- As far as UTM was aware, research activities on the LCS scenarios, including creation of the					
		LSC scenarios, were continued or newly started in Indonesia, Viet Nam and Thailand, using the					
		methodology developed by the project.					
(Expected Overall Goal)	1 Expansion of	(Ex-post Evaluation) achieved					
	_	>In Malaysia (other th					
Application of the	application of the		thodology to create the LCS scenarios was expanded to 8 add	litional			
methodology to create	methodology to create		vsia, in which 10 scenarios were created or being created,				
the LCS scenarios is	LCS scenarios to other		*A=Draft under preparation, B=draft approved. C=At impler	nentation stage			
expanded to other areas	areas in Malaysia (i.e.		nario created/being created using the research outputs of the	(For			
in Malaysia (i.e. areas	areas other than IM) and	project		reference)			
other than IM) and	Asian countries.			Status of scenario *			
Asian countries and the		1 Putrajaya Green G	Vity 2025	C Scenario +			
I CC 1		1 I unajaya Oreen e	11y 2023	C			
LCS scenarios and		2 Greener and Bette		В			
LCS scenarios and policies are			r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030	B C			
		2 Greener and Bette     3 Pengerang LCSB     4 Muar Local Plan	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030	B C A			
policies are		3Pengerang LCSB4Muar Local Plan	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030	С			
policies are implemented in IM		3Pengerang LCSB4Muar Local Plan5Muar District Clin	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030 nate Action Plan	C A			
policies are implemented in IM towards realization of		<ul> <li>3 Pengerang LCSB</li> <li>4 Muar Local Plan</li> <li>5 Muar District Clin</li> <li>6 Penampang Distri</li> </ul>	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030	C A A			
policies are implemented in IM towards realization of		<ul> <li>3 Pengerang LCSB</li> <li>4 Muar Local Plan</li> <li>5 Muar District Clin</li> <li>6 Penampang Distri</li> </ul>	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030 nate Action Plan ct Climate Action Plan Climate Action Plan	C A A A			
policies are implemented in IM towards realization of		<ul> <li>3 Pengerang LCSB</li> <li>4 Muar Local Plan</li> <li>5 Muar District Clin</li> <li>6 Penampang Distri</li> <li>7 Tawau Municipal</li> <li>8 Kg Bahru Climato</li> </ul>	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030 nate Action Plan ct Climate Action Plan Climate Action Plan	C A A A A A			
policies are implemented in IM towards realization of		3       Pengerang LCSB         4       Muar Local Plan         5       Muar District Clin         6       Penampang Distri         7       Tawau Municipal         8       Kg Bahru Climate         9       Hangtuah Jaya M         10       Kuala Lumpur Loc	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030 nate Action Plan ct Climate Action Plan Climate Action Plan : Action Plan unicipal Council Climate Action Plan cal Plan 2040	C A A A A A A A A			
policies are implemented in IM towards realization of		3       Pengerang LCSB         4       Muar Local Plan         5       Muar District Clin         6       Penampang Distri         7       Tawau Municipal         8       Kg Bahru Climate         9       Hangtuah Jaya M         10       Kuala Lumpur Loc         >In Asian countries	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030 mate Action Plan ct Climate Action Plan Climate Action Plan : Action Plan unicipal Council Climate Action Plan cal Plan 2040 *A=Draft under preparation, B=draft approved. C=At implemen	C A A A A A A A A A A A A A A A A A A A			
policies are implemented in IM towards realization of		3       Pengerang LCSB         4       Muar Local Plan         5       Muar District Clin         6       Penampang Distri         7       Tawau Municipal         8       Kg Bahru Climate         9       Hangtuah Jaya M         10       Kuala Lumpur Lc         >In Asian countries         Name of	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030 mate Action Plan ct Climate Action Plan Climate Action Plan e Action Plan inicipal Council Climate Action Plan cal Plan 2040 *A=Draft under preparation, B=draft approved. C=At implemen Name of LCS scenario created/being created using the research	C A A A A A A A A A A A A A A A A A A A			
policies are implemented in IM towards realization of		3       Pengerang LCSB         4       Muar Local Plan         5       Muar District Clin         6       Penampang Distri         7       Tawau Municipal         8       Kg Bahru Climate         9       Hangtuah Jaya M         10       Kuala Lumpur Loc         >In Asian countries	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030 mate Action Plan ct Climate Action Plan Climate Action Plan : Action Plan unicipal Council Climate Action Plan cal Plan 2040 *A=Draft under preparation, B=draft approved. C=At implemen	C A A A A A A A tation stage (For reference)			
policies are implemented in IM towards realization of		3       Pengerang LCSB         4       Muar Local Plan         5       Muar District Clin         6       Penampang Distri         7       Tawau Municipal         8       Kg Bahru Climate         9       Hangtuah Jaya M         10       Kuala Lumpur Lc         >In Asian countries         Name of	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030 mate Action Plan ct Climate Action Plan Climate Action Plan e Action Plan inicipal Council Climate Action Plan cal Plan 2040 *A=Draft under preparation, B=draft approved. C=At implemen Name of LCS scenario created/being created using the research	C A A A A A A A A tation stage (For reference) Status of			
policies are implemented in IM towards realization of		3       Pengerang LCSB         4       Muar Local Plan         5       Muar District Clin         6       Penampang Distri         7       Tawau Municipal         8       Kg Bahru Climate         9       Hangtuah Jaya M         10       Kuala Lumpur Lc         >In Asian countries         Name of	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030 mate Action Plan ct Climate Action Plan Climate Action Plan e Action Plan inicipal Council Climate Action Plan cal Plan 2040 *A=Draft under preparation, B=draft approved. C=At implemen Name of LCS scenario created/being created using the research	C A A A A A A A tation stage (For reference)			
policies are implemented in IM towards realization of		3       Pengerang LCSB         4       Muar Local Plan         5       Muar District Clin         6       Penampang Distri         7       Tawau Municipal         8       Kg Bahru Climate         9       Hangtuah Jaya M         10       Kuala Lumpur Lc         >In Asian countries         Name of         country	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030 mate Action Plan ct Climate Action Plan Climate Action Plan Action Plan inicipal Council Climate Action Plan cal Plan 2040 *A=Draft under preparation, B=draft approved. C=At implement Name of LCS scenario created/being created using the research outputs of the project Semarang Low Carbon Development Plan	C A A A A A A A A tation stage (For reference) Status of scenario *			
policies are implemented in IM towards realization of		3       Pengerang LCSB         4       Muar Local Plan         5       Muar District Clin         6       Penampang Distri         7       Tawau Municipal         8       Kg Bahru Climate         9       Hangtuah Jaya M         10       Kuala Lumpur Lc         >In Asian countries         Name of country         1       Indonesia         2       Viet Nam	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030 nate Action Plan ct Climate Action Plan Climate Action Plan anicipal Council Climate Action Plan cal Plan 2040 *A=Draft under preparation, B=draft approved. C=At implement Name of LCS scenario created/being created using the research outputs of the project Semarang Low Carbon Development Plan Danang Low Carbon Development Plan	C A A A A A A A A A tation stage (For reference) Status of scenario * B B			
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policies are implemented in IM towards realization of	2. Implementation of the	3       Pengerang LCSB         4       Muar Local Plan         5       Muar District Clin         6       Penampang Distri         7       Tawau Municipal         8       Kg Bahru Climate         9       Hangtuah Jaya M         10       Kuala Lumpur Lc         >In Asian countries         1       Indonesia         2       Viet Nam         -In addition, information and Haiphong in Viet I         (Ex-post Evaluation) a	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030 nate Action Plan ct Climate Action Plan Climate Action Plan ancipal Council Climate Action Plan cal Plan 2040 *A=Draft under preparation, B=draft approved. C=At implement Name of LCS scenario created/being created using the research outputs of the project Semarang Low Carbon Development Plan Danang Low Carbon Development Plan on sharing was ongoing by UTM in Riau in Indonesia and in I Vam. chieved	C A A A A A A A A A A tation stage (For reference) Status of scenario * B B Ho Chi Minh			
policies are implemented in IM towards realization of	2. Implementation of the LCS scenarios and	3       Pengerang LCSB         4       Muar Local Plan         5       Muar District Clin         6       Penampang Distri         7       Tawau Municipal         8       Kg Bahru Climate         9       Hangtuah Jaya M         10       Kuala Lumpur Lc         >In Asian countries         1       Indonesia         2       Viet Nam         -In addition, information and Haiphong in Viet 1         (Ex-post Evaluation) a         -All of the LCS scenaria	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030 mate Action Plan ct Climate Action Plan Climate Action Plan ancipal Council Climate Action Plan cal Plan 2040 *A=Draft under preparation, B=draft approved. C=At implement Name of LCS scenario created/being created using the research outputs of the project Semarang Low Carbon Development Plan Danang Low Carbon Development Plan on sharing was ongoing by UTM in Riau in Indonesia and in I Vam. chieved ios and policies for IM and its local authorities developed unc	C A A A A A A A A A A A A A C A C For reference) Status of scenario * B B Ho Chi Minh			
policies are implemented in IM towards realization of	LCS scenarios and	3       Pengerang LCSB         4       Muar Local Plan         5       Muar District Clin         6       Penampang Distri         7       Tawau Municipal         8       Kg Bahru Climate         9       Hangtuah Jaya M         10       Kuala Lumpur Lc         >In Asian countries         1       Indonesia         2       Viet Nam         -In addition, information         and Haiphong in Viet I         (Ex-post Evaluation) a         -All of the LCS scenar         were implemented, exec	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030 nate Action Plan ct Climate Action Plan Climate Action Plan Action Plan inicipal Council Climate Action Plan cal Plan 2040 *A=Draft under preparation, B=draft approved. C=At implement Name of LCS scenario created/being created using the research outputs of the project Semarang Low Carbon Development Plan Danang Low Carbon Development Plan on sharing was ongoing by UTM in Riau in Indonesia and in I Vam. chieved ios and policies for IM and its local authorities developed undor tept for 2 out of 10 Actions for A Low Carbon Future for IM,	C A A A A A A A A A A A A A C A C For reference) Status of scenario * B B Ho Chi Minh			
policies are implemented in IM towards realization of the LCS.	LCS scenarios and policies in IM.	3       Pengerang LCSB         4       Muar Local Plan         5       Muar District Clin         6       Penampang Distri         7       Tawau Municipal         8       Kg Bahru Climate         9       Hangtuah Jaya M         10       Kuala Lumpur Lc         >In Asian countries         1       Indonesia         2       Viet Nam         -In addition, information         and Haiphong in Viet I         (Ex-post Evaluation) a         -All of the LCS scenar         were implemented, exenot proceeded mainly of	r Kuala Lumpur -Kuala Lumpur LCS Blueprint (KLLCSBP) 2030 2 2030 mate Action Plan ct Climate Action Plan Climate Action Plan ancipal Council Climate Action Plan cal Plan 2040 *A=Draft under preparation, B=draft approved. C=At implement Name of LCS scenario created/being created using the research outputs of the project Semarang Low Carbon Development Plan Danang Low Carbon Development Plan on sharing was ongoing by UTM in Riau in Indonesia and in I Vam. chieved ios and policies for IM and its local authorities developed unc	C A A A A A A A A A A A A A C A C For reference) Status of scenario * B B Ho Chi Minh			

3 Efficiency

While the project period was within the plan (ratio against the plan: 100%), the project cost slightly exceeded the plan (ratio against the plan: 101%). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair. 4 Sustainability

<Policy Aspect>

There is a strong policy framework to promote research on LCS and realization of LCS, such as the 11th Malaysian Plan (2016-2020), which set forth green growth for sustainability and resilience and the third National Physical Plan 2040, which includes "Low Carbon Cities and Sustainable Infrastructure" under one of the main thrusts "Spatial Sustainability and Resilience to Climate Change". Malaysia intends to reduce the GHG emissions intensity of Gross Domestic Production (GDP) by 45% by 2030 relative to the emissions intensity of GDP in 2005 as pledged in its Nationally Determined Contribution (NDC).

<Institutional/Organizational Aspect>

Organizational structure required to utilize the research outputs/outcomes was well established in IM and in Malaysia. UTM-LCARC carried out research and consultancy work on the LCS. In IM, Environment Division of IRDA as well as local governments were responsible for low carbon aspects in their policies/programs. At national level, PLANMalaysia was responsible for transpiring the knowledge of low carbon into its spatial planning framework/guidelines at national, state, and local level based on scientific evidence. According to these institutions, the number of staff involved in the relevant units was sufficient since there was no difficulty caused by personnel shortage. UTM was responsible for operation and maintenance of the provided equipment and relevant staff was assigned to each equipment item.

<Technical Aspect>

The researchers of UTM sustained and improved their research capacity through participating in the LCS- related research projects and implementing training seminars/workshops on the LCS. They also sustained the skills and knowledge to properly operate and maintain the provided equipment through continued utilization. IRDA and PLANMalaysia further improved their scientific literacy through

implementation of the LCS scenarios/policies developed under the project and participating in creating LCS scenarios/policies and enhancement of collaboration with international organizations involved in climate change issues. <Financial Aspect>

UTM continuously secured budget to utilize the research outputs/outcomes of the project and operation and maintenance for the provided equipment through research projects contracted by local authorities. IRDA and the local governments in Johor State secured the necessary budget for LCS implementation from their own budget and in-kind contribution from the private sector. It is noted that, in 2018 and 2019, additional fund was provided to IRDA by Sustainable Energy Development Authority (SEDA) Malaysia through a project "Green Technology Application for the Development of Low Carbon Cities (GTALCC)" (2015-2019) supported by UNDP.

_		Examples of research budget on th	e LCS secured by UTM	
	Research	Amount (Ringgit Malaysia (RM))	Source of fund	Budget period
]	Pengerang LCSBP	100,000	Johor State	2018
	KL LCSBP	400,000	Kuala Lumpur City	2017-2019
	Climate Action Plan - 5 pilot cities	150,000	Global Covenant of Mayors	2019-2020
1 5				

Source: UTM

<Evaluation Result>

Therefore, the sustainability of the effects through the project is high.

5 Summary of the Evaluation

The project achieved the Project Purpose (i.e. Methodology to create LCS scenarios is developed and applied in Malaysia, and the research findings are disseminated to Asian countries). The project effects were continued, and the Expected Overall Goal (i.e. Application of the methodology to create the LCS scenarios is expanded to other areas in Malaysia (i.e. areas other than IM) and Asian countries and the LCS scenarios and policies are implemented in IM towards realization of the LCS) was achieved. Regarding the Sustainability, no problems were observed in terms of the policy, institutional/organizational, technical, and financial aspects. As for the Efficiency, the project cost slightly exceeded the plan. Considering all of the above points, this project is evaluated to be highly satisfactory.

# III. Recommendations & Lessons Learned

Lessons Learned for JICA:

- Involvement of local governments both at the project planning and implementation stages has facilitated better understanding and commitments on the utilization of the project's outputs by them towards actual realization of key actions for the LCS program developed under the project after the project completion.



UTM-Low Carbon Asia Research Centre



Air quality monitoring equipment

Count	ry Name	Research and Development for Reducing Geo-Hazard Damage in					
Ma	laysia	Malaysia caused by	y Landslide a	nd Flood			
I. Project Outline							
Background	Flood and landslide are two major disasters that cause human losses and economic damage in Malaysia. To cope with the disasters, government agencies prioritized the importance of reducing geo-hazard damage caused by landslides and floods. For example, The Slope Engineering Department (CKC) under the Public Works Department (JKR) developed the National Slope Master Plan (2009-2023) for slope management and the development of the Early Warning System (EWS). The Department of Irrigation and Drainage (DID) under the Ministry of Natural Resources and Environment, adopted the approach of Integrated Flood Management, where EWS was an integral part of the response plan. The project aimed to propose a trial system of an advanced disaster risk management system with an integrated						
Objectives of the Project	<ul> <li>The project aimed to propose a trial system of an advanced disaster risk management system with an integrated data system of landslide and flood to the relevant government agencies in Malaysia, through the construction of 1) an analysis system for temporal change and real-time condition of surface environment, 2) a comprehensive, advanced numerical flood-runoff models, 3) a landslide hazard assessment system, and 4) a comprehensive disaster information database, as well as 5) the trial proposal of a risk management system utilizing risk information in local government agencies and the improved accuracy of geo-hazard risk assessment.</li> <li>1. Expected Overall Goal: NA.</li> <li>2. Project Purpose: A trial system of an advanced disaster risk management system with an integrated data system of landslide and flood is proposed to the relevant government agencies in Malaysia for supporting their consideration of disaster management programs implementation.</li> </ul>						
Activities of the Project	<ul> <li>* Dungun River basi</li> <li>Main activities: <ol> <li>Group 1 on Rem</li> <li>Group 1 on Rem</li> <li>Elevation Model (I)</li> <li>Synthetic Aperture</li> <li>multi-temporal spa</li> <li>Group 2 on Floc</li> <li>the Integrated Floc</li> <li>high-resolution 3D</li> <li>Fluid-Flow Simula</li> <li>Group 3 on Lan</li> <li>models with hydr</li> <li>monitoring areas v</li> <li>Group 4 on Disa</li> <li>maps, sustainabilit</li> <li>Group 5 on Pre</li> <li>EWS for landslide</li> <li>for local governmed</li> </ol> </li> <li>Inputs (to carry ou</li> <li>Japanese Side</li> <li>Experts: 3 persons</li> <li>Trainees received:</li> <li>Equipment: Serve</li> </ul>	DEM) using RS technolog e Rader (CP/SAR); develo- atial datasets. od risk assessment: Develo- od Analysis System (IFAS 0 hydro-geological model ator (GETFLOWS). dslide risk assessment: De rological analysis; install with proposed numerical a lister information database: y maps, and inventory may paration of Risk Managen /flood hazard for selected ent and community. t above activities)	ect implementation phical information gies such as Unma opment of a meth opment of a flood ); development of for the Kelantan evelopment of a la lation of landsli nalysis method. : Development of ps in each scale); nent System: Exp monitoring area short term) satellite data,	5			
Project Period	June 2011 – May 2016	I	Project Cost	(ex-ante) 394 million yen, (actual) 260 million yen			
Implementing				Universiti Tenaga Nasional (UNITEN); Multimedia			
Agency	University (MMU)		•	-			
Cooperation Agency in Japan		for Water Hazard and Ris		th Science and Disaster Prevention (NIED); Global (ICHARM); Kyoto University; Ibaraki University;			

< Special Perspectives Considered in the Ex-Post Evaluation >

For this SATREPS project, a Project Design Matrix (logical framework) was not prepared, and the Overall Goal was not identified in the Ex-ante Evaluation Sheet/Master Plan attached to the Record of Discussions. Meanwhile, in the Terminal Evaluation Report, "the improvement of the existing early warning system of the government agencies and the improved accuracy of geo-hazard risk assessment that can be utilized for disaster risk management planning from the national to the local level" was mentioned as expected project benefits in terms of social application of the research outputs/outcomes. Therefore, this ex-post evaluation regards the following as the Expected Overall Goal: "The existing early warning system of the government agencies and

<sup>&</sup>lt;sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development

the accuracy of geo-hazard risk assessment are improved." The achievement status of the Expected Overall Goal is considered as a part of the expected positive impact.

### 1 Relevance

<Consistency with the Development Policy of Malaysia at the Time of Ex-Ante Evaluation>

This project was consistent with Malaysia's development policies on slope and flood management, as mentioned in "Background" above. The 10th Malaysia Plan (2011-2015) also aimed to promote the Integrated River Basin Management approach.

<Consistency with the Development Needs of Malaysia at the Time of Ex-Ante Evaluation>

As mentioned in "Background" above, this project was consistent with the need to reduce geo-hazard damage caused by landslides and floods.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

This project was consistent with "Country Assistance Program for Malaysia" (2009) that held appropriate assistance "in the fields of disaster prevention and management against such disasters as flood, landslide, haze, earthquake and tsunami" as part of "Overcoming Regional Issues," one of the priority issues of assistance.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The project is deemed to have achieved the Project Purpose to a certain extent at the time of project completion. The relevant government organizations, namely, JKR (related to landslide) and DID (related to flood), participated in the research and technology transfer in the project. The landslide and flood analysis models developed by the project were reviewed by JKR and DID, respectively (Indicator 1). Regarding the EWS, a trial version of the EWS for landslide was developed and being fine-tuned in collaboration with JKR. At the same time, the development of the one for flood was delayed and did not reach the review phase by DID (Indicator 2). A WEB-GIS type disaster reduction database named Hazard Watcher was developed and installed at the participating universities. It was reported that all the project outputs were presented to the government organizations, but whether they reviewed the database for their adoption is not clear (Indicator 3). <<Continuation Status of Project Effects at the time of Ex-post Evaluation>

Some project effects from SATREPS are still being continued to the time of ex-post evaluation. It was confirmed that UNITEN, USM, and MMU have continued some of this project's research or started new research projects in such topics as UAV+CP/SAR, RS/GIS image processing, landslide risk mapping, Hazard Watcher, and real-time monitoring based on the project's outputs. Many research activities have been carried out in collaboration between UNITEN and other organizations/companies such as Malaysian Department of Mineral and Geoscience (JMG), Tenaga Nasional Berhad (TNB; Malaysian electricity utility provider), Malaysia Space Agency, Sarawak State Government, and Geomapping Technology (GMT) Sdn Bhd. Moreover, UNITEN collaborates with JMG in training on landslide assessment. While the knowledge and concept learned in SATREPS research has become basis of flood management system at DID Malaysia, the trial EWS developed under this project was not utilized in totality (see below).

A number of the equipment and software provided to the counterpart universities under this project (e.g., flood monitoring stations, Data Centre, server facilities, software such as ArcGIS, ERDAS, UDEX, Agisoft, Matlab) have been utilized for these research projects. After SATREPS completion, there was no further budget allocated on some equipment that are not utilized after SATREPS research was concluded.<sup>2</sup> Also, although IFAS and GETFLOWS were installed at the DID Forecast Centre, they are no longer in the operational mode because DID developed and currently operates the real-time EWS, namely, the National Flood Forecasting Warning System (NaFFWS), using a different model which can produce flood hazard maps automatically in real-time mode. According to DID, some parts of the models introduced under the project had to be modified to suit the Malaysian situation and personnel capability.<sup>3</sup> At UNITEN, IFAS is still used by postgraduate students.

<Status of Achievement for Expected Overall Goal at the time of Ex-post Evaluation>

The Expected Overall Goal has been partially achieved by the time of ex-post evaluation. Although the trial version of EWS developed under this project was not directly adopted by the government agencies, DID acknowledged that the knowledge learned during development of the system during SATREPS and its concept has become good reference in developing the National Flood Forecasting Warning System (NaFFWS). For landslide, this project's EWS did not directly contribute to the EWS that JKR is in the process of developing since, according to USM and JKR, human resources involved in the research are no longer around, and there is a challenge in budget allocation. For flood, as already explained, DID developed NaFFWS but did not use this project's prototype.

While there are some cases where parts of the model developed through SATREPS are not directly adopted, experience and knowledge from this project have contributed to the establishment of some other systems. After SATREPS project completion, Malaysian government progressed further to independently continued to improve disaster management system and venture into new researches. For example, JMG used the example from Hazard Watcher to establish its landslide risk management named the National Geospatial Terrain And Slope Information System (NATSiS) in the year 2018. DEM developed under this project was integrated with other sources to establish NATSiS. Also, TNB Grid Maintenance established the Virtual Geohazard Management Asset System (ViGMAS). This system enables TNB to forecast any flood event five days ahead and predict landslide events five or six hours ahead. This extra time is valuable for TNB Grid Maintenance

<sup>&</sup>lt;sup>2</sup> The landslide monitoring system broke down after project completion and no budget for repair and maintenance has been allocated, presumably because the system had been used to collect data for landslide risk assessment in the project and its role has been terminated upon the completion of this research. <sup>3</sup> According to DID, IFAS installed during this project could only produce hydrograph, but according to DID, there is a new necessity arises now that requires a real-time system that can produce flood hazard map. GETFLOWS is not deemed as user-friendly, as it has no Graphic User Interface (GUI) and DID officers are not well-versed in the programming language.

in terms of future planning for emergency response in assuring public safety.

Regarding the accuracy of geo-hazard assessment, as well, the three counterpart universities and DID confirmed the improvement and the indirect contribution of this project through the enhancement of knowledge of developing and using different models (e.g., DEM, CP/SAR, IFAS, and GETFLOWS).

<Other Impacts at the time of Ex-post Evaluation>

No negative impact was observed by the counterpart organizations interviewed. Positive impacts they pointed out include enhanced skills and knowledge among the participating researchers,<sup>4</sup> contribution to national landslide and flood prevention measures,<sup>5</sup> completion of masters and Ph.D. degrees in related topics, and networking and collaborative skills among various institutions.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal					
Aim	Indicators	Results			
(Project Purpose)	Indicator 1: The	Status of the Achievement: achieved (partially continued)			
A trial system of an	landslide/flood models are				
advanced disaster risk	reviewed by the	- The landslide risk assessment model was completed and demonstrated to JKR. JKR was involved in			
management system	government agencies for	the development of the model.			
with an integrated data	incorporating in their	- The flood analysis model based on IFAS and the 3D hydro-geological models based on GETFLOWS			
system of landslide and	research or actual hazard	was developed for the target river basin. DID was involved in the development of the models. It also			
flood is proposed to the	risk management.	reviewed the two models in comparison with the existing model.			
relevant government					
agencies in Malaysia for		(Ex-post Evaluation)			
supporting their		Although the models mentioned above have not been incorporated in the system of the government			
consideration of disaster		agencies in totality, further research has been conducted using the constituent technologies as follows.			
management programs		- USM and MMU applied the landslide risk assessment model to a selected Cameron Highland site.			
implementation.		- UNITEN, in collaboration with JMG, used satellite image for landslide risk assessment and virtualized in the 3D system.			
		- UNITEN integrated the high-resolution 3D hydro-geological model with a groundwater survey using			
		resistivity and seismic for the Groundwater Resources Assessment Project (National Project) with JMG and GMT Sdn. Bhd.			
		- UNITEN conducted the Comprehensive Geomorphology and Geological Study in Malaysia using			
		UDEX Software with JMG and GMT Sdn. Bhd.			
		- UNITEN conducted the terrestrial laser scanning in geological risk assessment using UDEX			
		Software with JMG and GMT Sdn. Bhd.			
		- UNITEN developed the Innovative Slope Indicator Monitoring and Asset Management System			
		(ISIMAMS) using integration concept from the Groups 1-3 outputs of this project and Hazard			
		Watcher under Sarawak State Government, GMT Sdn. Bhd, JKR Sarawak, and JMG.			
		<ul> <li>UNITEN used Hazard Watcher for extracting normalized difference vegetation index (NDVI) data and monitoring in Sarawak State Government.</li> </ul>			
		- UNITEN, TNB, and the Malaysia Space Agency collaborated in research and operational tasks for			
		the TNB-Grid using satellite imagery and GIS for vegetation and landslide risk and vulnerability			
		assessment. This is to ensure the sustainable supply of electricity to users via the national grid.			
		- UNITEN used the real-time slope monitoring concept adaptation to TNB, Sarawak State			
		Government, and JMG.			
		- UNITEN collaborated with JMG in training on landslide assessment.			
		- UNITEN and Sarawak State Government, JKR Sarawak, GMT Sdn. Bhd. and JMG Sarawak			
		conducted collaborative research to establish the Visualize Slope Management System using ArcGIS			
		System, satellite data, and the Hazard Watcher concept.			
		- MMU utilized the SAR sub-system for further development of a ground-based SAR (GBSAR) to			
		detect land deformation. GBSAR has higher detection accuracy compared to CP/SAR, and 1 Ph.D.			
		student graduated under this research project.			
		* See "Expected Overall Goal" below for the use of the models in developing EWS.			
	Indicator 2: The EWS is	Status of the Achievement: partially achieved (partially continued)			
	reviewed by the	(Project Completion)			
	government agencies for	- A trial version of the EWS for landslide was developed and being fine-tuned in collaboration with			
	full or partial adoption to	JKR. EWS for flood had not yet been completed.			
	improve their existing				
	warning system.	(Ex-post Evaluation)			
		- The trial version of EWS developed under this project was not directly adopted by the government			
		agencies, but the knowledge from this project was used for the development of NaFFWS. * See			
		"Expected Overall Goal" below for more information.			

<sup>&</sup>lt;sup>4</sup> For example, UNITEN informed that their researchers joined Collaboration Hubs for International Research Program (CHRP).

<sup>&</sup>lt;sup>5</sup> Besides collaborating in the development of NaFFWS, UNITEN was involved in development of Guideline for Landslide Vulnerability Assessment and Risk analysis for Critical Infrastructure (CI) in Malaysia with the Construction Industry Development Board (CIDB) Malaysia.

	Indicator 3: The disaster reduction online database is reviewed by the government agencies for update and improvement of their existing database.	<ul> <li>Status of the Achievement: partially achieved (partially continued)</li> <li>(Project Completion)</li> <li>Information on flood/landslide disaster collected as a WEB-GIS type database called Hazard Watcher. The beta version was installed at each university.</li> <li>The project compiled all outputs and submitted it to the Malaysian Government by the end of the project.</li> </ul>
		(Ex-post Evaluation) Hazard Watcher is accessible by all researchers (including researchers from government agencies such as DID and JKR) who were a part of SATREPS teams and used among the counterpart universities for various research projects (See Indicator 1 above). Some government agencies use the database indirectly through the research projects in which they are involved, but the database continues to function on an inter-researcher basis and is not used directly by government agencies.
(Expected Overall Goal) The existing early warning system of the government agencies and the accuracy of geo- hazard risk assessment are improved.	improvement of the existing early warning system of the government	<ul> <li>(Ex-post Evaluation) partially achieved</li> <li><u>EWS</u></li> <li>DID developed NaFFWS, and the knowledge from this project was used for its development. For example, some findings from this project's systems utilized by DID were the acquirement of abilities on IFAS operation for real-time flood forecasting. Also, IFAS was used as one of the models in the development of a flood forecasting model for NaFFWS.</li> <li>JKR continue to develop EWS that is suitable for Malaysia condition and at the moment is not directly contributable by SATREPS project output</li> <li>JMG established NATSiS using the example from Hazard Watcher and by integrating DEM with other sources.</li> <li>TNB Grid Maintenance established ViGMAS for asset maintenance and geo-hazards management. Researchers' experience and knowledge of 3D modeling from this project have contributed to the development of ViGMAS. Hazard Watcher is also referred to for this system.</li> <li>Accuracy of geo-hazard risk assessment</li> <li>The respective organizations pointed out that the following system, which was developed using part of the concept/outputs of this SATREPS project, enhanced the accuracy of geo-hazard risk assessment: NaFFWS (DID), NaTSIS (UNITEN), GBSAR (MMU).</li> </ul>

#### Source: JICA document; Final Report; Questionnaire with the implementing agencies

### 3 Efficiency

Both the project cost and the project period were within the plan (ratio against the plan: 66% and 100%, respectively). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability <Policy Aspect>

The Malaysian Government remains to have national policy aiming for disaster risk reduction such as the 11th Malaysia Plan (2016-2020) and the Long-Term Improvement Plan on flood forecasting under the NaFFWS Program.

<Institutional/Organizational Aspect>

This study could not collect factual information on the current organizational setting of the counterpart organizations and the government agencies for the utilization of the research outputs/outcomes of this project. However, it can be inferred from the various research activities and social implementation efforts, as described above, that a certain level of organization has been established. Among the equipment provided under this project, the ones that are still working are operated and maintained by a particular school or faculty of each university. <Technical Aspect>

Many ex-counterpart personnel remains in the same counterpart universities. According to the questionnaire and interview with them, researchers at each university have sufficient research capacity to continue their research and get more research funding. Government organizations such as JKR and DID also have enough ability to develop their own EWS mentioned above.

Although the trial version of EWS developed under this project was not directly adopted by the government agencies, DID acknowledged that the knowledge learned during development of the system through SATREPS and its concept has become good reference in developing the National Flood Forecasting Warning System (NaFFWS).

<Financial Aspect>

There are a number of financial resources available in Malaysia, contributed by the federal government, local government, and also private entity for the reduction of geo-hazard damages caused by landslide and flood. Each counterpart university has secured the budget to continue its research activities, as indicated in the table below, although information on the amount was not available. No concrete information was available on whether government agencies have secured enough budget for relevant policy implementation. However, as mentioned above, they are developing and implementing EWS and other disaster risk management systems. Therefore, it can be assumed that they have a certain amount of budget available.

University	Source of fund
USM	Long Term Research Grant Scheme (LRGS) research grant by Ministry of Higher Education (MOHE), specifically translational research
	grant (with the condition that the research outcome must have benefits to society) under Malaysia Research University Network (MRUN).
UNITEN	TNB Direct Access Fund, JMG, Fundamental Research Grant Scheme (FRGS) (MOHE), Sarawak State Government, GMT Sdn. Bhd.

# MMU MOHE, Ministry of Science, Technology and Innovation (MOSTI), and Malaysia Digital Economy Corporation (MDEC) for GBSAR

<Evaluation Result>

In light of the above, factual information of the institutional/organizations and financial aspects of the implementing agency is not available. Therefore, the sustainability of the effects through the project is fair (cannot determine as high).

# 5 Summary of the Evaluation

The project is deemed to have achieved the Project Purpose to a certain extent of proposing a trial system of an advanced disaster risk management system with an integrated data system of landslide and flood: the trial system was mostly completed and reviewed by the relevant government agency. Although the trial EWS model developed during SATREPS is not directly adopted, counterpart acknowledged the beneficial experience and knowledge learned during SATREPS. After project completion, the counterpart universities have utilized various technologies developed under this project in research activities in collaboration with relevant government agencies. However, the trial EWS developed under this project was not used in totality. Regarding sustainability, as factual information of the institutional/organizations and financial aspects of the implementing agency is not available. On the other hand, no problem was found in the policy and technical aspects. Considering all of the above points, this project is evaluated to be satisfactory.

# III. Recommendations & Lessons Learned

# Recommendations for Implementing Agency:

With regards to equipment, it is recommended to relevant organizations (universities, government departments, etc.) to continue with utilization of equipment procured through this project and allocation of budget for O&M, after hand over from JICA.

In view of social utilization of the project output, it is recommended that more researchers from implementing agency that are deemed as potential end-users (and not only from academic institutions/universities)<sup>6</sup> are included in research team. This is to ensure that project output has higher potential to be adopted through input by researchers from implementing agency.

# Lessons Learned for JICA:

This project was the first SATREPS project in Malaysia. During the planning of the project, it wasn't clearly explained that it would be evaluated for content that is "beyond project implementation" as the Overall Goal to the Malaysian side. That is why the Malaysian side feels this is rather "unfair," and that evaluation should reflect the implementation of this research during research duration (i.e., until the trial system to be proposed to relevant agencies in Malaysia for review towards adoption, which was almost done). On the other hand, JICA wants to emphasize the social utilization of project output after project completion. When this project was planned, the decision to conduct ex-post evaluation for SATREPS projects had not been made, and there is no mention of ex-post evaluation in the agreement between the Malaysian side and JICA for this project. Therefore, such a feeling is reasonable. However, even after FY2016, when the conduct of ex-post evaluation for SATREPS projects was defined and commenced, it is still important to fully explain it to the counterpart agencies. Also, at the time of planning, it is necessary to have an agreement with the counterpart agencies on the Overall Goal and its indicators as well as the necessary monitoring framework (implementing entity, system, etc.) with social utilization of the expected research outputs in mind.



Photo 1 (provided by UNITEN): One of the equipment procured for flood monitoring (Water Level and Rainfall Station) is still being used by UNITEN and DID.



Photo 2 (provided by MMU): MMU utilized the SAR subsystem for further development of a ground-based SAR (GBSAR) to detect land deformation. According to MMU,GBSAR has higher detection accuracy compared to CP/SAR and can detect sub-mm movement on natural or synthetic objects.

<sup>&</sup>lt;sup>6</sup> Although the SATREPS research team only include researchers from DID and JKR as those from government agencies, there are a number of other potential users such as Malaysian National Disaster Management Agency (NADMA), local/state governments, Malaysian Meteorological Dept (MMD), Malaysian Mineral & Geoscience Dept (JMG), Malaysian Civil Defense Force (AMP), Government-Link Company (GLC) Tenaga Nasional Berhad (TNB).

Country Name							
Republic of Philipp	bines (Phase I and II)						
I. Project Outline							
Background	According to the inventory survey conducted by the Department of Public Works and Highway (DPWH) in December 2009, the proportion of the paved national roads in the total length was approximately 70% but about 30% of the paved national roads needed repair and rehabilitation due to cracks of pavements. While DPWH aimed at the proportion of the paved national road of 95%, further enhancement of road and bridge maintenance system was an urgent issue for DPWH. In particular, it was essential to strengthen technical capacity of the regional office staff and to establish a maintenance cycle composed of a series of activities including inspection planning, inspection, inspection evaluation and repair works.						
Objectives of the Project	Thr mainter manual aimed a mainter enginec <phase 1. Over cons 2. Proj- man impr</phase 	<ul> <li>Through trainings on quality management of road/bridge construction and maintenance, road slope maintenance management and bridge maintenance management, development and revisions of the technical manuals and guidelines as well as improvement of management cycle of road and bridge maintenance, the project aimed at enhancing capability of engineers of DPWH and the pilot Regional Offices on quality management and maintenance management of roads/bridges, thereby contributing to enhancement of those capability of the engineers in other regions.</li> <li><phase &="" i="" ii=""></phase></li> <li>1. Overall Goal: Capability of DPWH and Regional Offices engineers on quality management of road/bridge construction and maintenance and maintenance management of road/bridge is improved.</li> <li>2. Project Purpose: Capability of engineers of DPWH, Regional Offices and district engineering offices on quality management of road/bridge construction and maintenance and maintenances and maintenance management of road/bridge is improved.</li> </ul>					
Activities of the Project	improved in the pilot regions.         1. Project site: <phase &="" i="" ii=""> Manila (DPWH head offic Central Visayas Region (Region VII), and Davao Region         2. Main activities: <phase i=""> i) Development and delivery of training programand maintenance), ii) Formulation of technical manuals on <phase ii=""> i) Establishment of road/bridge maintenance m Slope Management System (RSMS) and improvement of as well as trainings in CAR and Region VII, iii) Develor Management System (BMS) and improvement of RMMM         3. Inputs (to carry out above activities)         Japanese Side       Phil         <phase i=""> <pli>         1) Experts from Japan: 15 persons       1)         2) Training in the third country (Vietnam and Indonesia): 9 persons       3)         4) Equipment: Clinometers and Laser-Type Distance</pli></phase></phase></phase></phase>			<ul> <li>egion (Region XI)</li> <li>ograms on quality management of road/bridge construct ls on road/bridge construction and maintenance</li> <li>ice management cycle, ii) Promotion of utilization of Reat of Routine Maintenance Management Manual (RMM Development of engineering inspection manual on Brid MM as well as trainings in Region VII and Region XI</li> <li>Philippine Side</li> <li>Phase I&gt;</li> <li>1) Staff allocated: 21 persons</li> <li>2) Land and facilities: Office spaces in DPWH and three model Regional Offices</li> <li>3) Operation cost: cost for the pilot projects, cost the project staff</li> <li><phase ii=""></phase></li> <li>1) Staff allocated: 56 persons</li> <li>2) Land and facilities: Office spaces in the th model Regional Offices</li> </ul>	tion oad IM) dge the for		
Project Period	<phase< td=""><td>ry, 2007 – February, 2010</td><td>Project Cost</td><td><phase i=""> (ex-ante) 350 million yen (actual) 498 million yen <phase ii=""></phase></phase></td><td></td></phase<>	ry, 2007 – February, 2010	Project Cost	<phase i=""> (ex-ante) 350 million yen (actual) 498 million yen <phase ii=""></phase></phase>			
		r, 2011 – September, 2014		(ex-ante) 350 million yen (actual) 439 million yen			
Implementing	<phase< td=""><td>I and Phase II&gt;</td><td></td><td>· · · · · · · · · · · · · · · · · · ·</td><td></td></phase<>	I and Phase II>		· · · · · · · · · · · · · · · · · · ·			
Agency		nent of Public Works and Highw					
Cooperation Agency		I> Ministry of Land, Infrastruct	-				
in Japan	<phase< td=""><td>II&gt; Nippon Engineering Consul</td><td>tants Co., Ltd., Ka</td><td>atahira Engineering International, Hanshin Expressway</td><td></td></phase<>	II> Nippon Engineering Consul	tants Co., Ltd., Ka	atahira Engineering International, Hanshin Expressway			

< Special Perspectives Considered in the Ex-Post Evaluation >

[Evaluation of the Project Purpose and the Overall Goal and the envisaged logic for achieving and sustaining the project effects]

The following issues should be considered in order to evaluate the achievement level of the Project Purpose and the Overall Goal of the two projects. Phase I: The indicator 1 of the Project Purpose is overlapped with the indicator of the Output 1. The indicator 3 of the Project Purpose is not relevant due to no activity to establish training system.

Phase II: The indicators of the Project Purpose used by the terminal evaluation were different from the ones in the revised project design matrix (ver.3) but there was no explanation about reasons why the terminal evaluation team used different indicators. Therefore, while the information and data at the time of terminal evaluation are used for the ex-post evaluation, the verifiable indicators for the Project Purpose and the Overall Goals for the Phase II are based on the PDM ver.3

Therefore, in the ex-post evaluation, the two projects are interpreted as one intervention, and the Project Purpose and Overall Goal were restructured to verify achievement levels and continuation of the effects.

#### 1 Relevance

<Consistency with the Development Policy of the Philippines at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policies of the Philippines prioritizing maintenance and rehabilitation roads and bridges in the "Medium-term Development Plan" (2004-2010 and 2011-2016) and "Medium-term Program" (2005-2010 and 2011-2016) of DPWH and those policy priorities had not changed throughout the project periods.

<Consistency with the Development Needs of the Philippines at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the development needs of the Philippines for proper maintenance and repair of roads and bridges in order to improve the service level and to reduce repair cost as well as to extend the lifetime of the road infrastructure for sustainable development of the country. The development needs had not changed throughout the project periods.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA Policy to prioritizing support for "enhancement of economic structure for sustainable growth and overcoming of constraints on growth" in the "Country Assistance Program" (2000).

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The restructured Project Purpose for the Phase I and Phase II was achieved. The technical methods and quality control required by the technical manuals and guidelines have been utilized (Indicator 1). In terms of the number of defects repaired (Indicator 2), there were 6 cases of road repair and 12 cases of bridge repair under the Phase I. Also, 2 pilot projects for road maintenance and 8 pilot projects for bridge maintenance were conducted under the Phase II. In terms of proposing and taking the necessary countermeasures (Indicator 3), damages on bridges were properly diagnosed and the most proper measures were taken to fix the damages under the Phase I. Under the Phase II, the conditions of the target roads and bridges were improved through implementation of the pilot projects.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued. In the pilot regions of CAR, RO VII, and RO XI, the inspections/repair of roads and bridges by using the technical manuals/guidelines developed/revised by the projects, including the regular inspection and repair, have been continuously conducted but the frequency of regular inspections and repairs have decreased due to the improvement of road and bridge conditions. The trainings of road and bridge maintenance by using the technical manuals/guidelines developed/revised by the project have been conducted by DPWH but the number of trainings has decreased because some of the engineers have been already trained. For the period from February 2016 to January 2019, some trainings, such as the technical guidelines and manuals developed by the project, were conducted under the Phase III (2016-2019) in non-pilot regions as part of the sustainability program in cascading information and skills to other regions.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved by the time of ex-post evaluation. For the period from 2015 to 2018, DPWH conducted the trainings of road maintenance and bridge maintenance for each Regional Office (Indicator 1). From 2016, the trainings were conducted for non-pilot regions as a part of the project activities of the Phase III. Also, for the same period, all the 10 Regional Offices conducted inspections of roads and bridges at least once by using the technical manuals/guidelines developed/revised by the project and necessary repair works (Indicator 2). In addition, the Department Order (DO no. 94 s. 2014) has been issued instructing all DPWH Regional, District Engineering Offices and Project Management Offices to use the technical guidelines/manuals developed during the Phase II for road and bridge maintenance work and the District Engineering Offices have conducted regular inspection on roads and bridges in accordance with the Department Order No.41 Series of 2016. Conditions of roads and bridges have improved over time because of the regular inspection and maintenance conducted by DPWH (Indicator 3). Only in Region XI that the percentage of roads with bad condition have increased from 2011 to 2018 but such increase can be attributed to calamity and conversion of local/provincial roads to national roads. <Other Impacts at the time of Ex-post Evaluation>

Some positive impacts by the project have been observed at the time of ex-post evaluation. The participation of women in the trainings conducted by DPWH increased from 25% in 2015 to 35% in 2019. No negative impact on natural and social environment by the project has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Aim	Indicators	Results					
(Project Purpose)	Indicator 1	Status of the Achievement: achieved (continued)					
Capability of engineers of	The technical methods and quality control	(Project Completion)					
DPWH, Regional Offices	required by the technical	<phase i=""></phase>					
and district engineering	manuals/guidelines developed/revised by	- The inspection apparatus/equipment introduced by the training, such as the					
offices on quality	the project are properly utilized and	portable digital clinometer and laser type distance meter, were utilized for					
management of	practiced in the pilot projects and in other	the routine inspection for roads					

#### Achievement of Project Purpose and Overall Goal

model maintenance       - Data co bridge construction       in coordinace with the individual matter management of coordinace is in improved in accordinace with the individual matter management is coordinate with the individual matter management is constructed in plane project.         in the plane rigions.       - Data co bridge quality were collected and unityced in accordinace with the individual manadol guidelines developed/revised by the project is an individual manadol guidelines developed/revised by the project.         in the plane rigions.       - Data co bridge quality were collected and unityced in accordinace with the individual manadol guidelines developed/revised by the project.         (No. of indipectional/cipiii of bridge in accordinate with the individual manadol guidelines developed/revised by the project.         (No. of indipectional/cipiii of bridge in accordinate with the individual manadol guidelines developed/revised by the project.         (No. of indipectional/cipii of bridge in accordinate with the individual manadol guidelines developed/revised by the project.         (No. of indipectional/cipii of bridge in accordinate with the individual manadol guidelines developed/revised by the project.         (No. of indipectional/cipii of bridge in accordinate with the individual management and project.         (No. of regular impection/reguin of bridge in accordinate with the individual management of indices are proved in the individual management and project.         (No. of regular impection/reguin of bridge in accordinate with the individual management and project.         (No. of regular impection/reguin of bridge in accordine with the individual management and indi			<b>D</b> .	1 • 1			11 . 1		1.	1	
in the pilot regions.     - Damages on bridges were properly diagnosed in accordinace with the manual.       in the pilot regions.     - Finance III       - The technical manual/splitations developedrevined by the project were unitical for pilot projects.       (Chype of Loubation)       No. of impectionscreption of bridges were properly diagnosed in accordinace with the embediate event to bridge and the project.       - Damages on bridges were properly diagnosed in accordinace with the embediate event to bridge and the project.       - Discreption of bridges of the project.       - Discreption of the project.	road/bridge construction	activities.		-	e qual	ity were c	ollected an	d analyze	ed in a	ccordanc	e with the
of road/mige is improved in the pilot regions.       manual.         in the regions.       manual.         in the pilot regions.			- Damages on bridges were properly diagnosed in accordance with the								h tha
in the pilot regions.       -Fhase ID-         - The technical manual/split/diffues developed/revised by the project were utilized for pilot projects.       -The technical manual/split/diffues developed/revised by the project were utilized for pilot projects.         (Ex-post Evaluation)       The constraint of the pilot regions.       The constraint of the pilot regions.         (No. of impections/report of bridges by using the technical manual/split/diffues developed/revised by the project.       The constraint of the pilot regions.         (No. of impections/report of bridges by using the technical manual/split/diffues developed/revised by the project.       The region impection report.         (No. of regular inspection/report of bridges in accordure with the technical manual/split/diffues developed/revised by the project.       No. of regular inspection/report of bridges in accordure with the technical manual/split/diffues developed/revised by the project.         (Ro VII)       meetion       The real to impection report.         (No. of regular inspection/report of bridges in accordure with the technical manual/split/diffues.       The real to impection report.         (No. of regular inspection/report.       Status of the bridge report.       Status of the bridge report.         (No. of regular inspection report.       Status of the bridge report.       Status of the bridge report.         (Project Completion)       Status of the bridge report.       Status of the bridge report.         (Project Completion)       Status of the bridge report. </td <td>_</td> <td></td>	_										
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utilized for pild projects.         (L:-poor Livalanico).         No. of impection/expire of radks by using the technical manual-guidalines developed revised by the project.				chnical	manua	als/guideli	ines develo	ped/revi	sed by	the proje	ect were
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developed/revised by the project       Image: Control of the project         Plin Regions       0 11       0 11       4         (CAR, BO VII       Repair       1       0       1       3         Indicator 2       Trapection repair of bridges by using the technical manual/guideline developed/revised by the project       Image: Control of the project       1       1       1       2         Indicator 2       Type of 2015       2016       2017       2018       2019				-							
Indicator 2         The number of defacts repaired.         Indicator 3           Indicator 3         The enginese of DPWH, Regioned Office Advicement: adviced (continued)         In CAR, and 1 in RO XII           Indicator 3         The enginese of DPWH, Regioned Office Advicement: adviced (continued)         In CAR, and 1 in RO XII           Indicator 3         The enginese of DPWH, Regioned Office         Status of the Advicement: adviced (continued)           (Coverall Cost)         Indicator 1         Status of the Advicement: adviced (continued)           (Coverall Cost)         Indicator 1         Status of the Advicement: adviced (continued)           (Coverall Cost)         Indicator 1         Status of the Advicement: adviced (continued)           (Coverall Cost)         Indicator 1         Status of the Advicement: adviced (continued)           (Coverall Cost)         Indicator 1         Status of the Advicement: adviced (continued)           (Coverall Cost)         Indicator 1         Status of the Advicement: adviced (continued)           (Coverall Cost)         Indicator 1         Status of the Advicement: adviced (continued)           (Coverall Cost)         Indicator 3         Status of the Advicement: adviced (continued)           (Coverall Cost)         Indicator 4         Status of the Advicement: adviced (continued)           (Coverall Cost)         Indicator 1         Status of the Advicem			[No. of insp	pection	s/repai	r of road	s by using	g the tec	hnical	manuals	s/guidelines
Indicator 2     The number of defects repaired.       Indicator 2     The number of defects repaired.       The number of defects repaired.     Status of the Adversement: achieved (continued)       (Paper 1)     100 and paper 1)       Indicator 2     The number of defects repaired.       The number of defects repaired.     Split projects for void gas over emproved through improvement.       1     1     100 and paper 1)       1     100 and paper 1)     100 and paper 1)       1     1     1       1     1			developed/r	evised l	1 · · · · · · · · · · · · · · · · · · ·		· · · · · · · · ·		1		
Pilot Regions         Impection         1         0         1         4           (CAR, RO VII         Repair         1         0         1         3           (No. of inspection/repair of bridges by using the technical manual-guidelines developed revised by the project)         2015         2016         2017         2018           (CAR, RO VII         Repair         1         1         1         1         2           (CAR, RO VII         Repair         1         1         1         2           (Ro VI         Repair         2         48         67         45         18           RO VII         Repair         54         36         94         96         74           Ropict         73         7         7         37         60         14         12         12           Ropict         Repair         54         36         94         96         74           Ropict						-	2015	2016	2017	7 20	18
Indicator 2       The number of defeets repaired.       CAR. Rol VII       Repair       1       0       1       3         Indicator 2       The number of defeets repaired.       Status of the rode crapit.       - <td></td>											
Indicator 2         The number of defects repaired.         Indicator 2         The number of defects repaired.         Status of the Achievement: achieved (continued) (Project Completion)         Version 1         1       1         1			-								
Indicator 2         The number of defects repaired.         Construction					R	epair	1	0	1	3	5
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management of road/bridge construction and maintenance and maintenance management       15       9       4       15       4         2015       2016       2017       2018       2019	-		2015		201	6	2017	2	2018		
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and maintenance and maintenance management 2015 2016 2017 2018 2019	-		_	ings of	,	mainten		regionel	13		4
maintenance management									2018		2019
	maintenance management				_01						

of road and bridge is		18	13		28	19	
improved.	mateutor 2	Status of Achie (Ex-post Evalu [No. of inspect	uation)		s by Regio	nal Offices	5]
		Type of activity	2015	201		017	2018
	the project.	Inspection	7	3		10	10
	the project.	Repair	7	2		0	9
		[No. of inspect	tion and rep	air of bridg	ges by Reg	ional Offic	es]
		Type of activity	2015	201	5 2	017	2018
		Inspection	0	1		8	16
		Repair	7	4		13	15
	The percentage of roads and bridges with	Status of Achie (Ex-post Evalu [% of roads wi	uation) th bad conc	litions]			
			2011	2015	2016	2017	2018
		Philippines	13.11	7.57	6.36	5.64	4.67
		CAR	17.60	17.44	17.60	17.64	14.60
		RO VII	0.99	1.10	0.99	0.66	0.22
		RO XI	8.80	8.87	8.80	9.36	9.70
		[% of bridges with bad conditions]					
			2011	2015	2016	2017	2018
		Philippines	10.34	6.60	5.24	1.87	1.18
		CAR	0.45	0.33	0.30	0.12	0.06
			0.60	0.40	0.24	0.13	0.16
		RO VII RO XI	0.80	0.40	0.10	0.06	0.04

Although the total project period was as planned (ratio against the plan: 100%), the total project cost exceeded the plan (ratio against the plan: 133%). The outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability <Policy Aspect>

The "Philippine Development Plan" (2017-2022) includes the improvement of International Roughness Index (IRI) from 2015 baseline value of 4.62 to 3.0 by the end of 2022. This can be achieved by improving the condition of roads through regular maintenance of roads and bridges. In addition, various Department Orders (DO) have been released in relation to road and bridge maintenance and inspection such as DO 94 series of 2014, DO 41 and 164 series of 2016, DO 23 and 24 series of 2019, among others. Therefore, the trainings and the inspection and repair works based on the technical manuals/guidelines developed/revised by the project have been endorsed by those policies.

<Institutional Aspect>

There has been no change in the organizational setting since the project completion. DPWH has been responsible for budgeting and budget allocation for the trainings of road and bridge maintenance as well as the inspection and repair works of roads and bridges by the Regional Office and District Engineering Offices. The number of maintenance staff of each region has been fixed based on the DPWH budget: CAR with regular employees of 13 and job order (non-permanent) of 21, RO VII with 13 and 56 and RO XI with 13 and 50. There are additional staff working for inspection and repair in the District Engineering Offices that help out the Regional Offices. The total number of trainers for the trainings and OJTs on the improved road and bridge maintenance by using the technical manuals/guidelines developed/revised by the project in the three pilot ROs decreased from 256 in 2015 to 36 in 2019. However, in addition to the Working Group members of the project, the personnel of other ROs have been engaged in the technical trainings and every year the number of trainers increases depending on the training they held because according to DPWH all trained staff can be trainers/resource persons in the future.

<Technical Aspect>

The training mechanism based on the technical manuals/guidelines developed/revised by the project has been sustained due to the DO No.94 Series of 2014 mandating DPWH personnel to conduct inspection and repair works based on those manuals and guidelines. In addition, the regular trainings following those manuals and guidelines have been conducted by the DPWH Bureau of Maintenance for the period from 2017 to 2019. The skills and knowledge of the engineers of the pilot Regional Offices and the District Engineering Offices have sustained at a sufficient level for necessary maintenance of roads and bridges because the conditions of roads and bridges have been improved over the years. Also, the level of skills and knowledge of the engineers of DPWH and the three pilot Regional Offices have been sufficient as resource persons for the technical trainings by DPWH.

As mentioned above, DO No. 94 series of 2014 prescribes the DPWH personnel in charge of implementation such as the Regional Offices, District Engineering Offices and Project Management Offices to adopt the technical manuals and guidelines developed by the project.

<Financial Aspect>

DPWH has continuously allocated the necessary budget for the road and bridge maintenance as well as the technical trainings based on the technical manual/guidelines developed/revised by the project.

<Evaluation Result>

In light of the above, there has been no problem in any aspects. Therefore, the sustainability of the effectiveness through the project is

# high

# 5 Summary of the Evaluation

The project achieved the Project Purpose and the Overall Goal through the implementation of the improved road and bridge maintenance by the technical trainings based on the technical manuals/guidelines developed/revised by the project. As for efficiency, the project cost exceeded the plan.

Considering all of the above points, this project is evaluated to be highly satisfactory.

### III. Recommendations & Lessons Learned

### Lessons Learned for JICA:

The DPWH has been able to institutionalize the outputs made by the Project through the issuance of various Department Orders. They have continuously utilized the manuals and handbooks developed by the Project not just for purpose of training but also to actually enhance its operations in terms of inspections and repair works of road and bridges. This is actually a good way to ensure the sustainability and effectiveness of Projects. For future and existing technical projects of JICA, it should be discussed with counterpart agencies on how the outputs would be institutionalized so that the outputs will not just get shelved and forgotten after its completion.



Technical Working Group Meeting



Counterpart Working Group Meeting



Bridge Inspection



Road Inspection

Country Name						
Lao People's Democratic		Livelihood Improvement Project for Southern Mountainous and Plateau Areas				
Republic						
I. Project Outline						
Background	The border mountainous area, including four provinces of Attapeu, Champasak, Salawan and Sekong, is a part of the Cambodia-Laos-Vietnam (CLV) Development Triangle Area. In 2008, 352 out of the total 1,664 villages in the four provinces were designated as "poor village" by the Government of Lao PDR, and the promotion of farmers' production and the improvement of their livelihoods were urgent issues. On the other hand, the Government of Lao PDR had taken "the Lao Extension Approach" based on clusters <sup>1</sup> of villages for outreaching administrative services more across the country. However, the approach had not been properly practiced at a field level, and there was room to improve the approach based on lessons learnt from the failures.					
Objectives of the Project	Province the Tec implem improv	Through trainings on appropriate technologies identified and cluster <sup>1</sup> development for officials of the Provincial Agriculture and Forestry Offices (PAFOs), the District Agriculture and Forestry Offices (DAFOs) and the Technical Service Centers (TSCs), fostering of core farmers to introduce and disseminate the technologies, and implementation of farmer-to-farmer trainings from the core farmers to general farmers, the project aimed at improving villagers' livelihood in the target clusters, thereby contributing to improvement of villagers' livelihood in the four southern provinces.				
	2. Pro tec					
Activities of the Project	<ol> <li>Ma app transferred app transferre</li></ol>	<ol> <li>Main Activities: 1) Identification of appropriate technologies based on local conditions, 2) Trainings on the appropriate technologies and cluster development for officials of PAFOs, DAFOs and TSCs, 3) Technical transfer to the core farmers for dissemination of the identified appropriate technologies, 4) Implementation of farmer-to-farmer training, and so on.</li> <li>Inputs (to carry out above activities) Japanese Side         <ul> <li>Experts: 14 persons</li> <li>Staff allocated: 53 persons</li> <li>Experts from the Third country: 3 persons (Nepal, 2. Land and facilities: project offices in the Thailand and Vietnam)</li> <li>Department of Livestock and Fishery and PAFO of Champasak province</li> <li>Trainees received in Third Country: 7 persons</li> <li>Local expenses: utility costs (Cambodia and Thailand)</li> <li>Equipment: 4WD vehicles, projector and screen, motorcycles, notebook computer, etc.</li> </ul> </li> </ol>				
Project Period	Novem	ber 2010 – November 2015 Project Cost (ex-ante) 390 million yen, (actual) 371 million yen				
Implementing Agency	Depart	ment of Livestock and Fishery (DLF), Ministry of Agriculture and Forestry (MAF)				
Cooperation Agency in Japan	None					

<Constraints on Evaluation>

• As Attapeu province did not provide any information and data about the project, the evaluation analyses in this ex-post evaluation is carried out on the basis of the information and data collected from the three provinces of Champasak, Salawan, and Sekong.

1 Relevance

<Consistency with the Development Policy of Laos at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Laos' development policies of the "National Growth and Poverty Eradication Strategy" (2004) setting an agriculture and forestry as one of the four central sectors and "The 6th five-year plan for the agriculture and forestry sectors" (2006-2010) focusing on food security as one of the four prioritized goals at the time of ex-ante evaluation as well as the "Strategy of Livestock and Fishery Development in Lao PDR 2020" emphasizing the development of livestock and fishery at the time of project completion.

<Consistency with the Development Needs of Laos at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Laos' development needs to outreach administrative services through the clusters of villages across the four provinces of Attapeu, Champasak, Salawan and Sekong for the promotion of farmer's production and the improvement of their livelihoods.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with "The Country Assistance Policy for Lao PDR" (2006) highlighting "Agricultural Regional

<sup>&</sup>lt;sup>1</sup> Cluster is a unit for administrative services and composed of 5-10 villages under a district which is the lowest administrative division.

Development and Utilization of Sustainable Forest Resource" as one of the priority areas. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. Through the project, core farmers were trained and started to introduce appropriate technologies into their farmlands. As a result, the average income of almost of all the core farmers in the expansion sites (the sites targeted in the latter half of the project) increased by 106% from 20.9 million kips in 2013 to 43 million kips in 2015 (Indicator 1). Also, the average income of the general farmers who received farmer-to-farmer trainings on aquaculture provided by the core farmers increased by 85% from 18.8 million kips in 2014 to 34.8 million kips in 2015, and their assets also did (Indicator 2). <Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially continued since the project completion. Even after the project completion, the core farmers trained by the project have continuously adopted the appropriate technologies introduced by the project. According to PAFOs and DAFOs in the target three provinces, due to the continuous use of the technologies, the average income of the core farmers in the three provinces have sustained or increased in comparison to the one at the time of project completion. However, they also reported that there were some years when the average income decreased for the reasons such as flood and animal disease. Additionally, in July 2019, general farmers, who received technical instructions from the core farmers (Champasak province: 70 general farmers, Salawan province: 7 general farmers, Sekon province: 7 general farmers), started to introduce the appropriate technologies, and although in-depth data on their average income and assets was available only for Champasak province (one village), according to the interviews to the general farmers in the target three provinces, their income and assets have gradually risen year by year.

The extension activities based on the farmer-to-farmer approach have been partially sustained. Since the project completion, some of the core farmers trained by the project have disseminated the appropriate technologies introduced by the project to their relatives and surrounding farmers, and a number of new core farmers was raised in Champasak province and Sekong province by July 2019 (Champasak province: 32 new core farmers, Salawan province: no new core farmer, Sekon province: 8 new core farmers). Also, in addition to the core farmers trained by the project, it was confirmed that the new core farmers have also provided trainings (On-the-Job training basis) to general farmers in the target areas. The total number of participants in farmer-to-farmer training held between 2016 and July 2019 was 430 farmers in Champasak province, 135 farmers in Salawan province, and 260 farmers in Sekon province. DAFOs in all the target provinces reported that the main reasons for the continuous dissemination of the appropriate technologies are because the technologies are easily adopted, and the adoption leads to an increase in the income. Yet, due to personnel and budget constraints of government organizations, the dissemination areas are limited to areas surrounding the areas where the core farmers trained by the project live.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has not been achieved at the time of ex-post evaluation. Comparing the production of seven agricultural products in the target three provinces in 2015 to in 2018 (or 2017), the number of agricultural products whose production increased was 2 in Champasak province, 6 in Salawan province, and 1 Sekon province (Indicator 1). Rice, fish and meat consumption of farmers and their income have been in an upward trend in all the target three provinces (Indicator 2 and 3). According to PAFOs and the core farmers in all the target provinces, the appropriate technologies introduced by the project has contributed to such positive impacts. However, as mentioned above, areas where the appropriate technologies have been disseminated have been really limited, and even the project effects pertinent to the Overall Goal have covered only areas confirmed through the visit to districts and the interviews to farmers at the time of ex-post evaluation. In light of the above, the project effects confirmed above are considered not to be achieved up to the level set by the Overall Goal (the whole areas of provinces).

<Other Impacts at the time of Ex-post Evaluation>

A positive impact was observed at the time of ex-post evaluation. Due to the usefulness of LIPS Implementation Guideline for Expansion Stage developed by the project, World Vision International, an international non-governmental organization, invited DAFO staff to train their targeted farmers about how to select the best core farmers by using the guideline. On the other hand, a case causing an adverse impact was confirmed by the field survey in this ex-post evaluation. One of the farmers adopting the appropriate technology introduced by the project (pig farming) in Mulapamok district of Champasak province expanded its scale to a commercial farm, which caused serious odor pollution and noise. The problem was solved by the relocation of the pig farm. <Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Aim	Indicators	Results
(Project Purpose)	1. Core farmers' income is increased by	Status of the Achievement: Achieved (Partially Continued)
Villagers' livelihood is	20% on average as a result of appropriate	(Project Completion)
improved in the target	technology introduced by the project.	• The average income of 75 out of 76 core farmers fostered by the project in
clusters through extension		the expansion site increased by 106% from 20.9 million kip in 2013 to 43
of appropriate technology.		million kip in 2015.
		• The remaining one core farmer was just selected and started to adopt the
		appropriate technology introduced by the project.
		(Ex-post Evaluation)
		• The number of core famers using the appropriate technologies in July 2019
		has increased mainly because of their relatives and surrounding farmers
		(Champasak province: 48 core farmers, Salawan province: 23 core farmers,
		Sekon province: 28 core farmers).
		• According to PAFOs and DAFOs in the three provinces, although the
		average income of the core famers has sustained and increased, there were

Achievement of Project Purpose and Overall Goal

		some years when the income decr	ansad dua i	to flood and	lonimal	licanca		
	2 Average income and assets of those	some years when the income decreased due to flood and animal disease. and assets of those Status of the Achievement: Partially Achieved (Partially Continued)						
	-	attended (Project Completion)						
	farmer-to-farmer training is increased.	• The average income of the general farmers who received farmer						
	furnier to furnier truning is hereased.	<ul> <li>The average income of the general farmers who received farmer trainings on aquaculture increased by 85% from 18.8 million kip 34.8 million kip in 2015.</li> </ul>						
						III 2014 to		
		• Their assets also rose between 2014 and 2015 as indicate						
		below.	incated in	i the table				
		[Assets of the general farmers]						
		Asset / Year	1\	2	014	2015		
		Area of paddy fields (ha/household			1.3	1.4		
		Area of other agricultural fields (ha		d)	1.8	2.2		
		Number of fish pond (per househo			1.4	1.6		
		Number of vehicle (per household)			0.2	0.2		
		Number of motorcycle (per household)			1.6	1.7		
		Number of hand tractor (per house	/		0.6	0.7		
		Number of rice mill (per household	d)		0	0.1		
		(En an et Englanding)						
		(Ex-post Evaluation)	a agus fau	waana tha		and and		
		• According to the interviews to the			-			
		assets of general farmers in the trend.	inree provi	inces nave	been in	an upward		
				<b>-</b> - <b>-</b>	1	c :		
		• The data on the average inco		-	-			
		Champasak province (one village			ow. The d	lata on the		
		one in the remaining two province	es was not	available.				
		[The evenes income and exects	of company	formation	n tha C			
		[The average income and assets	of general	l larmers l	n the C	nampassak		
		province (one village)]	2015	2016	2017	2010		
		Item / Year	2015	2016	2017	2018		
		Income from agricultural production (million Kip/person/year)	on 8.3	5 9.5	10	11		
		No. of households with livestock						
		Buffalo	24	4 25	25	25		
						25		
		Cattle	34		37	37		
		Goat		- 10	20	40		
		Pig	2.		26	26		
		Chicken	4	0 40	42	47		
		Area of agricultural field	ds 1.:	5 1.5	2	2		
		(ha/household)				10		
		No. of households with fishponds		3 5	6	10		
		No. of households with vehicle		1 1	2	3		
		No. of households with motorcycle			66	75		
		No. of households with hand tracto			58	61		
		No. of households with rice mills	14	4 15	17	18		
(Overall Goal)		<ul><li>(Ex-post Evaluation) Not Achieved</li><li>Comparing the production of several several</li></ul>	n agriculti	ural produce	ta in tha t	argat three		
Villagers' livelihood is	increased in 4 southern provinces.	provinces in 2015 to in 2018 (or 2						
improved in the 4		whose production increased was						
southern provinces		province, and 1 Sekon province.						
through extension of		[ A	. Channe	1	1			
appropriate technology.		Agricultural production of villagers	2015	2016	2017	2018		
		Rice (kg/person)	750	850	950	1,050		
		Buffalo (head/household)	3	4	4	3		
		Cattle (head/household)	5	4	5	5		
		Pig (head/household)	4	5	7	7		
		Goat (head/household)	0	0	0	0		
		Poultry (head/household)	47	34	49	26		
		Aquaculture (pond/household) Note: the data from two core far	2 mers and	2 two gener		2 rs in each		
		province.	mers and	wo gener	ai iaiiiit			
		[Agricultural production of villagers	in Salawa	n province	l			
		Item / Year	2015	2016	2017	2018		
		Rice (kg/person)	1,034	1,059	982	853		
		Buffalo (head/household)	1	1.2	1.4	2		
		Cattle (head/household)	1	1.3	1.6	2		

Coart fload/nouschold)       0.2       0.3       0.6       0.0         Pottry (head/nouschold)       1.8       2.4       3.6       -         Note: the data from two core farmers and two general farmers in carpovince.       -       -       Note: the data from two core farmers and two general farmers in carpovince.         Agricultural production of villagers in Sckong province?       - <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>									
Poultry (head/household)       25       28       29       33         Aguacular (pron-household)       18       2.4       3.6          Note: the data from two core farmers and two general farmers in eaprovince.       [Agricultural production of villagers in Sekong province]          Rise (kgperson)       3.84       3.94       3.02       3.02       3.11       3.150       3.22       1.18       3.01       3.02       1.01       2.016       2.017       20.18       3.02       1.01       1.01       1.01       1.01       1.01       1.01       1.01       1.01       1.01       1.01       1.01       1.01				7	8		12		
2. Rice, fish, and meat consumption of vilagers in Selong province.         2. Rice, fish, and meat consumption of vilagers in comprovince.         2. Rice, fish, and meat consumption of vilagers in complexity.         vilagers is increased in 4 souther province.         12. Rice, fish, and meat consumption of vilagers in three southern provinces.         2. Rice, fish, and meat consumption of the data from two core farmers and two general farmers in ear province.         2. Rice, fish, and meat consumption of (Ex-post Evaluation) Not Achieved         vilagers is increased in 4 southern provinces.         13. Not: the data from two core farmers and two general farmers in ear province.         Rice, fish, and meat consumption of (Ex-post Evaluation) Not Achieved         vilagers is increased in 4 southern * The costomption by utilagers in three southern provinces (only the tary district) has gradually increased since the projet completion. However, the considered that the level required for the Overall Goal (the spread of a effect across the provinces) has not been quite limited, it costs be considered that the level required for the Overall Goal (the spread of a effect across the provinces) has not been quite limited, it costs be considered that the level required for the Overall Goal (the spread of a effect across the provinces) has not been quite limited, it costs be considered that the level required for the Overall Goal (the spread of a effect across the province) has not been quite limited, it costs the province has a state with the level required for the Overall Goal (the spread of a effect across the province) has not been quite limited, it costs the province has a state with a state state with the level required for t							0.6		
Note: the data from two core farmers and two general farmers in ear province.         (Agricultural production of villagers in Sckong province)         Item / Year       2015       2016       2017       2018         Buifalo (head/household)       0.23       0.24       0.24       0.24         Cattle (head/household)       0.24       0.24       0.24       0.24         Poultry (head/household)       0.24       0.24       0.24       0.24       0.24         Note: the data from two core farmers and two general farmers in ear provinces       in consumption for villagers in stanpost completion. However, the confirmed overrage of the project client has been quite limited, it coust the confirmed overrage of the project client has been quite limited, it coust the confirmed overrage of the project clienthas been quite limited, it coust the confirmed overrage of the pro			/				30		
2. Rice, fish, and meat consumption of villagers in Secong province)         2. Rice, fish, and meat consumption of CEX-post Evaluation by villagers in three southern provinces.         2. Rice, fish, and meat consumption of CEX-post Evaluation by villagers in three southern provinces.         2. Rice, fish, and meat consumption of CEX-post Evaluation by villagers in three southern province.         2. Rice, fish, and meat consumption of CEX-post Evaluation by villagers in three southern provinces (only the target district).         villagers is increased in 4 southern         Yee, fish, and meat consumption of villagers in Champasak province (Ur gpreson/week)]         Rice, fish, and meat consumption of villagers in Selong province (Ur gpreson/week)]         Rice, fish, and meat consumption of villagers in Salawan province (Ur gpreson/week)]         Rice, fish, and meat consumption of villagers in Selong province (Ur gpreson/week)]         Rice, fish, and meat consumption of villagers in Selong province (Ur gpreson/week)]         Rice, fish, and meat consumption of villagers in Selong province (Ur gpreson/week)]         Rice, fish, and meat consumption of villagers in Selong province (Ur gpreson/week)]         Rice, fish, and meat consumption of villagers in Selong province (Ur gpreson/week)]							4		
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Coat (head/household)       1.41       1.36       1.28         Poultry (head/household)       1.8       12.2       11.8         Aquaculture (pond/household)       -       -       -         Note: the data from two core farmers and two general farmers in ea       province.         Note: the data from two core farmers and two general farmers in ea       province         1.18       1.28       -       -         1.28       The consumption by villagers in three southern provinces (only the tary district) has gradually increased since the project completion. However, reprovinces.       -       -         1.28       The consumption by villagers in three southern provinces (only the tary district) has gradually increased since the project completion. However, the confirmed coverage of the project affect has been quite limited, it cou be considered that the level required for the Overall Goal (the spread of the effect across the provinces) has not been reached.         [Rice, fish, and meat consumption of villagers in Champasak province (Ur g/person/week)]       -       -         Item / Year       2015       2016       2017       2018         Rice       3.151       3.189       3.218       3.311         Note: the data from the target district.       -       -       -       -         [Rice, fish, and meat consumption of villagers in Sekong province (Ur g/person/week)]       -       -							-		
Poultry (head/household)       11.8       12.2       11.8         Aquaculture (pond/household)       -       -       -         Note: the data from two core farmers and two general farmers in eaprovince.         2. Rice, fish, and meat consumption of (Ex-post Evaluation) Not Achieved         • The consumption of (Ex-post Evaluation) has not been resched.         provinces.         • The consumption of villagers in three southern provinces (only the tar district) has gradually increased since the project completion. However, the confirmed coverage of the project completion. However, the data from the target district.         [Rice, fish, and meat consumption of villagers in Salawan province (Ur g/person/week)]       Item / Year       2015       2016       2017       2018         [Rice fish, and meat consumption of villagers in Salawan province (Ur g/person/week)]       Item / Year       2015       2016       2017       2018							-		
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$\frac{1}{\text{ltem / Year}} \frac{2015}{2016} \frac{2016}{2017} \frac{2018}{2018}$ $\frac{1}{\text{Rice}} \frac{3,000}{3,113} \frac{3,150}{3,222}$ $\frac{1}{\text{Fish}} \frac{815}{843} \frac{857}{858}$ $\frac{1}{\text{Meat}} \frac{409}{421} \frac{440}{441}$ Note: the data from the target district. [Rice, fish, and meat consumption of villagers in Salawan province (Ur g/person/weck)] $\frac{1}{\text{Item / Year}} \frac{2015}{2016} \frac{2017}{2018} \frac{2018}{3,311}$ $\frac{1}{\text{Fish}} \frac{266}{266} \frac{267}{266} \frac{266}{266}$ $\frac{1}{\text{Meat}} \frac{450}{450} \frac{450}{500} \frac{500}{500}$ Note: the data from the target district. [Rice, fish, and meat consumption of villagers in Sekong province (Ur g/person/weck)] $\frac{1}{\text{Item / Year}} \frac{2015}{2016} \frac{2017}{2018} \frac{2018}{3,031} \frac{3,081}{3,188} \frac{3,189}{3,031} \frac{3,081}{3,081} \frac{3,188}{3,188} \frac{1}{186} \frac{1}{186} \frac{3000}{308} \frac{3023}{323} \frac{3311}{311} \frac{3}{\text{Meat}} \frac{439}{467} \frac{468}{468} \frac{466}{466}$ Note: the data from the target district. [Ex-post Evaluation) Not Achieved • The average income of villagers is increased (EX-post Evaluation) Not Achieved • The average income of the core farmers and general farmers interview by the ex-post evaluation has been in an upward trend since the project effect h been quite limited, it could be considered that the level required for t Overall Goal (the spread of the effect across the provinces) has not be reached. [Average income from agricultural activities (Unit: 1,000 Kip/household)] Province / Year 2015 2016 2017 2018 Champasak 225.4 196.7 230 236.			neat consumptio	n of villager	s in Cham	pasak prov	vince (Unit:		
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Note: the data from the target district.         [Rice, fish, and meat consumption of villagers in Salawan province (Ur g/person/week)]         Item / Year       2015       2016       2017       2018         Rice       3,151       3,189       3,218       3,315         Fish       266       266       266         Meat       450       450       500       500         Note: the data from the target district.       [Rice, fish, and meat consumption of villagers in Sekong province (Ur g/person/week)]         Item / Year       2015       2016       2017       2018         Rice       3,038       3,031       3,081       3,184         Rice       2,015       2016       2017       2018         Note: the data from the target district.       16x-post Evaluation Not Achieved       16x-post Evaluation Not Achieved         3. Average income of villagers is increased       (Ex-post Evaluation Not Achieved       16x evrage income of the core farmers and ge		Fish	815	843		857	889		
Rice, fish, and meat consumption of villagers in Salawan province (Urg/person/week)]         Item / Year       2015       2016       2017       2018         Rice       3,151       3,189       3,218       3,311         Fish       266       267       266       266         Meat       450       450       500       500         Note: the data from the target district.       [Rice, fish, and meat consumption of villagers in Sekong province (Urg/person/week)]         Item / Year       2015       2016       2017       2018         Rice       3,038       3,031       3,081       3,184         Fish       300       308       323       312         Meat       439       467       468       464         Note: the data from the target district.       [Ex-post Evaluation) Not Achieved       The average income of the core farmers and general farmers interview by the ex-post evaluation has been in an upward trend since the project effect h been quite limited, it could be considered that the level required for to Overall Goal (the spread of the effect across the provinces) has not be reached.         [Average income from agricultural activities (Unit: 1,000 Kip/household)]       Province / Year       2015       2016       2017       2018         Province / Year       2015       2016       2017       2018			010	045		037	00)		
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g/person/week)]       Item / Year       2015       2016       2017       2018         Rice       3,151       3,189       3,218       3,311         Fish       266       267       266       266         Meat       450       450       500       500         Note: the data from the target district.       [Rice, fish, and meat consumption of villagers in Sekong province (Ur g/person/week)]         Item / Year       2015       2016       2017       2018         Rice       3,038       3,031       3,081       3,184         Fish       300       308       32.3       311         Meat       439       467       468       466         Note: the data from the target district.       (Ex-post Evaluation) Not Achieved       • The average income of the core farmers and general farmers interview by the ex-post evaluation has been in an upward trend since the projc completion. However, as the confirmed coverage of the project effect he been quite limited, it could be considered that the level required for t Overall Goal (the spread of the effect across the provinces) has not be reached.         [Average income from agricultural activities (Unit: 1,000 Kip/household)]       Province / Year       2015       2016       2017       2018         [Aherage income from agricultural activities (Unit: 1,000 Kip/household)]       Province / Year       2015			409	421					
Item / Year       2015       2016       2017       2018         Rice       3,151       3,189       3,218       3,311         Fish       266       267       266       266         Meat       450       450       500       500         Note: the data from the target district.       [Rice, fish, and meat consumption of villagers in Sekong province (Ur g/person/week)]         Item / Year       2015       2016       2017       2018         Rice       3,038       3,031       3,081       3,180         Fish       300       308       3223       312         Meat       439       467       468       466         Note: the data from the target district.       [Ex-post Evaluation) Not Achieved       •       •         3. Average income of villagers is increased       (Ex-post Evaluation has been in an upward trend since the proje completion. However, as the confirmed coverage of the project effect heen quite limited, it could be considered that the level required for t Overall Goal (the spread of the effect across the provinces) has not be reached.         [Average income from agricultural activities (Unit: 1,000 Kip/household)]       Province / Year       2015       2016       2017       2018         Champasak       225.4       196.7       230       236.       236. <th></th> <th>Note: the data fro</th> <th>409 om the target dist</th> <th>421 trict.</th> <th> 1</th> <th>440</th> <th>448</th>		Note: the data fro	409 om the target dist	421 trict.	1	440	448		
Rice       3,151       3,189       3,218       3,313         Fish       266       267       266       269         Meat       450       450       500       500         Note: the data from the target district.       [Rice, fish, and meat consumption of villagers in Sekong province (Urg/person/week)]         Item / Year       2015       2016       2017       2018         Rice       3,038       3,031       3,081       3,180         Fish       300       308       323       312         Meat       439       467       468       460         Note: the data from the target district.       [Ex-post Evaluation) Not Achieved       •       The average income of the core farmers and general farmers interview by the ex-post evaluation has been in an upward trend since the projecompletion. However, as the confirmed coverage of the project effect he been quite limited, it could be considered that the level required for to Overall Goal (the spread of the effect across the provinces) has not be reached.       [Average income from agricultural activities (Unit: 1,000 Kip/household)]         Province / Year       2015       2016       2017       2018         Champasak       225.4       196.7       230       236.		Note: the data fro [Rice, fish, and	409 om the target dist	421 trict.	ers in Sala	440	448		
Fish       266       267       266       267         Meat       450       450       500       500         Note: the data from the target district.       [Rice, fish, and meat consumption of villagers in Sekong province (Ur g/person/week)]         Item / Year       2015       2016       2017       2018         Rice       3,038       3,031       3,081       3,184         Fish       300       308       3223       312         Meat       439       467       468       464         Note: the data from the target district.       (Ex-post Evaluation) Not Achieved       •       •         3. Average income of villagers is increased       (Ex-post Evaluation) Not Achieved       •       •       The average income of the core farmers and general farmers interview by the ex-post evaluation has been in an upward trend since the projece ompleton. However, as the confirmed coverage of the project effect he been quite limited, it could be considered that the level required for to Overall Goal (the spread of the effect across the provinces) has not be reached.         [Average income from agricultural activities (Unit: 1,000 Kip/household)]       Province / Year       2015       2016       2017       2018         [Champasak       225.4       196.7       230       236.		Note: the data fro [Rice, fish, and g/person/week)]	409 om the target dist meat consumpti	421 trict. ion of villag		440 awan prov	448 ince (Unit:		
Meat       450       450       500       500         Note: the data from the target district.       [Rice, fish, and meat consumption of villagers in Sekong province (Ur g/person/week)]         Item / Year       2015       2016       2017       2018         Rice       3,038       3,031       3,081       3,180         Fish       300       308       323       312         Meat       439       467       468       468         Note: the data from the target district.       [Ex-post Evaluation) Not Achieved       • The average income of the core farmers and general farmers interview by the ex-post evaluation has been in an upward trend since the project completion. However, as the confirmed coverage of the project effect h been quite limited, it could be considered that the level required for t Overall Goal (the spread of the effect across the provinces) has not be reached.         [Average income from agricultural activities (Unit: 1,000 Kip/household)]       Province / Year       2015       2016       2017       2018         [Average income from agricultural activities (Unit: 1,000 Kip/household)]       Province / Year       2015       2016       2017       2018		Note: the data fro [Rice, fish, and g/person/week)] Item / Year	409       om the target dist       meat consumpti       2015	421 trict. ton of villag	2017	440 awan prov 7	448 ince (Unit: 2018		
Note: the data from the target district.         Rice, fish, and meat consumption of villagers in Sekong province (Ur g/person/week)]         Item / Year       2015       2016       2017       2018         Rice       3,038       3,031       3,081       3,184         Fish       300       308       323       311         Meat       439       467       468       460         Note: the data from the target district.       (Ex-post Evaluation) Not Achieved       • The average income of the core farmers and general farmers interview by the ex-post evaluation has been in an upward trend since the projec completion. However, as the confirmed coverage of the project effect heen quite limited, it could be considered that the level required for t Overall Goal (the spread of the effect across the provinces) has not be reached.         [Average income from agricultural activities (Unit: 1,000 Kip/household)]       Province / Year       2015       2016       2017       2018         Champasak       225.4       196.7       230       236.		Note: the data fro [Rice, fish, and g/person/week)] Item / Year Rice	409       om the target dist       meat consumpti       2015       3,151	421 trict. 2016 3,189	2017	440 awan prov 7 ,218	448 ince (Unit: 2018 3,313		
[Rice, fish, and meat consumption of villagers in Sekong province (Ur g/person/week)]         Item / Year       2015       2016       2017       2018         Rice       3,038       3,031       3,081       3,180         Fish       300       308       323       312         Meat       439       467       468       460         Note: the data from the target district.       (Ex-post Evaluation) Not Achieved       1       1         3. Average income of villagers is increased in 4 southern provinces.       (Ex-post Evaluation) Not Achieved       1       1         4 southern provinces.       • The average income of the core farmers and general farmers interview by the ex-post evaluation has been in an upward trend since the projec ompletion. However, as the confirmed coverage of the project effect heen quite limited, it could be considered that the level required for to Overall Goal (the spread of the effect across the provinces) has not be reached.         [Average income from agricultural activities (Unit: 1,000 Kip/household)]       Province / Year       2015       2016       2017       2018         [Average income from agricultural activities (Unit: 1,000 Kip/household)]       Province / Year       2015       2016       2017       2018		Note: the data fro [Rice, fish, and g/person/week)] Item / Year Rice Fish	409           om the target dist           meat consumpti           2015           3,151           266	421 trict. 2016 3,189 267	2017	440 awan prov 7 ,218 266	448 ince (Unit: 2018 3,313 269		
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Rice       3,038       3,031       3,081       3,180         Fish       300       308       323       312         Meat       439       467       468       466         Note: the data from the target district.       6       300       308       323       312         Meat       439       467       468       466         Note: the data from the target district.       6       6       6         3. Average income of villagers is increased       (Ex-post Evaluation) Not Achieved       7       7       6         3. Average income of villagers is increased       (Ex-post Evaluation) Not Achieved       7       7       6       6         10. The average income of the core farmers and general farmers interview by the ex-post evaluation has been in an upward trend since the projec completion. However, as the confirmed coverage of the project effect h been quite limited, it could be considered that the level required for t Overall Goal (the spread of the effect across the provinces) has not be reached.         [Average income from agricultural activities (Unit: 1,000 Kip/household)]         Province / Year       2015       2016       2017       2018         Champasak       225.4       196.7       230       236.2		Note: the data fro [Rice, fish, and g/person/week)] Item / Year Rice Fish Meat Note: the data fro [Rice, fish, and	409       om the target dist       meat consumpti       2015       3,151       266       450       om the target dist       meat consumpti	421 trict. 2016 3,189 267 450 trict.	2017	440           awan prov           7           ,218           266           500	448 ince (Unit: 2018 3,313 269 500		
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Meat       439       467       468       466         Note: the data from the target district.       .		Note: the data fro [Rice, fish, and g/person/week)] Item / Year Rice Fish Meat Note: the data fro [Rice, fish, and g/person/week)] Item / Year	409       om the target dist       meat consumpti       2015       3,151       266       450       om the target dist       meat consumpti       2015	421 trict. 2016 3,189 267 450 trict. ion of villag 2016	2017 3 gers in Sel 2017	440           awan prov           7           ,218           266           500           kong prov           7	448 ince (Unit: 2018 3,313 269 500 ince (Unit: 2018		
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Source : Terminal Evaluation Report, Interview and questionnaire with PAFOs, DAFOs and 12 core farmers (two core farmers and two general farmers per province)

3 Efficiency

The project cost and period were within the plan (ratio against the plan: 95% and 100%, respectively). The outputs were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

The "8th Five-Year Agriculture and Forestry Development Plan" (2016-2020) promotes the development and production of livestock and aquaculture. As the project aimed at introducing and disseminating the appropriate technologies such as livestock and aquaculture across the four southern provinces, the project has been backed up by the national policies. <Institutional Aspect>

There have not been any major changes in the organizational setting for the dissemination of the appropriate technologies introduced by the project.

#### [National level]

DLF of MAF has been responsible for establishing national strategies and plants to regulate or disseminate livestock and aquaculture in addition to the supervision and support to officers of provincial and district offices to outreach the extension service of the appropriate technologies to farmers. 60 staff members have been allocated there, and according to DLF, the number of the staff has been sufficient as they have fulfilled their responsibilities without any major problems.

# [Provincial level]

PAFO has played a role in implementing the strategies and plans established by DFL and guiding DAFO for the extension services of the appropriate technologies. 10 staff members have been allocated there, and according to PAFO in all the target provinces, the number of the staff has been enough as they have performed their roles without any major problems. [District level]

DAFO has been in charge of providing the extension services of the appropriate technologies to farmers. An office in each district has 25 staff members. According to DAFOs visited for this ex-post evaluation, there have been a lack of the staff, depending on offices, due to a quota system. Therefore, they have undertaken the extension activities within their limitation of human resources, and a recruitment of new staff is under consideration.

TSC has taken a responsibility for transferring the technical knowledge and skill to adopt the appropriate technologies to farmers. According to MAF, TSC has been placed within DAFO and fulfilled the responsibility without any major problems. [Village level]

The revolving system introduced by the project has been sustained even after the project. Committees for the revolving system have strongly functioned, and a series of cycles that core famers hand over livestock to other farmers has been implemented without any major problems.

# <Technical Aspect>

[National, provincial, and district levels]

The staff members of DLF and PAFOs and DAFOs in the three target provinces of Champasak, Salawan and Sekong have sustained the necessary knowledge and skills for the dissemination of the appropriate technologies. This is because MAF organizes refresher trainings on agriculture and livestock twice a year, and 30-50 technical staff members from the organizations participate in the trainings.

The staff members of TSC have also sustained the necessary knowledge and skills for the dissemination of the appropriate technologies. International non-governmental organization and other donors like the World Bank and International Fund for Agricultural Development provide refresher trainings to the members and core farmers about agriculture, livestock, aquaculture and fishery. [Guideline and manual]

As mentioned above, LIPS Implementation Guideline for Expansion Stage developed by the project has continued to be utilized by DAFO. For example, an international non-governmental organization invited DAFO staff to train their targeted farmers about how to select the best core farmers by using the guideline.

Furthermore, all of the manuals for extension staff and core farmers developed by the project, such as manual on indigenous cattle raising, manual on goat raising, and manual on indigenous pig raising, have bee continuously utilized. According to staff of DAFOs in the target provinces, the reason for the use is because the appropriate technologies introduced by the project take into account of local context and this leads to farmers' income generation.

# <Financial Aspect>

[National level]

The budget for the dissemination of the appropriate technologies introduced by the project has been continuously allocated to DLF since the project completion. According to DLF, the budget has been sufficient to perform the role given. However, the overall budget of DLF has been reduced since the project completion due to more budget allocation to other governmental agencies to take measures against natural disasters. Although the trend is expected to continue, the minimal amount of budget for the implementation of livestock and aquaculture activities will be continuously allocated.

Budget for	Dissemination	Activities
	(11	

(Unit: Million Kip)					
2016	2017	2018	2019 (plan)		
800,000	770,000	530,000	229,000		
200	200	200	200		
200	200	180	260		
80	90	105	110		
	800,000 200 200	2016         2017           800,000         770,000           200         200           200         200	201620172018800,000770,000530,000200200200200200180		

# [Provincial level]

Note: The budget of DLF is the total budget for capacity enhancement of its staff.

The budget for the dissemination of the appropriate technologies has continued to be allocated to PAFOs since the project completion. However, the allocation has been smaller than the requirements due to the limitation of budget, which has constrained the implementation of the dissemination activities, but the minimal amount of budget for the extension activities will be continuously secured. <Evaluation Result>

In light of the above, slight problems have been observed in terms of the institutional and financial aspects of the implementing agency. Therefore, the sustainability of effects of the project is fair.

#### 5 Summary of the Evaluation

The project achieved the Project Purpose aiming at the improvement of villagers' livelihood in the target clusters through extension of appropriate technology. As the core farmers trained by the project has continued to use the appropriate technologies introduced by the project and disseminated them to their relatives and surrounding farmers, there are some villages whose income has increased. However, the dissemination of the technologies has been limited, and the Overall Goal which aimed at improving villagers' livelihood in the 4 southern provinces has not been achieved. As for sustainability, the number of personnel at a district level has been lacked, the overall budget of DLF has been in a downward trend, and the budget for the extension activity at a field level has been limited. However, it was also confirmed that the sufficient number of staff has been allocated to many organizations and the minimum budgets for the activities which each organization is obliged to undertake have been secured.

Considering all of the above points, this project is evaluated to be satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- In order to enhance the sustainability of the project, the following recommendations are proposed.
- PAFOs and DAFOs secure their budget for their extension activities by requesting additional budgets to the central government.
   PAFOs, DAFOs, and TSCs set an annual goal for the extension activities within the allocated budget and implement the activities along with the goal.
- Lessons Learned for JICA:
- The technologies introduced by the project are appropriate to local contexts and farmers' needs, and the average income of farmers introducing the technologies has increased. In light of this, where projects introducing any technologies into locals are formulated and/or planned, in order to maximize their effects, it would be better to carefully study local contexts and consider how to apply them to the projects at the stage of project formulation and/or planning.
- Since the project completion, the technologies introduced by the project have been disseminated from target farmers to non-target farmers and areas, but its coverage has been limited due to personnel and budget constraints of government organizations at this moment. In order to sustain and expand the project effects, it is necessary to prepare an action plan by discussing with counterparts and farmers how to disseminate the technologies to other farmers and areas through farmer-to-farmer trainings after training core farmers. Therefore, at the stage of project implementation, it would be better to undertake the extension activities and discuss actions to continue the activities after the project completion through discussion and agreement with counterparts.



Core Farmer Raising Poultry in Thateng district, Sekong province



Pig Raising in Mulapamok district, Champasack province

Country Name	Project for Sustainable Development of Human Resources for Health to Improve
Lao People's Democratic	Maternal, Neonatal and Child Health Services
Republic	Matchina, Technical and Chind Health Services

# I. Project Outline

Background	In Lao P.D.R., despite a considerable progress in improving the health of its population, the maternal mortality rate was at 580 per 100,000 live births and the under 5 mortality rate was 61 per 1,000 live births in 2011, which were the highest among the South East Asian countries. Moreover, in 2009, the number of health workers (medical doctors, nurses and midwives with middle and high-level professional education) was 3,385 equal to 0.53 health workers per 1,000 populations, which was significantly lower than the Global Health Workforce Alliance's minimum recommended threshold of 2.3 health workers per 1,000 populations. The quality of health services was another challenge. Nursing and midwifery schools of universities and colleges in the country did not have unified curriculums, and national examinations have not been conducted. As a result, quality of health services was not standardized or equitable.				
Objectives of the Project	<ul> <li>Through the development of standard systems for nursing education, strengthening of the capacities of training institutions to implement quality educational programs, and strengthening of the coordination among relevant departments and organizations to improve the educational systems, the project aimed at the reinforcement of systems to develop human resources for health in order to provide standard and quality services, thereby contributing to the development of qualified human resources for health to improve maternal, neonatal, and child health (MNCH) services.</li> <li>1. Overall Goal: Qualified human resources for health are developed to improve MNCH services.</li> <li>2. Project Purpose: Systems to develop human resources for health are reinforced to provide standard and quality services based on the concept of CHIPU (Complex Hospital, Institute, Project and University)*</li> <li>* The concept to promote development of human resources for health through partnership among schools, hospitals, and</li> </ul>				
Activities of the Project	<ul> <li>the MOH and development partners.</li> <li>Project Site: sites where the University of Health Science (UHS), Colleges of Heath Science (CHSs) and Public Health Schools (PHSs) as well as 17 teaching hospitals located in Vientiane and seven provinces of Champasak, Luang Prabang, Savannakhet, Xiangkhoang, Khammouan, Oudmxai, Salavan</li> <li>Main Activities: <ol> <li>development and/or institutionalization of the standard systems for nursing education,</li> <li>strengthening of the capacities of training institutions to implement quality educational programs,</li> <li>strengthening of the good coordination among relevant departments and organizations to effectively improve the educational systems.</li> </ol> </li> <li>Inputs (to carry out above activities) <ul> <li>Japanese Side</li> <li>Experts: 13 persons.</li> <li>Staff Allocated: 6 persons</li> <li>Traines received in Japan: 22 persons</li> <li>Land and Facilities: project office</li> <li>Training in the third country: 57 persons (50 to Thailand, 1 to China, 6 to Indonesia)</li> <li>Equipment: PCs, copiers, printers, projectors, office furniture, etc.</li> </ul> </li> </ul>				
Project Period	February 2012 - February 2016Project Cost(ex-ante) 350 million yen, (actual) 236 million yen				
Implementing Agency	Department of Health Professional Education (DHPE) and the Department of Health Care and Rehabilitation (DHR) of Ministry of Health (MOH) (Former Department of Training and Research (DTR) and Department of Health Care (DHC) of Ministry of Health (MOH) reorganized in 2019 and 2018 respectively)				
Cooperation Agency in Japan	Ministry of Health, Labor and Welfare, National Center for Global Health and Medicine, National College of Nursing, Japan				

# **II. Result of the Evaluation**

1 Relevance

<Consistency with the Development Policy of Laos at the Time of Ex-Ante Evaluation>

The government of Laos formulated the "Health Personnel Development Strategy by 2020" in 2010 and the "7th National Health Sector Development Plan (NHSDP) 2011-2015" in 2011 both of which elaborated the needs of human recourse development for health through collaboration and partnership among schools, hospitals and MOH. Improvement of the quality of health services to the level of ASEAN countries by improving health system was also emphasized in the 7<sup>th</sup> NHSDP. Therefore, the project was consistent with the development policies of Laos at the time of ex-ante evaluation.

<Consistency with the Development Needs of Laos at the Time of Ex-Ante Evaluation>

Under the heath strategy and plan stated above, the Human Resources for Health Technical Working Group (HRH-TWG) was formulated in order to enhance quantitative and qualitative capacities of training institutions for health. However, the educational functions, technical level, and management capacities of the training institutions for human resources for health were still insufficient, and operations of the programs and strategies implemented by the institutions were not exactly the kind of effective and efficient ones. Besides, in relation to preparatory arrangement for integration into ASEAN Economic Community by the end of 2015, MOH was required to develop the national licensing system. Therefore, the project was consistent with the development needs of Laos at the time of ex-ante evaluation. <Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

In the "Country Assistance Program for Lao PDR" (September 2006) by the government of Japan, improvement of healthcare services (improving maternal and child health services, developing human resources and institution building related to the field of healthcare, raising the capacity for health management of local communities) was raised as one of the six priority areas of Japan's assistance policies for Lao PDR. Therefore, the project was consistent with the Japan's ODA policy for Laos at the time of ex-ante evaluation. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved at the time of project completion. The management tools<sup>1</sup> were introduced to all the target schools of UHS, CHSs and PHSs<sup>2</sup>. As for the target hospitals, although the dissemination workshop was held in Mahosot Hospital inviting the staff from other target hospitals, follow-up activities were still needed to institutionalize practical applications of the tools in the hospitals (Indicator 1). The competency-based curriculum was introduced in the CHSs and the Vientiane Nursing School in 2014 and in UHS and PHSs in 2015 (Indicator 2). The "Strategy on Health Care Professional Licensing and Registration in Lao P.D.R. 2016-2025" was submitted and approved by MOH and issued as the ministerial ordinance No. 2098 in December 2015 (Indicator 3).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued at the time of ex-post evaluation. The management tools have been introduced to and practically applied in all the 17 target hospitals by the end of 2016. The tools have not only been continuously utilized in the target schools and hospitals but also been further disseminated through the meetings of teachers and hospital staff and introduced in the classes of nursing management and nursing ethics. The competency-based nursing has continuously been the basis of nursing education in the target schools. The textbooks of competency-based nursing developed by the project have been the main textbooks in the schools. The national license examination has not yet started but is planned to start in December 2020. In accordance with the ministerial ordinance No. 2098, the preparation for conducting the national examination has been steadily progressing including the implementation of a pilot examination by MOH in 2019.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has not been achieved at the time of ex-post evaluation. Since the national licensing examination has not yet started at the time of ex-post evaluation but is planned to be conducted at the end of December 2020, the number of human resources for health who have licenses has not increased. The national licensing examination was planned to be conducted at the end of December 2020 because its target year was set in 2016-2020 by the "Strategy on Health Care Professional Licensing and Registration in Lao P.D.R. 2016-2025" prepared by the project.

<Other Impacts at the time of Ex-post Evaluation>

According to the interviews with the Head of Nursing Division of Mahosot Hospital and the staff of some provincial hospitals, the quality of nursing documentation is the base of nursing practice, and the documentation improved by the project has reduced the work burden of nurses. No negative impact on natural, social and economic environment has been observed at the time of ex-post evaluation. <Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Aim	Indicators	Results
Project Purpose:	Indicator 1:	Status of the Achievement: Partially achieved (continued)
Systems to develop	Management tools to put "competency" and	(Project Completion)
human resources for	"scope of nursing practices" into practice	The management tools were introduced to all the target schools of UHS, 3
health are reinforced to	are disseminated to all the target schools	CHSs and 5 PHSs. As for the target hospitals, although the dissemination
provide standard and	and hospitals.	workshop was held in 2015 in Mahosot Hospital inviting the staff from other
quality services based on		16 target hospitals, follow-up activities were still needed to institutionalize
the concept of CHIPU		practical applications of the tools in the hospitals.
(Complex Hospital		(Ex-post Evaluation)
Institute Project		The management tools have been introduced to and practically applied in all
University).		the 17 target hospitals by the end of 2016. The tools have not only been
		continuously utilized in the target schools and hospitals but also further
		disseminated through the meetings of teachers and hospital staffs and
		introduced in the classes of nursing management and nursing ethics in the
		target schools.
	Indicator 2:	Status of the Achievement: Achieved (continued)
	Competency-based nursing education is	(Project Completion)
	started in UHS, 3CHS, and their teaching	The competency-based curriculum was introduced in 3 CHSs and their
	hospitals.	teaching hospitals and Vientiane Nursing School in 2014 and in UHS and 5
		PHSs and their teaching hospitals in 2015.
		(Ex-post Evaluation)
		Theory and demonstrations of the competency-based nursing has been

#### Achievement of Project Purpose and Overall Goal

<sup>&</sup>lt;sup>1</sup> Management tools developed by the project were ordering forms, patients' assessment sheet, nursing care sheet, checklist for nursing records, standards of nursing care, nursing care manual, supportive supervision checklist, etc.

<sup>&</sup>lt;sup>2</sup> Target institutions were UHS, 3 CHSs, 5 PHSs, 5 central hospitals, and 12 provincial hospitals.

		continuously introduced in UHS and 3 CHSs and their teaching hospitals
		The textbooks of competency-based nursing have been the main textbooks i
		the schools.
	Indicator 3:	
		Status of the Achievement: Achieved (continued)
	The framework of the national licensing	(Project Completion)
	system including national examination for	The "Strategy on Health Care Professional Licensing and Registration in La
	nurses is submitted for approval.	P.D.R. 2016-2025" prepared by the project was submitted and approved b
		MOH and issued as the ministerial ordinance No.2098 in December 2013
		The dissemination workshop for the strategy was held in February 201
		inviting more than 150 stakeholders from central and provincia
		organizations, hospitals, educational institutions, etc.
		(Ex-post Evaluation)
		The pilot examination for the national licensing examination wa
		implemented by MOH in 2019. The first official examination is planned to b
		conducted in December 2020.
Overall Goal:	Increase of the number of human resources	(Ex-post Evaluation) Not achieved
Qualified human	for health who have licenses.	Since the national licensing examination has not yet started at the time
resources for health are		ex-post evaluation but is planned to be conducted at the end of December
developed to improve		2020, the number of human resources for health who have licenses has n
MNCH Services.		increased. The national licensing examination was planned to be conducted
WINCH SCIVICES.		the end of December 2020 because its target year was set in 2016-2020 because its target year was set in 2016-2020 because the "Strategy on Health Care Professional Licensing and Registration in La
		P.D.R. 2016-2025" prepared by the project.
Source: Project Completi	on Report (2016) interviews with the manager	rs of UHS, CHSs, PHSs, central hospitals, and provincial hospitals.

#### 3 Efficiency

Both of the project cost and period were within the plan (ratio against the plan was 67% and 100% respectively). The outputs were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

The government of Laos launched the "Health Sector Reform Strategy and Framework 2013-2025" and provided a road map to achieve a resilient health systems and universal health coverage (UHC)<sup>3</sup>. The reform framework's priority areas include development of human resources for health along with health financing, health governace, health service delivery, and health information systems. In association with the development of human resources for health, the reform framework specifies legal and regulatory arrangements and procedures for licensing and registration of human resources for health including nurses and midiwives.

<Institutional/Organizational Aspect> In line with the "Strategy on Health Care Professional Licensing and Registration in Lao P.D.R. 2016-2025" prepared by the project, the

Health Professional Council was organized in December 2017 as a secretariat office for national license examinations for nurses and midwives. Besides, DTR and DHC have been reorganized in 2019 and 2018 respectively to exercise more flexible and efficient management of health professional education and healthcare aiming at the achievement of UHC by 2025. On the other hand, according to interviews with the managers, teachers and trainers of the schools and hospitals involved in the project, the number of staff, especially high-level professional staff including teachers and instructors, has not been sufficient. For example, one teacher teaches 5 to 6 subjects to 30 to 50 students in a school, and one clinical trainer takes care of more than 20 students in a hospital. These are in excessive numbers for health education composed of considerable volume of hands-on practices.

<Technical Aspect>

Management tools developed by the project have not only been continuously used in the target schools and hospitals for their works but also introduced in the classes of nursing management, nursing ethics and other related programs. Competency-based nursing materialized by the project has been the basis of nursing education in the target schools and hospitals, and the competency-based curriculum, syllabus and textbooks prepared by the project have been continuously utilized since their authorization by MOH in 2015. According to the regulation of the Ministry of Education and Sport to update curricula every 5 years, the curricula and teaching materials prepared by the project are planned to be updated and improved in 2020 with the financial support from JICA and the United Nations Population Fund (UNFPA). The quality of nursing education in the target schools and hospitals has been maintained through the regular evaluation and guidance made by the supportive supervision introduced by the project. The supportive supervision has been managed by the nursing education committee formulated by the project composed of the teachers of UHS, CHSs and hospitals. Adding to the committee, the Healthcare Professionals Council and the Nursing Board and Midwifery established by MOH has been assisting the supportive supervision to be functional.

<Financial Aspect>

Although the budget for nursing education has been allocated by MOH, the amount of budget has not been stable and sufficient. MOH has been financially supported by a number of development partners. However, the budget for nursing education has been suppressed because a significant part of the fund goes to higher priority areas such as disease control and nutrition support. <Evaluation Result>

In light of the above, slight problems have been observed in terms of the institutional/organizational and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

The Project Purpose was achieved by disseminating the management tools and introducing the competency-based nursing education to

<sup>&</sup>lt;sup>3</sup> Universal health coverage means that all people have access to the health services they need, when and where they need them, without financial hardship. (Source: WHO)

all the target schools and one of the target hospitals. The Overall Goal was not achieved because the national licensing examination for nurses and midwives has not started yet and the number of human resources for health who have licenses has not increased. As for sustainability, the institutional setup has been prepared for the national licensing examination, and the systems, tools and materials developed by the project have been continuously utilized and disseminated. However, limited human and financial resources have remained as issues. Considering all of the above points, this project is evaluated to be satisfactory.

# III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- In order to achieve the Overall Goal of the project by increasing the number of nurses and midwives who have licenses, it is recommended that MOH will make sure to start the national license examination system in December 2020 as planned.
- An allocation of sufficient number of professional staff to the schools and hospitals has been continuously recommended by the terminal evaluation (2015) and the project completion report (2016). It is recommended that MOH takes whatever possible actions to increase the number of staff in order to fill the gaps in staffing.
- Lessons Learned for JICA:
- The project has made significant contributions to the improvement of human resource development systems for health in Lao P.D.R. only leaving staffing shortages and financial constraints as issues for the sustainability of the project effects. Limited human and financial resources can be drawbacks to success of an ODA project particularly of sustainability of project effects. Although staffing and financing are out of the scope of a project in many cases, it is recommended that a project includes possible tactics in its plan to improve staffing and financing of the counterpart agency and to mitigate negative effects on the project by the staffing and financing issues. For that, it is strongly recommended to make a detail study on the staffing and financing situation of the counterpart agency at the initiation stage of a project. When any issues are expected to come up during the project period, it is recommended that the project finds specific countermeasures discussing with the implementing agency and execute them on the initiative of the implementing agency. Moreover, if it is necessary and possible, a support by other scheme such as a policy advisor or a technical cooperation project for governance improvement could be one of the measures to deal with the issues.
- The Overall Goal of the project aimed at "the increase of human resources who have licenses" through the implementation of a national licensing examination. However, the strategic plan prepared by the project aimed at "the implementation of a national licensing examination" as its final target. The final target (overall goal) of the project and the final target of the operational strategy of the implementing agency were thus inconsistent. Therefore, while the final operational target of the implementing agency has been achieved after the project, the overall goal of the project has not been achieved. To prevent this sort of situation takes place, it is required to explicitly state a target year of each project objective (overall goal, project purpose, output), and to carefully make related plans to be consistent with each other and with the project plan.



Midwives training in the competency-based curriculum



Competency-based curriculum

Country Name		Project for the Capacity Development of Business Persons through Laos-Japan Human Resource				
Lao People's Demo Republic	cratic	Development Institute	velopment of Bu	siness Persons through Laos-Japan Human Resource		
I. Project Outline						
Background	Lao P.I Howev populat rapid in based-e nationa has dev leading integral urgently anticipa	D.R. pursued the market-orien er, hardships were anticipated a tion density, insufficient infrastr acrease in young workforce as we economy. Facing those issues, al challenge. Under the circumsta- veloped business activities with a role in human resource devel- tion with the Association of Sou y required for producing highly ated.	ted economic re- ahead with constr- cucture developm rell as human resc development of ances, the Laos-Ja the support of the opment for busin utheast Asian Na- qualified busines	Economic Mechanism (NEM) in 1986, the government of eform and made considerable progress in its economy, raints such as an inland country, small population, sparse ent, and high demands for employment creation due to a purce development with professional knowledge of market human resource in the private sector was a significant apan Human Resource Development Institute (LJI), which e Japanese government since 2001, was expected to play a ness world. In addition, in preparation for the scheduled tions (ASEAN) in 2015, further strengthening of LJI was as persons who were able to handle various business issues		
Objectives of the Project	<ul> <li>Through developing the capacity of the staff of LJI, the project aimed at strengthening the role and function of LJI as the center to develop highly qualified business persons in Laos, thereby contributing to continuou education for business persons who can deal with the ASEAN integration.</li> <li>1. Overall Goal: Business persons who can deal with the ASEAN integration are continuously educated throug LJI.</li> <li>2. Project Purpose: The role and the functions of LJI as the center of developing highly qualified business persons are strengthened.</li> </ul>					
Activities of the Project	1.         Prospective           2.         Ma           2.         Ma           1)         2)           3.         Inp           Japanes         1)           2.         E:           96         3.           3.         Inp           4.         Tr           4.         Tr           5.         Ed	oject Site: Vientiane Capital and ecified except Savannakhet prov ain Activities: development of the capacity of independently, development of the capacity of practical business knowledge making LJI a hub of the busin development of the capacity of puts (to carry out above activitie	vince) of LJI staff to be and know-how, ness network, of LJI staff to be es) country: 2 rsons ersons	<ul> <li>including Savannakhet province (other provinces were not</li> <li>able to conduct field surveys and consultations</li> <li>able to manage business courses that can provide</li> <li>able to manage the Institute on their own.</li> <li>Lao Side <ol> <li>Staff Allocated: 32 persons</li> <li>Land and Facilities: land and facilities for LJI</li> <li>Local cost: cost for utility of facilities (electricity, water, communication, etc.)</li> </ol> </li> </ul>		
Project Period		ber 2010 - August 2014	Project Cost	(ex-ante) 450 million yen, (actual) 476 million yen		
Implementing Agency	Laos-Ja	apan Human Resource Develop	ment Institute (L.	П)		
Cooperation Agency in Japan	The Jap	The Japan Foundation, Panasonic Excel International Co., Ltd.				

# **II. Result of the Evaluation**

<Special Perspectives Considered in the Ex-Post Evaluation>

• The continuation status of the Indicator 4 for the Project Purpose at the time of ex-post evaluation was evaluated as a part of the achievement status of the Overall Goal.

# 1 Relevance

<Consistency with the Development Policy of Laos at the Time of Ex-Ante Evaluation>

By formulating the "National Growth and Poverty Eradication Strategy" (2004) and "6<sup>th</sup> Five-Year National Socio-economic Development Plan 2006-2010," the government of Lao P.D.R. placed an aim of "bringing the country out of the least developed country list of the United Nations by 2020" on the top priority target. In line with this policy, the development of private sector was regarded indispensable for economic growth of the country and tax revenue increase for the government. Besides, promotion of small and medium enterprises and strengthening of private sector human resource development were defined as significant issues for the sake of job creation for increasing young working population, poverty reduction, and for social stability. Therefore, the project was consistent with the development policies of Laos at the time of ex-ante evaluation.

<Consistency with the Development Needs of Laos at the Time of Ex-Ante Evaluation>

In recognition of its achievements for the past ten years, the Laos-Japan Human Resource Cooperation Center (LJC) was upgraded in

May 2010 to be LJI, an undergraduate level institute. Consequently, LJI has been entitled to confer degrees and have additional staff. Commensurately with these authority and privilege, LJI was required to strengthen its institutional capacity to produce high quality business persons. Therefore, the project was consistent with the development needs of Laos at the time of ex-ante evaluation. <Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The basic policy defined in the Japan's "Country Assistance Program for Lao PDR" (September 2006) was to support the self-help efforts by Laos towards realizing voluntary, independent, and sustainable economic growth, with a view to integration into the global and regional economies. One of the six priority areas for attaining this goal was the institution building and human resources development for enhancing the private sector (improving the environment to facilitate investment and exports, developing human resources in order to enhance the private sector). Therefore, the project was consistent with the Japan's ODA policy for Laos at the time of ex-ante evaluation. <Evaluation Result>

In light of the above, the relevance of the project is high.

#### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved at the time of project completion. LJI's mid-term business plan was prepared in 2014 in line with the 5-year plan (2011-2015) of the National University of Laos (NUOL), and LJI's fiscal year (FY) 2014 annual plan was made in alignment with the mid-term business plan (Indicator 1). The rate of expenditure covered by LJI constantly increased and reached at 80.9% at the time of project completion in August 2014 (Indicator 2). The average satisfaction rate of the graduates of the Master of Business Administration (MBA) programs from 2010 to 2014 was 89.0%. Although no quantitative data were available, all the employers surveyed by the project in 2014 evaluated the MBA courses high (Indicator 3). The total number of graduates for four years of the project period was 1,336 as of July 2014 (Indicator 4). By the time of project completion, LJI has exchanged five MOUs (memorandum of understanding) with organizations at home and abroad and developed networks with many other public and private organizations (Indicator 5). <<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued at the time of ex-post evaluation. The mid-term plan (5-year plan) was updated in 2016 and annual plans have been regularly prepared. The rate of expenditure covered by LJI has decreased and been between 30% and 40% due to the increase in expenditure for maintenance and renovation of facilities, upgrading of teaching equipment, and the salary for staff. The satisfaction rate of MBA graduates has maintained over 80% and the one of their employers surveyed once in 2016/17 was 85%. The number of graduates in a year has been fluctuating between 600 and 1,700 after the project completion. The number of MOU and networks with business related organizations has constantly increased after the post project period.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved at the time of ex-post evaluation. The number of students graduated or completed the MBA program and/or the general business courses in a year has been between 97 and 370, which exceeded the target of 115 except in year of 2019/2020 affected by the incidence of COVID-19.

<Other Impacts at the time of Ex-post Evaluation>

By introducing a Keieijuku Program, LJI started providing training programs to local chambers of commerce and industries to wider areas in other provinces. Through this program, LJI has expanded its networks and contributed to socio-economic development nationwide. Since its establishment in 2001, LJI has provided more than 4,500 graduates and participants of the business courses including MBA programs to the business domain. This has been a significant impact on the human resource development for the economy of Lao P.D.R. <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

#### Achievement of Project Purpose and Overall Goal

Aim	Indicators	<b>^</b>		Results			
Project Purpose:	Indicator 1:	Status of the Ach	nievement: Ac	hieved (conti	inued)		
The role and the functions	The mid-term business plan (5-year plan) is	(Project Complet	tion)				
of LJI as the center of	prepared with initiatives of the Lao	The mid-term bu	isiness plan w	as prepared in	n 2014 in line	with the 5-ye	ear plan
developing highly	counterparts, and alignment between the 5-	(2011-2015) of N	NUOL. There	fore, the plan	was not for f	ive years but	for one
qualified business persons	year plan and FY 2014 annual plan is made.	year. LJI's FY 2	2014 annual p	olan was mad	e in alignmei	nt with the m	id-term
are strengthened.		business plan. T	hese planning	g works were	conducted w	vith initiatives	s of the
		Lao counterparts	according to	the NUOL's	planning sche	edule consulti	ng with
		the Japanese exp	erts.				
		(Ex-post Evaluat	<i>,</i>				
		The mid-term pl				-	
		update of 5-year					
		according to the	-	-		ne initiative	of Lao
		counterparts con					
	Indicator 2:	Status of the Ach		hieved (parti	ally continued	l)	
	80% of LJI expenditure is covered by the	(Project Complet	<i>,</i>				
	Lao side, including LJI revenue.	The rate of experience		-	-		
		at 80.9% at the t		•	•		
		supported by a st		rease in base	salary of civi	l servant staff	during
		the project period					
		(Ex-post Evaluat	<i>,</i>		-		
		Table 1. Rate of	-				1
		2014/15	2015/16	2016/17	2017/18	2018/19	
		38%	28%	29%	37%	44%	
		The rate of expe	enditure cover	ed by LJI ha	s decreased d	ue to the incr	ease of

		expenditure for mai				ties and up	grading of
		teaching equipment	as well as th	e salary for	· staff.		
	Indicator 3:	Status of the Achieve	ement: Achi	eved (conti	nued)		
	80% of the MBA graduates and his/her	(Project Completion)	)				
	employers is satisfied with the program's	The average satisfact	tion rate of I	MBA gradua	ates from 20	010 to 2014	was 89.0%
	outcome(s).	Although the quantit	ative data o	f satisfactio	on rate of th	eir employe	rs were n
		available, according	to the surve	y conducted	d by the pro	ject in Augu	ıst 2014, a
		the employers surve	yed evaluate	ed the MBA	courses hig	gh or relativ	ely high.
		(Ex-post Evaluation)	)				
		Table 2. Satisfaction	rate of MB	A graduates	and their e	mployers	
			2015/16	2016/17	2017/18	2018/19	2019/20
		MBA graduates	90%	91%	86%	90%	95%
		Employers	-	85%	-	-	
		The satisfaction rate	e of MBA g	graduates ha	as maintain	ed over 80	% after t
		project, and the one	of their emp	oloyers surv	eyed once i	n 2016/17 v	vas 85%.
	Indicator 4:	Status of the Achieve	ement: Achi	eved (conti	nued)		
	The graduates of the practical business	(Project Completion)	)				
	courses exceed 1,000.	The total number of	graduates f	for four yea	rs of the pr	oject period	l was 1,3
		from 20 subjects of 7	72 courses a	s of July 20	)14.		
		(Ex-post Evaluation)					
		Refer to the Overall	Goal.				
	Indicator 5:	Status of the Achieve	ement: Achi	eved (conti	nued)		
	LJI, as a hub of the business education,	(Project Completion)	)				
	builds a network with internal/external	By the time of project completion, LJI has exchanged five MOUs with					
	organizations (ministries, government	institutions at home	and abroad	including th	e Banking	Institute of	the Bank
	organizations, business associations,	the Lao P.D.R and	Sasin Jap	an Center	in Chulalo	ongkorn Ur	niversity
	universities, NGOs).	Thailand. Besides th	ese MOUs,	LJI has dev	veloped net	works with	many otl
		institutions and com	panies inclu	iding the Sa	van-Seno S	pecial Ecor	nomic Zo
		Authority in Laos an	d Toyota B	oshoku Asia	a Co., Ltd. i	n Thailand.	
		(Ex-post Evaluation)					
		The number of MOU	J has increa	ased to nine	e at the time	e of ex-post	evaluat
		with organizations i	ncluding th	e Lao Nati	onal Cham	ber of Con	nmerce a
		Industry and Lao Te	lecom in La	os, the Tha	i-Nichi Ins	titute of Teo	chnology
		Thailand, and the G	raduate Scl	hool of Inte	ernational C	Cooperation	Studies
		Kobe University in J					
Overall Goal:	Total 115 students graduate or complete the	(Ex-post Evaluation)					
Business persons who can	MBA program and/or the general business	Table 3. Number of s	-		-		it: perso
deal with the ASEAN	course every year after the project		2015/16	2016/17	2017/18	2018/19	2019/2
integration are	completion.	Business Courses	338	171	196	107	7
continuously educated		MBA Program	32	32	27	30	2
through LJI.		Total	370	203	223	137	9
		The number of stude	-	-			
		general business cou					
		project. The number	in 2019/20	20 declined	due to the	incidence	of COVI
		19.					
	n Report (2014), interview with the Director	CT II					

Although the project period was within the plan (the ratio against the plan: 100%), the project cost exceeded the plan (the ratio against the plan: 106%). The outputs were produced as originally planned by the end of the project period. Therefore, efficiency of the project is fair.

4 Sustainability <Policy Aspect>

The "8<sup>th</sup> Five-Year National Socio-economic Development Plan 2016-2020" of the government of Lao P.D.R. declared that human development was a key factor of national development and planned to build a workforce in administration and management such as business administrators, financial managers and economists, and to employ them in public and private organizations where they can contribute to national development.

<Institutional/Organizational Aspect>

The Japanese Studies Center was established in 2019 in LJI in order to strengthen the LJI's functions of research and introduction of Japanese business cultures. The institutional networking has been progressing by increasing the MOUs with various public and private organizations at home and abroad. The number of LJI staff has been slightly increasing from 37 in 2015 to 39 in 2019<sup>1</sup>. However, the majority are administrative staff members, and the number of teaching staff is 12 in total including the ones concurrently serving as administrative staff. According to the interview with the Director of LJI, the number of teaching staff is insufficient for its expanding activities.

<sup>&</sup>lt;sup>1</sup> The number of staff decreased to 35 in 2020 due to outsourcing of cleaning staff. The number of civil servant staff has not been changed.

#### <Technical Aspect>

In their daily operations, managers and teaching staff keep using knowledge and skills they learned in the project such as planning, monitoring, problem solving methods, knowledge management, and others. Some teaching staff has been improving their learning by pursuing higher academic degrees with the support of JICA. Textbooks and manuals including the MBA Program Implementation Manual prepared by the project have been fully utilized in LJI, and new textbooks and teaching materials have been prepared by the teaching staff as necessary.

<Financial Aspect>

Although revenue and expenditure of LJI have been maintained virtually constant for four years after the project, excessive expenditure has continued, and the rate of expenditure covered by LJI has been at a level below the target of 80% (see Table 4). <Evaluation Result>

Т	Table 4. Revenue and Expenditure of LJI         Unit: US\$						
	Year	2015/16	2016/17	2017/18	2018/19		
	Revenue	281,474	278,458	286,288	306,620		
	Expenditure	583,810	612,294	526,939	474,616		
S	Source: LJI						

In light of the above, slight problems have been observed in terms of the institutional/organizational and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

#### 5 Summary of the Evaluation

The Project Purpose was achieved by strengthening the administrative, financial and networking capacities of LJI. The Overall Goal was achieved by largely increasing the number of graduates and participants of the business courses including MBA programs. As for sustainability, the institutional enhancement has been progressing by expanding a network with business and education organizations, and the textbooks and manuals prepared by the project have been continuously utilized. However, the limited number of teaching staff and financial external dependency have remained as issues. As for efficiency, the project cost exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

# III. Recommendations & Lessons Learned

# Recommendations for Implementing Agency:

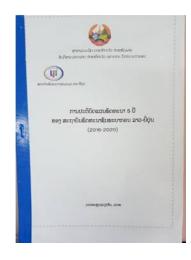
- It is recommended that LJI considers increase of the number of teaching staff or an alternative, and a measure for the teaching staffs to
  concentrate on teaching. For example, additional assignments of staff of civil servants may be realized with support from NUOL, an
  alternative can be invitation of visiting lecturer through the network from private institutions, and employing contract staffs for
  administrative works can be a way to release the teaching staffs from administrative works.
- It is recommended that LJI increases the rate of expenditure covered by LJI to the target level of 80% by making a longer term financial plan including detail estimations of the revenue from business programs and expenditure for maintenance and renovation of facilities, upgrading of teaching equipment, and the salary for staff.

Lessons Learned for JICA:

The project invited experts from Thailand and also sent the counterparts to Thailand for the third country training programs. The
lectures made in Thai language which is very close to Lao language was highly acceptable for Lao students, and the visits to Thailand
provided opportunities to strengthen the relationships and exchange MOUs with the public and private organizations in Thailand.
Invitations of experts from and training in the third country nearby in similar environments, thus, could be a cost-effective means to
generate highly effective outcomes.



Closing ceremony of MBA 11<sup>th</sup> batch program in September 2020



LJI's Five-year Plan (2016-2020)

Country Name	
Lao People's Democratic	Capacity Development for Sector-wide Coordination in Health Phase 2
Republic	

# I. Project Outline

J			
Background	The Ministry of Health (MOH) of Lao PDR implemented various programs and projects with supports of many development partners (DPs). However, the interventions by DPs did not result in effective improvement of the health status of people in the country because the projects were implemented in the limited, unbalanced and overlapped issues and areas without coordination between MOH and DPs as well as among DPs. In order to realize the coordination in the health sector, JICA commenced a technical cooperation project, the "Capacity Development for Sector-wide Coordination in Health Phase 1" (2006-2010). Under the project, the Sector Working Groups and Technical Working Groups (TWGs) were established within MOH, and a Sector-wide Coordination Mechanism was introduced for coordinating programs/projects. However, TWGs had not been well functioning, and the projects had not been implemented based on the mid-term and long-term perspectives.		
Objectives of the ProjectThrough strengthening of management and monitoring capacity of TWGs and the Secretar coordination between TWGs and MOH's departments, introduction of the Sector-wide Coordination provincial and district levels, and upgrading of the Sector Common Workplan/Monitoring I national health development plan, the project aimed at implementing strategic sub-sector development effective alignments and harmonization under the 7th five-year Health Sector Development contributing to implementation of strategic plans, effective coordination and resource allocation manner by MOH to achieve the Millennium Development Goals.1.Overall Goal: MOH is able to implement strategic plans and conduct effective coordination allocation in a sustainable manner to achieve the Millennium Development Goals.2.Project Purpose: Under the 7th five-year Health Sector Development Plan, strategic sub-sector			
Activities of the Project	<ul> <li>plans are implemented with effective alignments and harmonization.</li> <li>Project Site: the whole of Laos</li> <li>Main Activities: 1) Strengthening of management and monitoring capacity of TWGs and the Secretariat, 2) Promotion of coordination between TWGs and MOH's departments, 3) Introduction of the Sector-wide Coordination Mechanism at provincial and district levels, 4) Upgrading of the Sector Common Workplan/Monitoring Framework for a national health development plan, etc.</li> <li>Inputs (to carry out above activities) Japanese Side <ul> <li>Experts: 18 persons</li> <li>Experts: 18 persons</li> <li>Training in the third country: 8 persons (3 in the Philippines, 3 in Thailand, 1 in Cambodia and 1 in Vietnam)</li> <li>Equipment: copiers, a notebook computer, a headset, etc.</li> </ul> </li> <li>Local expenses: cost for project activities</li> </ul>		
Project Period	December 2010 - March 2016 (Extension: December 2015 - March Project Cost 2016) (ex-ante) 330 million yen, (actual) 275 million yen		
Implementing Agency	The Ministry of Health (MOH)		
Cooperation Agency in Japan	National Center for Global Health and Medicine (NCGM)		

# II. Result of the Evaluation

1 Relevance

<Consistency with the Development Policy of Laos at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Laos's development policies of "The 6th five-year Health Sector Development Plan" (2006-2010) indicating the importance of coordinating international assistance to improve aid efficiency at the time of ex-ante evaluation and "The 8th five-year Health Sector Development Plan" (2016-2020) setting a sector wide coordination in a sub-program of "international, public and private cooperation" at the time of project completion.

<Consistency with the Development Needs of Laos at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Lao's development needs of activation of a Sector-wide Coordination Mechanism including TWGs for alleviating the lack of coordination between MOH and development partners and among the partners which prevented efficient implementation of development projects in the country.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with "The Country Assistance Program for Laos" (2006) raising the improvement of health services as one of the priority areas in order to attain Millennium Development Goals. <Evaluation Result>

#### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the time of project completion. Through the project, the Sector-wide Coordination Mechanism was introduced into seven provinces out of 18 provinces. However, only two provinces, Attapeu province and Sekong province, fully introduced the mechanism, and other provinces just introduced a part of it (Indicator 1). In order to align and harmonize procedures between MOH and DPs, the format for annual operational planning was prepared by the project, and the annual operation planning by using the format was being progressed, but it did not reach the sufficient alignment and harmonization of the procedures(Indicator 2). Furthermore, all programs and projects were endorsed by MOH and DPs under "the 7th five-year Health Sector Development Plan" (2011-2015) (Indicator 3), and most of DPs aligned their programs/projects under the Plan (Indicator 4). It should be noted that indicator 1 and 2 were achieved by the time of ex-post evaluation.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued since the project completion. After the project completion, not only provinces of Attapeu and Sekong but also other provinces started to introduce the Sector-wide Coordination Mechanism. At the time of ex-post evaluation, all of 18 provinces have fully operated the mechanism. This is because, after the project was completed, MOH incorporated the mechanism into "The 8th five-year Health Sector Development Plan" (2016-2020). In addition, the mechanism has been mentioned at a roundtable meeting that is organized once a year, having the attendance of director general of PHOs. For the district level, PHOs have mandated to technically support all DHOs. Each PHO has conducted dissemination seminars to their DHOs, and all the DHOs in the whole nation have attended such seminars by the time of ex-post evaluation. For instance, one PHO organizes an internal meeting after the annual National Sector-Wide Coordination meeting and disseminates information to the key personnel from DHOs. According to the MOH, this coordination mechanism has become regular practice among the health sector; however, the introduction and operation of the mechanism at the district level has been limited due to a lack of follow-up procedures to the DHO's technical issues for which there is insufficient support from PHO. . The format for annual operational planning, the tools of progress reporting, and the Sector-wide indicators developed by the project have been revised, authorized and utilized by MOH and DPs, which has led to the more alignment and harmonization of procedures between them. As a result, all programs/projects under "The 8th five-year Health Sector Development Plan" (2016-2020) have been recognized by MOH and almost of all the programs/projects have been supported by DPs. Additionally, although the in-depth data on the number of DPs which align projects/programs under the Plan is not available, according to MOH, most of DPs have aligned their projects/programs under the Plan.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved at the time of ex-post evaluation. All of programs/projects under "the 8th Five-Year Health Sector Development Plan" (2016-2020) have been shared with DPs (Indicator 1). The percentage of the budget provided to implement programs/projects under the Plan to the total budget of MOH was 2.94% in 2011/12 but increased to 7.2% in 2017/18 (Indicator 2). DPs such as JICA, United Nations Children's Fund (UNICEF), and World Health Organization (WHO) have provided financial supports to MOH to implement the programs/projects under the Plan, and the amount of the supports increased from 463,510 million Kip in 2016 to 709,227 million Kip in 2019 (Indicator 3). As mentioned in the continuation status of project effects, the Sector-wide Coordination Mechanism has been fully introduced and operated at a provincial level while not at a district level. However, DHOs have managed to carry out programs/projects under "the 8th Five-Year Health Sector Development Plan" (2016-2020) with technical supports by PHOs (Indicator 4). This can be seen from the fact that access to some health services such as Antenatal Care (ANC) and Delivery by Skilled Birth Attendant (SBA) has been improved (Indicator 6). According to MOH, the mechanism has maximized the health sector development in Laos brought by aid (Indicator 5). The reasons for this are as follows: 1) all concerned personnel of the government of Laos have clearly been aware of their mandates, roles, and responsibilities on the health sector development through the Sector-wide Coordination Mechanism, which has led to a significant increase in their ownerships, 2) all key DPs have aligned their projects/programs under a single policy framework, and such information has been shared among relatives, and 3) the mutual accountability between the government of Laos and DPs has been increased. Furthermore, the retention rate of health workers has been improved from 2.88 in 2013/14 to 3.02 in 2017/18 (Indicator 7).

<Other Impacts at the time of Ex-post Evaluation>

Positive impacts by the project were observed at the time of ex-post evaluation. According to MOH, the project brought a wide range of positive impacts on gender. For example, the introduction of the Sector-wide Coordination Mechanism has strengthened Maternal, Newborn and Child Health care service and immunization programs, which has enabled more mothers and children to enjoy them. There were no other positive or negative impacts observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal

	rieme vement of rieje	
Aim	Indicators	Results

(Project Purpose)		Status of the Achievement: Not Achieved (Partially Achieved)			
Under the 7th five-year	is introduced at the provincial and district				
Health Sector	levels.	• Out of 18 provinces, only two provinces (Attapeu province and Sekong			
Development Plan,		province) fully introduced the Sector-wide Coordination Mechanism and 5			
strategic sub-sector		provinces (Saravanh province, Champasak province, Phongsaly province,			
development plans are		Oudonxay province, and Louang Namtha province) partially did.			
implemented with		(Ex-post Evaluation)			
effective alignments and		• All of 18 provinces have introduced and operated the Sector-wide			
harmonization.		Coordination Mechanism. At the district level, although all the DHOs in			
		the whole nation have attended the dissemination seminars, the			
		introduction and operation of the mechanism has been limited.			
	2 To what extent procedures are aligned	Status of the Achievement: Not Achieved (Achieved)			
	and harmonized by Departments of MOH				
	and DPs.	<ul> <li>Annual operational planning with use of the format for annual operational</li> </ul>			
	and DFS.				
		planning developed by the project was on-going between MOH and DPs.			
		(Ex-post Evaluation)			
		• The format for annual operational planning, the tools of progress			
		reporting, and the Sector-wide indicators developed by the project have			
		been revised, authorized and utilized by MOH and DPs.			
		Status of the Achievement: Achieved (Continued)			
	single policy framework are recognized	(Project Completion)			
	among MOH and supported by DPs.	• All of programs/projects were endorsed by MOH and DPs under the 7th			
		five-year Health Sector Development Plan.			
		(Ex-post Evaluation)			
		• All of programs/projects under "the 8th five-year Health Sector			
		Development Plan" (2016-2020) have been recognized by MOH, and			
		almost of all the programs/projects have been supported by DPs.			
	4 Numbers of DPs which align with	Status of the Achievement: Achieved (Continued)			
	project/program under a single policy				
	framework are increased.				
		• Most of DPs aligned their projects/programs under the 7the five-yea			
		Health Sector Development Plan.			
		(Ex-post Evaluation)			
		• Although the in-depth data on the number of DPs which align			
		projects/programs under "the 8th five-year Health Sector Development			
		Plan" (2016-2020) is not available, according to MOH, most of DPs have			
		aligned their projects/programs under the Plan.			
(Overall Goal)	1. Programs under a single policy				
MOH is able to	framework are shared with DPs.	• All of programs/projects under "the 8th five-year Health Sector			
implement strategic plans		Development Plan" (2016-2020) have been shared with DPs.			
and conduct effective	2. Inputs allocated by MOH to implement	(Ex-post Evaluation) Achieved			
coordination and resource	programs under a single policy framework.	• The percentage of the budget to implement programs/projects under the			
allocation in a sustainable		8th five-year Health Sector Development Plan to the total budget of MOH			
manner to achieve the		has been increasing. [Percentage of the budget to implement programs/projects under the 8th			
Millennium Development		five-year Health Sector Development Plan to the total budget of MOH			
Goals.		(Unit: %)]			
Obais.		2011/12 2014/15 2016/17 2017/18			
		2.94 6.01 7.8 7.4			
	3. Inputs allocated by DPs to implement	(Ex-post Evaluation) Achieved			
	programs under a single policy framework.	• DPs such as JICA, UNICEF, and WHO, have provided financial supports			
		to MOH to implement programs/projects under "the 8th five-year Health			
		Sector Development Plan" (2016-2020)			
		[The amount of financial supports from DPs to MOH (Unit: Million Kip)]20152016201720182019			
		N/A 463,510 533,597 353,397 709,227			
	4 All DIIO- (Durationairel II-elth Officere) and				
	4. All PHOs (Provincial Health Offices) and	<ul> <li>(Ex-post Evaluation) Partially Achieved</li> <li>All of 18 provinces have introduced and operated the Sector-wide</li> </ul>			
	DHOs build system and structure for	• All of 18 provinces have introduced and operated the Sector-wide			
	4. All PHOs (Provincial Health Offices) and DHOs build system and structure for coordination mechanism	<ul> <li>All of 18 provinces have introduced and operated the Sector-wide Coordination Mechanism. At the district level, although all the DHOs in the whole nation haves been attended the dissemination seminars,.</li> </ul>			
	DHOs build system and structure for	<ul> <li>All of 18 provinces have introduced and operated the Sector-wide Coordination Mechanism. At the district level, although all the DHOs in the whole nation haves been attended the dissemination seminars,. However, the introduction and operation of this mechanism in the district</li> </ul>			
	DHOs build system and structure for coordination mechanism	<ul> <li>All of 18 provinces have introduced and operated the Sector-wide Coordination Mechanism. At the district level, although all the DHOs in the whole nation haves been attended the dissemination seminars,. However, the introduction and operation of this mechanism in the district level has been limited.</li> </ul>			
	DHOs build system and structure for	<ul> <li>All of 18 provinces have introduced and operated the Sector-wide Coordination Mechanism. At the district level, although all the DHOs in the whole nation haves been attended the dissemination seminars,. However, the introduction and operation of this mechanism in the district level has been limited.</li> <li>(Ex-post Evaluation) Achieved</li> </ul>			
	DHOs build system and structure for coordination mechanism	<ul> <li>All of 18 provinces have introduced and operated the Sector-wide Coordination Mechanism. At the district level, although all the DHOs in the whole nation haves been attended the dissemination seminars,. However, the introduction and operation of this mechanism in the district level has been limited.</li> <li>(Ex-post Evaluation) Achieved</li> <li>According to MOH, the Sector-wide Coordination Mechanism maximized</li> </ul>			
	<ul> <li>DHOs build system and structure for coordination mechanism</li> <li>5. Aid efficiency is improved through coordination and harmonization.</li> </ul>	<ul> <li>All of 18 provinces have introduced and operated the Sector-wide Coordination Mechanism. At the district level, although all the DHOs in the whole nation haves been attended the dissemination seminars,. However, the introduction and operation of this mechanism in the district level has been limited.</li> <li>(Ex-post Evaluation) Achieved</li> <li>According to MOH, the Sector-wide Coordination Mechanism maximized the health sector development in Laos brought by aid.</li> </ul>			
	DHOs build system and structure for coordination mechanism 5. Aid efficiency is improved through	<ul> <li>All of 18 provinces have introduced and operated the Sector-wide Coordination Mechanism. At the district level, although all the DHOs in the whole nation haves been attended the dissemination seminars,. However, the introduction and operation of this mechanism in the district level has been limited.</li> <li>(Ex-post Evaluation) Achieved</li> <li>According to MOH, the Sector-wide Coordination Mechanism maximized the health sector development in Laos brought by aid.</li> <li>(Ex-post Evaluation) Partially Achieved</li> </ul>			
	<ul> <li>DHOs build system and structure for coordination mechanism</li> <li>5. Aid efficiency is improved through coordination and harmonization.</li> </ul>	<ul> <li>All of 18 provinces have introduced and operated the Sector-wide Coordination Mechanism. At the district level, although all the DHOs in the whole nation haves been attended the dissemination seminars,. However, the introduction and operation of this mechanism in the district level has been limited.</li> <li>(Ex-post Evaluation) Achieved</li> <li>According to MOH, the Sector-wide Coordination Mechanism maximized the health sector development in Laos brought by aid.</li> <li>(Ex-post Evaluation) Partially Achieved</li> <li>Out of four indicators regarding health services, two indicators have</li> </ul>			
	<ul> <li>DHOs build system and structure for coordination mechanism</li> <li>5. Aid efficiency is improved through coordination and harmonization.</li> </ul>	<ul> <li>All of 18 provinces have introduced and operated the Sector-wide Coordination Mechanism. At the district level, although all the DHOs in the whole nation haves been attended the dissemination seminars,. However, the introduction and operation of this mechanism in the district level has been limited.</li> <li>(Ex-post Evaluation) Achieved</li> <li>According to MOH, the Sector-wide Coordination Mechanism maximized the health sector development in Laos brought by aid.</li> <li>(Ex-post Evaluation) Partially Achieved</li> <li>Out of four indicators regarding health services, two indicators have improved, and the remaining two indicators have been slightly worsened.</li> </ul>			
	<ul> <li>DHOs build system and structure for coordination mechanism</li> <li>5. Aid efficiency is improved through coordination and harmonization.</li> </ul>	<ul> <li>All of 18 provinces have introduced and operated the Sector-wide Coordination Mechanism. At the district level, although all the DHOs in the whole nation haves been attended the dissemination seminars,. However, the introduction and operation of this mechanism in the district level has been limited.</li> <li>(Ex-post Evaluation) Achieved</li> <li>According to MOH, the Sector-wide Coordination Mechanism maximized the health sector development in Laos brought by aid.</li> <li>(Ex-post Evaluation) Partially Achieved</li> <li>Out of four indicators regarding health services, two indicators have</li> </ul>			
	<ul> <li>DHOs build system and structure for coordination mechanism</li> <li>5. Aid efficiency is improved through coordination and harmonization.</li> </ul>	<ul> <li>All of 18 provinces have introduced and operated the Sector-wide Coordination Mechanism. At the district level, although all the DHOs in the whole nation haves been attended the dissemination seminars,. However, the introduction and operation of this mechanism in the district level has been limited.</li> <li>(Ex-post Evaluation) Achieved</li> <li>According to MOH, the Sector-wide Coordination Mechanism maximized the health sector development in Laos brought by aid.</li> <li>(Ex-post Evaluation) Partially Achieved</li> <li>Out of four indicators regarding health services, two indicators have improved, and the remaining two indicators have been slightly worsened. [Access to Selected Health Services (Unit: %)]</li> </ul>			

	Prenatal Care	48	35.7	45.1 47.6
	DTP-HepB-Hib	3 87	79	81.3 83.9
7. Retention of he	alth workers is improved. (Ex-post Evaluati			
	• The retention ra	ate of health workers	has improved.	
	[Retention rate of	health workers (Uni	t: %)]	
	2013/14	2014/15	2015/16	2017/18
	2.88	2.87	3.22	3.02

Source : Terminal Evaluation Report, Questionnaire and Interview with MOH 3 Efficiency

# 3 Efficiency

Although the project cost was within the plan (ratio against the plan: 83%), the project period slightly exceeded the plan (ratio against the plan: 110%) due to additional activities such as the approval and introduction of a monitoring tool and the discussing of future direction of "coordination" between MOH and DPs. The outputs were produced as planned. Therefore, the efficiency of the project is fair. 4 Sustainability

# <Policy Aspect>

"The 8th five-year Health Sector Development Plan" (2016-2020) setting a sector-wide coordination in a sub-program of "international, public and private cooperation", and "Health Sector Reform" (2013-2025) also promotes a sector-wide coordination mechanism. As the project aimed at implementing strategic sub-sector development plans with a wide range of donors through the Sector-wide Coordination Mechanism, it has been endorsed by the national policies.

<Institutional Aspect>

There have not been major changes in the organizational setting for the Sector-wide Coordination Mechanism. [National level]

The Department of Planning and International Cooperation of MOH has been a secretariat of the Sector-wide Coordination Mechanism. 6 staff have been assigned there, and according to them, as they have fulfilled their responsibilities without any major problems, the number of the staff has been sufficient.

# [Provincial level]

The Health Promotion Section of PHO has played a role in supporting Department of Planning and International Cooperation of MOH as a deputy secretariat of the Sector-wide Coordination Mechanism. The Section in each province has had 2 staff, and according to them, as they have performed their roles without any major problems, the number of the staff has been enough. [District level]

As described above, the Sector-wide Coordination Mechanism has yet to be fully introduced and operated at a district level, there are no specific organizations in charge.

[Monitoring Framework for Five-year Health Sector Development Plan]

The monitoring framework for five-year health sector development plan developed by the project has been sustained and functioned. With the framework, all issues related to health sector have been monitored on a regular basis.

<Technical Aspect>

The staff of the above-mentioned organizations at national and provincial levels has sustained the necessary knowledge and skills to perform their responsibilities given. According to the staff, although there is no internal training, since the Sector-wide Coordination Mechanism does not require the staff to have any specialized knowledge and skill, the knowledge and skills of the staff are considered to be sufficient. However, as many coordinators of TWGs trained by the project were retired and new coordinator units do not fully understand the Sector-wide Coordination Mechanism, internal training on the Mechanism and meeting facilitation skills will be needed. <Financial Aspect>

MOH reported that the necessary budget for the Sector-wide Coordination has been provided by DPs including the Global Fund, the Asian Development Bank, and the World Bank and been secured every year and that where the budget is not enough, additional budget is allocated by the Government of Laos. According to the budget data from 2015 to 2019, it can be confirmed that a certain amount of budget

The Budget o	of promoting	the Sector-wide
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Coord	ination N	Mechanis	sm (Unit	: Million Kip)
2015	2016	2017	2018	2019 (Plan)
400	400	300	300	500

has been secured every year. The budget has been consumed to hold technical working group meetings four times a year and round table meetings for policy dialogue once a year. The situation is considered to continue.

<Evaluation Result>

Therefore, as there have been some problems from the institutional aspect, the sustainability of the effects through the project is fair. 5 Summary of the Evaluation

The project achieved the Project Purpose aiming at implementing strategic sub-sector development plans with effective alignments and harmonization under the 7th five-year Health Sector Development Plan by the time of ex-post evaluation and achieved the Overall Goal aiming at implementing strategic plans and conducting effective coordination and resource allocation in a sustainable manner to achieve the Millennium Development Goals. As for the sustainability, the organizational setting at a district level, which was targeted by the project, has not been established even at the time of ex-post evaluation. As for the efficiency, the project cost slightly exceeded the plan. Considering all of the above points, the project is evaluated to be satisfactory.

# III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• The Sector-wide Coordination Mechanism has not been fully introduced and operated at a district level due to DHO's technical issues even though dissemination seminars have been provided to all the districts. In order for DHO to operate within this mechanism thereafter, MOH should take measures to improve the technical capacity of the DHO staffs, such as establishing standard follow-up procedures and training on the mechanism for the staff periodically. Lessons Learned for JICA: MOH, especially department and division concerned, have done well on the dissemination of the Sector-wide Coordination Mechanism at central and provincial levels. For example, they have logged the mechanism to MOH policy and take it as one of the important agendas at a roundtable meeting and to be operated in the countrywide. However, it was difficult to disseminate the Sector-wide Coordination Mechanism at a district level in Laos due to the limited resources of provinces and the weak coordination with PHOs. Therefore, at the planning and implementation stage for future projects targeting the whole of a target country, strategies sufficiently considering limited human resources and weak governance at sub national levels should be examined.



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Roundtable Meeting at MOH



Meeting on Capacity Development for Sector-Wide Coordination in Health Phase 2 at MOH

Country Name		Establishment of Ca	arbon-Cycle-System with Natural Rubber
Socialist Repu	iblic of Viet Nam		
I. Project Outline			
Background	The demand for NR w production of fossil fir rubber with NR is exp that cause the latex expanding its use and of Viet Nam requester system by development expand NR usage an	as still high due to its spec uel-based synthetic rubber ected to reduce carbon dio allergy and disturb chem reducing the risk of protein d the Government of Japa t of nanotechnology for pr	ber trees (Hevea brasiliensis) is a promising plant resource in Asia. ecific physical properties that synthetic rubber does not have. As the er causes enormous carbon dioxide emissions, replacing synthetic oxide emissions. On the other hand, NR contains protein substances mical modification; therefore, its deproteinization is essential to in-caused allergy. Based on the above background, the Government wan to implement technical cooperation to establish a carbon-cycle roduction of high-performance NR and highly functional polymer to efficient processing system and usage of wastewater and waste
Objectives of the Project	Research Institute of V of NR through develop polymer from NR, (in technology of rubber in technologies related to fuel-based synthesized 1. Expected Overall 2. Project Purpose: 0 Vietnam will be e	Vietnam (RRIV) on the tech ping (i) a novel evaluation (v) technology to produce industrial wastewater, there to low protein natural rubber rubber. Goal: N.A. Capacity of Hanoi University	of Hanoi University of Science and Technology (HUST) and Rubber chnologies to realize sophistication and expansion in the application n method of NR, (ii) high-performance rubber, (iii) high functional e bio-fuel from rubber waste woods, and (v) advanced treatment eby contributing to the promotion of researches and development on per in Viet Nam to increase uses of natural rubber to replace fossil rsity of Science and Technology and Rubber Research Institute of gies to realize sophistication and expansion in application of natural ober production.
Activities of the Project	<ol> <li>Project Site: Hano</li> <li>Main activities: ( method, drafting deproteinized and method suitable degrading microon evaluation of gree</li> <li>Inputs (to carry ou Japanese Side</li> <li>Experts: 18 person short-term)</li> <li>Main equipment: Resonate (NMR), for a test plant fr</li> </ol>	i and Binh Duong Province i) Establishment of analys of a new standard for protein-free NR; (iii) Esta for waste wood, selection ganism; (v) Development nhouse gas emission capac t above activities) V ns (3 long-term and 15 1) 2) A Nuclear Magnetic a centrifugal machine or deproteinization of actor for wastewater	<ul> <li>vision of terminal structure, development of evaluation evaluation of low-protein NR; (ii) Preparation of prototype of ablishment of rubber nanotechnology; (iv) Development of crushing on of degrading microorganisms and enzymes, improvement of t of manufacturing and processing wastewater treatment technology, city and decomposition mechanism of rubber wastewater.</li> <li>Vietnamese Side</li> <li>Staff allocated: 43 persons</li> <li>Facilities: [HUST] Project coordination Office and research facilities at HUST including renovating laboratories, Construction of a new building for the Center for Rubber Science and Technology (CEBER);</li> <li>[RRIV] A laboratory and a site for the pilot scale reactor of wastewater treatment system, Working space for Japanese short-term experts in Binh Duong Province</li> </ul>
Project Period	April 2011 – March 20	/	Project Cost (ex-ante) 394 million yen, (actual) 398 million yen
Implementing			; Hanoi University of Science and Technology (HUST); Rubber
Agency	Research Institute of V	ietnam (RRIV)	
Cooperation			tional Institute for Environmental Studies (NIES); Tokyo National
Agency in Japan	Collage of Technology	(TNCT); Kure National C	Collage of Technology (KNCT)

# II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

For this SATREPS project, PDM (logical framework) was not prepared, and the Overall Goal was not set.<sup>2</sup> According to the terminal evaluation summary, the project expected that the technologies developed by the project be eventually adopted by the rubber industries in Viet Nam in the future, toward the final goal of replacing fossil fuel-based rubber with NR. Based on the above and the framework of the ex-post evaluation of STAREPS projects, this ex-post evaluation regards the following as the Expected Overall Goal, "Researches and development on technologies related to low protein NR are promoted in Viet Nam to increase uses of NR to replace fossil fuel-based synthesized rubber."

# 1 Relevance

<Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation>

This project was consistent with Viet Nam's development policies such as the "National Energy Strategy" (2007), which set a target of

<sup>&</sup>lt;sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development

<sup>&</sup>lt;sup>2</sup> The "overall objective" mentioned in the terminal evaluation report was described as a final goal, not a goal for three years after project completion.

5% of renewable energy generation in 2020, and the "National Target Program to Respond to Climate Change (NTP-RCC)" (2008-2020), a comprehensive policy on climate change countermeasures. The Vietnamese Government intended to promote the NR industry as an important agricultural product for export.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation>

As mentioned in "Background" above, this project was consistent with the need to develop technology for the production and use of NR to establish a carbon-cycle system. Production of NR was rapidly growing in Viet Nam during project implementation, and value-added processing and waste wood and water treatment of NR were important.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

This project was consistent with the "Country Assistance Program for Viet Nam" (2009), which held "Stable Supplies for Resource and Energy" (under "Promotion of Economic Growth and Strengthening of International Competitiveness"), "Natural Environment Conservation" (under "Environmental Conservation"), and "Rural Development and Improvements in Livelihood" (under "Improvements in Livelihood").

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The project achieved the Project Purpose at the time of its completion. The Outputs of the project, namely, (i) a novel evaluation method of low protein NR, (ii) deproteinized/protein-free NR production technology, (iii) highly functional polymer production technology from NR, (iv) technology to produce bio-fuel from rubber waste woods, and (v) advanced treatment technology of rubber industrial wastewater, were all developed. Also, the Center for Rubber Science and Technology (CEBER) established within HUST is considered as another important output of the project. HUST was allocating budget and personnel for the operation of the center. Two key researchers assigned to CEBER were members of this SATREPS project, and they received scholarships from the project for their Master and Ph.D. study at NUT, Japan.

Concerning RRIV, their research capacity on treatment technologies of wastewater from rubber production was improved, and RRIV was planning to apply for funding from the Vietnam Rubber Group (VRG) to do further studies on treatment technology for wastewater from rubber production plants.

As a result, both of the indicators for the Project Purpose were achieved. Regarding Indicator 1, by involving this SATREPS Project, researchers at HUST collaborated with researchers in Japan and published a number of international papers on NR. Regarding Indicator 2, the Rubber Research Division under the Vietnam Chemical Society was established with HUST as a leading member.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects continued to the time of ex-post evaluation. CEBER, as the research hub for low protein NR, and other involved departments under HUST such as the Biology Department and the Department of Environment Technology have continued the researches and started new researches<sup>3</sup> based on the outputs of this project and produced more research papers after project completion. Funding has been obtained from the Ministry of Science and Technology (MOST), MOET, and the National Foundation for Science and Technology Development (NAFOSTED) under MOST. HUST is still a leading member of the Natural Rubber Division of the Chemical Society of Vietnam.

In addition, HUST has secured a budget for operation and maintenance of equipment provided by this project, such as NMR, the test plant for deproteinization of NR, the lab-scale wastewater treatment reactor. The equipment is all in good condition and used for the researches mentioned above.

At RRIV, research on the advanced treatment technology for rubber industrial wastewater was not continued due to their financial difficulty as VRG, its parent company, has been privatized and struggling with the global fall of rubber price. However, follow-up studies on the treatment technology have been conducted by the School of Environment Technology/HUST. Therefore, it does not significantly affect the effectiveness/impact of this project. Regarding the equipment provided under this project, while the pilot reactor for wastewater treatment system is not in use since there is no research that requires this equipment as mentioned above, some analytical equipment such as a gas chromatograph analyzer is used for checking the quality of wastewater from rubber factories as one of the services RRIV provides to rubber companies.

<Status of Achievement for Expected Overall Goal at the time of Ex-post Evaluation>

The Expected Overall Goal has been achieved by the time of ex-post evaluation. The draft national standard for evaluation of low protein NR prepared under the project was adopted by the Vietnam Standards and Quality Institute (TCVN) in 2016 as TCVN 11527:2016. Further, CEBER has made significant progress in upgrading the TCVN standard into a new ISO standard for the evaluation of low-protein NR. CEBER is in the ISO registration process and expects the new ISO standard to be issued in 2021. Besides, CEBER registered with MOST for innovation of the deproteinized NR production technology in February 2018, and it is under the appraisal process.

In terms of commercialization to promote the use of low-protein NR, CEBER has been cooperating with some rubber companies to produce medical gloves of high quality that were highly evaluated by some hospitals using these low-protein NR medical gloves. With the core technology of deproteinization of NR, at the time of ex-post evaluation, Dr. Phan Trung Nghia (ex-Project Manager of this project and the Director of CEBER) was planning to establish a company to start a business with private companies for scaling up the deproteinization process and commercializing medical goods such as medical gloves, contraceptives using protein-free latex. Besides, CEBER has been working with some Japanese companies to develop products further using highly functional polymer originated from NR for products such as automobile parts. Using the deproteinized NR production technology, CEBER cooperated with a Vietnamese private company to conduct further studies on the development of a compound material to produce automobile parts.

<sup>&</sup>lt;sup>3</sup> Besides the researches mentioned in the table, "Achievement of Project Purpose and Overall Goal" below, CEBER has started quite a number of researches to develop new material from low-protein NR such as sulfurized rubber which will be used in fuel cell and silicalized rubber which is elastic with high tensile strength.

<Other Impacts at the time of Ex-post Evaluation>

No negative impact on the natural environment was observed. Wastewater treatment of the pilot plant is regularly monitored to ensure that the discharge meets the national standards. It is also used as the input data for current ongoing research.

Other positive impacts pointed out by HUST include the following. (a) The capacity was improved among the researchers involved in the project as well as their students, who have been instructed by these researchers to be new researchers on NR. (b) The scientific literacy on the government side has improved as well. (c) After the release of the national standard on the evaluation of low protein natural rubber (TCVN 11527:2016), the Directorate for Standards, Metrology and Quality (STAMEQ)/MOST established a National Technical Standard Committee for rubber and rubber products, and Dr. Phan Trung Nghia was assigned as a member of the committee. (d) Besides, Dr. Nghia was appointed as Head of the Technical Committee for Evaluation of Contraceptive Instrument" under MOST. <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

	Ac	chievement of Project Purpose and Overall Goal	
Aim	Indicators	Results	
(Project Purpose)	Indicator 1: Papers are	Status of the Achievement: achieved (continued)	
Capacity of HUST and	publicized in science	(Project Completion)	
RRIV will be enhanced on	journals.	By the end of August 2015, 84 papers were publicized in science journals (73 international and	
the technologies to realize		11 Japanese). Of these, 16 were submitted as joint research papers between Viet Nam and Japan.	
sophistication and		This number of achievements was evaluated by the JST as being "many papers."	
expansion in application of		(Ex-post Evaluation)	
NR and		Papers publicized after project completion include the following.	
environment-friendly NR		Continuation of the researches based on the ones under this project	
production.		- 22 papers, including 4 papers of International Scientific Index, on the novel evaluation method of NR (CEBER/HUST)	
		- 10 domestic papers on electricity transmitting rubber, blended rubber, biomass of rubber and	
		biological decomposition of wastewater from rubber production (CEBER/HUST)	
		- (Number unknown) International and domestic papers on the electromagnetic waste	
		absorption materials made from NR	
		New researches based on the research outputs of this project	
		- 2 international papers and 1 domestic paper on the investigation on properties and	
morphology of modified natural rubber having filler Nano matrix structure prep graft-copolymerization with organosilane monomer (CEBER/HUST)			
		- 2 international papers on the characteristics of microbial aggregation of NR (School of	
		Biotechnology and Food Technology/HUST)	
	Indicator 2: A natural	Status of the Achievement: achieved (continued)	
	-	(Project Completion)	
		Natural rubber division was established under the Chemical Society of Vietnam on 18th of	
	existing academic	November 2015. School of chemical engineering in HUST became a member of Vietnam Rubber	
	society in Viet Nam.	Association on the same day.	
		(Ex-post Evaluation)	
		Natural rubber division has been continued under the Chemical Society of Vietnam. HIST is still	
		a leading member.	
(Expected Overall Goal)	Enhancement of	(Ex-post Evaluation) achieved	
Researches and	research and	- The national standard for evaluation of low protein NR was adopted as TCVN 11527:2016.	
development on	development on	- CEBER has been cooperating with some rubber companies to produce low-protein NR medical	
technologies related to low	-	gloves, which was highly evaluated by some hospitals that are using them.	
protein NR are promoted in	low protein NR in Viet	- CEBER has been working with some Japanese and Vietnamese companies to develop products	
Viet Nam to increase uses of	Nam.	further using highly functional polymer originated from NR for products such as automobile	
NR in order to replace fossil		parts.	
fuel based synthesized			
rubber.			
Source: Terminal Evaluation	Report; JST Final Repo	rt; questionnaire and interview with HUST; telephone interview with RRIV	
Efficiency			
Although the project pe	eriod was as planned	the project cost slightly exceeded the plan (ratio against the plan: 100% and 101%	

Although the project period was as planned, the project cost slightly exceeded the plan (ratio against the plan: 100% and 101%, respectively). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The Government of Viet Nam has committed to contributing to the global effort of the greenhouse gas emission reduction by 8% by 2030. The prime minister approved a national action plan for the implementation of the Paris Agreement on Climate Change. The "Target Program for Climate Change and Green Growth for 2016-2020" was approved by the Prime Minister in 2016, and the Ministry of Natural Resources and Environment plans to renew the program for 2021 and 2025. In a conference to promote the rubber industry's sustainable development, jointly organized by the Central Economic Committee and Ministry of Agriculture and Rural Development (MARD), MARD presented its support for rubber processing technology to focus on the export of rubber products rather than raw material. <Institutional/Organizational Aspect>

The organizational/institutional arrangements for research activities, as well as social application of the research outputs, have been

secured with CEBER/HUST, which has been a research hub for NR in the northern Viet Nam, as already mentioned. CEBER with three research departments has continued working on the project results, including the development of new material from deproteinized NR, improvement of treatment technologies for wastewater from rubber production, etc.

Regarding RRIV, CEBER has recently restarted its communication with Vice Director of VRG to involve RRIV in their new projects on treatment technologies for rubber industrial wastewater.

<Technical Aspect>

CEBER is rated as one of the key national laboratories, and it has obtained an ISO certificate for a standardized laboratory. Researchers at CEBER have utilized outputs of this SATREPS project to start new projects on rubber material with silica particle, liquid rubber, liquefied epoxy rubber, and catalytic rubber material, transmitting membrane for a fuel cell. By engaging in these new projects and participating in international conferences, the researchers have improved their research capacity and enhance their knowledge of NR.

Although improvement of RRIV's research capacity for treatment technologies of rubber industrial wastewater is limited due to shortage of research funding caused by the global fall of rubber price, researchers at the School of Environmental Technology/HUST have sustained and improved their knowledge on the treatment technologies of rubber industrial wastewater by conducting projects, participating in difference conference and seminars, exchanging with other overseas universities.

<Financial Aspect>

As already mentioned, HUST has been allocating budget for the operation of the equipment provided by this SATREPS project (e.g., 300-400 million VND for NMR every year), and able to mobilize quite a number of financial sources from the government and secure sufficient budget for their researches on NR (e.g., four research grants from NAFOSTED with the amount ranging from 815 million VND to 835 million VND for three years; three research grants from MOET with the amount ranging from 560 million VND to 3,500 million VND for two years). It is expected that in the future, as well, CEBER will be able to secure enough budget for operation and maintenance of the equipment provided by the project, including NMR, from annual budget allocation by HUST, their independent research funded by MOET and MOST, and also joint research and development activities with the private sector including Japanese companies mentioned above.

RRIV has been facing with shortage of funding for their researches. However, the School of Environmental Technology/HUST, which took over researches on advanced technology for the treatment of rubber industrial wastewater, has been able to secure sufficient budget to conduct new projects utilizing research outputs of the SATREPS project and the lab-scale wastewater treatment reactor provided by the project.

<Evaluation Result>

Therefore, the sustainability of the effects through the project is high.

5 Summary of the Evaluation

The project achieved the Project Purpose of enhancing the capacity of HUST and RRIV on the technologies to realize sophistication and expansion in the application of NR. The project's effects have continued, i.e., CEBER/HUST established under this project has served as the research hub for low protein NR, and CEBER and other involved departments under HUST have continued researches based on the project outputs. Collaboration between these research institutions and the private sector for the social application of the research outputs has progressed. The commercialization of the use of low-protein NR, such as medical gloves, has even started. Regarding sustainability, no major problem has been found in any of the policy, institutional/organizational, technical, and financial aspects. As for efficiency, the project cost exceeded the plan only slightly. Considering all of the above points, this project is evaluated to be highly satisfactory.

# **III. Recommendations & Lessons Learned**

Recommendations for Implementing Agency:

(1) Due to some financial difficulties caused by the global fall in the price of rubber, VGR has not allocated a budget for RRIV to continue their research on wastewater treatment technology. However, other technology needs in Viet Nam's rubber industry need to be addressed. For example, the advanced technology developed by this project is used to treat wastewater from rubber latex production. However, only 20% of rubber processed in Viet Nam is latex concentrate (liquid), and the remaining 80% is solid rubber produced from rubber latex. Therefore, further studies should be carried out to make some adjustments to the technology to treat wastewater from solid rubber processing factories. The Vietnamese Government, VRG, and HUST are thus recommended to consider initiating research programs to address such needs. Also, Japanese universities involved in the project could consider cooperating with Vietnamese researchers to localize the technology to meet the demands of the local market.

(2) At the time of the ex-post evaluation, Dr. Nghia of CEBER was preparing to establish a company to start up a business utilizing the deproteinization technology to produce medical gloves and other products from protein-free NR. The establishment of a company is necessary because CEBER is under the management of HUST, a state university, and CEBER is not eligible to sign a commercial contract with a private company. In Viet Nam, research institutes and universities mainly focus on academic works. The collaboration with the private sector to commercialize their research outputs and apply newly developed technologies in real life is still lacking. Therefore, the Vietnamese government is recommended to introduce a model of the industry – academia – government collaboration in Viet Nam. The government's support for university-affiliated venture businesses should be considered to make use of technologies resulting from academic research at national universities and other research institutes.

#### Lessons Learned for JICA:

This project was designed focusing mainly on research and technology development. Preparation for future social application and promotion for the dissemination of the project outputs was planned, but due to high-end product technology, it was not enough to be feasible. Particularly, the private sector's involvement and ensuring buy-in from the government for the project's outputs were not included. As a result, although RRIV/VRG is under the management of MARD during project time, information sharing with MARD and linkage with the government's programs for the rubber industry's development has not yet been realized.

At the time of the ex-post evaluation, HUST has quite a number of projects on NR funded by MOST and MOET. However, in terms of dissemination and social application, HUST has not been able to link with any government program on rubber industry development (instead, HUST has managed to carry out the dissemination and social application by cooperating with some private companies). For better promotion of future utilization and dissemination of the project's outputs, aiming at the commercialization of newly developed technologies, the private sector's involvement at the beginning of the project and understanding of the Vietnamese government on the importance of the project is necessary. More outreach activities targeting the private sector and government agencies should have been included in the project. At the end of 2020, VRG asked HUST to support the protein-free rubber technology.

In addition, soon at the project designing stage, some economic analysis or initial market surveying and discussion on proprietary right to consider the potential application/commercialization of the technologies developed by the project should have been considered.

Also, JICA could have encouraged the Vietnamese side to prepare a plan/roadmap of 5-10 years to sustain the project outputs and prepare for future applications of the developed technologies and to have it agreed/endorsed among all the players, including relevant state agencies, involved research institutes and potential private sector partners by the time of project completion.



Photo 1. Medical gloves made from deproteinized NR compared with normal products



Photo 2. Center for Rubber Science and Technology (CEBER) in the campus of HUST

Country Name		Project for the Development of Crop Genotypes for the Midlands and Mountain Areas of North
Socialist Republic of Viet		Vietnam
Nam		
I. Project Outline		
Background	year in self-suf high yid research Nationa results. develop advance evaluat	
Objectives of the Project	socio-ed method high yid contribu 1. Ex 2. Pro- soc	project aimed to strengthen the rice breeding system to develop promising lines adapting for natural and conomic conditions in the midlands and mountain areas of North Viet Nam through (i) improving breeding using high-throughput genotyping technology, (ii) developing promising lines with short growth duration, elding, and disease and insect resistance, and (iii) characterizing eco-physiology of promising lines, thereby uting to dissemination of the improved rice varieties. pected Overall Goal: N.A. oject Purpose: Rice breeding system is strengthened to develop promising lines adapting for natural and cio-economic conditions in the midlands and mountain areas of North Viet Nam.
Activities of the Project	<ol> <li>Project site: Hanoi, Lao Cai Province, Thai Nguyen Province, Soc Trang Province</li> <li>Main Activities: (i) Conduct genetic survey and identify useful genes; optimize DNA marker assisted selection (MAS) by high-throughput genotyping technology; accelerate generations using high temperature conditions of Mekong Delta.</li> <li>(ii) Develop promising lines; accumulate useful genes (pyramiding) in promising lines; evaluate phenotypical traits of promising lines.</li> <li>(iii) Characterize physiological property of available and newly developed lines; test ecological adaptability of available and newly developed lines; compile information for recommended cultivation methods of promising lines.</li> </ol>	
Project Period		ber 2010 – December 2015 Project Cost (ex-ante) 383 million yen, (actual) 463 million yen
Implementing Agency	Vietnan	n National University of Agriculture (VNUA)
Cooperation Agency in Japan		of Agriculture, Kyushu University; Institute of Tropical Agriculture, Kyushu University; Bioscience and mology Center, Nagoya University

# II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

-The logical framework of this SATREPS project has the Super Goal "Food security is improved, and sustainable rural development is progressed by disseminating improved rice varieties" but does not have the Overall Goal. Although the terminal evaluation report treated this goal as the Overall Goal, the first half of it, namely, "Food security is improved and sustainable rural development is progressed" is considered too high to attain by the time of this ex-post evaluation. Based on the above and the framework of ex-post evaluation of SATREPS projects, this ex-post evaluation regards the following as the Expected Overall Goal, "Improved rice varieties are disseminated", which is the second part of the above-mentioned goal, and examines whether actions toward dissemination, i.e., preparation for registration of improved varieties, collaboration with seed companies, etc., have been taken as actions for social application of the research outputs/outcomes of this project. The first part of the Super Goal, namely, "Food security is improved and sustainable rural development is progressed" was examined to a possible extent as "other positive impacts".

<sup>&</sup>lt;sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development

1 Relevance

<Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, the project was consistent with "10-Year Strategy for Socio-Economic Development (2001-2010)" and "Agricultural and Rural Development Sector Five-Year Plan (2006-2010)", which respectively set forth development of appropriate agricultural production structures such as ensuring food security and promoting rice export and scientific research and application in rural areas, including rural and mountainous areas.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation >

At the time of ex-ante evaluation, the project was consistent with development needs of Viet Nam for strengthening the rice breeding system to develop promising lines adapting for natural and socio-economic conditions in the midlands and mountain areas of North Viet Nam as stated in "Background".

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with "Country Assistance Program for Viet Nam" (2009), including "Rural Development and Improvements in Livelihood" under "Improvements in Living and Social Conditions and Corrections of Disparities".

<Evaluation Result> In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved at the time of project completion. Through the project activities, various promising lines for the new variety of rice were developed with the traits of short growth duration, high yield, resistance against insect/disease, and/or low temperature tolerance. Among them, at least 7 lines (target: at least 2 or 3 lines) had at least one of the three target traits. It was found that growing duration of DCG72 was more than 10 days shorter while DCG19 showed growth duration of 5-10 days shorter than that of KD18, a locally adapted rice variety (Trait (a), target-10 days). As for Trait (b), DCG66 was verified to have high grain yield with an increase of 10% compared to that of KD18 (target:5-10%). Grain yield of DCG36 was also increased with application of nitrogen fertilizer, but their achievement status of the target was not verifiable because degree of increase was not mentioned in the existing project related documents. The lines with resistance against bacteria leaf blight (DCG72 mentioned above, DCG83, and DCG86) and brown planthopper (DCG31 and DCG36) were identified (Trait (c)).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects continued to the time of ex-post evaluation. VNUA continued 7 researches related to the research outputs of the project, some of which were conducted in collaboration with the relevant government authorities in the project site, and implemented 5 new research projects using the research methods developed by the project, the equipment/facilities provided by the project<sup>2</sup> and well-skilled human resources/researchers trained by the project. After project completion, total 50 scientific papers, 3 books related to rice field were published by the researchers involved in the project. Regarding DCG72, VNUA collaborated with seed companies, seed centers and farmers in operation of the experimental paddy fields and extended cultivation. As the result, DCG72 was approved as a new national variety by Ministry of Agriculture and Rural Development (MARD) in 2019, which was widely disseminated by the provincial Department of Agriculture and Rural Developments (DARDs), using cultivation guidelines completed by VNUA based on the guideline prepared by the project. Farmers in Red River Delta and North midland and mountainous regions, including Thai Nguyen province, were using DCG72 in late spring to avoid drought at transplanting time, whereas those in North and South Central Viet Nam, including Nghe An province, were utilizing it for flood avoidance in summer-autumn season. Further, DCG66 was recognized as a temporary national variety. VNUA was cooperating with a seed company and some provincial seed centers to provide seeds for farmers to expand the cultivation area of DCG66. When its production area reaches the required area (over 600 ha), VNUA would apply for official recognition as national variety. In addition, the promising lines carrying genes for both high yield and resistance to brown planthopper/bacteria leaf blight were shared/supplied for researchers for breeding new rice varieties in Crop Research and Development Institute (CRDI) under VNUA. <Status of Achievement for Expected Overall Goal at the time of Ex-post Evaluation>

The Expected Overall Goal was achieved as actions for social application of the research outputs/outcomes of the project were taken. As mentioned above, DCG72 was approved as a new national variety in 2019 and DCG66 was released as temporary national variety in 2018, contributing to dissemination of the improved rice varieties developed by the project. The fact that in a very limited time of project implementation, researchers successfully developed a new rice variety with outstanding traits of very short growth duration and resistance to pest/disease like DCG72 and only few years after the project completion, this research output was officially recognized as national variety, meeting the high requirements of the competent agencies is rather remarkable<sup>3</sup>. The promising lines carrying genes for both high yield and resistance to brown planthopper/bacteria leaf blight were utilized for breeding new rice varieties as well.

Negative impacts were not observed. Meanwhile, various other positive impacts were mentioned by VNUA. For example, research capacity of the researchers involved in the project were improved, which was reflected in promotion of many project participants, including a promoted professor, 5 associated professors and 10 PhD holders in the field of rice science. Among them, 4 associated professors and 5 PhD holders were women. Scientific literacy and awareness of MARD and Ministry of Science and Technology (MOST) were also

 $<sup>^2</sup>$  One equipment item (i.e. DNA Genotyping System with accessories) was not utilized since 2018 due to lack of suitable kit/test regents. In 2012, during the project implementation, the maker decided to discontinue production and sale of test reagents, therefore, the suitable kit/test reagents were available only until 2017. According to VNUA, there were also no similar kit/test reagents produced and sold at the market by other companies suitable to use for the system, thus VNUA was not utilizing the equipment. However, VNUA still utilized the genotyping technology introduced by the project for research activities by using other equipment and applying the knowledge and know-hows learnt from the project.

<sup>&</sup>lt;sup>3</sup> In average, there are about 25-30 new rice varieties to be recognized as national or temporary new national varieties every year, which have to meet the requirements in terms of agronomic characteristic set by the competent agencies including: productivity: 10%-15% higher than productivity of the check variety, growth duration: shorter than that of the check variety and resistance to insect and disease.

So far about 450-500 national rice varieties and about 200 temporary national varieties have been officially recognized in Vietnam. However, among the recognized varieties, the new varieties with a very short growth duration (from 80-100 days) like DCG72 is limited.

improved through the project as VNUA regularly updated and reported the research results. Dissemination and cultivation of DCG72 had a positive impact on food security in the project site since it was a very short growth duration rice variety and was suitable for the North midland and North and South Central regions, where droughts and floods often occurred, seriously affecting rice production. <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement	of Project	Purpose and	Overall	Goal

socio-economic conditions in the midlands and mountain areas of North Viet Nam.       shortened by 10 days (current averaging growing duration is 100-110 days in autumn and tareas of North Viet Nam.       >Trait (a): Growing duration of DCG72 with background of KD18 and DCG19 with ackground of IR24, another locally adapted rice variety, also showed growth duration of 5-10 days shorter than that of KD18.         Nam.       (b) Yield increases by 5-10% compared with the popular (check) variety in the Project area (midland and mountain area = Thai Nguyen and Lao Cai) *to compare figures measured at experimental fields       >Trait (c): It was verified that the promising lines with background of KD18 carrying genes for bacteria leaf blight resistance (including DCG72, DCG83 and DCG86) and genes for brown planthopper resistance (including DCG72, DCG83 and DCG86) and genes for brown planthopper resistance (including DCG72, DCG83 and DCG86) and genes for brown planthopper resistance was verified on the tested promising line; however, name of tested lines was not mentioned in the available project related documents.         (Expected Overall Goal) Improved rice varieties are disseminated.       (Ex-post Evaluation)         *See <special perspectives<br="">Considered in the Ex-Post Evaluation &gt;       OCG64 was recognized as a new national variety and disseminated to the farmer in both the project site and non-project sites.         *See <special perspectives<br="">Considered in the Ex-Post Evaluation &gt;       &gt;CG66 was recognized as a temporary national variety and VNUA was promoting expansion of its cultivation in collaboration with a seed company and provincial seed centers. VNUA would apply for recognizion as a national variety once the cultivation area reaches the required area.         (Ex-post Evaluation &gt;&lt;</special></special>	Aim	Indicators	Results
strengthened to develop       rice with the following traits         promising lines adapting       (target: at least 2 or 3 lines)         for natural and control is in the mildlands and mountain areas of North Viet       (a) Growing duration is is socio-ecconomic         Nam.       (b) Yield increases by 5-10%         Nam.       (b) Yield increases by 5-10%         (b) Yield increases by 5-10%       (b) Yield increases by 5-10%         (check) variety in the Project area (midland and mountain area = Thai Nguyen and Lao       -Trait (a): Growing duration of KD18 carrying a gene to increase primary rachis branches, such as DCG36, was increased with application of nitrogen fertilizer, but degree of increase is not mentioned in the available project related documents.         (c) Resistance against insect/disease was introduced       Prait (b): May verified that the promising lines with background of KD18 carrying a gene to increase of mentioned in the available project related documents.         (Expected Overall Goal)       Promising lines developed by the project were continuously utilized by VNUA, the related government organizations, and other research institutes.         *See <special considered="" evaluation="" ex-post="" in="" perspectives="" the="">       -DCG66 was recognized as a temporary national variety and disseminated to the farmer in both the project site and non-project sites.         • DCG66 with background of KD18 carrying agenes for borin planthopper resistance (including DCG31 and DCG36) had resistance against incet/disease was introduced         (Expected Overall Goal)       Promising lines develope</special>		· ·	Status of the Achievement: achieved (continued)
promising lines adapting for natural and socio-econoucie conditions in the midlands and mountain areas of North Viet Nam.       (a) Growing duration is averaging growing duration is midlands and mountain areas of North Viet Nam.       growing duration is averaging growing duration is invited by 104 days (current by 100-110 days in autumn and areas of North Viet Nam.       Trait (a): Growing duration of DCG72 with background of KD18 arcrying a gene for shore averaging growing duration is invited increases by 5-10% compared with the popular (check) variety in the project area (midland and mountain area = Thai Nguyen and Lao Cai) *to compare figures measured at experimental fields (c) Resistance against insect/disease was introduced       >Trait (b): DCG66 with background of KD18.         (c) Resistance against insected at experimental fields (c) Resistance against insect/disease was introduced       >Trait (c): Naw serified that the promising lines with background of KD18 carrying genes for bacteria leaf blight resistance (including DCG3) and DCG36) and genes for brown planthopper resistance (including DCG3] and DCG36) and genes for brown planthopper resistance (including DCG3] and DCG36) and genes for white-backed planthopper resistance was verified on the texted promising line; however, name of tested lines was not mentioned in the available project related documents.         (Expected Overall Goal) Improved rice varieties are disseminated.       (Ex-post evaluation) - The promising lines developed by the project related documents.         (Expected Overall Goal) Improved rice varieties are disseminated.       (Ex-post Evaluation) achieved - DCG72 was officially recognized as a new national variety and disseminated to the farmer in both the project site and non-project sites. - DCG66 was recognized as a temporary national variety once the cul	Rice breeding system is	lines for the new variety of	(Project Completion)
for natural and socio-economic conditions in the socio-economic conditions in the averaging growing duration is shortened by 10 days (current averaging growing duration is averaging growth duration was more than 10 days shorter than that of KD18. In addition, it was also found that grain yield of lines with background of KD18 carrying a gene to increase primary rachis branches, such as increase of 10% compared to KD18. In addition, it was also found that grain yield of lines with background of KD18 carrying a gene to increase is not mentioned in the available project related documents.         (a) Growing duration is averaging the popular (check) variety in the Project fields       (c) Resistance against insect/disease was introduced       >Trait (c): It was verified that the promising lines with background of KD18 carrying agene for white-backed planthopper resistance (including DCG32, DCG33 and DCG36) and genes for white-backed planthopper resistance was verified on the tested promising line; however, name of tested lines was not mentioned in the available project related documents.         (Expected Overall Goal)       Expost Evaluation)       - The promis	strengthened to develop	rice with the following traits	-Various promising lines for the new variety of rice were developed with the traits of short
socio-economic       shortened by 10 days (current       >Trait (a): Growing duration of DCG72 with background of KD18 carrying a gene for short         averaging growing duration is       averaging growing duration is       provid duration was more than 10 days shorter than that of KD18 and DCG19 with         nam.       100-110 days in autumn and       interest of North Viet       provid duration was more than 10 days shorter than that of KD18.         Nam.       (b) Yield increases by 5-10%       5-10 days shorter than that of KD18.       provid duration of arcrase primary rachis branches, such as the check) variety in the Project         area (midland and mountain area = Thai Nguyen and Lao       CG36, was increased with application of nitrogen fertilizer, but degree of increase is not mentioned in the available project related documents.       >Trait (c): It was verified that the promising lines with background of KD18 carrying genes for borwn planthopper resistance (including DCG31 and DCG36) had resistance against bacter lieaf blight raches was reliafed blight resistance was verified not the tested promising line; however, name of tested lines was not mentioned in the available project related documents.         (Expected Overall Goat)       (Ex-post evaluation)       - The promising lines developed by the project were continuously utilized by VNUA, the related government organizations, and other research institutes.         *Also see the results of the Expected Overall Goat       (Ex-post Evaluation) achieved         *See <special perspectives<="" td="">       - DCG32 was officially recognized as a new national variety and disseminated to the farmenin both the proj</special>	promising lines adapting	(target: at least 2 or 3 lines)	growth duration, high yield, resistance against insect/disease, and/or low temperature
conditions in the midlands and mountain areas of North Viet Nam.       averaging growing duration is mountain areas of North Viet Nam.       growth duration was more than 10 days shorter than that of KD18 and DCG19 with 15-125 days in sutum and 15-125 days in spring season 15-125 days in spring season (check) variety in the Project area (midland and mountain area = Thai Nguyen and Lao Cai) *to compare figures measured at experimental fields (c) Resistance against insect/disease was introduced       >Trait (0): DCG66 with background of IR24 was verified to have high grain yield with an increase of 10% compared to KD18. In addition, it was also found that grain yield of lines with background of KD18 carrying a gene to increase primary rachis branches, such as DCG36, was increased with application of nitrogen fertilizer, but degree of increase is not mentioned in the available project related documents.         C(c) Resistance against insect/disease was introduced       >Trait (0): It was verified ton the tested promising lines with background of KD18 carrying genes for bacteria leaf blight resistance (including DCG31 and DCG36) had resistance against insect/disease was introduced         (Expected Overall Goal) Improved rice varieties are disseminated. *See <special perspectives<br="">Considered in the Ex-Post Evaluation &gt;       (Ex-post Evaluation) achieved · DCG72 was officially recognized as a new national variety and VNUA was promoting expansion of its cultivation in collaboration with a seed company and provincial seed centers. VNUA would apply for recognition as a national variety once the cultivation area reaches the required area. - The promising lines with background of KD18, carrying genes for both high yield and resistance to brown planthopper/bacteria leaf blight were shared/supplied for breeding new rice varieties in CRD1 under VNUA.</special>	for natural and	(a) Growing duration is	tolerance. Among them, at least 7 lines with at least one of the 3 target traits were developed.
midlands and mountain       100-110 days in autumn and         areas of North Viet       115-125 days in spring season         Nam.       (b) Yield increases by 5-10%         (c) Yield increases by 5-10%       (b) Yield increases by 5-10%         (c) Wield increases by 5-10%       (check) variety in the project         (check) variety in the project       area (midland and mountain area = Thai Nguyen and Lao         Cail *to compared with the popular       (check) variety in the Project         (a) *to compare figures       measured at experimental fields         (c) Resistance against insect/disease was introduced       >Trait (c): It was verified that the promising lines with background of KD18 carrying agenes for brown planthopper resistance (including DCG72, DCG83 and DCG86) had resistance against bacter         leaf blight and brown planthopper resistance (including DCG71, DCG86 and DCG86) had resistance against bacter         leaf blight and brown planthopper resistance (including DCG72, DCG83 and DCG86) had resistance against bacter         leaf blight and brown planthopper resistance (including DCG72, DCG83 and DCG86) had resistance against bacter         leaf blight and brown planthopper resistance (including DCG72, DCG83 and DCG86) had resistance against bacter         leaf blight resistance (acue)         (Expected Overall Goal)         Improved rice varieties         are disseminated.         *See <special perspectives<="" td="">         Con</special>			>Trait (a): Growing duration of DCG72 with background of KD18 carrying a gene for short
areas of North Viet       115-125 days in spring season       5-10 days shorter than that of KD18.         Nam.       (b) Yield increases by 5-10%       >Trait (b): DCG66 with background of IR24 was verified to have high grain yield with an increase of 10% compared to KD18. In addition, it was also found that grain yield of lines with background of KD18 carrying a gene to increase primary rachis branches, such as DCG36, was increased with application of nitrogen fertilizer, but degree of increase is not mentioned in the available project related documents.         Cai) *to compare figures measured at experimental fields       (c) Resistance against insect/disease was introduced         (c) Resistance against insect/disease was introduced       Trait (b): DCG36 was norenessitance (including DCG32 and DCG36) and genes for brown planthopper resistance (including DCG32 and DCG36) and genes for brown planthopper resistance (including DCG32 and DCG36) had resistance against background of the tested promising line; however, name of tested lines was not mentioned in the available project related documents.         (Expected Overall Goal)       - The promising lines developed by the project were continuously utilized by VNUA, the related government organizations, and other research institutes.         *Also see the results of the Expected Overall Goal       - DCG72 was officially recognized as a new national variety and disseminated to the farmer in both the project site and non-project sites.         *See <special considered="" evaluation="" ex-post="" in="" perspectives="" the="">       - DCG66 was recognized as a temporary national variety and VNUA was promoting expansion of its cultivation in collaboration with a seed company and provincial seed centers. VNUA would appl</special>			
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related government organizations, and other research institutes.         *Also see the results of the Expected Overall Goal.         (Expected Overall Goal)         Improved rice varieties are disseminated.         *See <special considered="" evaluation="" ex-post="" in="" perspectives="" the="">         Evaluation &gt;         *The promising lines with background of KD18, carrying genes for both high yield and resistance to brown planthopper/bacteria leaf blight were shared/supplied for breeding new rice varieties in CRDI under VNUA.</special>			
*Also see the results of the Expected Overall Goal.         (Expected Overall Goal)         Improved rice varieties are disseminated.         *See <special perspectives<="" td="">         Considered in the Ex-Post Evaluation &gt;         Evaluation &gt;         *The promising lines with background of KD18, carrying genes for both high yield and resistance to brown planthopper/bacteria leaf blight were shared/supplied for breeding new rice varieties in CRDI under VNUA.</special>			
(Expected Overall Goal)       (Ex-post Evaluation) achieved         Improved rice varieties are disseminated.       - DCG72 was officially recognized as a new national variety and disseminated to the farmer in both the project site and non-project sites.         *See <special considered="" evaluation="" ex-post="" in="" perspectives="" the="">       - DCG66 was recognized as a temporary national variety and VNUA was promoting expansion of its cultivation in collaboration with a seed company and provincial seed centers. VNUA would apply for recognition as a national variety once the cultivation area reaches the required area.         - The promising lines with background of KD18, carrying genes for both high yield and resistance to brown planthopper/bacteria leaf blight were shared/supplied for breeding new rice varieties in CRDI under VNUA.</special>			
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Evaluation > reaches the required area. -The promising lines with background of KD18, carrying genes for both high yield and resistance to brown planthopper/bacteria leaf blight were shared/supplied for breeding new rice varieties in CRDI under VNUA.	*See <special perspectives<="" td=""><td></td><td></td></special>		
-The promising lines with background of KD18, carrying genes for both high yield and resistance to brown planthopper/bacteria leaf blight were shared/supplied for breeding new rice varieties in CRDI under VNUA.	Considered in the Ex-Post		
resistance to brown planthopper/bacteria leaf blight were shared/supplied for breeding new rice varieties in CRDI under VNUA.	Evaluation >		*
rice varieties in CRDI under VNUA.			
Sources: Terminal Evaluation Report, Final Report, questionnaire and interview survey to VNUA.	Sources: Terminal Evaluation	ation Report, Final Report, ques	stionnaire and interview survey to VNUA.

3 Efficiency

While the project period was within the plan, the project cost exceeded the plan (ratio against the plan: 100%, 121%). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair. 4 Sustainability

<Policy Aspect>

The Government of Viet Nam and MARD issued many policies/plans to promote research and application of science and technology with the aim of increasing productivity, quality, ensuring food security, including disseminating the new rice varieties developed by the project, including MARD's "5-year Agriculture and Rural Development Plan (2016-2020)" and "10-year Strategy for Agriculture and Rural Development (2011-2020)". MARD approved 2 promising lines i.e. DCG72 as national rice variety in 2019 and DCG66 as temporary national rice variety in 2018 as stated in "Effectiveness/Impact".

<Institutional/Organizational Aspect>

International Center of Plant Research, Japan/Vietnam (CIPR) was established in VNUA during the project implementation to exploit the facilities/equipment and human resource of the project. CIPR with 12 officers (6 working in Viet Nam and 6 attending training abroad at the time of ex-post evaluation) was assigned to continue research activities in major fields of genetics and breeding new varieties, crop physiology, nutrition and cultivation techniques. VNUA also established a collaborative network between VNUA and some governmental authorities and/or enterprises with the involvement of scientists/researchers trained by the project, including the seed centers in the project and non-project sites. The related governmental authorities such as MARD and provincial DARDs implemented policies/programs for utilization of the project's research outputs/outcomes in collaboration with VNUA. Almost all the provided equipment/facilities were continuously operated and maintained by VNUA.

<Technical Aspect>

The researchers involved in the project continuously improved their research capacity and sustained their skills and knowledge to properly operate and maintain the provided research facilities/equipment through participating in not only managing and implementing new

research projects but also continuing the related research activities using the research outputs of the project. The related government authorities such as MARD and MOST sustained/improved their scientific literacy through continuously implementing policies/programs on breeding rice varieties and funding new research projects based on the research outputs. <Financial Aspect>

Governmental authorities, international donors and research organizations/ institutions were continuously providing financial sources of more than 18 billion VND from 2015 to 2020 to VNUA for continuing or starting the related research activities mentioned in "Effectiveness/Impact" as well as for operation and maintenance of the installed research facilities/equipment after the project completion. <Evaluation Result>

In light of the above, the sustainability of the effects through the project is high.

5 Summary of the Evaluation

The project achieved the Project Purpose (i.e. Rice breeding system is strengthened to develop promising lines adapting for natural and socio-economic conditions in the midlands and mountain areas of North Viet Nam). The effect of the project continued, and the expected Overall Goal (i.e. Improved rice varieties are disseminated) was achieved. Regarding the sustainability, no major problems were observed in terms of the policy, institutional/organizational, technical, and financial aspects. As for the Efficiency, the project cost exceeded the plan. Considering all of the above points, this project is evaluated to be highly satisfactory.

# III. Recommendations & Lessons Learned

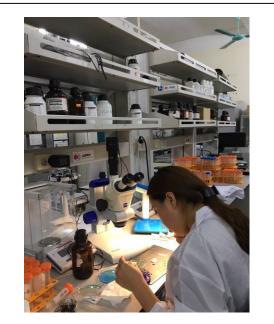
# Recommendations for Implementing Agency:

- It is recommended that VNUA continue to collaborate with governmental authorities, local provinces and private companies to supply seeds to farmers, expand cultivation area of DCG66 to confirm the advantage of wide adaptability and high grain yield of the improved rice variety. When DCG66 production area reaches the required area, VNUA should apply for official recognition as a national variety as soon as possible, which will contribute to dissemination of the improved rice varieties nationwide.

Lessons Learned for JICA:

- As stated above, one equipment item (i.e. DNA Genotyping System with accessories) has not been utilized since 2018 due to no availability of suitable kit/test regents at the market. Before launching the project, it is important for the project formulation team to introduce appropriate equipment, taking considerations of the conditions for research implementation and continuation (availability of chemicals).

- As stated above, two newly-developed rice varieties in the project have been recognized as national variety/temporary national variety and widely disseminated with the collaboration governmental authorities and private companies, which was enhanced during the project implementation and continued after the project completion. In order to facilitate the social application of the SATREPS project's research output/outcome in Viet Nam, it is important for the project team and Vietnamese counterpart research institute(s) to continuously update and report the results of research activities to the state management agencies and keep the continuous linkage with the relevant administration (both central governmental authorities and local governments) and private sector not only during the project implementation but also after the project completion.



VNUA's young researcher (graduated student) is conducting research activities at CIPR's laboratory



Checking rice seeds in CIPR's cold storage

Country Name	Comparative Studies of the Reproductive Biology and Early Life History of Two
Republic of Panama	Tuna Species Yellowfin Tuna and Pacific Bluefin Tuna for the Sustainable Use of These Resources

# I. Project Outline

I. Project Outline			
Background	Tuna fishery is an important industry for the Republic of Panama (hereinafter referred to as "Panama"), which generates valuable foreign exchange earnings for the country. However, in recent years, tuna resources show a decreasing trend and the excessive fishing pressure is said to be a major cause of the problem. Therefore, sustainable resource management of the species is highly required. Tuna resources are migratory species distributing widely in the Pacific Ocean and these resources are exploited by a large number of coastal countries of the Ocean. Tunas are normally found in offshore and open seas because of its nature, and which makes difficult to obtain research samples, this is why there are many unexplained points on their biological information. In this project, the research was conducted with the Achotines Research Institute in Los Santos Province (the institute is operated by the Tuna Commission (IATTC), and some facilities and equipment are also used by the Panama Aquatic Resource Authority (ARAP)), aiming at accumulating biological information and conducting research to make more effective and accurate resource management of Tuna.		
Objectives of the Project	<ol> <li>Through identification of spawning characteristics of Yellowfin tuna (YFT) and Pacific Bluefin tuna (PBF), establishment of a method to identify maternal life of YFT, identification of critical factors to affect the survival of YFT and PBF in their early life history and development of fingerling production technologies, the project aimed at adequately obtaining and synthesizing scientific knowledge and information on the reproductive biology and early life history of two tuna species, which are fundamental for the sustainable use of these resources, thereby strengthening resource management of two tuna species in Panamanian waters and IATTC jurisdiction area.</li> <li>Expected Overall Goal: Resource management of two tuna species in Panamanian waters and IATTC jurisdiction area is strengthened.</li> <li>Project Purpose: Scientific knowledge and information on the reproductive biology and early life history of two tuna species, which are fundamental for the sustainable use of these resources are adequately obtained and synthesized.</li> </ol>		
Activities of the Project	<ol> <li>Project Site: Los Santos Province</li> <li>Main Activities: 1) Identification of spawning characteristics of YFT and PBF, 2) Establishment of a method to identify maternal life of YFT, 3) Identification of critical factors that affect the survival of YFT and PBF in their early life history, 4) Development of fingerling production technologies, etc.</li> <li>Inputs (to carry out above activities)         Japanese Side         Panamanian Side         Experts: 48 persons         Trainees Received: 21 persons         Equipment: fish cage, freezer for feed storage, survey vessel, etc.         Local expense: cost for project activities         Local expense: cost for utility and equipment such as laptop and refrigerator, etc.     </li> </ol>		
Project Period	April 2011 – March 2016Project Cost(ex-ante)374 million yen, (actual)402 million yen		
Implementing	Aquatic Resources Authority of Panama (ARAP)		
Agency	Inter-American Tropical Tuna Commission Achotines Laboratory (IATTC Achotines Laboratory)		
Cooperation Agency in Japan	Kindai University		
iii sapan			

# II. Result of the Evaluation

1 Relevance

<Consistency with the Development Policy of Panama at the Time of Ex-Ante Evaluation >

The project was consistent with Panama's development policies of "The Policy on the Aquatic Resources of Panama for Fisheries and Aquaculture" (2010) and "National Strategy for aquaculture development" (2010) aiming at promotion of sustainable management of marine resources and promotion of development and diversification of aquaculture.

<Consistency with the Development Needs of Panama at the Time of Ex-Ante Evaluation >

The project was consistent with Panama's development needs of necessity of accumulating efficient biological information and conducting a study that contributes to more effective and accurate predictions of resource management for the sustainable use of tuna resources.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy<sup>2</sup> for Panama setting "environmental conservation" as one of the three priority

<sup>&</sup>lt;sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development

#### areas.

<Evaluation Result>

In light of the above, the relevance of the project is high.

# 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. Scientific and technical information applicable to resource management of tuna species, such as reproductive biology and early life history, was synthesized through the project and disseminated domestically and internationally by the following means: 34 publications (research paper, article and book), 70 conferences, the website in Japanese, English and Spanish, and 26 regional seminars/workshops. It was noteworthy as a highly remarkable achievement that the project achieved the partial cycle (from bloodstock to juveniles) of YFT cultivating for the first time in the world.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued since the project completion. The scientific and technical information produced by the project has been used for 6 research projects implemented by the IATTC, the ARAP, the University of Miami, the International Seafood Sustainability Foundation (ISSF), the University of Southern Mississippi, and the University of Texas. For example, the research project in collaboration with the ISSF is developing advanced sonar for tuna seiners to identify target species and reduce bycatch of juveniles by using biological information of tuna species identified by the project.

The research facilities and equipment provided by the project have still been maintained at the IATTC Achotines Laboratory and used for the research projects mentioned above.

<Status of Achievement for Expected Overall Goal at the time of Ex-post Evaluation>

The Expected Overall Goal has been partially achieved at the time of ex-post evaluation. As described above, research projects using the project outputs are ongoing in a collaboration between the ARAP or the IATTC and other institutions. Although it is too early to say that the overall goal, the strengthening of resource management of two tuna species, has been completely achieved at the moment, the impact of the project is concluded to be huge in that scientific and technical knowledge about the genetic information, reproductive biology and early life history of tuna species, which are vital for the sustainable resource management of tuna species in the future, were piled up, and the knowledge is expected to be used for future resource management at a practical level.

In terms of the utilization of research outcomes, the IATTC has been engaging in existing long-term research projects to secure population of tuna in the future. It is also expected that full cycle cultivating and other sustainable resource management method will be developed and practiced by the IATTC and the ARAP.

<Other Impacts at the time of Ex-post Evaluation>

Some positive impacts were confirmed at the time of ex-post evaluation. For instance, researchers of the IATTC and the ARAP improved their research capacity by receiving trainings from Japanese researchers and visiting Japan for training. Especially, the training regarding rearing juveniles of YFT helped the researchers to improve their technical capacity of monitoring and others. <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal			
Aim	Indicators	Results	
(Project Purpose) Scientific knowledge and information on the reproductive biology and early life history of two tuna species, which are fundamental for the sustainable use of these resources, are adequately obtained and synthesized.	1. Synthesis of scientific and technical	Status of the Achievement: Achieved (Continued) (Project Completion)	
(Expected Overall Goal) Resource management of two tuna species in Panamanian waters and JATTC jurisdiction area is strengthened.	1. Resource management measures elaborated based on the project outputs (improved biological information on two tuna species).	completely strengthened at the moment in tast there is no strategic	

<sup>2</sup> Ministry of Foreign Affairs "ODA Databook" (2011)

suitable methods of sustainable resource management have been
collected and synthesized for future resource management.
Source : JICA internal document, Terminal Evaluation Report, Questionnaire and interview to the ARAP and the IATTC

#### 3 Efficiency

Although, the project cost slightly exceeded the plan (ratio against the plan: 107%), the project period was within the plan (ratio against the plan: 100%) and the outputs were produced as planned. Therefore, the efficiency of the project is fair.

# 4 Sustainability

<Policy Aspect>

"National Action Plan for Sustainable Fisheries" (2016-2018) and "National Strategic Plan Panama 2030" (2017-2030) aim at the sustainable use of aquatic resources, with an ecosystem approach and transparent, coherent, equitable and participatory management, which guarantees the social and economic well-being of the fisheries and Aquiculture sector. As the project aimed to strengthen resource management of tuna species in Panamanian waters and IATTC jurisdiction areas, the project deemed purposeful for the national policies. <Institutional/Organizational Aspect>

There have not been any major changes in the institutional/organizational arrangement of the implementing agencies for the use and management of scientific and technical information applicable to resource management of tuna species produced by the project. There has been a cooperation between the ARAP and the IATTC for over 35 years, and they have initiated and continued new projects together with external institutions at the Achotines Laboratory using the results of the project into future joint activities. According to the ARAP and the IATTC, the number of the staff allocated to the ARAP and the IATTC is 2 researchers for the ARAP and 15 researchers and technicians for the IATTC. The organizations have a certain number of the staff for on-going investigations.

Additionally, the principal equipment provided by the project are maintained in good condition and appropriately safekept at the laboratory based on the agreement between the IATTC and the ARAP.

<Technical Aspect>

Through the implementation of the project and on-going research projects, the researchers of the ARAP and the IATTC have sustained the knowledge and skills necessary to continuously carry out research projects related to the scientific and technical information applicable to resource management of tuna species. As for the operation and maintaining of the research facilities and equipment provided by the project, all staffs have acquired the knowledge through the project and new research projects.

The guidelines (Experimental method of the distinction of sex by volume of hormone in small independent fin of PBF and larval and juvenile rearing of YFT) developed by the project have been continuously used for the new projects. For example, biologists at Achotines Laboratory are continuously using the guidelines for their research on distinguishing sex of YFT and keep contact with Kindai University. <Financial Aspect>

The budget for the activities of the IATTC Achotines Laboratory is 390,000 US Dollars per year. 70% of the budget is provided by the IATTC and the remainder is obtained through outside grants from external institutions and joint research projects. The budget is sufficient for on-going investigations. The ARAP and the IATTC have been trying to secure the budget to maintain the Laboratory's infrastructure and equipment in excellent condition.

<Evaluation Result>

In light of the above, no problem has been observed in terms of the policy, Institutional/Organizational, technical and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness is high.

# 5 Summary of the Evaluation

The project achieved the Project Purpose aiming at adequately obtaining and synthesizing scientific knowledge and information on the reproductive biology and early life history of two tuna species and has partially achieved the Overall Goal aiming at strengthening resource management of two tuna species in Panamanian waters and JATTC jurisdiction area. As for sustainability, the implementing agencies have had a sufficient number of staff, the necessary knowledge and skills and secured a sufficient amount of budget for research projects related to tuna species. In terms of efficiency, although the project cost slightly exceeded the plan, the project period was within the plan. It was confirmed that the outcomes were produced as planned.

Considering all of the above points, this project is evaluated to be highly satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• The social impact through the project (contribution to local fisheries and the fishery sector, etc.) was limited because of the nature of SATREPS, focusing on research only; therefore, realizing such social impact is considered to be a next activity. It would be recommendable to involve local fishers and companies during project and include components of technical transfer to them so that the future project can contribute directly to local communities to have social impact.

Lessons Learned for JICA:

- It was difficult to provide a long-term training in Japan to counterparts because the counterpart researchers were unable to be away from their institutes for a long time. In this regard, the project developed technical manual about larval and juvenile rearing of YFT so that the counterparts were able to follow up the research during the absence of Japanese researchers and after the project. The development of detailed scribed manual is quite effective for sustainability of project.
- The outcomes of the project have been widely recognized and been used internationally. It was because of having IATTC as a counterpart, which is worldwide well-known international organization that has great influence on tuna resource management, also ARAP who is leading a development of the fishery and aquiculture sector in Panama. In addition, with the effort of Kindai University, IACCT, ARAP and JICA, the project was widely publicized in Panama and Japan through various articles on newspaper and TV programs and press tours, which was effective to get wide public understanding of the project. Therefore, the advertisements with counterparts are impactful in order to expand the project outputs and get public understanding.
- In this project, partnership with a regional organization (i.e. the IATTC) was advantageous in terms of facilitating follow-up research efforts and wider dissemination of research findings. However, research work of the IATTC was meant to deal with a regional issue of

tuna resource management and did not directly address the issue of national interest of the implementing country. In this project, additional ARAP researchers were involved to learn skills of studying reproductive biology and early life history of fish species. It is noteworthy that the impact and benefit to the country should be considered even in the project with international organization.



Returning cultured juvenile tuna from sea cage to land based tank



Collecting information on the reproductive biology

conducted by Paraguay Office: June 2020

Country Name				conducted by Fullguly Office. Jule 2020	
Republic of Paraguay		Project for Capacity Development of Distribution Network Management of ESSAP			
I. Project Outline	, <i>j</i>				
Background	The water coverage in the Asuncion Metropolitan area in 1993 remained at a very low level of 63%. Then, a drinking water facility was built in the same year by the Government of Paraguay, and another new facilities for water purification, water conveyance, and water supply were installed in some parts of the city by the ODA loan, the "Asuncion Metropolitan Area Potable Water Project" (1995-2002). As a result, the coverage in the same area improved to 80% in 2005. On the other hand, a non-revenue water (NRW) rate reached 48% in 2008, which revealed that the rate had not been improved as planned. In the Metropolitan area, water pipe bursts which occurred 96 points a day in average caused various problems such as the enormous repair cost, a decrease in operating revenues due to a huge volume of water leakage, and damages on paved roads. The limited progress in dividing water pipe network into blocks with an adequate area for management also constrained not only obtaining the data of water supply volumes and water consumption volumes but also coping with an increase in the number of illegal connections to the distribution pipes associated with a rapid population growth.				
Objectives of the Project	<ul> <li>Through desk-top training and on-the-job training (OJT) in model areas, the project aimed at enhancing capacity of the Sanitation Services Company of Paraguay (Empresa de Servicios Sanitarios del Paraguay S. A.: ESSAP) for distribution network management (DNM), thereby contributing to improvement of its water supply service.</li> <li>1. Overall Goal: ESSAP's water supply service is improved.</li> <li>2. Project Purpose: Distribution network management capacity of ESSAP is enhanced.</li> </ul>				
Activities of the project	<ol> <li>Project site: Paraguay.</li> <li>Main activities: Training of headquarters (HQs) staff on methodologies of DNM, NRW management, and water pressure control, OJT in model areas, training for Regional Branch Office staff on DNM, development of training manuals and technical guides, etc.</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Paraguayan Side</li> <li>Experts from Japan: 13 persons</li> <li>Training in Japan: 10 persons</li> <li>Training in the third country: 13 persons</li> <li>Equipment for NRW management and water pressure control, etc.</li> <li>Local cost for training expenses, monitoring</li> </ol>				
Project Period	March (Extend	2011 to December 2014 ded period: March 2014 to ber 2014)	Project Cost	(ex-ante) 360 million yen, (actual) 421 million yen	
Implementing Agency	Sanitati	ion Services Company of Paraguay	v (Empresa de Se	rvicios Sanitarios del Paraguay S. A.: ESSAP)	
Cooperation Agency in Japan	Ministry of Health, Labour and Welfare, Kurashiki City, Hamamatsu City, Kyowa Engineering Consultants Co., Ltd., Chuo Kaihatsu Corporation				

# II. Result of the Evaluation

<Points to be considered at the time of the ex-post evaluation>

- Indicator 2 of the Project Purpose was the number of ESSAP staff who completed training during the project period. At the ex-post evaluation, ESSAP's organizational system and capacity for sustaining the project effects were verified as part of sustainability.

1 Relevance

<Consistency with the Development Policy of Paraguay at the time of ex-ante evaluation and project completion>

One of the priority policies set forth in the "Economic and Social Strategic Plan" (2008-2013) was the promotion of infrastructure development. In addition, as in the "Social Development Public Policy (Paraguay para Todos)" (2010-2020), development and maintenance of public service infrastructure and improvement of the access to drinking water were prioritized. Thus, the project objectives were consistent with Paraguay's development policies at the time of both ex-ante evaluation and project completion.

<Consistency with the Development Needs of Paraguay at the time of ex-ante evaluation and project completion>

There was little progress in dividing water pipe network into blocks (management of blocks with adequate size dividing the water distribution areas) constrained measuring the water supply volume and the water consumption volume and coping with the increase in illegal connections associated with a rapid population growth. There were urgent needs for developing a system for managing NRW and technical capacity for DMN. Thus, the project was consistent with development needs of Paraguay.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

One of the priority areas, which was confirmed by the ODA task force in the economic cooperation policy dialogue between Paraguay and Japan in July 2010was sustainable economic development, and the development objective under this priority was the enhancement of economic and social infrastructure<sup>1</sup>.

<sup>&</sup>lt;sup>1</sup> Ministry of Foreign Affairs (2011) "ODA Databook 2010."

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

The Project Purpose was achieved. ESSAP staff, learned a series of distribution network management technologies through the trainings delivered by the project and used them in their daily work. They also used the technologies to support other departments in daily operation work (Indicator 1). This was attributed to the learning results of the HQs staff and Regional Branch Office engineers and technicians through OJT in the model areas and basic training (Indicator 2). The water distribution network improvement plan was developed by the project, and it was officially approved at the board meeting as an ESSAP's action plan (Indicator 3). This plan aimed at developing the system for NRW for each large block.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued. The DNM technologies strengthened by the project have been continuously utilized in the daily work including measurement of water flows and water pressures in the model areas. Efforts for sustaining technologies have been confirmed, as surveys were conducted to establish new model areas. In addition, the water distribution improvement plan developed by the project has been continued. Based on the plan, ESSAP has conducted surveys and works on NRW management such as water provision by block in the area, monitoring volumes of water usage in the block, and investigation for water leakage reduction. <Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

It is judged that the Overall Goal has been achieved. Regarding the control of water flow and water pressure in service areas (Indicator 1), flow meters and water pressure meters have been installed at all well outlets in the distribution network of the Asuncion Metropolitan area, and the volumes of water distribution have been monitored in real-time (SCADA system). Within the Gran Asuncion Area, optimization of blocks within the service area has been underway. According to interviews with the Metropolitan Piping Network Department, the volume of water distribution has been stabilized. ESSAP has been planning to give advices to the Regional Branch Offices on measurement techniques of flow meters and improvement of water distribution networks. The number of customers has been on the slight increase (Indicator 2). The number new contracts in the Asuncion Metropolitan area and rural areas from 2017 to 2018 increased by 1.1% and 1.9%, respectively. Regarding the customers' satisfaction (Indicator 3), only three customers were able to be interviewed by the evaluator due to the limited survey period. They were mostly satisfied, but issues of water leakage were pointed out. As supplementary information on improvement of water supply services, although there have been water leakages, the number of claims including water leakage decreased from 2,472 cases in 2014 to 1,865 cases in 2018 in four blocks of the Asuncion Metropolitan area.

<Other Impacts at the time of Ex-post Evaluation>

The recognition for the Non-Revenue Water Section, which had improved their knowledge, has increased within ESSAP, and it has come to receive requests from other departments for providing advices and technical support on measurement of water pressure, identification of valve positions, etc. No impact on the natural environment and gender has been confirmed at the time of ex-post evaluation. In addition, technologies of water distribution network management strengthened by the project and provided equipment were used for formulating the "Water Leakage Reduction Project in New Model Areas (Lambare)" supported by JICA and the Inter-American Development Bank which aimed at making Lambare as the model area.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of the Project Purpose and Overall Goal				
Aim	Indicators	Results		
(Project Purpose)		Status of achievement: Achieved (Continued)		
Distribution network		(Project Completion)		
management capacity of	project are applied in the	- Learned technologies such as installation of water meters and water pipes, installation and		
ESSAP is enhanced	day-to-day operation.	adjustment of pressure reducing valves, measurement of water flow and water pressure and		
		monitoring were utilized in daily work.		
		- These technologies were also utilized upon request from other departments to support daily		
		operation work such as water leakage detection and repair, and water pressure control.		
		(Ex-post Evaluation)		
		- DMN technologies strengthened by the project have been utilized for daily work including		
		measurement of water flow and water pressure in the model areas.		
	2. More than 50 engineers			
	and technicians of ESSAP			
	HQs and branch offices			
		management, and water leakage detection.		
	DNM technologies.	- 130 Regional Branch Office staff completed training of piping works, management of valve		
		facility, installation of water meters, etc.		
		(Ex-post Evaluation)		
		- Verified in the institutional and technical aspects of sustainability.		
	3. ESSAP initiates			
		(Project Completion)		
	distribution network			
	improvement plan.	principles for water distribution improvement.		
		(Ex-post Evaluation)		
		- ESSAP has conducted surveys and works on NRW management based on the water		
	1 1 1	distribution network improvement plan.		
(Overall goal)	1. Flow and water			
ESSAP's water supply	-	(Ex-post Evaluation)		
service is improved.	service area are properly	- Measurement of water flows and water pressures have been continuously conducted in the		

Achievement of the Project Purpose and Overall Goal

controlled.	model areas. - In the distribution networ	k of the As	uncion Met	ropolitan a	rea, flow n	neters and v	water pressure
	meters have been installed						
	monitored in real-time. Se			•			-
	pressure has been more sta						
	has down. Also, within the	e Gran Asu	ncion Area,	the optim	ization of I	DIOCKS WITH	in the service
	area has been underway. - HQs has planned to provi	da advica f	or magaine	mont hy or	isting flow	mataraan	antimization
	of the distribution network			ment by ex	isting now	meters and	optimization
2 Number of customers	is Status of achievement: Acl		I alcas.				
increased.	(Ex-post Evaluation)	<u>ineveu.</u>					
		- The number of customers has slightly increased.					
		2014	2015	2016	2017	2018	
	Metropolitan Asuncion	227,920	231,545	234,137	244,398	247,280	
	Rural Areas	80,637	87,243	91,320	95,143	96,965	
	Source: Data from the Stat	istics Cens	us Director	ate.			
3. Customer satisfacti		tially achie	ved.				
level is improved.	(Ex-post Evaluation)						
	- Out of the interviewed the						
	"services have been improved" or "Services are satisfactory." Two pointed out problems of						
	water leakage. On the other hand, there were opinions that ESSAP's water provision services						
	and its image were improved, since it responded to water leakage claims quickly and continuously conducted NRW management.						
Source: Project Completion Report and response to		Ŭ					
2 Efficiency	the questionnalle surveys fior	n Essar, (					

#### 3 Efficiency

Both the project period and the project cost exceeded the plan (ratios against the plan: 128% and 117%, respectively). Outputs were produced as planned. Therefore, the project efficiency is fair.

4 Sustainability <Policy Aspect>

The "Paraguayan National Development Plan 2030" (2014) describes the importance of drinking water, sanitation, and power supply in improving the living environment needed for poverty reduction, social development and sustainable environment. In addition, the "National Water Supply and Sewerage Plan" (2018) of the Ministry of Public Works and Communications aims to contribute to improvement of the quality of life and the national social welfare through improvement of water and sanitation services. <Institutional Aspect>

In ESSAP HQs, the Non-Revenue Water Section under the Technical Department has been responsible for DNM including NRW management and water pressure control. The number of staff is 25 (13 technicians and 12 office workers). The section has worked for reduction of NRW through continuous efforts for water leakage control and water pipe repair in the model area, which has enabled its response to claim of water leakage and others within 48 hours in the area. Thus, the number of staff is judged to be sufficient. On the other hand, at the Metropolitan Area Piping Network Department, there has not been a sufficient number of staff to deal with water leakage due to old water pipes. In the Regional Branch Offices, the number of staff has been sufficient, as complaints such as water leakage have been responded to in almost four hours. ESSAP have annual targets set by the Directorate General of Public Enterprise which supervises public institutions. For these monitoring, the Non-Revenue Water Section receives data such as the number of water meters installed, billing/collection amount and the number of new connections, from the Gran Asuncion Sales Department and Metropolitan Area Piping Network Department of HQs for urban areas and from Regional Branch Offices for rural areas.

It is judged that the ESSAP HQs staff have sustained sufficient knowledge and skills, as they have continuously conducted DNM works and even extended works in new model areas based on the project. For construction of pipes and water meters, manuals for piping construction have been distributed to each technician of the Gran Asuncion Sales Department, Regional Sales Department and Metropolitan Area Piping Network Department. After construction, the technicians share their works with the Regional Branch Offices through the social network service (SNS) with photos. On the other hand, according to the Director of Encarnacion Branch, more staff have relied on rules of thumb than manuals in detecting leaks and installing pipes. Of the 53 staff trained by the project, 33 have remained as of the time of ex-post evaluation, being engaged in work related to measures for NRW and maintenance of water distribution facilities. As well, the Regional Branch Office staff have received manuals and share how they worked through SNS with photos, but no technical training has been conducted for new staff. They receive technical guidance through OJTs from HQs as needed. When dealing with a deficiency in the water pressure in the building, a water pressure gauge may be used, or the work may be carried out based on empirical rules such as checking the water pressure with fingers. In the Gran Asuncion Sales Department, part of the manuals developed by the project has been reflected in the bidding technical document of the bidding for commissioned works such as disconnection/reconnection, new connection, expansion, replacement of water meter.

<Financial Aspect>

The Main budget source of ESSAP has been collected water service charges. Others are financed by international organizations. Both revenue and expenditure have increased since 2015, but according to ESSAP, budgets have not been sufficient to invest in renewing aging pipes, updating water supply facilities and dividing distribution networks into blocks. Water charges have been set by the Regulatory Authority of Sanitation Business Administration.

Dudgets of ESS/II					
	2015	2016	2017	2018	2019 (until
					March)
Revenue	368,390	408,533	420,697	458,942	240,989
Expenditure	391,825	402,550	433,033	476,543	156,072
Source: ESSAP.					

Fees are collected based on the water consumption volume by customers who have the water meter installed, and fees are calculated and charged based on the past average water consumption volume of the customers whose water meter is not updated. The fee collection rate

in 2018 was 58.2%. In September 2018, the water charge was raised by 9%, and the ESSAP revenue is expected to increase. <Evaluation Result>

In the light above, there have been some problems in the institutional, technical and financial aspects. Therefore, the sustainability of the effects is fair.

5 Summary of the Evaluation

The Project Purpose was achieved, and the project effects have continued. Through OJT in the model areas and basic research activities, ESSAP HQs staff have got technologies and utilized them in their work on NRW management and water pressure control. As a result, the water volumes and pressures have been appropriately managed through continuous measurement of the water flows and water pressures and real-time monitoring of distribution volumes. Also, the surveys to improve services outside the model areas have been planned. Regarding sustainability, it is necessary to increase the number of staff at some sections of HQs, to improve the technical level of the Regional Branch Offices, and to increase investment to further expand operations. Both the project period and cost exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

Recommendations for Implementing agency:

- While the technical capacity of the Non-Revenue Water Division has been developed, it is still necessary to upgrade knowledge and skills of other departments and the Regional Branch Offices. It is recommended to ESSAP to conduct 1-2-day technical training so that work and repairs would be carried out in accordance with not the rule of thumb but the manual. It is also recommended to continue OJT by more experience staff upon request on the work site in order so that knowledge would be accumulated.
- It is desirable to organize an inter-sectional technical committee for sharing their progress and problem solving with initiative of the Non-Revenue Water Division for further improving skills and handling complaints by establishing a collaborative system across sections among HQs and Regional Branch Offices.
- For strengthening NRW management, it is necessary to measure the volumes of water supply and distribution. In order to promote utilization of the SCADA system developed by ESSAP, it is recommended to promote further establishment of blocks for water supply services and to obtain information of distribution pipes and customers by each block, as well as to prioritize blocks for taking countermeasures against NRW and to implement them sequentially.



Training on accuracy verification of water meters



Analysis of changes in inflow water in the model area

Country Name	The Project for Improvement of the Bridges Management Capacity
Arab Republic of Egypt	The Project for improvement of the Druges Management Capacity

I. Project Outline				
Background	General Authority for Roads, Bridges and Land Transport (GARBLT) managed a road network of more than 23,000 km across Egypt, on which 1,473 bridges existed. However, there were a large number of deteriorated bridges due to insufficient maintenance, causing an adverse influence on not only the domestic but also the international transport system. In GARBLT, there were lack of human resources with adequate knowledge, and sufficient techniques and necessary equipment for appropriate inspection and evaluation of bridges. (Figures at the time of ex-ante evaluation).			
Objectives of the Project	<ul> <li>The project aimed to improve the capacity of GARBLT on bridge maintenance management in Egypt through enhancement of bridge maintenance management cycle and the capacity of GARBLT engineers on bridge inspection and repair, and preparation of Bridge Maintenance System (BMS), thereby having bridges maintained properly.</li> <li>1. Overall Goal: Bridges in Egypt are maintained properly.</li> <li>2. Project Purpose: Capacity of GARBLT on bridge maintenance management is improved.</li> </ul>			
Activities of the Project	<ol> <li>Project Purpose: Capacity of OARDEP on ordege maintenance management is improved.</li> <li>Project Site: Whole region of Egypt.</li> <li>Main Activities: Proposal and trial on measures to improve maintenance management cycle, development of bridge inspection manuals and on-site training (OST) on inspection using the manuals, development of a bridge repair manual and OST on minor repair, development of BMS and OST on BMS utilization.</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side Egyptian Side</li> <li>Experts: (long-term) 1 person, (short-term) 10 persons</li> <li>Trainees received: 15 persons</li> <li>Equipment: Equipment for bridge inspection and repair, server for BMS, etc.</li> <li>Local cost</li> </ol>			
Project Period	March 2012 – June 2015 (Extension: April -June 2015)Project Cost(ex-ante) 400 million yen, (actual) 488 million yen			
Implementing Agency	General Authority for Roads, Bridges and Land Transport (GARBLT)			
Cooperation Agency in Japan	Honshu-Shikoku Bridge Expressway Co., Ltd., Nippon Engineering Consultants Co., Ltd., Chodai Co., Ltd.			

# II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

- The target year for Overall Goal is 3-5 years after the project completion, according to the existing documents. Therefore, the target year for the ex-post evaluation was set to be 2020 (i.e. five years after the project completion).
- The target figure for the first Indicator for Overall Goal (i.e. Frequency of regular training/seminars for GARBLT engineers to spread bridge maintenance management over Egypt) is not available in existing the documents; however, in the Project Completion Report, it is recommended to hold a seminar once a year to achieve Overall Goal. In view of the above, the target figure was set to be at least once a year in this ex-post evaluation.
- The definition of the second Indicator for Overall Goal (i.e. Bridges in Egypt are managed properly based on the manuals developed by the project) is not clearly mentioned in the existing documents. In this ex-post evaluation, the achievement status of the followings were confirmed: planning and implementation of bridge inspections based on the project manuals in each district under GARBLT, planning and implementation of repairs based on the manual and using the repair technologies demonstrated by the project as needed, and registration of inspections and repairs in the BMS based on the manual. In addition, appropriateness of the number of inspected and repaired bridges was examined in view of the description of the Overall Goal. (Although the target number is not clear in the Overall Goal, it was expected that "bridges other than 20 target bridges of the project are inspected and repaired by GALBLT engineers" at the planning stage.) Also, utilization status of data in the BMS for planning of inspections and repairs was checked.

### 1 Relevance

<Consistency with the Development Policy of Egypt at the Time of Ex-Ante Evaluation and Project Completion>

At the time of ex-ante evaluation and project completion, the project was consistent with the national five-year socio-economic development plan (2007/08-2011/12) of Egypt, which included realization of safer transport network and reduction of environmental burden as one of the five basic strategies of the transport development sector.

< Consistency with the Development Needs of Egypt at the Time of Ex-Ante Evaluation and Project Completion >

At the time of ex-ante evaluation, the project was consistent with the needs of improvement of the capacity of GARBLT on bridge maintenance management as described in <Background>. Changes in the needs were not reported at the time of project completion. <Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, the project was consistent with the Country Assistance Program for the Arab Republic of Egypt (June 2008), which included "Realization of sustainable growth and employment generation" as one of the priority areas, under which realization of sustainable effect of financial support was to be pursued alongside "technical cooperation for the improvement of management including system architecture and maintenance and operation of infrastructures".

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved at the time of project completion (judged based on the status of achievement of the three indicators: achieved, achieved, and partially achieved, respectively). Bridge inspections on 20 selected bridges (target bridges) were carried out by GARBLT engineers properly based on the inspection manuals through OST (Indicator 1). Typical repair technologies were demonstrated through OST as well (Indicator 2). GARBLT started inspection on bridges other than the target bridges in each district, and results of inspection were entered in the BMS based on the project manual except for those of some old bridges without drawings (ratio of bridges, for which inspection results were entered, was not available). (Indicator 3).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued to the time of ex-post evaluation. According to GARBLT, inspections and repairs of bridges, including the target bridges and other bridges in each district, have been conducted based on the project manuals and the Egyptian Code of Practice (ECP) that are applied to all bridges in Egypt<sup>1</sup>. (Please also see <Other Impacts> below). The statement of GARBLT was confirmed through review of maintenance reports for 2 bridges as well as site observation of inspection activities of 3 bridges by the evaluator. GARBLT also stated that all of the inspection and major repairs of new bridges have been recorded in the BMS based on the manual but those of old bridges have not been recorded due to lack of drawings (ratio of bridges, for which results of inspection and major repairs were entered, was not available). In addition, minor repairs have not been recorded because there are so many minor repairs and the number of staff of GARBLT for the data entry is limited.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved (judged based on the status of achievement of the two indicators: achieved and partially achieved, respectively) and the achievement status is likely to continue in the target year (2020). The training center of GARBLT conducts regular training (at least once a year) to spread bridge maintenance, which is consistent with the concept in the project manuals, to its engineers all over Egypt (Indicator 1). Bridges in Egypt are properly maintained except for the data entry of inspection and major repair results of old bridges without drawings and minor repair results in the BMS and utilization of the BMS as a planning tool. As described above, inspections and repairs of bridges have been planned and conducted properly based on the project manuals and the ECP and results of inspections and major repairs of new bridges have been recorded in the BMS but not those of old bridges without drawings and minor repairs. The number of inspected bridges is considered appropriate in view of the Overall Goal because as many as 1,120 bridges in Egypt (including the 20 target bridges)<sup>2</sup> were inspected in 2018. The number of repaired bridges is also considered appropriate because minor defects are repaired promptly with the budget allocated to the district offices (DOs), and major defects are repaired with the budget allocated from the headquarters in order of priority. If the major repairs are not completed in the same year, the remaining ones are included in the repair plan in the next year. The BMS is yet to be utilized for planning of inspections and repairs primarily because the data entry of new bridges has not been completed due to a large number of ongoing projects and the limited manpower and that of old bridges not completed due to limited number of staff and budget to sufficiently conduct site surveys. It is not certain when the data entry will be completed (Indicator 2).

<Other Impacts at the time of Ex-post Evaluation>

According to GARBLT, the committee for formulation/update of the ECP includes members from GARBLT trained by the project and the techniques in the project inspection manuals have been incorporated in the ECP to be applied in all bridge inspections. Meanwhile, negative impacts have not been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Project Pu	rpose and Overall Goal

Aim	Indicators	Results
(Project	(Indicator 1)	Status of the Achievement: achieved (continued)
Purpose)	Bridge inspections on 20	(Project Completion)
Capacity of	selected bridge are carried	- Bridge inspections on 20 selected bridge carried out by GARBLT engineers through OST based on the
GARBLT on	out by GARBLT engineers	project manuals.
bridge	properly.	(Ex-post Evaluation)
maintenance		- Bridge inspections on 20 selected bridge have been carried out based on the project manuals and the ECP
management is		properly.
improved.		Status of the Achievement: achieved (continued)
	Typical repair technologies	(Project Completion)
	are demonstrated on several	- Typical repair technologies (e.g. washing by high-pressure washers) were demonstrated through OST.
	bridges.	(Ex-post Evaluation)
		- Repairs have been conducted as based on the ECP, using the demonstrated technologies in the project
		manual as needed.
	(Indicator 3)	Status of the Achievement: partly achieved (partially continued)
	GARBLT starts inspection	(Project Completion)

<sup>&</sup>lt;sup>1</sup> Regarding Aswan Bridge (a target bridge), periodic inspection has not been conducted yet because it is scheduled every 5years according to the statement from GARBLT's engineers although annual inspection is recommended by the manual. As for El-Salam Peace Bridge (another target bridge), an additional periodic inspection (fatigue inspection), which was recommended by the follow-up cooperation study of JICA for the grant aid project "The Project for Construction of the Suez Canal Bridge (1997)" ("Follow-up cooperation study on the bridge design (Counterpart training for the suez canal bridge project)" (2016)), has not been conducted, however,

<sup>&</sup>lt;sup>2</sup> For reference, 1,120 bridges were equivalent to 74% of the bridges managed by GARBLT in 2018.

	1	
	on bridges other than target	- GARBLT started inspection on bridges other than target bridges in each district.
	bridges in each district and	- The inspection records were entered in the BMS based on the project manual except for those of old
	the inspections and repair	bridges without available drawings. Data entering status of repairs was not clear.
	records are properly input in	(Ex-post Evaluation)
	the BMS.	- Inspections of bridges other than target bridges have been conducted in each district based on the project
		manuals and the ECP properly.
		- Inspections and major repairs of new bridges have been recorded in the BMS based on the project manual
		but those of old bridges without available drawings and minor repairs have not been recorded.
(Overall Goal)	(Indicator 1)	(Ex-post Evaluation) achieved
Bridges in Egypt	GARBLT holds regular	- GARBLT training center provides regular training for its engineers at all districts, including the training
are maintained	seminars/trainings for its	on maintenance of bridges to spread proper bridge maintenance over Egypt. Contents of the training are
properly.	engineers to spread proper	consistent with the concept in the project manuals. For example, 3 training courses related to bridge
	bridge maintenance over	maintenance were conducted in 2018 (i.e. training courses on new survey technologies, introduction in
	Egypt.	project management, and bridges' technologies).
	(Indicator 2)	(Ex-post Evaluation) partially achieved
		- Inspections of bridges have been conducted properly based on the project manuals and the ECP. In 201
	managed properly based on	1,120 bridges in Egypt were inspected.
	the manuals developed in	- Repairs have been conducted as needed based on the project manual and the ECP.
	the Project.	- Inspections and major repairs of new bridges have been recorded in the BMS based on the project manual
		but those of old bridges without available drawings and minor repairs have not been recorded
		- The BMS is yet to be utilized as a planning tool because data entry of new bridges under construction ha
		not been completed due to lack of manpower and that of old bridges due to limited number of staff and
		budget to sufficiently conduct site surveys. It is not certain when the data entry will be completed It is
		noted that GARBLT has asked the Central Agency for Organization and Administration to establish new
		posts of 25 engineers for the BMS and the matter is under study
Source: Project	Completion Report: question	naire and interview survey to GARBLT; maintenance reports (2019) for 2 bridges; site observation of

Source: Project Completion Report; questionnaire and interview survey to GARBLT; maintenance reports (2019) for 2 bridges; site observation on inspection activities of 3 bridges; and list of training courses of GARBLT training center.

# 3 Efficiency

Both the project cost and period exceeded the plan (ratio against the plan: 122% and 108% respectively). The project period was extended because of the delay of the procurement of a bridge inspection vehicle due to security worsening and the consequent delay of capacity development using the vehicle. The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

#### 4 Sustainability

<Policy Aspect>

The need for enhancing the transport sector services and safety on the road network is set forth by Mid-term Sustainable Development Plan (2017-2020) and Egypt Vision 2030.

<Institutional Aspect>

GARBLT is a well-established organization in charge of roads and bridges in Egypt. At central level, Central Department for Bridge Construction & Maintenance is continuously responsible for bridge maintenance, including management of the BMS developed by the project. However, organization for operation of the BMS, including operators and engineers, has not been established as recommended by the terminal evaluation of the project because of the shortage of staff due to ongoing projects on construction of a large number of bridges and government policy on controlling of new recruitment in the public sector. Apart from the manpower for the BMS, the necessary number of staff was considered to be allocated to conduct bridge maintenance at the time of ex-post evaluation because the inspections and repairs were conducted properly as described in "Effectiveness/Impact". The present number of staff, however, would be insufficient to conduct proper inspections and repairs in the future, considering a large number of bridges being constructed all over Egypt. <Technical Aspect>

GARBLT has sustained technical capacity to conduct bridge maintenance according to the technical instruction in the project manuals and the ECP. All of the engineers trained by the project have continued to engage in bridge maintenance and apply the skills and knowledge acquired through the project in their duties, using the manuals. All of the equipment provided under the project are utilized and maintained in good condition, too.

<Financial Aspect>

According to GARBLT, budget is allocated for inspection and repair works and the amount of this budget is increasing every year to coop with securing the increasing needs for conducting proper bridge inspections and repairs all over Egypt as described in "Effectiveness/Impact". Meanwhile, the budget for new positions to establish organization for the BMS has not been secured/requested due to the government policy on control of new recruitment in the public sector. It is not certain whether the budget will be secured to employ sufficient number of engineers to ensure proper inspections and repairs expected to be increased after ongoing projects are completed. <Evaluation Result>

In light of the above, some problems have been observed in terms of the institutional and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

# 5 Summary of the Evaluation

The project achieved the Project Purpose ("Capacity of GARBLT on bridge maintenance management is improved") and the effects of the project have continued. The Overall Goal ("Bridges in Egypt are maintained properly") has been achieved. Regarding the sustainability, slight problems have been observed in terms of the institutional and financial aspects (e.g. organization for the BMS has not been established in GARBLT and it is not certain whether the budget for employing additional staff will be secured to ensure proper maintenance of a large number of bridges under construction in future). As for the efficiency, the project cost and period exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• It is recommended that Chairman of GARBLT immediately establish a new unit for BMS in charge of entering the bridge data at GARBLT headquarters. The unit should use a new technology to input the data for the bridges without available drawings.

• It is recommended that the BMS unit of GARBLT stated above issue the first annual report on the needs for maintenance/repair as a planning tool for the preventive maintenance by June 2020.

• It is recommended that GARBLT conduct regular fatigue inspection for EL-Salam Peace Bridge, recommended by the follow-up study of JICA, in addition to the inspections in the project manual, and issue the inspection report accordingly.

• Although Aswan Bridge is scheduled to be inspected every 5 years according to statement from GARBLT's engineers, more frequent inspection according to the inspection manuals (such as cable tension measurement) and publication of the detailed report would be desirable because it is a special bridge (Cable Stayed Bridge) in Egypt.

Lessons Learned for JICA:

• During the implementation of the project, it is important to promote daily discussion between JICA expert team and implementing agency to brought more deep understanding of the concerned issues<sup>3</sup>.

• The department for bridge inspection and repair (i.e. BMS unit) recommended by the project has not been established yet because of the recent policy of the government to decrease the hiring in government authorities. This might affect the sustainability of the project after completion. It is risky to link the future sustainability of the project with some event that might be uncertain in the future. When making recommendations on institutional aspects of the implementing agency at the end of the project, JICA should always propose different scenarios. For example, other possible scenario for this project, instead of establishing new department, is to study the possible restructuring of the GARBLT.

Bridge Inspection Vehicle



Photo 1. The bridge inspection vehicle in operation at the site (inspection of bridge)

Bridge Management System BMS



Photo 2. Staff in operation

<sup>&</sup>lt;sup>3</sup> During the project implementation, daily discussions between JICA expert team and GARBLT engineers brought more deep understandings about the bridges issues in Egypt and contributed to identification of realistic common defects in bridges for effective investigation and repair; implementation of training for special and advanced inspection test, provision of convenient/suitable bridge inspection vehicle for assuring sustainability of operation, vast dissemination of knowledge of bridge repair and inspection to representatives of other relevant ministries and agencies working in the field of bridge inspection.

Country Name			
Republic of Ghana	The Project on Electrical Engineers Training for African Countries (EETA)		
I. Project Outline			
BackgroundECG Training Center under the Electricity Company of Ghana (ECG), a power distribution compare the only training organization in Ghana in the power distribution field, and had so far provided only for newly hired technicians (technical workers who are responsible for on-site maintenance works). He the technician training was being conducted on old equipment, and the importance of quality of train been poorly recognized and obsolete. In addition, in order to efficiently operate and maintain th distribution facilities, it was necessary to provide opportunities for training to engineers who superv comprehensively managed the power distribution facilities. Meanwhile, ECG Training Center had provided training to Gambia, Liberia and Sierra Leone at the of the West Africa Power Pool (WAPP) Secretariat. Since Sierra Leone and Liberia faced a serious sho human resources due to the collapse of their infrastructure and the outflow of human resources due to civil war. Gambia was similar to Ghana in that the operation and maintenance of power distribution is covered a wide range of old and new equipment.			
Objectives of the Project	<ul> <li>Through (i) analyzing and identifying training needs, (ii) improving training for technicians, (iii) implementing training for engineers, and (iv) improving monitoring and managing capacity, the project aimed at strengthening training capacity on distribution system operation and maintenance for ECG and the third countries, thereby contributing to improvement in distribution system operation and maintenance.</li> <li>1. Overall Goal: Distribution System operation and maintenance in ECG and third countries is improved.</li> <li>2. Project Purpose: Training capacity on distribution system operation and maintenance for ECG and third countries is strengthened.</li> </ul>		
Activities of the project	<ol> <li>Project site: Tema (25km from Accra)</li> <li>Main activities: (i) analyzing and identifying training needs, (ii) improving training for technicians, (iii) implementing training for engineers, and (iv) improving monitoring and managing capacity</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Ghana Side</li> <li>Experts: 11 persons</li> <li>Staff allocated: 8 persons</li> <li>Training in Japan: 7 persons</li> <li>Equipment: substation for training, facilities in ECG and control room of ECG measurement equipment, software, etc.</li> </ol>		
Project Period	September 2013-August 2016Project Cost(ex-ante) 299 million yen, (actual) 504 million yen		
Implementing Agency	Ministry of Energy (MOE), Electricity Company of Ghana (ECG)		
Cooperation Agency in Japan	NEW JEC Inc.		

# II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

• Continuation of the project effects was analyzed as factors to achieve the Overall Goal.

• Due the restrictions introduced as a result of COVID-19 situation, data for the third countries could not be obtained

1 Relevance

<Consistency with the Development Policy of Ghana at the Time of Ex-Ante Evaluation >

The project was consistent with the development policy of Ghana. Energy, oil and gas industry was one of the priority agenda under the "Ghana Shared Growth Development Agenda" (2010-2013). Also, in the "Energy Sector Strategy and Development Plan" formulated in February 2010, strengthening of the grid level was one of the priority policies.

<Consistency with the Development Needs of Ghana at the Time of Ex-Ante Evaluation >

The project was consistent with the development needs of Ghana for improvement of distribution loss. Under the "Energy Sector Strategy and Development Plan" stated above, distribution networks were being improved and modernized with the goal of reducing the loss rate from 25% to 18%. The neighboring countries needed capacity enhancement as mentioned in the "Background" above. << Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy to Ghana. "Country Assistance Program to Ghana" (September 2006) prioritized industrial development including human resource development.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved at the time of project completion. Although the number of training courses for technicians did not change, training courses for engineers started under the project and three courses were implemented (Indicator 1). The syllabus, curriculum and training materials were revised and developed (Indicator 2). Meanwhile, training for the third countries cannot be said to be strengthened because four training courses out of five which were planned, were cancelled due to the outbreak of Ebola hemorrhagic fever. <Status of Continuation of the Project Effects>

As mentioned above, the status of continuation of the project effects at the time of ex-post evaluation were verified as the part of the verifiable indicators of the Overall Goal and the factors affecting the achievement levels of the verifiable indicators of the Overall Goal.

For example, technicians and engineers improved their skills by the training continuously conducted by the project, which made contributions in soft aspect to decrease SAIFI. As such, it had affected achievement level of a verifiable indicator of the Overall Goal. <Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal was partially achieved. The System Average Interruption Frequency Index (SAIFI) of ECG operational area improved dramatically (Indicator 1) and it can be said that the project has contributed in soft aspect by enhancing the maintenance techniques of the technicians and engineers. SAIFI has consistently improved and significantly dropping year by year from 2016 to 2019 towards the regulated benchmarks of 6 for all areas. Supply availability/reliability has been also improved over the periods under consideration. On the other hand, distribution loss did not improve, mainly due to external factors (Indicator 2). Main factors that contributed to the increase in distribution losses are due to overage and overloaded distribution equipment, meter tampering and bypasses, illegal connections and illegal vending of electricity and delay in capturing of uncaptured meters according to the ECG Training Centre.

After the project was completed, the ECG Training Centre have continued providing training courses constantly as shown in the table below. Training for technicians and engineers of ECG has largely continued by using the training materials developed by the project. Also, training of other important entities was quite significant.

Training by the Lees Training Centre							
Type of training		2016	2017	2018	2019		
ECG (technicians)	No. of training	4	7	16	6		
	No. of trainees	45	276	354	180		
ECG (engineers)	No. of training	2	1	1	0		
	No. of trainees	20	18	13	0		
Others (Northern Electricity Department Company, Regional Maritime University,	No. of training	7	27	17	18		
graduate students)	No. of trainees	211	522	169	198		

## Training by the ECG Training Centre

Note: No training was conducted for engineers in 2019 as the discussion on the course content with was not finalized. The Government of Ghana entered into a concession agreement with Power Distribution Services Limited (PDS), a private company in March 2019 for operation and management of ECG. However, the government was in the process of terminating a concession agreement. Until the concession agreement is terminated, the course could not be finalized.

As for the third countries, there had been no training until 2019 due to the financial constraint; however, the ECG Training Center conducted one training for Liberia and Sierra Leone through the support of WAPP.

The substation constructed under the project has been utilized for all related training courses on operation and maintenance of distribution equipment for the various target groups.

<Other Impacts at the time of Ex-post Evaluation>

No negative impact on the natural environment has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Aim	Indicators	-	poor and o vora		esults			
(Project Purpose)	Indicator 1: Number of training	Status of the Ad	chievement: part	ially achieve	ed			
Training capacity on	courses for technicians and engineers	(Project Compl	etion)					
distribution system	will increase.	Compared with	before 2013, the	e number of	training cou	urses for tec	hnicians did	not
operation and		changed. However, training courses for engineers started under the project. Three courses						
maintenance for ECG		were already co	onducted.					
and third countries is	Indicator 2: Syllabus, curriculum and	Status of the Ac	chievement: part	ially achieve	ed			
strengthened.	training materials will be revised or	(Project Compl	etion)					
	newly developed.	The syllabus, c	urriculum and tra	aining mater	rials were w	ell prepared	l. Regulation	is for
		construction and safety and the current situation of Ghana were well considered and the			d and they			
		were also creat	ed through const	ant and freq	uent comm	unication be	etween Japar	lese
		experts and lec	turers in the Trai	ning Centre	and the pro	ject office o	of ECG. The	materials
		were highly regarded by the lecturers.						
			is no reference a		-			
			inguish between	content writ	ten by the e	experts and o	quotations fr	om
		original source	S.					
			is no reference a		e			
			inguish between	content writ	ten by the J	ICA experts	s and quotati	ons from
		original source						
(Overall Goal)	Indicator 1: Distribution loss and	(Ex-post Evaluation) partially achieved						
Distribution System	SAIFI (The System Average	Distribution lo				10	2010	
operation and	Interruption Frequency Index) will		2016	2017		-	2019	
maintenance in ECG	decrease in Ghana and third countries.	ECG	23.6	22.6		.3	24.7	
and third countries is		*No data was obtained for the third countries.						
improved.		~						
		SAIFI						_
			Op. Area	2016	2017	2018	2019	_
		ECG	Metro	60	48	28	25	

#### Achievement of Project Purpose and Overall Goal

	Urban	89	88	57	47	
	Rural	108	104	61	59	
*N	o data was obtained for the t	hird countrie				

## Source : ECG Training Centre

3 Efficiency

Although the project cost significantly exceeded the plan (the ratio against the plan: 169%) the project period was as planned (the ratio against the plan: 100%). After the Record of Discussion was signed (November 2010), it took several years to select the Japanese consultant team. Until the commencement of the main activities in September 2013, two experts were dispatched twice in 2012. One of the reasons for the difference between planned and actual total budget is the cost to dispatch these two experts. Based on the updated information from the study by these experts on the needs and the situation of ECG, the project activities were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

## <Policy Aspect>

Reduction of distribution losses has been prioritized by major policy documents of the current government administration, including the "Coordinated Programme of Economic and Social Development Policies" (2017-2024), the "Medium Term National Development Policy Framework" (2018-2021) and others.

<Institutional/Organizational Aspect>

The ECG Training Centre has become a Directorate on its own, with the head being a Head Office Director. The ECG Training Centre has also formulated its own business plan and developmental programs which incorporate the training system introduced by the project. Thus, the ECG Training Centre has had some level of autonomy compared to the situation before the implementation of the project. The number of staff at the ECG Training Centre is 15 (including four at the technical section, that is responsible for training, six at human resources, three at ICT (Information Communication Technology and two at accounts) which is adequate for sustaining the project effects, according to the ECG Training Centre.

### <Technical Aspect>

Technical staff members (Instructors) of the ECG Training Centre have sustained the necessary skills through continuous training and field training and by utilizing training materials developed by the project.

### <Financial Aspect>

The ECG Training Centre has received budget provision from their Head Office and other internal sources; however, mostly not adequate to cover all expenses.

<Evaluation Result>

In light of the above, some problems have been observed in terms of the financial aspect of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

#### 5 Summary of the Evaluation

The project purpose was partially achieved at the time of project completion, as training courses for engineers started and training materials were created; however, training for third countries was limited. The Overall Goal was partially achieved as at ECG, SAIFI improved while distribution losses did not. As for the sustainability, some problems have been observed in terms of the financial aspect. As for the efficiency, the project cost significantly exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

#### III. Recommendations & Lessons Learned

## Recommendations for Implementing Agency:

ECG Training Centre is recommended to conduct training for technicians and engineers of the third countries (Gambia, Sierra Leone, and Liberia) continuously by collaborating with WAPP.

## Lessons Learned for JICA:

The equipment, especially the substation for training provided by project at its premises has enabled the delivery of practical training courses. It can be said that it contributed to the reduction of SAIFI in Ghana from soft aspect and attracted a growing number of institutions and trainees to the ECG Training Centre. When supporting a technical training institution, providing the requisite practical training facilities will enhance the project impacts and sustainability.



Training course for graduate engineers on multi skilling



Training course for ECG Technicians on Sub-station maintenance

Country Name		Sustainable Land Management Promotion Project			
Republic o	f Malawi				
I. Project Outline					
Background	farmers. The agricultu materials, farming tech improve agricultural government of Malaw placed the disseminati	In Malawi, a majority of the working population is engaged in agriculture, and most of them are small armers. The agricultural productivity was generally low because of the limited access to input agricultural naterials, farming techniques, etc. While utilization of compost and prevention of soil erosion were required to mprove agricultural productivity, the techniques did not sufficiently prevail. To resolve these issues, the government of Malawi formulated the plan of "Agricultural Sector Wide Approach (ASWAp)" in 2009, and placed the dissemination of the Sustainable Land Management techniques (SLM techniques) as one of the key ssues in the development policy.			
Objectives of the Project	Through institutional and human capacity improvement for soil and/or compost testing and skills for field test, equipping LRCD* Subject Matter Specialists (SMSs) and extension agents with the SLM techniques, and application of the compost making and application techniques by pilot site farmers in Mzuzu ADD**, as well as provision of measures to diffuse the SLM techniques nationwide, the project aimed at enhancement of capacity of MoAIWD*** to diffuse appropriate SLM, thereby contributing to nationwide diffusion of the appropriate SLM techniques in Malawi. * LRCD: Land Resource Conservation Department ** ADD: Agricultural Development Division ***MoAIWD: Ministry of Agriculture, Irrigation and Water Development 1. Overall Goal: Appropriate Sustainable Land Management (SLM) techniques* are diffused to nationwide. 2. Project Purpose: Capacity of MoAIWD to diffuse appropriate SLM techniques is enhanced. * SLM techniques: scientifically tested existing compost making and application techniques and knowledge that are prompted by the project.				
Activities of the Project	North*, Nkhata Ba *Mzimba South an 2. Main Activities: (1) Training of lab analysis, Compi (2) Development of handbooks, etc. (3) Selection of on application, Prep (4) Seminars/works SLM techniques 3. Inputs (to carry ou Japanese Side 1) Experts: (long ter (short-te 2) Trainees Received 3) Equipment: Vehic etc. 4) Local Expenses: I	prompted by the project.oject Site: Four areas under District Agriculture Office (DAO) (Rumphi, Mzimba South and Mzimbaorth*, Nkhata Bay) in Mzuzu ADD (located in the northern region)Izimba South and Mzimba North are DAOs' under Mzuzu ADD in Mzimba Districtain Activities:Training of lab researchers and technicians, Production of manual for soil and compost analysis, Dataanalysis, Compilation of technical messages, etc.Development of training modules, Training for extension agents, Preparation of SLM techniquehandbooks, etc.Selection of on-farm demo areas and lead farmers (LF), Training for LFs on compost making andapplication, Preparation of extension materials, etc.Seminars/workshops to diffuse the SLM techniques for LRCD SMSs, National workshops to present theSLM techniques, etc.puts (to carry out above activities)see Side(long term) 2 persons(short-term) 8 persons(short-term) 8 persons(short-term) 8 persons (Japan)quipment: Vehicle, computers, survey equipment, 3)Local Expenses: Utilities for the project office			
Duciast David	training/workshop				
Project Period	November 2011 – Nov				
Implementing Agency	Ministry of Agriculture, Irrigation and Water Development (MoAIWD)* Land Resources Conservation Department (LRCD) *Ministry of Agriculture and Food Security (MoAFS) at the time of ex-ante evaluation. It was reorganized into MoAIWD in 2014.				
Cooperation Agency in Japan	N/A				

## II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation >

• During the field survey, to see the diffusion of the SLM techniques on a nationwide scale, information about the adoption status in ADD other than Mzuzu, i.e. Machinga, was collected.

## 1 Relevance

<Consistency with the Development Policy of Malawi at the Time of Ex-Ante Evaluation and Project Completion>

At the time of ex-ante evaluation, in the Malawi Growth and Development Strategy (MGDS) (2006–2011), agriculture and food security was one of the six priority areas. In the area of agriculture and food security, increase in agricultural products of small farmers and provision of effective extension services on agribusiness technique were mentioned as well as enhancement of agricultural productivity by

diffusion of soil conservation technique. At the time of project completion, in ASWAp, the highest agricultural policy and highly prioritized investment programme in Malawi, SLM technique was one of the three pillars.

<Consistency with the Development Needs of Malawi at the Time of Ex-Ante Evaluation and Project Completion>

At the time of ex-ante evaluation, it was required that farmers adopt proper techniques to improve soil fertility and agricultural productivity. No change in the needs was observed at the time of project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

One of the two priority areas of Japan's assistance for Malawi was development of foundations for industrial growth including agriculture and mining<sup>1</sup>.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the project completion. The SLM technique handbooks were compiled but not officially approved, partly due to the delay of soil analysis to be incorporated in the handbooks and partly due to the procedural matter. As a procedure for approval, the project wanted the handbooks to be reviewed and approved by the Agriculture Technical Clearing Committee first and then forwarded to Department of Agricultural Extension Services (DAES) for use. After the establishment of Lunyangwa Agricultural Research Services (ARS) in 2012, soil and compost testing became available in the northern region through the project activities at Lunyangwa ARS, and requests for soil analysis significantly increased. Sometimes soil analysis results were given to farmers but not in a user-friendly format, while soil analysis results were not given in some cases, according to the terminal evaluation. <Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued to the time of ex-post evaluation. The SLM technique handbooks were reviewed and officially approved by DAES in 2016 and distributed to all the 28 districts of Malawi. The national workshops to diffuse the SLM techniques nationwide were held in 2016 in Machinga and Mzuzu, and a total of 223 persons participated from MoAIWD, the World Food Programme (WFP) and several NGOs. Services for soil and compost testing are continuously available. Out of 20 persons (2 extension agents and 18 farmers) interviewed during the ex-post evaluation survey, 60% have access to soil analysis results and 40% to compost testing. Considering the availability of the analysis results during the project, it is considered that the level of services has been maintained since the project completion. Provision of the results of research is basically "demand driven", however, research experts are not only waiting for requests for soil testing services but they approach farmers to provide services even if farmers have not demanded. <Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved. The SLM component has been incorporated in the Agricultural Sector Wide Approach Two (ASWAp II) started 2017 as well as in a project supported by the Development Fund of Norway. Although the statistical data was not available, it is considered that the most of the Agriculture Extension Development Officers (AEDOs) across the country have been trained and are able to instruct farmers on the SLM techniques, as seen in the fact that they conduct demonstrations of making compost manure at annual campaigns held in all the 28 districts<sup>2</sup>. According to LRCD, more than 600,000 Malawian farmers are practicing the SLM techniques and the number is increasing as non-target farmers during the project period are also practicing the SLM techniques. In addition, the LFs interviewed indicated that there was a clear difference in the quantity of harvest among maize without compost manure, with compost manure only, and with micro-dozed compost manure.

<Other Impacts at the time of Ex-post Evaluation>

Positive impacts on gender are observed at the time of the ex-post evaluation. The result of the ex-post evaluation survey shows that there are more than 60% of women practicing and participating in the SLM techniques. The rate of women participating in compost manure making and application is higher than men, according to interview with AEDO, extension officers, and LFs during the survey. No negative impact has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Aim	Indicators	Results				
(Project Purpose)	(Indicator 1) The SLM technique	Status of the Achievement: partially achieved (achieved after project completion) (continued)				
	handbook is reviewed by DAES and	(Project Completion)				
Capacity of	distributed to all the 28 districts'	The SLM technique handbooks were compiled but not approved.				
MoAIWD to	LRCD and Extension SMSs.	(Ex-post Evaluation)				
diffuse		• The SLM technique handbooks were reviewed and approved in 2016 and distributed to				
appropriate SLM		extension officers as well as SMSs across all the 28 districts of Malawi.				

Achievement	of Project	Purpose	and	Overall	Goa

<sup>&</sup>lt;sup>1</sup> MOFA "ODA Country Data Book 2012"

 $<sup>^2</sup>$  It may be difficult to say to what extent the project contributed to the capacity development of AEDOs as the staff are trained on the SLM techniques by other projects such as Sustainable Agricultural Productivity Programme implemented by the MoAIWD.

techniques is	(Indicator 2) Services for soil and/or	Status of the Achiev	vement: partially achieved (continued	)		
enhanced.	compost testing in Northern region	(Project Completion		,		
	become available and results are	· Soil and compost testing became available in the northern region through the project				
	accessed by extension agents and		6	on. Not all the soil analysis results,		
	farmers.	however, were shar		, ,		
		(Ex-post Evaluation				
		· •	s conducted for 20 persons (2 extensi	on agents and 18 farmers).		
			sons who have access to the results of	5		
		-	sons who have access to the results of	- , ,		
(Overall Goal)	(Indicator 1) The SLM techniques are (Ex-post Evaluation) achieved					
	applied in agricultural programs • The SLM component has been integrated in the programs of ASWAp II.					
Appropriate		• The SLM techniques and the handbooks have been adopted by the Sustainable Agricultural				
Sustainable Land	stakeholders* in order to improve soil	soil Lead Farmer Project (SALFP) supported by the Development Fund of Norway and				
Management	fertility.	implemented in areas including Mzimba North and Nkhata Bay.				
(SLM)	*Stakeholders: NGOs, other donors					
techniques are	and private sectors.					
diffused to	(Indicator 2) More than 80% of (Ex-post Evaluation) achieved					
nationwide.	AEDOs across the country are trained	ed · According to interviews conducted in Mzimba North, Nkhata Bay and Machinga, all the				
	by SMSs and are able to instruct	ruct AEDOs in these districts have been trained on the SLM techniques and are able to instruct and				
	farmers on the SLM techniques by	support farmers.				
	MoAIWD.	• In the annual ca	impaigns implemented in all the 28	districts of Malawi, AEDOs conduct		
		demonstrations of t	he SLM techniques of making compo	aking compost manure to farmers.		
	(Indicator 3) 50,000 of farmers are	(Ex-post Evaluation	n) achieved			
	adopting SLM technique across the					
	country by 2018.	· ·	the country in 2018 and the number i	s increasing.		
	(Indicator 4) Productivity of maize		n) achieved			
	increases by 20% on the LFs of the		Quantity Harvested (Oxe	carts*)		
	project in Mzuzu ADD area.	Maize without	Maize applied with compost	Maize applied with micro-dosed		
		compost	manure only	compost manure (basal- and		
		manure**	(basal- and top-dressed)	top-dressed)		
		0 - 0.5 Oxcarts	3.3 Oxcarts	6.2 Oxcarts		
		*One Oxcart is equ	ivalent to 600kg. The data is compari	son for the land size of 0.5 acre.		
			1 1 1	completion, project effect is assessed		
	based on the comparison "with-without".					
	Source: Interview with Euthini Extension Planning Area (EPA), Mzimba North.					
Source: Terminal	Source: Terminal Evaluation Report, Questionnaire and interview to LRCD and Mzuzu ADD					

## 3 Efficiency

Although the project cost exceeded the plan, the project period was within the plan (ratio against the plan: 113% and 100%, respectively). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair. 4 Sustainability

<Policy Aspect>

The MGDS III (2017-2022) advocates sustainable conservation of natural resources including land and the soils. It articulates issues on environmental sustainability as well as integrated soil fertility management including parameters promoted by the project. ASWAP II (2017-2023) places emphasis on strengthening implementation capacities and coordination of various actors through their policies. In addition, the Malawi National Resilience Strategy (2018-2030) is aimed at breaking the cycle of food insecurity in Malawi through catchment protection and management.

<Institutional Aspect>

The government has well organized structure with specified roles to promote land management techniques. However, due to the limited financial resources, the number of officers is insufficient to efficiently carry out their duties and diffuse the SLM techniques, especially in terms of conducting SLM activities with the growing number of famers. The staff require support in terms of transportation (motor bikes), fuel, lunch allowance and other incentives when their operation areas are large.

<Technical Aspect>

The staff have skills required for them and are able to conduct demonstrations of the SLM techniques. However, they need continuous training or refresher training especially for the new staff, LF and fallower farmers (FFs) to maintain the needed skill levels. DAES has a plan to conduct fortnight training to AEDOs at every EPA. Nevertheless, the above-mentioned training is not conducted as planned due to lack of financial resources. DAES plans to utilize projects implemented by MoAIWD, like ASWAp, and NGOs' related projects to incorporate and diffuse the SLM techniques and support farmers. The SLM technique handbooks and the technical materials are easy to use, and are consequently utilized by the 28 districts as well as other organizations such as WFP, World Vision, and the Adventist Development and Relief Agency (ADRA).

Budget allocation

		()	Unit: Malawi Kv	wacha (MwK)	
Fiscal year	2015/16	2016/17	2017/18	2018/19	

<sup>&</sup>lt;sup>3</sup> The total number of Malawian farmers is based on the data by the DAES (2019).

<financial aspect=""></financial>	MoAIWD	96,088,400	121,881,366	166,135,550	210,389,733	
The financial resources are not sufficient across the	- National budget					
districts surveyed during the evaluation. It was reported	Nkhata Bay district	1,922,744	1,440,090	1,135,241	1,231,204	
that the activities were supported by resources from	Machinga ADD*	4,981,948	5,136,545	5,436,915	6,100,330	
stakeholders who were also promoting SLM activities	The budgets allocated a		ly for diffusion	of the SLM tec	hniques but for	
within their program mainstream. The organizations and	all operations and admin					
programs that were frequently mentioned across the	The budgets for other three districts of the project sites were not available. *The allocation for Machinga ADD includes the budget for Balaka, Zomba an Machinga districts for operations and administration.					
districts were: ASWAp, World Vision, Total Land Care,						
1						
Development Fund of Norway, and SALFP. The lack of						
sufficient funding slows the expansion of the SLM technique	es.					
<evaluation result=""></evaluation>						
In light of the above, some problems have been observed in terms of the institutional, technical and financial aspects of the						
implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.						
5 Summary of the Evaluation						

The project partially achieved the Project Purpose of enhancement of the capacity of MoAIWD to diffuse appropriate SLM techniques as the soil analysis results were given but not always and the SLM technique handbooks were compiled but not approved at the time of the project completion and approved in the following year. At the time of the ex-post evaluation, the approved SLM technique handbooks have been distributed nationwide and services for soil and compost testing are continuously available to extension workers and farmers. Therefore, the project effects have been continued. The Overall Goal of nationwide diffusion of appropriate SLM techniques has been achieved as AEDOs are trained and able to instruct farmers on the SLM techniques, and the number of farmers practicing the SLM techniques is increasing as well as the productivity of maize. Sustainability is high in the policy aspect but some problems have been observed in the institutional, technical and financial aspects, because personnel and budget allocation is not sufficient, which delays the expansion of the SLM techniques. In regard of the efficiency, the project cost exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

## Recommendations for Implementing Agency:

• The MoAIWD needs to provide training and further promote the diffusion of the SLM techniques. Since there is inadequate funding at all levels with the ministry, the government is recommended to utilize funding sources of other projects within the same ministry to incorporate the activities of SLM. This will ensure to maintain the skill level of the staff and to diffuse the SLM techniques nationwide. Furthermore, the MoAIWD needs to strongly collaborate with projects by NGOs or other development partners in utilizing the manuals developed by the project.

## Lessons learned for JICA:

• There are positive effects of high crop production by using compost. This was a result from improved soil structure and increased water-holding capacity. Most farmers interviewed showed willingness to continue the practice as they indicated that they applied less amount of chemical fertilizers. As most farmers realize high crop production, there has been a high adoption rate of the technique. In addition, farmers are now able to send their soil samples for analysis, which facilitated the farmers to know the soil deficiency and apply recommended nutrients. In introducing new soil technique, it is effective that the farmers know the actual results of the technique. Based on the above good practice, it can be concluded that the program with the SLM techniques is effective and can be applied to smallholder farmers.



Focus group discussion of farmers after applying the SLM techniques.



A farmer, who practices the SLM techniques, showing maize harvested after applying compost manure

Country Name		Project on Capacity Development for	Ef	fective Flood Management in Flood	
Republic of Ken	ya	Prone Areas			
I. Project Outline					
Background	In 2003, the southern part of Lake Victoria Basin including Nyando River experienced serious flooding tha affected approximately 22,000 people. In 2007, Garissa town, located in the middle of the Tana River Basin, was hit by flood and suffered from consequent financial losses of approximately 8.5 million USD. In order to address and take measures against such flood risks, JICA carried out "the Study on Integrated Flood Management for Nyando River Basin" (2006-2009) and the grant aid project, "Programme for Community–Based Flood Disaster Management to Adapt to Climate Change in the Nyando River Basin" (2009-2011) for support the Integrated Flood Management (IFM). In addition, the Government of Kenya had institutionalized the Water Resource Users Associations (WRUAs) in local communities for promoting community-based flood management based on the WRUA Development Cycle (WDC), a method supported by the Water Resource Authority (WRA). However WRUAs did not have the capacity to implement community-based flood management activities.				
Objectives of the Project	a coord activitie to contri the six 1. Ov ma 2. Pro- ma	management is expanded to all six catchments.			
Activities of the Project	<ol> <li>Pil</li> <li>Ma         <ul> <li>(1)</li> <li>sys</li> <li>lev</li> <li>im</li> <li>Japanes</li> <li>Ez</li> <li>Tri</li> <li>Ea</li> <li>di</li> <li>4)</li> </ul> </li> </ol>	<ol> <li>Pilot Site: Nairobi, and three Sub-Catchment Areas (Lower Gucha Migori, Lower Lumi, and Isiolo)<sup>1</sup></li> <li>Main Activities:         <ol> <li>Planning, staffing, and budgeting by WRA for flood management activities, establishment of a training system for WRA staff, institutionalization of knowledge management system at regional and sub-regional level, (2) Establishment of "flood management forum" for coordinating stakeholder, and preparation and implementation of community-based flood management activities</li> <li>Inputs (to carry out above activities)</li> </ol> </li> <li>Inputs (to carry out above activities)</li> <li>Experts: 7 persons</li> <li>Staff Allocated: 59 persons</li> <li>Trainees Received: 22 persons</li> <li>Land and facilities: Project offices in WRA</li> <li>Equipment: vehicle, PCs, printer, photocopier, digital planimeter, etc.</li> </ol>			
Project Period		D11 – June 2014 Project Cost		-ante) 320 million yen, (actual) 314 illion yen	
Implementing Agency	Ministry of Water & Sanitation and Irrigation (MWSI: formerly known as the Ministry of Water and Sanitation (MWS), the Ministry of Water and Irrigation (MWI) or the Ministry of Environment, Water and Natural Resources (MEWNR) by federal ministerial restructuring during (2013) and after the project period (2015, 2018)) Water Resources Authority (WRA: formerly known as the Water Resources Management Authority (WRMA) by federal ministerial restructuring after the project period (2017))				
Cooperation Agency in Japan		y of Land, Infrastructure, Transport, and Tourism			

## II. Result of the Evaluation

<Constraints on Evaluation>

It was not possible to survey some of the sub-regional offices either due to security restrictions e.g. Coastal Athi, Lower Tana, and Mt. Elgon Cheragany, or budgetary constraints e.g. Lower Tukwel, Lakes Baringo and Bogoria, etc.

1 Relevance

<Consistency with the Development Policy of Kenya at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Kenya's development policies such as the "First Medium Term Plan (2008-2012)" of the "Kenya Vision 2030" issued in 2008, that prioritized sustainable economic growth and poverty reduction and set flood management in the Nyando River Basin as a priority project. Consequently, the "Second Medium Term Plan (2013-2017)" positioned management of climate-induced natural disasters as a cross-cutting issue that required collaborative action by public and private sector agencies at national, county, and community levels.

<Consistency with the Development Needs of Kenya at the Time of Ex-Ante Evaluation and Project Completion > The project was consistent with Kenya's development needs of reducing not only flood risk and hazard magnitudes but also the

<sup>&</sup>lt;sup>1</sup> There are six Catchment Areas (CAs) in Kenya and under each of the CAs had a three-layered structure namely, Sub-Regions, River Basins, and Sub-Catchments. By selection of the three project sites, the project targeted three CAs: Lake Victoria South, Athi, Ewaso Ng'iro North. The rest are non-target CAs but subject to Overall Goal: Tana, Rift Valley, and Lake Victoria North.

vulnerability of flood-affected people in flood-prone areas in Kenya. There was no change in the needs by the time of project completion. <Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy towards Kenya. One of the six priority areas of Japan's assistance for Kenya confirmed in the economic cooperation policy dialogue in 2000 was environmental conservation including flood management<sup>2</sup>. <Appropriateness of Project Design/Approach>

As the project design was based on and incorporated key elements of previous flood management projects implemented with JICAs support that is, structural and non-structural measures for flood management especially at the community level, it is generally deemed as an appropriate approach. However, in terms of the process of attaining the Overall Goal after the project, its design had not been able to entirely cover challenges in project sustainability that might arise in the field such as leadership and budgetary constraints. <Evaluation Result>

In light of the above, the relevance of the project is high

#### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The project purpose was partially achieved by the time of project completion. Participating counterpart personnel were trained and it is perceived that they learnt flood management through the project in order to implement community-based activities (Indicator 1). The process to incorporate integrated flood management into catchment management was ongoing. All the Catchment Management Strategies (CMSs) of target areas were in the final stage of preparation at the time of project completion. As for the Sub-Catchment Management Plans (SCMPs), IFM Plans of two sub-catchments had been completed and duly incorporated into the SCMPs, and the IFM Plan of one sub-catchment was in the process of finalization (Indicator 2). Regarding the knowledge management mechanism<sup>3</sup> and training system, it laid the foundation for aggregation of data gathered at the community level and preparation of the internal training program (Indicator 3). Alongside the IFM Expansion Plan for the 12 target rivers, WRA finalized its Corporate Work Plan underpinned by the budget (Indicator 4).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have partially continued after project completion. All the target catchment areas have revised their CMS and included flood management. On the other hand, the sub-catchment areas were not able to incorporate IFM into SCMPs especially due to financial constraints since the revision of SCMPs is a lengthy and consultative process. According to the field survey, as a result of training counterpart personnel by the project, community-based activities have been implemented in the three target sub-catchment areas although in varying degrees. Furthermore, in spite of budgetary limitations, flood management officers and community development officers tried as much as possible to accommodate flood-related activities within the budget for their daily work.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal had been partially achieved at the time of ex-post evaluation. Although they experienced some delays, WRA prepared the final draft of their Strategic Plan 2018 – 2022 and included flood management in it. Flood management is one of the activities that is considered to be an incentive for communities to engage in catchment conservation activities in order to contribute towards sub-article 2.3.4 (b) "Securing water resources in order to provide sustainable water in good quality and quantity". Additionally, under Article 4.2.8 (pg. 51) Flood and Drought Mitigation Measures, WRA notes that based on its plans to mitigate against floods, effective flood early warning systems, the establishment of evacuation centres, development and review of integrated flood Management plans should be enhanced, and there is need to develop and implement all IFMPs (Indicator 1). Among six sub-regions of the catchment areas, 5 WRA staffs, including ex-counterpart personnel in the three non-project catchment areas and personnel of the six sub-regions, have the capacity to implement community-based flood management activities and have been conducting the same (Indicator 2). CMSs have been revised in all three non-target catchment areas and a total of 9 out of 43 WRUAs in three sub-regions have incorporated flood management in their SCMPs (Indicator 4). Although there is no information on specific budget allocation or distribution in the three non-target catchment areas after the project completion efforts, GoK disbursed a total of Ksh. 25 million and about Kshs. 20 million for two kinds of flood projects which target all six catchments respectively in 2016/2017 and 2017/2018. (Indicator 5).

Some positive impacts were confirmed at the time of the ex-post evaluation. In two non-target catchment areas, namely Lake Victoria North and Rift Valley, the World Bank-funded Kenya Water Security & Climate Resilience Project and the Water Services Trust Fund (WSTF) supported the setting up of community-based flood early warning system. Some of the WRA staff, in charge of the implementation of the system, were trained under the project. Furthermore, Isiolo, Taita Taveta, Kisumu, Narok, and Migori County Governments have incorporated flood management in their Country Integrated Development Plans (CIDPs) and it is expected that this will eventually result in greater involvement and budgetary allocation by the county governments. In the meantime, no negative impact was confirmed. <Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goa
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Aim	Indicators	Results			
(Project Purpose)	Indicator 1: Staff of WRA in charge of	Status of the Achievement: Achieved (Continued)			
The institutional	flood management in the project target	(Project Completion)			
framework of flood	areas has the capacity to implement	Almost all the counterpart personnel could deepen understanding of flood			
management in the	community-based activities.	management through the training. According to the capacity assessment, 23% of			
context of integrated		elements of capacity development were very much improved and 55% were			
water resource		partially improved.			
management is		(Ex-post Evaluation)			

<sup>&</sup>lt;sup>2</sup> Ministry of Foreign Affairs, "ODA Databook 2011"

<sup>&</sup>lt;sup>3</sup> It was defined by JICA Project Team as a built-in mechanism in WRA that institutionally accumulates the experiences and lessons learned from the disaster management activities at community level.

established for the		As a result of training staff by the project, community-based activities have be
effective and sustainable		implemented in target sub-catchment areas.
implementation of community-based activities in the project target areas.		<ul> <li>Lower Gucha Migori: 1) Training WRUAs on SCMP development, flo management, integrity and governance, climate change adaptation, da collection, 2) Construction of a small section of road using donou technology, Evacuation drill at Kabuto and Nyora in 2015, 4) Creation of awareness, 5) Flo monitoring.</li> </ul>
		<ul> <li>Lower Lumi: 1) Flood monitoring through rain gauges, Flood monitori through river gauge, 3) Flood early warning in liaison with WRUAs</li> <li>Isiolo: Flood monitoring through river gauge</li> </ul>
	Indicator 2: Flood management is	Status of the Achievement: Partially achieved (Partially continued)
	incorporated in the CMS and SCMP of flood-prone areas in the Project	(Project Completion)
	target areas.	CMSs: The concept of Integrated Flood Management (IFM) was incorporated the draft final CMSs
		SCMPs: IFMPs for Isiolo River and Lumi River were completed and are to duly incorporated into the SCMP. IFMP for Gucha Migori River was in the scale of the scale
		process of finalizing. (Ex-post Evaluation)
		CMSs: In all the three catchment areas (Lake Victoria South / Athi / Ewa Ng'iro North), Lake Victoria South CMS (2015-2022), Athi (2015-2022) CM
		and Ewaso Ng'iro North CMS (2015-2022) included flood management in li with the revised WDC manual.
		SCMPs: Due to budgetary constraints, however, SCMPs have not been revis
		to incorporate IFMP since the project completion in all three sub-catchment ar
		(Lower Gucha Migori / Lower Lumi/ Isiolo).
	Indicator 3: WRA's knowledge management mechanism and training	Status of the Achievement: Partially achieved (Not continued) (Project Completion)
	system function covering the project	Knowledge management mechanism: The procedure for flood survey and
	target areas are established.	survey form was prepared and was planned to be used in the next rainy seas
		Training system: Training plan and training materials were prepared, and ma
		trainers and trainers were fostered. The budget for expansion of the second st
		training had been included in the Annual Corporate Work Plan (Ex-post Evaluation) Knowledge management mechanism and training system may not have b
		fully institutionalized considering its low profile within WRA and elsewh
		The training was not systematically conducted after the project in the ta
		catchment areas. However trained personnel in each catchment retained capacity for flood monitoring.
	Indicator 4: The budget for flood management is secured in the project	Status of the Achievement: Achieved (Not continued)
	target areas.	(Project Completion) WRA prepared the IFM Expansion plan for 12 target river basins and the Ann Corporate Work Plan with its budget. In the Annual Plan, activities and budget.
		for three project target areas and the Nyando River were included. (Ex-post Evaluation)
		Though WRA managed to implement some flood management activities for target catchments by using their overall budget, the specific budget was
Overall Goal)	Indicator 1: WRA's Strategic Plan	additionally allocated or disbursed after the project. (Ex-post Evaluation) Partially achieved
he institutional ramework of flood nanagement in the	properly addresses flood management	The final draft of WRA's Strategic Plan (2018-2023) was prepared and includes flood management in line with WRA's mandate as per the Water 2016 and the revised WDC but it had not yet been finalized since WRA was consulting stakeholders.
ontext of integrated	Indicator 2: WRA staff in charge of	(Ex-post Evaluation) Partially achieved
vater resource	flood management has the capacity to	• Among three catchment areas for extension of project activities (Tana/I Valley/Lake Victoria North), two counterpart personnel each for Rift Valley
nanagement is expanded o all six catchments.	implement community-based	Lake Victoria North have been engaged in the implementation of commun
o un six catoninento.	activities in the six catchments	<ul><li>based activities for flood management.</li><li>Among six sub-regions under the catchment areas above, one personnel each</li></ul>
		South Rift and Lower Nzoia has been supporting community-based activities flood management.
	Indicator 3: Flood management is	<ul> <li>(Ex-post Evaluation) Partially achieved</li> <li>CMSs have been revised in all three non-target catchment areas.</li> </ul>
	incorporated in CMS and SCMP of	• Whereas, 4 WRUAs out of 12 in South Rift sub-region have incorporated flo
	flood-prone areas in the six catchments	management in their SCMPs, as well as 2 WRUAs out of 20 in Lakes Barin
	Indicator 4: WRA's knowledge	and Bogoria and 3 WRUAs out of 11 in Lower Tukwel. (Ex-post Evaluation) not achieved
	management mechanism (knowledge	No follow-up was done to institutionalize the system after the project in all
	management) and training system	three non-target catchment areas.
	function covering the six catchments	
	are established	

Indicator 5: Budget for flood management is secured in the six catchments	(Ex-post Evaluation) Partially achieved Some budget specifically for flood management was secured for Loitokitok Sub- regional Office. Rift Valley Regional Office was also allocated the budget for three years in a row although the final disbursement was challenging. However, GoK disbursed over Ksh. 45 million for two kinds of flood management programmes which targeted all six catchments.
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Source : Field survey interviews with WRA staff at Regional and Sub-Regional Offices in Ewaso Ng'iro North, Athi, Lake Victoria South project target catchments and staff at Rift Valley and Lake Victoria North non-project catchments.

#### 3 Efficiency

Both the project period and cost were within the plan (ratio against the plan: 100% and 98%, respectively). The outputs were produced as planned. Therefore, the efficiency of the project is high.

## 4 Sustainability

<Policy Aspect>

In Kenya Vision 2030's "Third Medium-Term Plan (2018-2022)", the section on environment, water, sanitation, and regional development has positioned the development and implementation of Sub-catchment Management Plans (SCMPs) as a flagship project under the Water Resource Management Programme specifically focusing on rehabilitation of monitoring stations and upgrading telemetry equipment and facilities for flood management.

#### <Institutional Aspect>

Following the creation of 47 county governments in 2013 as prescribed in the Constitution of Kenya (COK) 2010, all policies and legislation in Kenya have been revised to align with this system of government. However, although the "Water Act (2002)" was amended to become the" Water Act (2016)" which created new institutions including replacing the Water Resources Management Authority (WRMA) with WRA, the mandate of WRA with regard to flood management remains basically the same as that of WRMA.

WRA has assigned 1 flood management officer at each of their regional and sub-regional offices in the target catchment areas. The number of flood management staff is therefore perceived as being sufficient since floods occur only during the rainy season and are prone to specific areas. However, it was considered problematic at the sub-catchment level since for one, at the Kisii Subregional Office, the Flood Management Officer retired and had not been replaced. Secondly, the staff responsible for flood management at the Loitokitok and Isiolo Subregional Offices were each doubling up as the Flood Management Officer and Community Development Officer which means that in the event that either of them was not available for one reason or another especially during the rainy season, it is likely that the respective Subregional Office would experience some challenges in efficiently and effectively implementing flood management activities. <Technical Aspect>

Although not so much effort was made for further training after the project, ex-counterpart personnel in the regional offices in the catchment areas have retained a certain type of capacity such as for flood monitoring. In this regard, they have acquired considerable know-how to the extent of being able to carry out regular monitoring without any reference to the manuals produced under the project. Such manuals, however, were not distributed to any of the offices in project non-target areas during or after the project since there was no clear procedure on how to distribute the documents. With regard to the status of each sub-regional office, capacity for flood management depended on the presence and availability of trained personnel who play a key role in flood management. In the case of Kisii, the sub-regional office has been active in mobilizing communities to form WRUAs through training and supporting the development of SCMPs, however, the pivotal FMO was transferred and has not yet been replaced. In Loitokitok though, the incumbent FMO has vast and varied experience in and deep understanding of flood management. In the case of Isiolo, WRA transferred an officer to take over from and be inducted by the retiring Flood Management Officer. Although the officer transferred is a Community Development Officer, she can competently and comfortably handle both community development and flood management activities.

<Financial Aspect>

In the target areas, the budget has not been allocated for regional offices and in the case of the sub-regional offices, only Loitokitok was allocated Kshs. 56,400 for flood management in 2017 though it was not adequate since there was major flooding in Lower Lumi and the actual expenditure amount turned out to be Ksh. 266,400. All those offices, therefore, had to incorporate flood management within community development works at the expense of other daily activities. The Government, however, disbursed Ksh. 25 million in 2016/17 and Kshs. 20 million in 2017/18 for two kinds of flood management programmes targeting all the six catchments. <Evaluation Result>

In light of the above, the implementing agency has faced some difficulties from the institutional aspect. In addition, in terms of technical and financial aspects, there have been some major problems experienced. Therefore, the sustainability of the effects through the project is low.

## 5 Summary of the Evaluation

The project partially achieved the Project Purpose and Overall Goal. All the target catchment areas have revised their CMS and included flood management. Although in varying degrees, community-based activities have also been implemented in three target sub-catchment areas. As for sustainability, WRA has not yet established a coherent mechanism for flood management at every level and has experienced some challenges in providing technical support to sub-catchment areas. With regard to the financial aspects, although the national budget has been allocated for flood management activities from 2016 to 2018, it has been very inadequate thus sustainability is not assured. Considering all of the above points, this project is evaluated to be partially satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

The field survey revealed that WRA Strategic Plan 2012 – 2017 has not been finalized and many SCMPs including for the project target areas needed to be updated. Since the Strategic Plan is the basic foundation for the formulation of all other strategies and plans, WRA should highly prioritize revision of the Strategic Plan and seek and set aside a budget for this purpose. Considering that the devolved system of government started just before the end of the project, the Strategic Plan should be aligned with this system in order to enhance collaboration with county governments and joint implementation of activities. At the same time, besides flood management, the revised

Strategic Plan should also include other elements of the project such as knowledge management, training, and succession issues.

Lessons Learned for JICA:

- Although the project supported preparation of a specific budget for flood management activities, its allocation was not highly prioritized since there were other activities competing for WRA's limited financial resources. Consequently, flood management activities were not highly prioritized especially due to the unpredictability of flood incidences and as a result, the budget was not regularly allocated. At the same time, in the case of flood management through community-based activities, the budget allocation structure may not include affected small community units. It is therefore extremely important for JICA to carefully consider the actual situation with regards to flood management," and the social and environmental aspects of climate change in order to ensure continuous availability of budget.
- The establishment of the institutional framework for flood management envisaged in the project was deemed to be quite ambitious as it was supposed to be applied to all catchment areas in the country. Sustainability, therefore, was subject to the introduction of a wide range of very key actions to be undertaken by the implementing agency on a nationwide scale, right from the policy level to other fundamental aspects such as documentation, human resources development, and provision of budget that are beyond the project's scope of activities. This implies that some level of institutional reforms is inevitably required in order to achieve the Overall Goal. When designing such an institutional framework through a project, it is therefore imperative to deliberately select a set of valid indicators to align with ongoing institutional reforms.



Riverbank protection gabions constructed during the project in Isiolo Sub-catchment.



WRUA explaining operations of functioning Early Warning System equipment in Upper Lumi (Left). Properly functioning Early Warning System equipment in Upper Lumi (Right).

Country Name		Project for Capacity Develop	mont for Local	Cover	mmont Training Dhase 2
United Republic of Tanzania		rioject for Capacity Develop	ment for Local	Gover	nment framing r nase 2
I. Project Outline					
Background	Capacity building of local government staff in Tanzania had been under responsibility of each local government. On the other hand, the central government had been responsible to build an effective national training system that enables to provide appropriate training to meet local needs. Under those circumstances, the Prime Minister's Office-Regional Administration and Local Governance (PMO-RALG, currently President's Office, Regional Administration Local Government (PO-RALG) and JICA jointly implemented the "Capacity Development for Local Government Training" project. Based on the training strategy formulated in this project, most of the authority and budget for training management was transferred to the Local Government Training Institute (LGTI) under the umbrella of PO-RALG, which was newly appointed as the "Lead Training Institution" (LTI). By strengthening that newly established functions, it was needed to create an environment where training could be implemented more effectively.				
Objectives of the Project	<ul> <li>Though strengthening LGTI's coordination capacity, strengthening capacity of LGTI on organizing existing/new practical training and others, the project aimed at establishing an effective Local Government Authority (LGA) training framework, thereby contributing to providing quality training by LGAs to their staff.</li> <li>Overall Goal: LGAs provide quality training (long-term and short-term) to its staffs.</li> <li>Project Purpose: Effective LGA training provision framework is established.</li> </ul>				
Activities of the project	<ol> <li>2. M sr e</li> <li>3. In Japan</li> <li>1) E</li> <li>2) E</li> <li>3) L</li> <li>c</li> </ol>		tors, vehicle operating cost,	and (i Tanza 1) 2) 3)	group for implementation of training strategy, (ii) iii) strengthening capacity of LGTI on organizing anian Side Staff allocated: 18 persons Facilities: Project office Local Operational Cost: Allowance, per diem, training expenses, etc.
Project Period		011-July 2015	Project Cost	(ex-ai	nte) 370 million yen, (actual) 219 million yen
Implementing Agency	Local Government Training Institute (LGTI), Prime Minister's Office- Regional Administration and Local Government (PMO-RALG) (Division of Local Government, Division of Organizational Development)				
Cooperation Agency in Japan	-				

## II. Result of the Evaluation

<Special perspectives of evaluation to be considered >

· The continuing status of the Project Purpose was analyzed under the Overall Goal.

## 1 Relevance

<Consistency with the Development Policy of Tanzania at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policy of Tanzania. At the time of ex-ante evaluation, the government of Tanzania had implemented the Local Government Reform Program Phase2 (LGRP2) between 2009 and 2013 as a policy framework for decentralization. As one of the important measures to realize the "improvement of local government capacity", the program's main task, LGPRP2 aimed at formulating and implementing training strategy in order for LGAs to implement the training policy of local government officials. At the time of project completion, under the "Policy Paper on Local Government Reform, 1998" (effective to date), autonomy was provided for LGAs to manage their training and the "Training Strategy for Local Government Authorities, 2010" (2010-2014) gave mandate to LGTI as Lead Training Institution

<Consistency with the Development Needs of Tanzania at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the development needs of Tanzania for capacity development of local government officials. At the time of ex-ante evaluation, strengthening the capacity of newly established functions of LGTI was needed. At the time of completion, the project was consistent with the development needs because capacity enhancement of LGA officials was essential for the government service to functions under Decentralization by Devolution.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy to Tanzania. "Governance and Accountability" was one of the priorities areas under the "Country Assistance Program for the United Republic of Tanzania" (2008).

<Appropriateness of Project Design/Approach>

The approaches for training of LGA staff depended on the LGRP2 scheme. However, its feasibility was significantly diminished because LGRP2 was terminated without realizing devolution of human resource management. Lack of authority for human resource management did not give incentives for LGAs to pursue human resource development, therefore, needs for LGA's training became very low. Nonetheless, the project has taken measures including PDM revision, such as reducing the number of outputs from five to three in response to the mid-term review.

In light of the above, the relevance of the project is fair.

### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was not achieved at the project completion. Among the indicators set to measure the effect of the project, "Capacities of LGTI to develop new courseware have been developed enough to embark on other courses using the same methodologies." (Indicator 1) and "Training Course Evaluation Reporting System has been developed and LGTI could utilize collected information for further improvement of training courses" (Indicator 3) were partially achieved, but "Capacities to disseminate new courseware to training providers and resource persons have been developed" (Indicator 2) was not achieved.

< Continuation Status of Effectiveness of Project Purpose after Project Completion>

The effects of the Project Purpose have partially continued. The project noticed it was essential to capacitate LGTI first to provide quality training to LGAs after the mid-term review, therefore, the focus was put to strengthen its core functions before adding executive and administrative responsibilities on. Although Project Design Matrix (PDM) had not changed in the last minutes of the project so it remains focusing on development of strategic plan and dissemination to other Training Providers (TPs), it should be highlighted that LGTI has managed to transcend and become a Lead Training Institute in the Local Government context as is suggested in the Project Completion Report. In conclusion, At the terminal evaluation, the project team seriously had felt the needs to change the project strategy and had made efforts to reach the intended goal by diminishing its scope to concentrate on institutional capacity development of LGTI in terms of curriculum development (indicator 1), disseminating the curriculum to its lectures within LGTI (not for other TPs) (indicator 2) and establishing the training course evaluation reporting system (within LGTI) (indicator 3). It is imperative to note even after project completion LGTI's institutional development as LTI of LGA trainings has enhanced, which can be said sustainable because the technics and human capacities remain at the ground level.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has partially achieved by the time of ex-post evaluation. Since a "Training Strategy" was still a draft and has not finalized by the PO-RALG, the training framework for LGAs can be said that is has not been updated (Indicator 1). Hence, who should be responsible for the roles such as coordination, training quality assurance, provision of Training of Trainers (TOT), development of TOT and so on, has not been assigned. However, courseware for additional courses were developed using modality and methodologies of the prior courses (Indicator 2) and a number of TOT courses were conducted from 2015 to 2018 (Indicator 3) by LGTI's efforts. Further training to LGAs by those personnel trained at ToT was conducted. Some of the trained trainers conducted lecturers at LGTI to teach the courses to LGAs. In terms of budget of trainings, LGAs, who bear the cost of training, have not had it, so instead of LGAs, LGTI itself have made tremendous efforts to obtain funds and manage to keep the sustainability of the training courses. <Other Impacts at the time of Ex-post Evaluation>

There have been some impacts for women, as priority was given to women attendants and participation of female staff was encouraged. No negative impact on the natural environment by this project has been observed and there was no land acquisition and resettlement. <Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

	Achievement of Project Pu	rpose and Overall Goal
Aim Indicators		Results
(Project Purpose)	Indicator 1:	Status of the Achievement: Partially achieved (Continued)
Effective LGA traini	ng Capacities of LGTI to develop new courseware	(Project Completion)
provision framework	is have been developed enough to embark on other	- LGTI has acquired certain levels of technical capacity to develop
established.	courses using the same methodologies.	courseware using the similar methodologies that have been deployed
		during the curriculum development exercise under the Project.
		- Some methodologies would not be applicable as they require significant
		financial capacities to replicate such as writing workshops, field survey,
		and engagement of external advisors.
		(At the time of ex-post evaluation)
		Refer to the Indicator 2 of the Overall Goal
	Indicator 2:	Status of the Achievement: Not achieved (Partially achieved)
	Capacities to disseminate new courseware to	(Project Completion)
	training providers and resource persons have been	- Technical capacity building of LGTI staff to conduct TOT to training
	developed.	provider, etc. was still on the way. At this stage, before receiving TOT as
		participants, the capacity to conduct TOT was regarded to be limited.
		- Dissemination of the courseware developed by LGTI to LGAs was a
		role to be played by PMO-RALG. It was to be decided how specifically
		PMO-RALG would disseminate it to LGAs with what kind of
		positioning (mandatory or optional, etc.).
		(At the time of ex-post evaluation)
		Refer to the Indicator 3 of the Overall Goal.
	Indicator 3:	Status of the Achievement: Partially achieved (Not continued)
	Training Course Evaluation Reporting System has	(Project Completion)
	been developed and LGTI could utilize collected	A format of Training Course Evaluation was scheduled to be produced by
	information for further improvement of training	reflecting the result of training in March, 2015. On the other hand, the
	courses	evaluation reporting system for further improvement of the course was
		piloted, however, was not fully institutionalized by PMO-RALG and
		LGTI by July 2015.
		(Ex-post Evaluation)

Achievement of Project Purpose and Overall Goal

		There was no existing evaluate TOT. However	-	-	
	Indicator 1: With many changes in environment surrounding LGAs, overall training framework targeting LGAs has been updated and enforced by PO-RALG.	TOTs Status of Achievement: Not achieved (At the time of ex-post evaluation) A new Training Strategy was drafted in June 2015. At the time of ex-post evaluation, communication between LGTI and PO-RALG on finalization and implementation of the new strategy was underway. Prospects for the date of approval is not set.			
	Indicator 2: S Courseware of additional courses are being	Status of Achievement: Achieved (At the time of ex-post evaluation) Courseware developed			
	developed using modalities and methodologies of priority courses.	Name of Course Contract		Modalities and Metho of the Local Reve	
		Management LGA Legal	Cours	se (TNA) of the Local Reve	
		Framework Councilors	Cours	se (TNA)	takeholders from
		Training Manual (Handbook)	PO-R Curri	1	ecretariat, LGTI,
	Indicator 3: Increased number of trained providers to conduct training courses using developed courseware	LGAs Staff Induction Manual	PO-R Curri	Team comprised of Stakeholders fi PO-RALG, Regional Secretariat, LC Curriculum Development, testing Dissemination and LGA	
		Improved O&OD DTF (CTF) and WF Manual	Team comprised of Stakeholders from PO-RALG, Regional Secretariat, LGTI, Curriculum Development, testing and Dissemination and LGA		
		Status of Achievement (At the time of ex-post 1) TOT	t: Achie	ved.	
		Name of Courses for	TOT	Number of training (Cumulative)	Number of Participants (Cumulative)
		Accountability for G Governance	ood	1 (2015)	25
		Conflict Resolution and Negotiation (CR+N)		2 (2015)	60
		LGA Revenue Enhancement (LRE)		4 (2015)	200
		Fundamentals of Effective Communication Skills		2 (2015)	60
		Contract Management LGA Legal Framework		(Part of LRE) (Part of LRE)	(Part of LRE) (Part of LRE)
		Councilor Training	лк	Phase 1 (13 times) (2015)	Phase 1 (10 – 15 in 13 Regions)
				Phase 2 (1 time) (2016)	Phase 2 (30 in 5 Zones)
		training courses i		of those trained traine to LGAs at LGTI.	rs conducted 12
Source : JICA documents,	questionnaires and interviews with PO-RALG and L	GTI			

Both the project cost and project period were within the plan (the ratio against the plan: 59%, 100%). Two outputs were deleted from the original plan in order to cope with the termination of LGPR2. Therefore, the efficiency of the project is high.

4 Sustainability <Policy Aspect>

The government policy has supported human resource development of LGAs. Under the Policy Paper on Local Government Reform (1998), which had been effective at the time of ex-post evaluation), LGAs have been required to set aside sufficient fund to ensure their staff training. Under the "Training Strategy for Local Government Authorities, 2010" (effective at the time of ex-post evaluation), the following mandate was given to LGTI: (i) LGTI as an LTI to undertake induction training to all new recruited personnel in LGAs. (ii) LGTI to undertake training to LGA staff and officials on matters pertaining to LGAs.

<Institutional Aspect>

The organizational structures of PO-RALG and LGTI have been appropriate and the sufficient number of staff has been assigned, respectively. If there are any issues of concern, PO-RALG through its Division of Local Governance (DLG) are involved and DLG may encourage LGTI to work with Development Partners (DPs), who could support the LGTI from various aspects, to improve performance in

LGA. However, no clear demarcation of roles has been written as the Training Strategy has not been finalized. <Technical Aspect>

LGTI has had sufficient skills because of the following reasons: (i) the quantity and quality of academic staff at the institute has increased. In terms of quality, training courses were updated and implemented depending on the priority, which was decided based on the needs and gaps of PO-RELG and available resources from LGTI. Also, the number of PhD holders among lecturers in LGTI increased from lat the start of the project to 9 at the time of ex-post evaluation and Master's degree holders occupied 20 out of 98 lecturers. (ii)A substantial number of short courses, research and consultancy services has been conducted, (iii) some outreach activities such as O&OD has been conducted, (iv) they have capability to produce curriculum, (v) they have had training of trainers and master trainers, and (vi) they have produced different courseware and other training manuals.

As a main policy maker, PO-RALG has had skills to finalize the Training Strategy,. On the other hand, implementation of training have been the duty of LGTI. However, according to PO-RALG, PO-RALG may suggest a training strategy based on operational tools of the PO-RALG. PO-RALG may update their orientation manuals, online training and indicate the need or demand for training

Most ex-counterpart staff of the project have retired or left the positions. Both LGTI and PO-RALG have training systems. LGTI have carried out (i) orientation of new staff who are introduced to roles of LGTI and LTI as well as roles of Department of Coordination and Quality Assurance (DCQA), (ii) TOT, (iii) On the Job Training (OJT), (iv) in-house training during management meetings, and (v) facilitation activities. PO-RALG have strengthened skills through (i) orientation, (ii) OJT, (iii) in-house training during management meetings and (iv) facilitation activities

<Financial Aspect>

The budget of LGTI has not been sufficient enough but they have managed to maintain their courses with limited budget they obtained from various sources. Therefore, LGTI has not been able to implement all the planned activities, but they are managing a part of their courses. LGTI have had plans to strengthen own revenue sources by establishing (i) hostel and accommodation, (ii) increasing student admission, (iii) introducing short courses, (iv) conducting consultancy services, and (v) writing research proposal for grants.

## **Budget of LGTI**

		(L	Unit: Ish)
	2016	2017	2018
Applied Budget	223,000,000	213,700,000	250,000,000
Approved Budget	223,000,000	213,700,000	250,000,000
Sources	Own Revenue	Own Revenue	Own Revenue

There has been no available budget for PO-RALG for the implementation of the Training Strategy, as it has not been approved yet. The Capacity Building Grant (CBG), which was the main source for LGAs to implement training, was suspended in year 2013-2014. Reallocation through the Local Government Development Grant (LGDG) System<sup>1</sup> where CBG was 10% of the Grant provided by the Government; which was active only for one year (2016-2017), and the Fund has not been allocated since year 2017-2018. <Evaluation Result>

Problems have been observed in the financial aspect; therefore, the sustainability of the effects through project is fair. 5 Summary of the Evaluation

The project did not achieve the Project Purpose at the project completion. Capacities of LGTI to develop new courseware was somewhat developed, and evaluation report system was developed to some extent. However, "Capacities to disseminate new courseware to training providers and resource persons have been developed" was not achieved. The Overall Goal has been partially achieved. Training Strategy have not been finalized, however, training to LGAs by the personnel who participated in TOT under the project have been reported to conduct a lecture to LGAs personals at LGTI. As for the sustainability, some problems have been observed in the financial aspect, however, the institutional capacities on planning and implementation of LGA training have been well enhanced.

Considering all of the above points, this project is evaluated to be partially satisfactory.

## III. Recommendations & Lessons Learned

Lessons Learned for JICA:

1. Consider Baseline Surveys before formulation of project – there was no pilot study that provide quantitative data i.e. the number of TOTs that were there to the number we aspire to achieve by the end of the project; hence making sustainability difficult and having a quantitative assessment impossible.

2. Involvement other Departments like the Planning Department or other related departments for purposes of Sustainability – It was apparent information sharing with other departments was low; aside from the DLG no other department had any information and could not provide insight. If we as JICA deal with the Ministry, we should also see other departments that influence either policy or planning issues for future sustainability.

3. The approaches for training of LGA staff depended on the LGRP2 scheme. However, its feasibility was significantly diminished because LGRP2 was terminated without realizing devolution of human resource management. Much consideration must have been made during the initial stages of project design, dependency on policies that lack either formal institutionalization or a particular sense of legal framework may not help avoid abrupt changes due to uncontrolled situations during the implementation stage. Additionally, in practice, it is not at all that easy to make such radical decision as to reflect and modify PDM based on the change of frequent policy framework with flexibility, which resulting in enlarging the risk of not reflecting the reality of the situation surrounding the project.

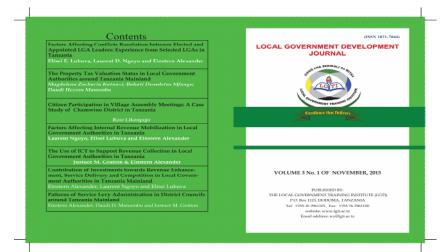
4. Proper reflection of the reality on project design even towards the end of the project should be done. – The project had realized the necessity of the modification of some part of the PDM after the midterm review, so they modified the PDM at that moment. However, since nobody ever expected the very base of the strategy, which the project was designed on, 'LGRP2' had abolished, the project had to reconsider

<sup>&</sup>lt;sup>1</sup> The LGDG system is the only main reliable vehicle for allocating development grants

to LGAs in mainland Tanzania. The system was introduced as a unified national

transfer method of providing development funding to LGAs.

its scope and goals, which took a certain time towards the end, resulting in little time left at the time of project termination. To avoid this, it would be important to make as much consideration as possible at the initial stage of the project designs as is mentioned above 3, as well as always to prepare for contingency plans for unexpected situations being happened in the developing countries' settings.





Classroom set-up at LGTI2

Cover Page of "LOCAL GOVERNMENT DEVELOPMENT JOURNAL" published by LGTI after the Project Completion Based on the knowledge / expertise gained through curriculum development exercise in the Project

Country Name	Project of Teacher Training Improvement in Science and Mathematics at Primary Level Phase II
Durling Face	(Projet d'Appui a la Formation Continue des Enseignants en Matiere de Sciences et de
Burkina Faso	Mathematiques a l'Ecole Primaire Phase 2)

## I. Project Outline

I. I Toject Outline	
Background	In Burkina Faso, since basic education became compulsory and free of charge (for the age from 6 to 16) in 2007, the gross enrollment rate of primary education significantly increased from 45.9% in 2001/02 to 72.4% in 2008/09. On the other hand, the completion rate was limited to 41.7% in 2008/09. Also, according to the survey (the Program of the Analysis of Education Systems: PASEC) in 2009, the achievement level of mathematics lowered compared to the one 10 years back, and capacity development of teachers was analyzed to be essential. In fact, a large number of teachers practiced one-way approach for students based on memorization without considering students' understanding level in their classes. Furthermore, teacher training courses in the country were shortened from the two-year program to the one-year program in 2012, and it was pointed out that capacity development of teachers was not sufficient. Also, In-Service Education Training (INSET) for enhancement of teachers' abilities was not established well. Therefore, it was an urgent issue to establish INSET to foster teachers who are able to provide learner-centered classes considering students' understanding level.
Objectives of the Project	<ul> <li>Through continuous teacher training on the learner-centered approach, the project aimed at improving teachers' pedagogical practices of the learner-centered approach in science and mathematics, thereby contributing to improvement of student's learning in science and mathematics classes in all public primary schools in Burkina Faso.</li> <li>Overall Goal: Student's learning in science and mathematics classes is improved in all public primary schools in Burkina Faso.</li> <li>Project Purpose: Teachers' pedagogical practices of the learner-centered approach in science and mathematics are improved through continuous teacher training.</li> </ul>
Activities of the Project	<ol> <li>Project Site: Burkina Faso nationwide (45 provinces in 13 regions)</li> <li>Main activities: 1) Development and distribution of lessons plans in science and mathematics, 2) Revision of the monitoring/evaluation tool and the training modules, 3) Trainings on the learner-centered approach to inspectors/pedagogical advisors, school directors and teachers, 4) Collection and analysis of good practices on the learner-centered approach, 5) Production of lesson films, good practices and teacher guides, etc.</li> <li>Inputs (to carry out above activities)         <ul> <li>Japanese Side</li> <li>Experts: 7 persons</li> <li>Staff Allocated: 25 persons</li> <li>Training in the third country: 10 persons (Kenya)</li> <li>Equipment: vehicle, photocopier, PCs, etc.</li> <li>Local expenses: cost for project activities</li> </ul> </li> </ol>
Project Period	December 2011 – September 2015 Project Cost (ex-ante) 260 million yen, (actual) 257 million yen
Implementing Agency	Ministry of National Education and Literacy (MENA)
Cooperation Agency	None

# in Japan II. Result of the Evaluation

<Constraints on Evaluation>

Due to the security reasons in the country, this ex-post evaluation attempted to verify the Continuation Status of Project Effects and the Overall Goal based on the data and information from only two regions out of the total 13 regions in the country, the Central region and the Central-Sud region.

1 Relevance

<Consistency with the Development Policy of Burkina Faso at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Burkina Faso's development policies of the "Ten-Year Plan for Basic Education Development Phase 2" (2008-2010) prioritizing improvement of quality of education and indicating reinforcement of INSET as one of the goals at the time of ex-ante evaluation and the "Program for Strategic Development of Basic Education" (2012-2021) setting improvement in the quality of formal basic education as one of the prioritized programs at the time of project completion.

<Consistency with the Development Needs of Burkina Faso at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Burkina Faso's development needs of establishment of INSET to foster teachers who are able to provide learner-centered classes considering students' understanding level.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy for Burkina Faso  $(2011)^1$  setting Basic Human Needs including basic education as one of the prioritized goals.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<sup>&</sup>lt;sup>1</sup> Ministry of Foreign Affairs, "Japan's ODA Data by Country" (2011)

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. Thanks to the project, teachers in the schools where the lesson plans were distributed in advance started to provide classes based on the learner-centered approach and the lesson plans. However, as the distribution of the lesson plans to all schools by MENA was delayed, it was not possible to confirm at a country level what percentage of teachers actually practiced the leaner-centered classes according to the plans (Indicator 1). According to the end-line survey conducted in March 2015, 85% of teachers in mathematics and 86% of teachers in science obtained the score of 3 or 4 concerning the item number  $7.4^2$  in the monitoring/evaluation tool (Indicator 2). Also, the survey revealed that 65% of teachers in mathematics and 74% of teachers in science obtained the score of 3 or 4 concerning the item number  $3.3^3$  in the monitoring/evaluation tool (Indicator 3). <Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially continued since the project completion. According to the inspectors/pedagogical advisors interviewed and the teachers in the schools (10 schools) visited for the ex-post evaluation, the lesson plans for the 1st quarter and 2nd quarters were distributed to schools nationwide after the project completion. On the other hand, the principals and teachers in the schools reported that the plan for the 3rd quarter has yet to be distributed and there are more or less some schools which have not received even the plans for the 1st quarter and 2nd quarter. They also said that all the teachers have practiced the learner-centered classes based on the plans during the 1st and 2nd quarters. According to the above-mentioned inspectors/pedagogical advisors and the principals, although inspectors/pedagogical supervisors have monitored schools even after the project completion, as the monitoring tool developed by the project has not been used by the inspectors/pedagogical supervisors and the principals due to its complexity, this ex-post evaluation could not verify whether students perform their learning activities according to teachers' instructions (Indicator 3). <Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved at the time of ex-post evaluation. As mentioned above, it was confirmed that the learner-centered approach introduced by the project has been disseminated to more or less the two regions targeted by the field survey of the ex-post evaluation. Yet, the Overall Goal aimed to disseminate the approach and produce its effects at a national level, and its achievement status could not be verified at such a level with the quite limited coverage of the field survey of two regions. However, 80% of the principals interviewed for the ex-post evaluation have recognized that students' comprehension and expression ability have improved (Indicator 1 and 3), and 60% of them (more than 80% of the target value) does that students' logical thinking ability has improved (Indicator 2). Considering that the lesson plans for the 1st quarter and 2nd quarter were distributed to almost of all schools across the country even though the one for the 3rd quarter was not, it is difficult to rigorously verify the achievement status for each of the indicators set in the Overall Goal, but it can be considered that the Overall Goal as a whole has been achieved to some extent.

Two positive impacts of the project were confirmed at the time of ex-post evaluation. Firstly, empowerment of female students was achieved. For example, as the right to speak is granted to all students in the learner-centered approach introduced by the project, female students became able to express themselves during classes and also take responsible positions in group-works. Secondary, support to teachers by communities have become more active. For instance, where there is a lack of materials (for example, a slate) necessary for science and mathematics lessons, teachers can ask communities to manufacture them or provide financial supports to purchase them. No other positive or negative impacts were confirmed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal				
Aim	Indicators	Results		
(Project Purpose)	1. In science and mathematics lessons in 13	Status of the Achievement: Not Achieved (Partially Achieved)		
Teachers' pedagogical	trained provinces, more than 90% of	(Project Completion)		
practices of the	teachers practice the learner-centered	• As the distribution of the lesson plans to all schools by MENA was		
learner-centered approach	approach according to the lessons plans.	delayed, it was not possible to confirm what percentage of teachers		
in science and		actually practiced the leaner-centered classes according to the plans.		
mathematics are improved		However, teachers in the schools where the plans were distributed in		
through continuous		advance practiced the classes in science and mathematics according to the		
teacher training.		plans.		
		(Ex-post Evaluation)		
		• According to the inspectors/pedagogical advisors interviewed and the		
		teachers in the schools (10 schools) visited for the ex-post evaluation, the		
		lesson plans for the 1st quarter and 2nd quarters were distributed to schools		
		nationwide. On the other hand, the principals and teachers in the schools		
		reported that the plan for the 3rd quarter has yet to be distributed and there		
		are more or less some schools which have not received even the plans for		
		the 1st quarter and 2nd quarter.		
		• According to the above-mentioned teachers and principals, all the teachers		
		have practiced the learner-centered classes on the basis of the plans.		
	2. In science and mathematics lessons in 13	hematics lessons in 13 Status of the Achievement: Achieved (Not verified)		
	trained provinces, more than 70% of	(Project Completion)		
	teachers obtain the score of 3 or 4	• 85% of teachers in mathematics and 86% of teachers in science obtained		

<sup>&</sup>lt;sup>2</sup> Item number 7.4 shows what percentage of teachers conduct lessons according to the lesson plan prepared by the project, and its scale is from 1 to 4 (4 is the highest).

<sup>&</sup>lt;sup>3</sup> Item number 3.3 shows what percentage of students perform learning activities according to the teacher's instruction, and its scale is from 1 to 4 (4 is the highest).

	concerning the item number 7.4 in the monitoring/evaluation tool.	monitoring/e March 2015.	evaluation tool acco	cerning the item r ording to the end-line		
		<ul> <li>(Ex-post Evaluation)</li> <li>As the monitoring tool developed by the project has not been used by inspectors/pedagogical advisors and principals due to its complexity, the indicator could not be verified.</li> </ul>				
	<ul> <li>3. In science and mathematics lessons in 13 Status of the Achievement: Achieved (Not verified) trained provinces, more than 70% of (Project Completion)</li> <li>teachers obtain the score of 3 or 4</li> <li>concerning the item number 3.3 (for students) in the monitoring/evaluation tool.</li> <li>65% of teachers in mathematics and 74% of teachers in science the score of 3 or 4 concerning the item number 3.3 (for students) in the monitoring/evaluation tool.</li> </ul>					
		inspectors/pe indicator cou	itoring tool develo edagogical advisor ild not be verified.	pped by the project h s and principals due t	-	
(Overall Goal) Student's learning in science and mathematics classes is improved in all	1. More than 70% of teachers recognize that students' comprehension has improved.	<ul> <li>The indicato field survey ex-post evalu</li> </ul>	r was unverified. is quite limited, the ation recognize the	However, even thoug 80% of the principles at students' compreher at students' compreher	s interviewed for the asion has improved.	
public primary schools in Burkina Faso.		Region	Total no. of principles interviewed	No. of the principles recognizing students' comprehension has improved	Rate of the principles recognizing students' comprehension has improved	
		Center	4	3	75	
		Central-Sud Total	6 10	5	83 80	
	2. More than 70% of teachers recognize that students' logical thinking ability has improved.					
		Region	Total no. of principles interviewed	No. of the principles recognizing students' logical thinking has improved	Rate of the principles recognizing students' logical thinking has improved	
		Center Central-Sud		$\frac{4}{5}$	75 50	
		Total	1		<b>60</b>	
	3. More than 70% of teachers recognize that students' expression ability has improved.	<ul> <li>(Ex-post Evalu</li> <li>The indicato field survey ex-post eva improved.</li> </ul>	ation) Unverified r was unverified. I is quite limited, luation recognize	However, even thoug 80% of the principles that students' exp g that students' exp	n the coverage of the s interviewed for the pression ability has	
		improved]	Total no. of	No. of the principles	Rate of the principles	
		Region	principles interviewed	recognizing students' expression ability has improved	recognizing students' expression ability has improved	
		Center Central Sud	4	3	75	
		Central-Sud Total	6 10	5	<u>83</u> <b>80</b>	
and teachers in 10 schools	ion Report, Project Completion Report, Inter		10	ş		
	eriod were within the plan (ratio against iciency of the project is high.	the plan: 99%	% and 100%, resp	pectively). The outp	uts were produced	

4 Sustainability

<Policy Aspect>

The "Program for Strategic Development of Basic Education" (2012-2021) sets improvement in the quality of formal basic education as one of the prioritized programs and promotes the provision of initial and INSET for formal basic education staff. As the project aimed to improve teachers' pedagogical practices of the learner-centered approach in science and mathematics, it has been backed up by the national

## policy.

#### <Institutional Aspect>

There were changes in the organizational setting to sustain the learner-centered approach introduced by the project, but the organizational changes have not negatively influenced the sustainability of the project effects.

[General Directorate of Research and Education of Innovation Pedagogy (DGREIP)]

DGREIP has played a role in developing and updating the curriculum based on integrative pedagogical approach (API) including the learner-centered approach introduced by the project. 97 staff members are allocated there, and according to the organization, the number of the staff has been sufficient, and there have not been any major problems from a perspective of staffing by the time of ex-post evaluation. [General Directorate of Pedagogical Guidance and Initial and Continuing Training (DGEPFIC)]

DGEPFIC has been responsible for monitoring the application of curriculum and teaching methods including the leaner-centered approach in schools as well as providing initial and in-service trainings to stakeholders (teachers and inspectors/pedagogical advisors). 112 staff members have been deployed there, and according to the organization, the number of the staff has been enough, and there have not been any major problems from a perspective of staffing by the time of ex-post evaluation.

## [General Directorate of Formal Education (DGEF)]

DGEF has been in charge of ensuring the implementation of education programs and teaching including the learner-centered approach and of educational reforms in schools. 107 staff members have been assigned there, and according to the organization, the number of the staff has been sufficient, and there have not been any major problems from a perspective of staffing by the time of ex-post evaluation. [Basic Education District (CEB)]

CEB has played a role in monitoring the application of curriculum contents and programs in schools and organizing teacher trainings. At least three inspector/pedagogical supervisors are allocated to each CEB, and according to the organization, the number of the staff has been sufficient, and there have not been any major problems from a perspective of staffing by the time of ex-post evaluation. <Technical Aspect>

#### [DGREIP and DGEFG]

The staff of DGREIP and DGEFG has sustained the knowledge and skills necessary to fulfill their responsibilities given. According to the organizations, no formal and regular trainings have been provided due to the lack of its budget at the time of ex-post evaluation. However, they also mentioned that as the API will be fundamentals of the curriculum, the knowledge and skills are highly likely to be sustained thereafter.

#### [DGEPFIC]

The staff of DGEPFIC has sustained the knowledge and skills necessary to fulfill their responsibilities given. This is because the staff acquired the knowledge and skills by joining the Pedagogical Supervisors' Conference held in September 2015 and the Teachers and Teachers Pedagogical Conference held in September and October 2019 and receiving some trainings provided by the JICA technical cooperation project, "Project for Strengthening Practical Education in the Training Centers for Teacher-students" (2016-2018). As mentioned above, no formal and regular trainings have been provided at the time of ex-post evaluation, and as the API will be fundamentals of the curriculum, the knowledge and skills are highly likely to be sustained thereafter. [Basic Education District (CEB)]

The staff of CEB has sustained the knowledge and skills necessary to fulfill their responsibilities given through self-trainings. As with DGREIP, DGEFG and DGEPFIC, no formal and regular trainings have been provided at the time of ex-post evaluation, and as the API will be fundamentals of the curriculum, the knowledge and skills are highly likely to be sustained thereafter.

## [Training modules and monitoring/evaluation tools]

While training modules developed by the project have continued to be used by teachers and inspectors/pedagogical supervisors for their self-study, the monitoring/evaluation tools have not as they are too complex for the relatives.

## <Financial Aspect>

### [DGREIP, DGEPFIC and DGEFG]

According to the staff of DGREIP, DGEPFIC and DGEFG, as the learner-centered approach introduced by the project was generalized, the budget to implement the approach started to be appreciated into the general account, not into the specific budget. Also, it was reported the budget has been in short. However, considering that the project effects have been partially achieved, the overall goal has been achieved and the sufficient number of staff has been allocated, a certain amount of budget for the approach is considered to have been secured even though the budget for trainings has been insufficient. The situation is expected to be continued. [CEB]

2.5 million CFA Fran has been allocated to CEB each year since 2017 to monitor teachers' activities and support teachers in mastering pedagogical approaches including the learner-centered approach. Even though the budget for trainings has been shortage, as the activities the organization is responsible for have been undertaken, a certain about of budget for the approach is considered to have been secured. The situation is expected to be continued.

#### <Evaluation Result>

In light of the above, slight problems have been observed in terms of the technical and financial aspects of the implementing agencies. Therefore, the sustainability of the effects through the project is fair.

## 5 Summary of the Evaluation

The project achieved the Project Purpose aiming at improving teachers' pedagogical practices of the learner-centered approach in science and mathematics through continuous teacher training and partially achieved the Overall Goal aiming at improving student's learning in science and mathematics classes in all public primary schools in Burkina Faso. As for the sustainability, no formal and regular trainings have been provided due to the lack of the budget, the sufficient number of staff has been drafted in to each organization and the organizations have fulfilled their responsibilities given.

Considering all of the above points, this project is evaluated to be satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- It was confirmed that the lesson plan for the 3rd quarter developed by the project has yet to be distributed to all schools. In order to maximize the project effects, MENA should distribute the lesson plan to all schools.
- It was confirmed that any formal and regular trainings are not provided to teachers and inspectors/pedagogical supervisors. In order to sustain their knowledge and skills related to the learner-centered approach introduced by the project, DGEPFIC should set up and provide the trainings.
- Lessons Learned for JICA:
- It was confirmed that it is easier and cheaper to introduce a new approach in the education system through an initial training system. In future technical cooperation projects, where the new approach is introduced into the education system, the best way would be to go through the initial training system.
- The project developed and introduced the monitoring/evaluation tools to monitor schools. However, due to the complexity, at the time of ex-post evaluation, the monitoring tools have not been used. This prevented from verifying the continuous status of the project effects. Therefore, in order to appropriately monitor and sustain project effects, it is recommended to develop and introduce user-oriented monitoring tools at the time of project planning and implementation.



Lesson sheet collection utilized by a teacher of Manga Sector II Primary School



Teacher's Guide utilized by a teacher of Béré A Primary School

## Internal Ex-Post Evaluation for Technical Cooperation Project (SATREPS<sup>1</sup>)

Country Name		Establishment of Sustainable Livelihood Strategies and Natural Resource Management in Tropical Rain Forest			
Republic of Cameroon		and Its Surrounding Areas of Cameroon: Integrating the Global Environmental Concerns with Local Livelihood Needs			
I. Project Outline					
Background	is the set the reg abundar drastica marketa (FAOS <sup>7</sup> Sectora conside areas b liveliho	vast tropical rainforest of Congo Basin that include the Eastern, Southern and Center Regions of Cameroon econd largest ones in the world next to Amazon rainforest and known as its biodiversity. The local people in ions has been traditionally gaining their livelihood by using natural resources and lands thanks to the natural resources from the tropical rainforest. However, shifting cultivation causing deforestation illy expanded due to the rapid population growth and penetration of agricultural production prioritizing ability. The deforestation decreased the forest area from 243,000km <sup>2</sup> in 1990 to 199,000km <sup>2</sup> in 2010 TAT). Although the government of Cameroon formulated and implemented "the Forest & Environment I Program (FESP)" in 2003 in order to cope with the deforestation issue, the program did not fully red possible adverse impacts on living of the local communities and the economic activities in the forest of strategy and natural resource management was urged in order to realize compatible forest protection and ement with the living of the local communities.			
Project Objectives	Thr avoid of non-tim project forest/fo 1. Ex 2. Pro	Through clarification of conditions assuring sustainable agricultural production, processing and marketing to avoid deforestation and cropland expansion, development of local community model for sustainable use of non-timber forest products (NTFPs) and preparation of a guideline for rational and sustainable ecosystem use, the project aimed at proposing methods for sustainable land use and natural resource conservation in forest/forest-savanna margin areas of South Region and East Region of Cameroon. 1. Expected Overall Goal: N/A			
Project Activities	<ol> <li>Provide the second secon</li></ol>	ject Site: Youndé, Bityli Village,Ebolowa Area (Southern Region), Andom Village, Bertoua areaand Gribé lage ,Yokadouma-Ngato Ancien Area (Eastern Region) in Activities: 1) Clarification of conditions assuring sustainable agricultural production, processing and rketing to avoid deforestation and cropland expansion, 2) Development of local community model for tainable use of non-timber forest products (NTFPs), 3) Preparation of a guideline for rational and tainable ecosystem use in forest/forest-savanna margin areas. puts (to carry out above activities)			
Project Period		11 – July 2016Project CostEx-ante: 400 million yen Actual: 404 million yen			
Implementing Agencies		Ministry of Scientific Research and Innovation (MINRESI), Institute of Agricultural Research for Development (IRAD), University of Dschang, University of Douala, University of Yaoundé 1			
Cooperation Agency in Japan	Kyoto University, Tokyo University of Agriculture, Shizuoka University, Tenri University, Kyoto Prefectural University, Notre Dame Seishin University				
II. Result of the Evalu < Special Perspectives Co		in the Ex-Post Evaluation >			

[Expected Overall Goal and Utilization of Research Outcomes]

Since the expected Overall Goal for the SATREPS project was not set by the project design, expected "Utilization of the research outcomes" was verified by this ex-post evaluation as a part of expected positive impacts by the SATREPS project.

1 Relevance

<Consistency with the Development Policy of Cameroon at the Time of Ex-Ante Evaluation >

The Project was consistent with Cameroon's policies to prioritize sustainable natural resource management, such as the "Growth and Employment Strategy Paper (GESP)" (2010-2020), the "Rural Sector Development Strategy (RSDS)" (2005-2015) and the "Forest Environment Sector Program (FESP)" (2003).

<Consistency with the Development Needs of Cameroon at the Time of Ex-Ante Evaluation>

The Project was consistent with Cameroon's development needs for sustainable natural resource management in order to cope with deforestation due to agriculture and to ensure the livelihoods of the rural people depending on the forests. <Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

<sup>&</sup>lt;sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development

The Project was consistent with Japan's ODA Policy for Cameroon, prioritizing support for forest conservation as a countermeasure against climate change<sup>2</sup>.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved at the time of project completion. "Forest-Savanna Sustainability Model" was presented to annual meeting of Japan Association for African Studies in Japan, in early June 2016. The model proposed the methods for sustainable land use and natural resource conservation are proposed in forest/forest-savanna margin areas of South and East Regions of Cameroon based on the research outputs though the planned outputs such as guidelines for sustainable agricultural production and for rational sustainable ecosystem use, sales system model based on cost calculation of cassava production and marketing and local community model for sustainable use of NTFPs were not developed.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued since project completion. Most of the research outputs by the SATREPS project have been utilized by the researchers and the local producers. For example, while "Handbook for the Investigation on Indigenous Alcoholic Beverages Production" has been used by the local producers, "Model for Sustainable Animal Use", "NTFPs Mapping at Project Site" and "Organic Matter of Soil Management Model" have been utilized by the researchers. On the other hand, the "Manual for Constructing Contour Ridge (Donou) for Sustainable Cassava Production" was not printed for distribution because of lack of budget and the Aflora database (database of NTFPs) has not yet open to the public because of the problem of its server.

In addition, the researches related to the research outputs by the SATREPS project have been conducted. The new SATREPS project, "Co-creation of innovative forest resources management combining ecological methods and indigenous knowledge (Co-création d'une gestion innovante des ressources forestières combinant les méthodes écologiques et les connaissances autochtones: Projet COMECA) (2018-2023), which has started by IRAD of Cameroon and the Center for African Area Studies (CAAS) of Kyoto University, was initiated and has been conducted for sustainable use of wildlife and NTFPs in the tropical rain forest of Southeast Cameroon by the local people initiative. Also, a grassroot technical cooperation project call, "Cassava Commercialization Project for Small-scale Farmers in the Eastern Region of Cameroon" (2018-2021) has been implemented by using the research output of the SATREPS project under the support of JICA.

The most of major research facilities and equipment installed by the SATREPS project have been utilized. The field stations of Andom and Griblé as well as a cassava processing factory in Bityili have been utilized by IRAD. The field stations of Andom and Griblé have been utilized for the grassroots technical cooperation project and the successive SATREPS project of COMECA, respectively. Also, 4 cassava processing units in Andom have been used by the local community. On the other hand, pilot farms in Bityili and Andom have returned to the owner as planned and use by them.

<Status of Achievement for Expected Overall Goal at the time of Ex-post Evaluation>

The two above-mentioned new projects have promoted the research outcomes of the SATREPS project. "Project COMECA" has utilized the sustainable use of NTFPs to balance conservation of biodiversity and livelihood of the local communities. The grassroots technical cooperation project for the cassava commercialization has utilized the research outcomes related to sustainable agriculture, including production, processing and marketing of cassava for income improvement of the local small-scale farmers. In addition, "the Project for Promotion of Conservation, Sustainable Use of Biodiversity and Climate Change Issues in the Commission of Central African Forest (COMIFAC) Countries<sup>3</sup>" (2015-2020), other technical cooperation project of JICA, has utilized the data of NTFPs commercialization. Furthermore, the Ministry of Science Research and Innovation (MINRESI) has promoted dissemination of the improve cassava varieties over the two divisions in the territory of Diocese.

<Other Impacts at the time of Ex-Post Evaluation>

There are some positive impacts of the Project confirmed at the time of the ex-post evaluation. The SATREPS project contributed to improve accuracy in scientific approach and knowledge as well as respective competence of the researchers through exchanges with the Japanese researchers. In addition, the universities involved in the SATREPS project from the Cameroon side enhanced their research capacity and the educational capacity by the research equipment installed by the SATREPS project.

From the social aspect, the SATREPS project facilitated reduction of subordination between the two ethnic groups of Konabembe and Baka through equal treatment of all the local population by the SATREPS project.

No negative impact by the SATREPS project was confirmed at the time of ex-post evaluation. <Evaluation Result>

Therefore, both the effectiveness and impact of the project is high.

Achievement	of Project Purpose

Achievement of Project Purpose			
Aim	Indicators	Results	
(Project Purpose)	Indicator 1:	Achievement Status: Achieved (Continued)	
Methods for sustainable land use	The acquisition of substantial data	(Project Completion)	
and natural resource conservation	for "Forest-Savanna Sustainability	• "Forest-Savanna Sustainability Model" was presented to annual meeting	
are proposed in	Model" and the analysis results are	of the Japan Association for African Studies in Japan, in early June 2016.	
forest/forest-savanna margin areas	presented.	(Ex-Post Evaluation)	
of South and East Regions of		<ul> <li>Most of the research outputs by the SATREPS project have been</li> </ul>	
Cameroon.		utilized by the researchers and the local producers.	
Source : Terminal Evaluation Report, JST Terminal Report, Questionnaires and interviews with the project Coordinator of IRAD			
3 Efficiency			
Although the project period was as planned (the ratio against the planned: 100%), the project cost slightly exceeded the plan (the ratios			

<sup>2</sup> Ministry of Foreign Affairs, "ODA Country Databook 2010"

<sup>3</sup> The Central Africa Forest Commission. It was established by the Congo Basin Countries including Cameroon in 1999.

against the plan: 101%). The project outputs were produced as planned. Therefore, the efficiency of the project is fair.

## 4 Sustainability

<Policy Aspects>

There has been no change in the policy priorities to promote the sustainable natural resource management, including forest resources and to protect biodiversity in the Congo Basin. Therefore, it is expected that the researches related to NTFPs production to conserve forest resources will be supported by the government of Cameroon.

<Institutional/Organizational Aspects>

The three field stations of Andom, Griblé and Bityili (cassava processing factory) were officially integrated as antennas of IRAD with staff and has been maintained by IRAD. Four researchers of IRAD have been engaged in the research activities related to the SATREPS project. COMIFAC elaborated a guide for management of transboundary protected area (Tri-National Dja-Odzala-Minkébé TRIDOM)<sup>4</sup> and has been planning to sensitize all their stakeholders of COMIFAC countries on the utilization of the guide. MINRESI and IRAD collaborate with *Obala Diocèse* in the city of Obala (Yaoundé Province) for cassava transformation based on the guide developed by the SATREPS project and has followed up a cassava transformation unit.

For promoting the utilization of the research outputs by the SATREPS project, there have been a steering committee which has been composed the Ministry of Agriculture and Rural Development (MINADER) with 10 members for sustainable agriculture, 7 for soil science, 4 for socioeconomic aspects, the Ministry of Forests and Wildlife (MINFOF) with 8 members for forest and NTFPs, the Ministry of Environment, Protection of Nature and Sustainable Development (MINEPED) with 12 members and MINRESI/IRAD with 13 members for the research activities related to the SATREPS project.

As mentioned above, three field stations have been integrated as antennas of IRAD and staffed. IRAD has maintained 7 machines of the food laboratory and 3 machines of the soil laboratory installed by the project. But 1 machine of the food laboratory and 1 machine of the soil laboratory were broken and one of the soil laboratory with 5 machines and the soil laboratory with 3 machines. While all the machines of the food laboratory have been functioning well, 2 machines of the soil laboratory were broken and unavailable spare parts in Cameroon.

In addition, MINRESI has been implementing planned research activities and using the research outputs and the publications by the SATREPS project as a helpful database for scientific literacy.

<Technical Aspects>

Some researchers of IRAD and University of Douala have upgraded their research capacities in their respective areas and others have been appointed to a scientific position or have become a doctorate degree holder. In particular, some researchers of IRAD who involved in the SATREPS project have been engaged in the COMÉCA project. A professor of the University of Dschang, as a researcher, improved his capacity through the SATREPS project and has been using his skill to elaborate the guide for the management of transboundary protected area (TRIDOM).

<Financial Aspects>

While there has no budget allocation by the government of Cameroon for any research activities related to the SATREPS project, including the COMECA project, IRAD have triennial budget program from 2020 to 2022 for the three field stations. It indicates that a part of running cost for the three field stations, including staff salaries, transport cost and allowances, have been covered. <Evaluation Result>

In the light above, there have been some problems from the institutional aspect. Therefore, the sustainability of the effects through the Project is fair.

#### 5 Summary of the Evaluation

The project was achieved the Project Purpose through the establishment of the "Forest-Savanna Sustainability Model" including the improved cassava production and NTFPs. As for sustainability, the implementing agency has personnel and budget shortages for the research activities related to the SATREPS project. As for efficiency, the project cost slightly exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learnt

Recommendations for Implementing Agency:

(for MINRESI/IRAD and University of Dschang)

• Research institutions should ensure that they have the necessary budget and personnel, for example agricultural engineers, extension officers, to maintain the facilities and equipment developed under this SATREPS project in order to continue to provide services to the local population. IRAD should actively lobby the budget authorities to do so.

Lessons Learnt for JICA:

Before selecting equipment, JICA should confirm the infrastructure conditions at the installation site, such as power and water, the availability of repair parts, and the availability of technicians to maintain and operate the equipment.

<sup>&</sup>lt;sup>4</sup> TRIDOM is a landscape spread over three countries - Cameroon, the Republic of Congo and Gabon. It is a transborder forest covers 178,000 km<sup>2</sup>, representing 10% of the Congo Basin rainforest.





A Cassava processing unit in Andom that continues to be used and maintained by local community

# Internal Ex-Post Evaluation for Technical Cooperation Project

The Rural Water Supply and Sanitation Capacity Development Project Rural Water Supply and Sanitation Capacity Development (RUWASA-CAD) Project Phase 2			
In order to cope with the limited access to safe water in rural areas, the Government of the United Republic of Tanzania prepared Water Sector Development Programme (WSDP) which was designed under the Sector Wide Approach to Planning (SWAp) in February 2007. WSDP was constituted by the four main components which included the "Rural Water Supply and Sanitation Programme" (RWSSP). In such context, the Government of Tanzania requested the Government of Japan technical cooperation for the "Rural Water Supply and Sanitation Capacity Development (RUWASA-CAD) Project" (Phase 1) in order to strengthen a system for implementation, operation and maintenance of the rural water supply. In order to disseminate the "Training Package" developed under the Phase 1 Project, RUWASA-CAD Project Phase 2 started in September 2011.			
use 1] ough enhancing Ministry of Water and Irrigation (MoWI) capacity for managing capacity developmen grammes, developing a training system model for District Water and Sanitation Teams (DWST) in aging Rural Water Supply and Sanitation (RWSS) projects, enhancing capacity of Basin Water Officer (Os), Regional Water and Sanitation Teams (RWSTs) and others, the project aimed at enhancing capacitie the target Districts providing RWSS services, thereby contributing to improving the RWSS services. Overall Goal: RWSS services in the target districts are improved. Project Purpose: Capacities of the target Districts providing RWSS services for rural communities are enhanced. use 2] ough revising Programme Implementation Manual (PIM) Annexes, and developing Capacity Developmen lementation Guideline, the project aimed at enhancing the system of supporting Implementing Agencies Capacity Development (CD), thereby contributing to strengthening IA's capacity to implementing			
SSP. Overall Goal: The capacity of Implementing Agencies (IA's) to implement RWSSP is strengthened. Project Purpose: The system of supporting IA's Capacity Development is enhanced for prope implementation of RWSSP.			
Project site:         [Phase 1] 22 districts in the Regions of Dar es Salaam, Coast, Lindi and Mtwara         [Phase 2] Tanzania nationwide (excluding regions in Zanzibar)         Main activities:         [Phase 1] (1) Strengthening capacity of the Ministry of Water and Irrigation to manage capacity development, (2) developing a training system model, (3) developing capacities of BWOs and RWSTs and others         [Phase 2] (1) Revision of PIM Annexes, (2) development of CD Implementation Guideline, and (3 conducting Training of Trainers (ToT)         Inputs (to carry out above activities)         [Phase 1]         Japanese Side       Tanzanian Side         1) Experts: 4 persons       1) Staff allocated: 7 persons         2) Trainees received: 5 persons       2) Land and facilities: Project office         3) Equipment: computer, printer, and vehicle       3) Local cost: Allowance for counterparts and training participants and utility charges         of equipment and vehicles, printing, contract with local consultants, construction cost       1) Staff allocated: 15 persons         1) Experts: 10 persons       1) Staff allocated: 15 persons         2) Trainees received: 5 persons       2) Land and facilities: Project office         3) Equipment: computers, printers and air       3) Local cost: Allowance for counterparts and training participants and utility charges			
<ul> <li>4) Local expenses: Employment of local staff, transportation, local expenses, etc.</li> <li>Ise 1] September 2007-July 2010</li> <li>Ise 2] August 2011–July 2013, July</li> <li>Project Cost</li> <li>Project Cost</li> <li>[Phase 1]</li> <li>(ex-ante) 280 million yen, (actual) 430 million yen</li> <li>[Phase 2]</li> <li>(ex-ante) 340 million yen, (actual) 382 million yen</li> </ul>			

	[Phase 2] Ministry of Water (MoW)
Cooperation Agency in Japan	[Phase 1] EARTH SYSTEM SCIENCE CO., LTD. [Phase 2] EARTH SYSTEM SCIENCE CO., LTD., KOKUSAI KOGYO CO., LTD., JAPAN TECHNO CO., LTD.

## II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

As the ex-post evaluation was conducted for both Phase 1 and Phase 2 projects in parallel, verification of the Phase 1 Overall Goal using indicator 3 and 4 was not feasible because the data are limited data.

1 Relevance

<Consistency with the Development Policy of Tanzania at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policies of Tanzania. "Vision 2025", the basic policy of national development in Tanzania, advocates "access to safe water" as one of the goals for achieving a high standard of living for the people. Also, rural water supply has been given high priority in policy documents such as the" National Poverty Reduction Strategy (NSGRP)" (2005-2010), the "National Water Policy (NAWAPO)" (2002) in harmonization with NSGRP, and the Millennium Development Goals".

<Consistency with the Development Needs of Tanzania at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the development needs of Tanzania for rural water supply. Limited access to safe water in rural areas had been a problem in Tanzania. At the time of the Phase 2 project completion, MoW launched WSDP from 2007 to 2025, and WSDP phase II just started. There was high expectation among members of WSDP that the revised PIM would contribute to improve the WSDP implementation.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy to Tanzania. At the time of ex-ante evaluation of the Phase 1 project, one of the five priority areas set based on "Country Assistance Programme for Tanzania" (2000) and the policy dialogue between Tanzania and Japan in 2001 was "Improvement of living environment by basic infrastructure development". At the time of the ex-ante evaluation of the Phase 2 project, infrastructure was one of the priority areas under the "Country Assistance Program for Tanzania" (2008). Water Resources Management and Rural Water Supply were included in this category.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

[Phase 1]

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. Among the indicators, "DWSTs adopt selection procedures of candidate communities for the scoping survey based on the demand-responsive approach (DRA) in the promotion phase" (Indicator 1) was partially achieved while "DWSTs examine and make comments to progress reports and other output reports to be submitted by the Technical and Facilitation Service Providers within the period agreed." (Indicator 2), "DWSTs update information on water supply and sanitation conditions as well as operation and maintenance of existing water supply facilities in the district every year." (Indicator 3) and "DWSTs integrate the strategies and activity plans on water supply, sanitation and hygiene promotion for households and schools into DWSP and annual plan." (Indicator 4) were achieved.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The effects of the project have continued at Lindi Region. There have been 5 DWSTs and 1 Municipal Water and Sanitation Teams (MWST) and they have continuously carried out practices initiated under the project for strengthening capacity for RWSS services. On the other hand, there has been a need of capacity building to water users and also enhancing the capacity of community organizations to give them ability to properly manage of the facility. Information on other target Regions were not collected due to time and budget limitation to execute this ex-post evaluation.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has not been achieved at the time of ex-post evaluation. Although the coverage rate of water supply improved in the target Regions, it did not reach the target value of the indicator, mainly because of rapid population growth, decrease of borehole production because of over utilization, failure or deterioration in some of projects because of lack of operational knowledge and maintenance cost, limited water sources and others, even though the target year of overall goal was set in 2015. (indicator 1). Due to the lack of operational & maintenance knowledge among the community users, the percentage of water supply points working for more than 6 months a year did not reach the target either (indicator 2).

[Phase 2]

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion, as all indicators, namely "The improved PIM Annexes (RWSSP) are authorized by MoW for official use in WSDP." (indicator 1), "The update method of the improved PIM Annexes (RWSSP) is formulated in TWG-2..." (indicator 2) and "More than 80% of RWST, which participated in ToT training provided by the Project, formulates the annual CD plan for their LGAs in line with regional scale CD implementation procedure stipulated in CD implementation guideline" (indicator 3) were attained.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The effects of the project have continued after the project was completed. PIM Annexes, for which the project supported and which was approved by MoW for official use, have been updated after the project completion. Nationally, RWSTs which participated in ToT training under the project, have continued formulating annual CD plan in order to achieve a goal targeted in water supply projects. The Capacity Development Implementation Guideline, which was developed under the project, have been updated in order for Community Owned Water Supply Organizations (COWSOs) to follow on how to implement rural water supply projects. MoW has supported RWSTs to pass on the skills provided by ToT to Regional Water Engineers (RWEs) and use of Capacity Development in order to transfer knowledge to the users and COWSOs.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved. According to a questionnaire survey conducted by MoW, more than 80% of IAs implemented RWSP nationally, by referring to the improved PIM annexes (Indicator 1). The extent to which CD support is provided to IAs was not verified as no information on the nationwide status is obtained (Indicator 2).

[Phase 1 &2]

<Other Impacts at the time of Ex-post Evaluation>

No negative impact on the natural environment by this project has been observed, and there has been no land acquisition and resettlement.

<Evaluation Result>

Therefore, the effectiveness/impact of the Phase 1 and Phase 2 projects is fair.

Achievement of Project Pur	pose and Overall Goal

	Achievement of Project Pur	
Aim	Indicators	Results
[Phase 1]	Targets: DWSTs which practices the following	Status of the achievement: partially achieved (Partially continued)
(Project Purpose)	actions in implementation of RWSSP reaches to	(Project Completion)*
Capacities of the target	80% (18 districts) by July 2010.	- The number of DWSTs that carried out the practice was 9 out of 22
Districts providing RWSS		(40%). Although this was less than target figure, the rest of the
services for rural	Indicator 1: DWSTs adopt selection procedures of	project targeted districts were practicing DRA at least partially.
communities are	candidate communities for the scoping survey	(Ex-post evaluation)**
enhanced.	based on the demand-responsive approach (DRA)	- There have been 5 DWSTs and 1 MWST in Lindi Region. They
	in the promotion phase	have used DRA.
	Indicator 2: DWSTs examine and make comments	Status of the achievement: achieved (Partially continued)
	to progress reports and other output reports to be	- The number of DWSTs that carried out the practice was 20 out of 22
	submitted by the Technical and Facilitation Service	(90.9%). This is more than the target figure.
	Providers within the period agreed.	(Ex-post evaluation)
		- On quarterly basis at Lindi Region
	Indicator 3: DWSTs update information on water	Status of the achievement: achieved (Partially continued)
	supply and sanitation conditions as well as	(Project Completion)
	operation and maintenance of existing water supply	
		-
	facilities in the district every year.	(95.4%). This is more than targeted figure.
		(Ex-post evaluation)
		- On quarterly basis at Lindi Region
	Indicator 4: DWSTs integrate the strategies and	Status of the achievement: achieved (Partially continued)
	activity plans on water supply, sanitation and	(Project Completion)
	hygiene promotion for households and schools into	The number of DWSTs that carried out the practice was 19 (86.3%). This
	DWSP and annual plan.	is more than targeted figure.
		(Ex-post evaluation)
		- The plans have been updated every year and its implementation plan
		have been updated on quarterly basis at Lindi Region.
[Phase 1]	Indicator 1: By the year of 2015, coverage rate of	Status of achievement: Not achieved
(Overall Goal)	improved water supply increases in the rural part of	(Ex-post evaluation) Enhanced capacities of the target Districts providing RWSS services have
	the target districts from 57.8 % to 75.6%.	helped the water coverage reach 68.9%, but not 75.6%, due to rapid
target districts are		population growth, decrease of borehole production because of over
improved.		utilization, failure or deterioration in some of projects because of lack of
		operational knowledge and maintenance cost, limited water sources and
		others. Status of achievement: Achieved
	Indicator 2: By the year of 2015, percentage of	(Ex-post evaluation)
	water supply points working for more than 6	The target was achieved (100%). Then due to lack of operational and
	months a year increases from 73% to 100% in the	maintenance knowledge among the community users, as well as
	target districts.	overloading to some boreholes with hand pumps led to repair of
		equipment sometime (e.g. hand pumps installed at schools and hospitals).
	Indicator 3: By the year of 2015, number of legally	Status of achievement: Not verified (see Special Perspectives Considered
	registered Water User Entities (WUEs) increases	in the Ex-Post Evaluation)
	compared to the present value in each target	
	district.	
	Indicator 4. By the year of 2015, people who have	Status of achievement: Not verified (see Special Perspectives Considered
	access to improved sanitation in the target districts	in the Ex-Post Evaluation)
	increases from X% to Y%.	
	the survey results were obtained from the questionna	
		e 1 project, the evaluation team only collected information from Lindi
	get and time for executing this ex-post evaluation.	
[Phase 2]	Indicator 1: The improved PIM Annexes (RWSSP)	Status of the achievement: Achieved
(Project Purpose)	are authorized by MoW for official use in WSDP.	(Project Completion) The improved PIM annex (English and Swahili) was approved and
The system of supporting		uploaded to MoW HP for official use by the mid of April 2015.
IA's Capacity	Indicator 2: The update method of the improved	Status of the achievement: Achieved (Continued)
-	Indicator 2. The update method of the hiptoved	Status of the wome comone remerced (Continued)

for proper implementation of RWSSP.	dicator 3: More than 80% of RWST, which articipated in ToT training provided by the prize formulates the annual CD plan for their	<ul> <li>(Project Completion)</li> <li>The proposal of PIM management structure was discussed and agreed in JSM. (Joint Supervision Mission; JSM is conducted semi-annually to review the progress of implementation of WSDP jointly by the Government of Tanzania and Development Partners).</li> <li>(Ex-post evaluation)</li> <li>PIM including Annexes has been updated during a quarterly report and send to MoW in order to improve rural water supply.</li> <li>Status of the achievement: Achieved (Continued)</li> <li>(Project Completion)</li> <li>More than 80% of RWSTs prepared annual CD plan for their LGAs by the end of the project term.</li> <li>(Ex-post evaluation)</li> <li>Nationally, RWSTs have continued formulating annual CD plan in order</li> </ul>
(Overall Goal)IncThe capacity ofbyImplementing Agenciesthat(IA's) to implementimRWSSP is strengthened.Incplaimimim	nplementation guideline dicator 1: The results of the questionnaire survey / AGM (Annual General Meeting) show that more an 80 % of IAs implement RWSP by referring nproved PIM annex. dicator 2: The CD support to IAs of RWSSP is rovided to more than 80% of CD activities anned in line with regional scale CD nplementation procedure stipulated CD nplementation guideline.	<ul> <li>Interestits of questionnaire survey by AGM shows that note than 80% of IAs implement RWSP by referring to improved PIM annex</li> <li>MoW has conducted survey during AGM in order to improve or meet 85% average water required by the country to rural water supply to get safe water by 2025.</li> <li>Status of Achievement: Not verified (Ex-post Evaluation)</li> <li>Total number of CD for COWSCOs in Coastal Region 2018/2019 is 100 which is updated cumulative each year. No information was obtained for the other regions.</li> </ul>

3 Efficiency

The project cost for the Phase 1 significantly exceeded the plan (the ratio against the plan: 154%) and the one for the Phase 2 slightly exceeded the Plan (the ratio against the plan: 112%). Although the project period for the Phase 1 was within the plan (the ratios against the plan: 97%), the ones for the Phase 2 project exceeded the plan (the ratio against the plan: 128%), due to the change of the project design. Also, one of the factors the project cost exceeded the original plan was that the input from Tanzanian side planned to use the basket fund. The outputs were produced as planned. Therefore, the efficiency of the both projects is fair.

## 4 Sustainability <Policy Aspect>

The Government of Tanzania has been very keen on water supply and sanitation in rural areas, as stipulated in the "Water Supply and Sanitation Act No. 5" (February, 2019), the "Water Supply and Sanitation Act" (2009), the "National Water Policy" (July 2002) and others. The new "Water Supply and Sanitation Act No. 5" (February, 2019) stipulated to formulate Rural Water Supply Agency (RUWASA) who will be responsible of coverage of supply of clean and safe water in the rural areas of Tanzania mainland. <Institutional Aspect>

It was only two months since RUWASA was established at the time of ex-post evaluation. Hence, the demarcation of roles and responsibilities, in terms of monitoring and updating PIM and supporting IA's CD for implementation of RWSSP, between Rural Water Supply Division of MoW and RUWASA has not been clear. Besides, MoW was still recruiting staff for RUWASA at the time of ex-post evaluation.

At the regional level, RWST at each region has two RWEs in average, however, the number of staff has been insufficient to undertake the duties for PIM and CD.

<Technical Aspect>

The situation at the time of ex-post evaluation was that most of the trained staff had moved to different offices or departments. They were transferred before establishment of RUWASA and no handing over of the project knowledge was done at all. In the course of forming RUWASA, MoW has been looking for fund both for project financing and capacity building for the new team, and has secured fund from Development Partners (DPs). Up to June 2019, all DWSTs got support from RWSTs. Following the formation of RUWASA, it was expected that RWSTs would be reformed again.

<Financial Aspect>

The government new financial year started from 1st July,2019 however, at the time of ex-post evaluation, ministries and other institutions had not received budget due to no disbursement by the Ministry of Finance. Because of the transition period, all past record have been secured at Regional Administrative Office (Registry department) then later on will be shared to RUWASA offices in the region. <Evaluation Result>

Therefore, as there have been some problems in the institutional, technical and financial aspects, the sustainability of the effects through the project is fair.

.5 Summary of the Evaluation

The Phase 1 project achieved the Project Purpose at the time of completion. The extent to which the effects have continued was not verified as information on the target Regions other than Lindi was not collected. The Overall Goal of the Phase 1 project was partially achieved, as the coverage rate of water supply improved, though it did not reach the target. As for the Phase 2 project, the Project Purpose was achieved and the effects of the project have continued. The Overall Goal of the Phase 2 project has been partially achieved, as more than 80% of IAs implemented rural water service projects referring to the improved PIM annexes. As for the sustainability, there have been some problems in the institutional, technical and financial aspects. As for the efficiency, the project cost significantly exceeded the plan and the project period exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

## III. Recommendations & Lessons Learned

## **Recommendations for Implementing Agency:**

- MoW is recommended to set aside budget for CD activities, and strengthen the number of staff and its skills, especially for timely
  supervision to check RWSS projects. RUWASA is recommended to carry out supervision of Regions (Districts, Wards and Villages),
  including site survey and conducting meetings and collecting necessary information to the operation and maintenance of RWSS
  projects.
- MoW is recommended to conduct capacity building of community organizations who did not receive the training during the project implementation to give them ability to properly management of the facility.

#### **Lessons Learned for JICA:**

- At the Coastal Region, COWSOs have been maintaining facilities well. However, most of the water users were complaining about
  paying water fees and they needed water free. ToT under the project only targeted RWSTs to improve the WSDP implementation
  based on discussions on the request of Tanzanian side and priorities of the activities. It might be more effective to conduct capacity
  building to water users to raise awareness on the importance of water collection fee which helps O&M of the project facility.
- As for the efficiency, one of the reasons why the project cost exceeded the original plan was that the input from Tanzanian side planned to use the basket fund. However, the Tanzanian policy changed and the fund could not be used as planned. Although the input from counterparts is necessary to retain their ownership in the project, it is also important to consider the extent of the input and its certainty in consideration of that the input is realistic and not excessive expectation of the unstable input of the counterpart.



A woman pumping water at Kilangala Village in Lindi Region

Country Name Republic of Zambia		Strengthening Teachers' Performance and Skills (STEPS) through School-Based Continuing Professional Development Project			
*	01a	Continuing Professional Development	110	oject	
I. Project Outline					
Background	basic ec low con (the low African Zambia Training	In Zambia, the net enrollment rate reached 94% by the government's efforts towards the expansion of access to basic education. On the other hand, there were some challenges to be tackled in the quality of education with the low completion rate (52.7% at the 9th grade and 19.8% at the 12th grade in 2009) and the low learning attainment (the lowest rank in mathematics at the 6th grade among the 14 participating countries in the southeast part of African). Considering that the quality of education could be attributed to the quality of teachers, the Government of Zambia attempted to establish an in-service teacher training framework known as School Program of In-Service Training for a Term (SPRINT). However, many of the trainings were held in a group setting on an ad hoc basis. Even after being institutionalized in 2000, the system lost substance due to the lack of clear training contents.			
Objectives of the Project	Thr District provisio project, skills in contribu	Through workshops on introduction of Lesson Study for Provincial Educational Support Team (PEST) and District Educational Support Team (DEST), implementation of Lesson Study in schools and its monitoring, provision of technical supports on Lesson Study to school stakeholders from resource persons trained by the project, and preparation of related materials to Lesson Study, the project aimed at enhancing teachers' teaching skills in mathematics and science under School-based Continuing Professional Development (SBCPD), thereby contributing to the improvement of students' learning process in science and mathematics.			
Activities of the Project	1.       Prc         2.       Ma         Imp       Stute         to I       3.         Japanes       1)         1)       Ex         2)       Tr         3)       Tr         pe       Na         (fr         5)       Ec         6)       Lcc	pject Site: the whole of Zambia (76 districts in 10 juin Activities: 1) Provision of workshops on in plementation of Lesson Study in schools and its dy to school stakeholders from resource persons Lesson Study including a Teaching Skills book, et puts (to carry out above activities)	prov ntrod mon trair c.		
Project Period		2011 – December 2015 Project Cost	(ex	-ante) 420 million yen, (actual) 404 million yen	
Implementing	Ministry of General Education (MoGE) (Ministry of Education, Science, Vocational Training and Early Education				
Agency	(MESV	TEE) was reformed to MoGE in 2015)			
Cooperation Agency	-				
in Japan					

## II. Result of the Evaluation

1 Relevance

< Consistency with the Development Policy of Zambia at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Zambia's development policies of "The Sixth National Development Plan" (2011-2015) focusing on improvement of the quality of education, particularly at a school level such as teacher continuing professional development, and "National Implementation Framework III" (2011-2015) raising "Upgrade teachers' qualifications to meet the minimum required standards through in-service training" as one of the priority strategies at the time of ex-ante evaluation and at the time of project completion. <Consistency with the Development Needs of Zambia at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Zambia's development needs of activation of an in-service teacher training system established for the improvement of the quality of education.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with "The Country Assistance Policy for Zambia" (2004) setting "human resource development and establishment of institution for self-sustained development" as one of the five priority areas.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. By introducing and implementing Lesson Study in schools in the

target districts in each province through the project, even though the degree varied among the provinces, SBCPD was strengthened. As a result, teachers' teaching skills in science and mathematics were confirmed to be enhanced from perspectives of the project team, teachers themselves, and students (Indicator 1, 2, and 3).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued since the project completion. According to Provincial Education Officers, teachers and students, in all the provinces, teachers' teaching skills enhanced by the project have sustained or further improved. Specifically, teachers have been able to prepare their lessons incorporating the concept of subjective learning and to utilize teaching materials like flip charts and manila papers other than chalkboards. The reasons for the sustainability or improvement are as follows: 1) the hierarchical system from a national level to a school level established by the project for the management and implementation of SBCPD through the School Program of In-service Training for the Term (SPRINT) framework has continued to be functional and 2) through the system, stakeholder meetings/workshops to transfer the knowledge and skills of SBCPD up to teachers have been held on a regularly basis.

Due to the above reasons, overall, most of the schools in the target districts in all the provinces have continuously practiced Lesson Study. Furthermore, in 5 out of 6 provinces with available data, the number of the schools adopting Lesson Study has dramatically increased for the period from 2015 to 2019: 582 to 911 in Central province, 71 to 168 in Northern province, 317 to 595 in Eastern province, 197 to 640 in Luapula province, 160 to 276 in Western province. In Southern province, the number of the schools increased from 332 in 2015 to 375 in 2016 but dropped to 321 in 2019. The reasons for the decrease are as follows: 1) there have been some teachers who have thought that Lesson Study introduced by the project is the same as another donor-supported intervention and is likely to phase out soon, 2) school leadership and management for a continuous practice of the Lesson Study have been poor, 3) the budget allocated from MoGE to schools has been limited, and 4) the monitoring system from a national level to a school level is not functioning as it used to be during the project implementation period. In light of the above, the number of schools newly practicing Lesson Study in the non-target districts after the project has significantly expanded. However, it was confirmed that there is still a certain number of schools which do not adopt Lesson Study.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved at the time of ex-post evaluation. According to the District Education Board Secretary's Office, it was confirmed through lesson observation that the students' L2 (Extent of subjective learning) and L-2 (Learning of pupils (subjective learning) have been improved in all of the provinces (Indicator 1). For example, students have opportunities to think about solutions to tasks given on their own during classes. Also, students are at times encouraged to work in pairs or groups for peer-to-peer learning. Additionally, the District Education Board Secretary's Office reported that the students' L-2 (Quality of learning) and L-3 (Operational learning) have sustained or further improved in all of the provinces. For instance, learners have become able to finish their tasks within the time given and to use teaching materials like worksheets.

<Other Impacts at the time of Ex-post Evaluation>

No other positive or negative impacts of the project were observed at the time of ex-post evaluation.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal

Aim	Indicators Results				
(Project Purpose)	1. Result of lesson observation (science and Status of the Achi				
Teaching skills are	mathematics) (demonstration of teaching (Project Completion	· · · · · · · · · · · · · · · · · · ·			
enhanced under		of evaluating teachers' teaching	skills thro	ugh lesson	
School-based Continuing		science and mathematics by the p		e	
Professional	•	of the 3 mentor provinces and the	-	-	
Development.	<ul> <li>For the 3 mentor provinces D-2 (1.15 at beyond each of</li> </ul>	-	e / new pro	vinces went	
Development		e and mathematics lesson observa	tion evaluati	ng teachers'	
	➢ For the 7 new provinces P-3 (1.09 at teaching skills]				
	Baseline to be 1.27 at End-line)	Item Baseline	Target	End-line	
	▶ For the 7 new provinces D-2 (1.03 at For the 3 mento		1.50	1.50	
		r provinces: $D-2^2$ 1.15	1.30	1.39	
	For the 7 new pr	rovinces: P-3 1.09	1.27	1.49	
	For the 7 new p	For the 7 new provinces: D-2 1.03 1.15 1.39			
	Note 1: Lesson pl	Note 1: Lesson plan considering pupils			
	Note 2: Lesson er	Note 2: Lesson enhancing pupils' Subjective Learning			
	(Ex-post Evaluati	(Ex-post Evaluation)			
	-	• According to Provincial Education Officers, through their monitoring of			
		classes, 9 out of 10 provinces have seen that teachers' teaching skills have			
		been sustained. Even in the remaining province, teachers' teaching skills is			
		considered to have improved.			
		[Status of the quality of teachers' teaching skills in each province]			
		Province Status of the quality of teachers' teaching skills			
		Central Improved			
		Northwestern Sustained			
		Copperbelt Sustained			
		Northern Sustained			
	Eastern	Eastern Sustained			

		Lusaka	Sustained			
		Muchinga	Sustained			
		Luapula	Sustained			
		Western	Sustained			
		Southern	Sustained			
	2. Self-evaluation of teachers in teaching	Status of the Achievement	: Achieved (Unverified)			
	skills (Target: positive average figure on (Project Completion)					
	self-evaluation tool by teachers)	• As a result of the self-ev	valuation of teachers' teaching skills at the end-line			
		they rated 4.57 against 4.05 at the baseline (a 0.52 increase), reaching the target.				
		(Ex-post Evaluation)				
		• The indicator was unve	rified. However, even though the coverage of th			
		field survey was quite li	imited, according to the teachers in the schools (2 field survey, teachers' teaching skills have bee			
	3. Students' evaluation of teaching L-1	Status of the Achievement	: Achieved (Unverified)			
	(1.49 at Baseline to be 1.55 at End-line)	(Project Completion)				
		• As a result of the students' evaluation of teachers' teaching L-1 at the				
		end-line, the students rat	ted 1.56 on average, exceeding the target of 1.55.			
	(Ex-post Evaluation)					
			erified. However, even though the coverage of the			
		• •	imited, according to the students in the schools (2			
		schools) visited in the	field survey, teachers' teaching skills have bee			
		improving.				
	1. Result of lesson observation (science and mathematics) (students' activities)	<ul> <li>Extent of subjective lea project have been sustain</li> <li>Learning of pupils (subjective)</li> </ul>	eved rning (L2): the students' L2 improved through th ned in all of the provinces. jective learning) (L-2): the students' L-2 improve been sustained in all of the provinces.			
-	2. Students' perception towards their	(Ex-post Evaluation) Achie	eved			
	learning	• Learning of pupils (qua	lity of learning) (L-2): they have improved L-2 : Northwestern province while sustained in oth			
		• Operational learning (L	-3): they have sustained the level of their learnin during classes and become able to use teaching			

3 Efficiency

The project cost and period were within the plan (ratio against the plan: 96% and 100%, respectively). The outputs were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability <Policy Aspect>

"The Seventh National Development Plan" (2017-2021) focuses on the needs of the provision of quality education at all levels, especially at primary and secondary levels, for the development of literacy and numeracy skills in learners. The "Zambia's Vision 2030" (2006-2030) emphasizes the development of the quality of human capital including investing in quality education and skills development. As the project aimed at enhancing teachers' teaching skills to improve students' learning process in science and mathematics, it has been backed up by those national policies.

<Institutional Aspect>

The organizational reform from MESVTEE to MoGE was put in practice in 2015. Apart from it, there have not been any other changes in the institutions to promote SBCPD containing Lesson Study introduced by the project. [National level]

MoGE has taken responsibilities for the formulation of educational policies including SBCPD. MoGE has 76 officers, and according to them, as they fulfill the responsibilities without any major problems, the number of the officers has been sufficient.

Teacher Education Section which is under MoGE has monitored the implementation status of activities pertinent to SBCPD by assembling groups of officers from national, provincial, district, zone, and school levels. The Department itself has 152 officers, and according to them, as they organize meetings without any major problems, the number of the officers is sufficient.

National Science Center has played a pivotal role in upgrading teachers' knowledge and skills by designing, developing, and producing the teaching and learning aids including SBCPD. 178 staff members have been deployed there, according to the center, the number of the staff members is sufficient as they perform their role without any major problems. [Provincial level]

Provincial Education Office and Provincial Resource Centers have been in charge of the management and implementation of SBCPD at a provincial level. According to them, they carry out their activities without any major problems with the current number of the staff (1 staff for each Provincial Education Office and 2-3 staff for each Provincial Resource Centers) [District level]

District Education Board Secretary's Offices and District Resource Centers have taken responsibilities for the management and implementation of SBCPD at a district level. 15 and 107 staff members are allocated to District Education Board Secretary's Office and

District Resources Center, respectively, and according to them, they do not have any major problems with the numbers. Thus, the staff members allocated are sufficient.

## [Zone level]

Zone Resource Centre has played a role in managing and implementing SBCPD at a zone level. 612 officials are allocated there, and according to the center, as they perform their roles without any major problems, the number of their staff is adequate. [School level]

Primary and secondary schools have been in charge of the management and implementation of SBCPD at a school level. 3 officials (SBCPD coordinators and subject facilitators) are allocated to each school, and according to the schools, as they carry out their activities without any major problems, the number of the officials is sufficient.

## <Technical Aspect>

## [SBCPD]

The key officials/staff belonging to the above-mentioned organizations have sustained the knowledge and skills on SBCPD at a sufficient level. In order to sustain such knowledge and skills, MoGE, Teacher Education Unit, and National Science Center hold capacity building meetings at least once a year, and additionally, some staff of Teacher Education Unit and National Science Center have received trainings in the third country spearheaded by the Center in collaboration with JICA. Also, at the Provincial Education Offices, Provincial Resource Centers, District Education Board Secretary's Offices, District Resource Centers, and Zone Resource Centers, stakeholder workshops have been held in accordance with SPRINT framework at least once per term, which contributes to enhancing the sustainability of the officials/staff's knowledge and skills. Furthermore, at a school level, teacher group meetings are held once per term.

Since the project completion, the number of resource persons who have been able to provide technical support for teachers through in-service training has increased (200 in 2015, 211 in 2016, 246 in 2017 and 265 in 2018) due to JICA's trainings, and the resource persons have sustained the knowledge and skills to provide technical supports related to SBCPD including the Lesson Study to schools through capacity building meetings at provincial, district and zone levels as well as subjective group/association meetings and support visits at a school level.

[Materials]

All of the materials developed by the project (Teaching Skills Book, Management Skills Book, etc.) have continued to be utilized as reference materials for teacher trainings and lesson study activities. <Financial Aspect>

Data on specific budget lines for SBCPD was not available. However, MoGE has a budget line for educational policies/programs. Also, taking into account that SBCPD has been widespread since the project

Budget of MoGE						
(Unit: Kwacha)						
2015	2016	2017	2019	2019	2020	
2015	2016	2017	2018	(Plan)	(Plan)	
9,433.33	9,143,215,926	10,641.93	9,509,894,033	10,199,454,090	10,102,990,227	

completion and the structure for SBCPD has remained at the time of ex-post evaluation, it is considered that a certain amount of budget has been allocated to manage and implement SBCPD since the project completion. According to MoGE, this trend is expected to be continued. According to the District Education Board Secretary's Office, at a school level, the allocated budget from MoGE is limited. <Evaluation Result>

In light of the above, there has been some problems in the financial aspect. Hence, sustainability of the effects through the project is fair.

5 Summary of the Evaluation

The project achieved the Project Purpose aiming at enhancing teaching skills under SBCPD and achieved the Overall Goal aiming at improving the students' learning process in science and mathematics. As for sustainability, though the budget allocated from MoGE to schools for SBCPD is limited, the number of staff drafted into the organizations at each level is sufficient and whose level of technical skills has been sustained.

Considering all of the above points, this project is evaluated to be highly satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• The project introduced Lesson Study to schools in 76 districts in 10 provinces, and even after the project, it was confirmed that the Lesson Study has been continuously practiced by the target schools and disseminated to the non-target schools. However, because of the implementation of the Lesson Study is not effectively and fully monitored by relative organizations at all levels and is not adequately budgeted, for the dissemination rate varies, depending on provinces and a type of school. In order to further enhance the project impact, it is recommended that relative organizations at all levels should fully recognize and fulfill their responsibilities given, the linkages between the organizations, especially from a national level to a provincial level, be strengthened, and insufficient amount of budget for each organization be complemented with financial support from other donors.

Lessons Learned for JICA:

• The project focused on introducing Lesson Study in Zambia through the existing "SPRINT" framework. As a result, the Lesson Study has been widely disseminated and promoted teamwork among teachers and peer-to-peer learning among learners has improved. Even at the time of ex-post evaluation, Teachers are confident to share ideas; discuss areas where they need to improve or seek guidance on the best way of handling particular topics or learners. Therefore, in order to maximize and sustain project effects, it is better to consider how a project can be integrated into an existing system/framework at the stage of project formulation/planning. In addition, it is desirable to understand the contents of support from other donors in the same field/sector to enhance coordination.



Peer-to-peer learning practice of teachers (Plan)



Lesson demonstration (Do)

Γ	Country Name	The Project for Enhancement of Water Supply Management of Zanzibar Water
	United Republic of Tanzania	Authority Project for Enhancement of Water Supply Management of Zanzibar Water Supply Authority Phase 2

# I. Project Outline

Background	In the urban area of Zanzibar, the piped water supply service started in the 1920s and groundwater has been used as one of water sources. However, due to the lack of financial resource, those water supply facilities had not been sufficiently maintained, which had led to a shortage of the system's water supply capacity. Under those circumstances, a grant aid project of "Zanzibar Urban Water Supply Development" was implemented from 2006 to 2010, in order to increase the water supply capacity. In addition, JICA conducted a technical cooperation project "Enhancement of Water Supply Management of Zanzibar Water Authority" (the Phase 1 project) from 2008 to 2010, which included the establishment of the fee collection system. The combination of the high leakage from the deteriorated distribution network and the low fee collection ratio had had negative impacts on the operation by the Zanzibar Water Authority (ZAWA). With an aim to improve the quality of service provided by ZAWA, further enhancement of the water supply management by ZAWA was to be conducted.							
Objectives of the Project	<ul> <li>Through (i) strengthening information management capacity, (ii) strengthening human resource management capacity, (iii) strengthening costumer management capacity (iv) strengthening leakage reduction activities and others, the project aimed at strengthening the management capacity of ZAWA, thereby contributing to improvement in water supply services.</li> <li><phase 1=""></phase></li> <li>1. Overall Goal: ZAWA'S financial fundamentals necessary for autonomous water supply authority are established.</li> <li>2. Project Purpose: Water tariff billing and collection system of ZAWA is established to the satisfaction of its customers.</li> <li><phase 2=""></phase></li> <li>1. Overall Goal: ZAWA's water supply services are improved.</li> <li>2. Project Purpose: ZAWA's management capacity through NRW reduction activities is improved.</li> </ul>							
Activities of the Project	<ol> <li>Project site: Unguja, Zanzibar</li> <li>Main activities:         <ul> <li>Phase 1&gt; (i) establishing a customer administr collection and claim handling, and others</li> <li>Phase 2&gt; (i) strengthening information manager capacity, (iii) strengthening costumer management of 3. Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Phase 1&gt;</li> <li>Expert: 8 persons</li> <li>Training in Japan: 20 persons</li> <li>Equipment: GPS, Customer management set, GIS software, Account software, Payroll software, Borehole water meter, Water meter, Water supply materials, GIS software, PC &amp; printers, Vehicles motorcycle and others.</li> <li>Local Cost: Local consultant fee, secretary fee, fuel cost for supplied vehicle, communication expense and others.</li> <li>Experts: 20 persons</li> <li>Training in Japan: 20 persons</li> <li>Training in Japan: 20 persons</li> </ul> </li> </ol>	y through NRW reduction activities is improved. ation system, (ii) strengthening of capacity of billing, tar nent capacity, (ii) strengthening human resource manageme capacity and (iv) strengthening leakage reduction activities Tanzanian Side <phase 1=""> <ol> <li>Staff allocated: 10 persons</li> <li>Land and facilities: Office space for the experts, to counters for cashers, the front office, the training ya bill printers, back-up server, 500 water meters is customers, materials for plumbing, furniture, papers a others</li> </ol> <b>Phase 2&gt;</b> Staff allocated: 97 persons Land and facilities: Project offices Operation cost: Installation cost of water meters, valva and flow meters, and daily allowance for staff members</phase>						
Project Period	procurement of equipment, local consultant <phase 1=""> January 2008-December 2010 <phase 2="">November 2011-October 2016 (Extended period: November 2015-October 2016)</phase></phase>	Project Cost Project Cost < Phase 1> (ex-ante) 303million yen (actual) 248 million yen < Phase 2> (ex-ante) 348 million yen (actual) 624million yen						
Implementing	Zanzibar Water Authority (ZAWA)							

#### Agency

### Cooperation Agency in Japan NJS Consultants Co., Ltd.

#### **II. Result of the Evaluation**

<Constraints on Evaluation>

- Face to face interviews were not conducted due to the COVID-19 pandemic, but information for this ex-post evaluation was collected through emails, telephone interviews and web meetings.
- < Special Perspectives Considered in the Ex-Post Evaluation >
- As the Phase 1 and Phase 2 projects share the common goal, the indicators for the Phase 2 project are verified to check the level of achievement of the Project Purpose and the Overall Goal.
- · Continuation of the project purpose was analyzed as factors to achieve the Overall Goal.

### 1 Relevance

<Consistency with the Development Policy of Tanzania at the Time of Ex-Ante Evaluation >

The project was consistent with the development policy of Tanzania. "Zanzibar Vision 2020", formulated in January 2002, aimed at ensuring access to safe water. In order to do so, specific goals were put in place, such as establishing a management system to supply reliable water at acceptable rates, and establishing a system for billing and collecting water tariff efficiently and effectively for all water users.

<Consistency with the Development Needs of Tanzania at the Time of Ex-Ante Evaluation >

The project was consistent with the development needs of Tanzania for enhancing water supply management in Zanzibar. As described above ("Background"), the combination of the high leakage from the deteriorated distribution network and the low fee collection ratio had had negative impacts on the operation by ZAWA.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA policy to Tanzania. At the time of the Phase 1 project, "Improvement of living environment in urban areas through the development basic infrastructure, including water line" is one of the priority areas in the "Country Assistance Program for the United Republic of Tanzania" (2000). At the time of the Phase 2 project, "Water Supply and Water Resource Management Program" is placed under the "Country Assistance Program for the United Republic of Tanzania" (2000). At the time of the United Republic of Tanzania (2008)". "Enhancing institutions/organizations and facilities for strengthening water resource management capacity" was targeted. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved at the time of project completion. The indicator 1 was achieved as the zoning plan of distribution network was adopted in the design work of a project supported by the African Development Bank (AfDB) based on the advice of the experts under the project. The indicator 2 was partially achieved, as Annual Business Plan (ABP) was developed and the annual budget was approved based on ABP by the Ministry of Lands, Housing, Water and Energy (MLHWE); however, the budget execution was not materialized due to the lack of actually available fund in the government of Zanzibar as whole.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The effects of the project have continued at the time of ex-post evaluation. As mentioned above, the status of continuation of the project effects at the time of ex-post evaluation were analyzed as the factors affecting the achievement levels of the verifiable indicators of the Overall Goal (such as improvements in the water supply services and the billing and collection in the Model System).

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved.

Water supply services have partially improved (Indicator 1), as the supply hours in the Model system (the number of customers are approximately 9,400 households) has achieved the target while the supply pressure has not reached the target. After the completion of the project, the project supported by AfDB as mentioned above, both of the supply hours and pressure have improved. However, in some areas, old existing pipes have not been replaced. That is why the pressure has not attained the target yet. As a measure to this problem, ZAWA is expecting to start a new loan project with JICA (one of the components is replacement of old pipes). Also, a loan project with the Indian government has been signed and has started.

The billing and collection in the Model System have improved (Indicator 2). However, ZAWA recognized that more improvement is required through introducing new mode of payment like mobile/bank payment for the customer conveniences. ZAWA has taken some measures. First, ZAWA has finalized the integration with some local banks like CRDB Bank Plc; however, currently ZAWA has been waiting for approval of MLHWE for ZAWA to open bank account to the private bank operators. Also, ZAWA has started using mobile payment which is called "Zantel easy pesa" (officially launched on 25th September, 2020).

The outputs of the Phase 2 project have continued after the project completion. During the project implementation, the Phase 2 project enhanced the capacity for information management. Based on the improved management information system (MIS), the five-year plan as well as ABP have been prepared and the necessary budget based on these plans have been approved by MLHWE in the government. Following the capacity development for human resources under the project, ZAWA revised organization structure and staff allocation, and since 2013, ZAWA received the new salary scheme. After the capacity development for customer management under the project, ZAWA updated the database and "SBM2 (Smart Billing Manager Two)", and also enabled the third parties' (mobile payment service providers) to integrate their system into ZAWA's database and SBM2 in a compatible manner and new recruitment for continuing supporting the customer management activities. The project enhanced the capacity to plan and implement leakage reduction during the project implementation, and ZAWA transferred the knowledge and standard procedure to the AfDB-supported project as stated above and to the other ZAWA daily practices.

<Other Impacts at the time of Ex-post Evaluation>

There has been no negative impact on the natural environment. No land acquisition and resettlement occurred. <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Pr	oiect Purpose a	and Overall Goal

Indicator 1: ZAWA's NRW reduction	Status of the Achievement: Achieved (continued)						
project, in collaboration with JICA	(Project Completion)						
Technical Cooperation, is commenced.The zoning plan of distribution network was adopted in the design were the AfDB project based on the advice of the experts under the project. (Ex-post Evaluation) Verified under the Overall Goal.Indicator 2: ZAWA's ABP with annual planned budgets is allocated with due consideration of overriding priority for ZAWA's utility operation.Status of the Achievement: Partially achieved (continued) (Project Completion)ABP was developed and annual budget was prepared based on it; how the budget execution was hampered by the lack of fund.							
	Verified under the Overall Goal.						
supply hours and water pressure as follows.	Supply hours (hrs/day)	8	12	8	8	12	12+
<ul> <li>(baseline) 12 hrs/day (target)</li> <li>Supply pressures (minimum at No.8): 2</li> <li>mH2O (baseline) 7 mH2O (target)</li> </ul>	Supply pressures (mH2O)	2	7	2	2	5	5
		· .					
	(Ex-post Evaluation) Act		Tanaat	2016	2017	2019	2019
• Ratio of collected/ billed customers:	Ratio of collected/ billed customers (%)	16	80	50	60	65	2019 70 85
• Ratio of collected / billed amount: 13 % (baseline) 90 % (target)	billed amount (%)	13	90	60	/0	80	83
	<ul> <li>project, in collaboration with JICA</li> <li>Technical Cooperation, is commenced.</li> <li>Indicator 2: ZAWA's ABP with annual</li> <li>planned budgets is allocated with due</li> <li>consideration of overriding priority for</li> <li>ZAWA's utility operation.</li> <li>Indicator 1: Water supply services in the</li> <li>Model System are improved in terms of</li> <li>supply hours and water pressure as follows.</li> <li>Supply hours (average): 8 hrs/day</li> <li>(baseline) 12 hrs/day (target)</li> <li>Supply pressures (minimum at No.8): 2</li> <li>mH2O (baseline) 7 mH2O (target)</li> <li>Indicator 2. The billing and collection in the</li> <li>Model System are improved as follows.</li> <li>Ratio of collected / billed customers:</li> <li>16 % (baseline) 80 % (target)</li> <li>Ratio of collected / billed amount: 13 %</li> </ul>	project, in collaboration with JICA(Project Completion)Technical Cooperation, is commenced.The zoning plan of distri the AfDB project based of (Ex-post Evaluation) Verified under the OveralIndicator 2: ZAWA's ABP with annual planned budgets is allocated with due consideration of overriding priority for ZAWA's utility operation.Status of the Achievement (Project Completion) ABP was developed and the budget execution was (Ex-post Evaluation) Verified under the Overal (Ex-post Evaluation) Verified under the Overal (Ex-post Evaluation) Verified under the Overal (Ex-post Evaluation) Verified under the Overal (Ex-post Evaluation) 	project, in collaboration with JICA Technical Cooperation, is commenced.(Project Completion) The zoning plan of distribution netw the AfDB project based on the advice (Ex-post Evaluation) Verified under the Overall Goal.Indicator 2: ZAWA's ABP with annual planned budgets is allocated with due consideration of overriding priority for ZAWA's utility operation.Status of the Achievement: Partially (Project Completion) ABP was developed and annual bud the budget execution was hampered (Ex-post Evaluation) Verified under the Overall Goal.Indicator 1: Water supply services in the Model System are improved in terms of supply hours (average): 8 hrs/day (baseline) 12 hrs/day (target)(Ex-post Evaluation) Partially achieved Baseline Supply pressures (minimum at No.8): 2 mH2O (baseline) 7 mH2O (target)Indicator 2. The billing and collection in the Model System are improved as follows. • Ratio of collected/ billed customers: 16 % (baseline) 80 % (target) • Ratio of collected / billed amount: 13 %(Ex-post Evaluation) Achieved Baseline 13 billed amount (%)	project, in collaboration with JICA Technical Cooperation, is commenced.(Project Completion) The zoning plan of distribution network was a the AfDB project based on the advice of the e (Ex-post Evaluation) Verified under the Overall Goal.Indicator 2: ZAWA's ABP with annual planned budgets is allocated with due consideration of overriding priority for ZAWA's utility operation.Status of the Achievement: Partially achieved (Project Completion) ABP was developed and annual budget was p the budget execution was hampered by the law (Ex-post Evaluation) Verified under the Overall Goal.Indicator 1: Water supply services in the Model System are improved in terms of supply hours (average): 8 hrs/day (baseline) 12 hrs/day (target) • Supply pressures (minimum at No.8): 2 mH2O (baseline) 7 mH2O (target)(Ex-post Evaluation) Achieved Baseline 12 hrs/day (target) • Ratio of collected / billed customers: 16 % (baseline) 80 % (target) • Ratio of collected / billed amount: 13 %(Examine the function of collected / billed amount (%)	project, in collaboration with JICA Technical Cooperation, is commenced.(Project Completion) The zoning plan of distribution network was adopted the AfDB project based on the advice of the experts u (Ex-post Evaluation) Verified under the Overall Goal.Indicator 2: ZAWA's ABP with annual planned budgets is allocated with due consideration of overriding priority for ZAWA's utility operation.Status of the Achievement: Partially achieved (contin (Project Completion) ABP was developed and annual budget was prepared the budget execution was hampered by the lack of fur (Ex-post Evaluation) Verified under the Overall Goal.Indicator 1: Water supply services in the Model System are improved in terms of supply hours (average): 8 hrs/day (baseline) 12 hrs/day (target) · Supply pressures (minimum at No.8): 2 mH2O (baseline) 7 mH2O (target)(Ex-post Evaluation) Achieved Baseline Indicator 2. The billing and collection in the Model System are improved as follows. · Ratio of collected/ billed customers: 16 % (baseline) 80 % (target) · Ratio of collected / billed amount: 13 %(Ex-post Evaluation) Achieved Baseline I a go 60 I a go 60	project, in collaboration with JICA Technical Cooperation, is commenced.(Project Completion) The zoning plan of distribution network was adopted in the de the AfDB project based on the advice of the experts under the (Ex-post Evaluation) Verified under the Overall Goal.Indicator 2: ZAWA's ABP with annual planned budgets is allocated with due consideration of overriding priority for ZAWA's utility operation.Status of the Achievement: Partially achieved (continued) (Project Completion) ABP was developed and annual budget was prepared based on the budget execution was hampered by the lack of fund. (Ex-post Evaluation) Verified under the Overall Goal.Indicator 1: Water supply services in the Model System are improved in terms of supply hours (average): 8 hrs/day (baseline) 12 hrs/day (target) · Supply pressures (minimum at No.8): 2 mH2O (baseline) 7 mH2O (target)(Ex-post Evaluation) AchievedIndicator 2. The billing and collection in the Model System are improved as follows. · Ratio of collected/ billed customers: 16 % (baseline) 80 % (target) · Ratio of collected / billed amount: 13 %(Ex-post Evaluation) Achieved	project, in collaboration with JICA Technical Cooperation, is commenced.(Project Completion) The zoning plan of distribution network was adopted in the design wor the AfDB project based on the advice of the experts under the project. (Ex-post Evaluation) Verified under the Overall Goal.Indicator 2: ZAWA's ABP with annual planned budgets is allocated with due consideration of overriding priority for ZAWA's utility operation.Status of the Achievement: Partially achieved (continued) (Project Completion) ABP was developed and annual budget was prepared based on it; how the budget execution was hampered by the lack of fund. (Ex-post Evaluation) Verified under the Overall Goal.Indicator 1: Water supply services in the Model System are improved in terms of supply hours (average): 8 hrs/day (baseline) 12 hrs/day (target) · Supply pressures (minimum at No.8): 2 mH2O (baseline) 7 mH2O (target)(Ex-post Evaluation) AchievedIndicator 2. The billing and collection in the Model System are improved as follows. · Ratio of collected / billed customers: 16 % (baseline) 80 % (target) · Ratio of collected / billed amount: 13 %(Ex-post Evaluation) Achieved

# 3 Efficiency

The project cost exceeded the plan (the ratio against the plan: 134%) and the project period slightly exceeded the plan (the ratio against the plan: 114%). The outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability <Policy Aspect>

There has been policy support for the project effects to continue, including Water Policy and Water Act (2004-2006 to the time of ex-post evaluation) for the water sector directive and legislation. The "Vision 2050" (expected to be effective from 2021) shares the same objective of access to the safe water as the current Vision 2020.

< Institutional/Organizational Aspect>

ZAWA, responsible for the water services in Zanzibar, has been an independent public entity since August 2006. ZAWA has restructured the organizational structure to improve and consolidate Non-Revenue Water (NRW) reduction activities. ZAWA has split Department of Finance and Administration into two Departments of Finance and Planning, and Human Resources and Administration. It also has established a new unit of District office coordinator who will be a chief of all district offices. This restructuring has improved the efficiency and reduced the ambiguity, according to ZAWA.

The number of staff has been insufficient, as ZAWA has had a big number of unskilled staff but few skilled staff. ZAWA requested the central government to fill such vacancies, and MLHWE in the government agreed and gave permission to proceed. However, the Ministry of Finance and Planning (MOFP) could not allocate the sufficient budget due to a lack of a solid fiscal capacity and it hindered ZAWA from proceeding with this plan for recruitment.

<Technical Aspect>

ZAWA has sustained the skills and knowledge acquired by introducing relevant courses in the training system of ZAWA Training Center and other training especially senior staff and particularly on aspects of NRW, through on the job training. However, the number of skilled staff has been limited as described above.

The manuals, guidelines and materials developed under the project such as Design Manuals, Operation and Maintenance manual, Leakage Control Manual, Manual on Water Rates and Related Practices Customer Services Charter, Reduction of Illegal Water, Guideline for Disconnection Works, Bill Delivery Strategy, Awareness and Education strategy, Annual business plan, Water Demand Management Policy and strategy etc. have been used in designs for new schemes eg. Systemization and zoning of distribution networks, tariff setting as well as reference materials for other water related activities.

<Financial Aspect>

Tariff has not yet covered the cost. Unmetered tariff existed and percentage of water meter coverage have been only 20%. So, water users who paid volumetric tariff were only 20%, the rest paid fixed rate without considering the consumption volume. Although ZAWA has received subsidies from the government of Zanzibar, ZAWA has also incurred losses.

<Evaluation Result>

In light of the above, slight problems have been observed in terms of the institutional/organizational, technical and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

The project achieved the Project Purpose at the project completion, as NRW reduction project was commenced based on the advices under the project, and ZAWA's annual busines plan with budget was prepared, though the budget execution was hampered. The Overall Goal was achieved, since the water supply services, as well as the billing and collection have improved. As for the sustainability, slight problems have been observed in terms of the institutional/organizational, technical and financial aspects; however, there has been no problem on the policy aspect. As for the efficiency, both the project cost and project period exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

### Recommendations for Implementing Agency:

- Considering the limited number of skilled staff, ZAWA and the Ministry of Lands, Housing, Water and Energy (MLHWE), which supervises ZAWA and has the authority to request the approval from Ministry of Finance and Planning for ZAWA's use of governmental fund/budget, must set aside budget for the capacity building and staff recruitment in order to improve proper management of the projects and eliminating leakages in the distribution pipes to their customers, utilizing the knowledge and experience obtained through the technical cooperation project.
- ZAWA needs to assign timely supervision of water supply to improve customer management and reduce NRW. In particular, ZAWA should make efforts for expanding metering coverage even outside the Model System of the project and for shifting the tariff system from fixed-rate tariff to volumetric tariff. In this regard, ZAWA should call on MLHWE and Zanzibar Utilities Regulatory Authority (ZURA) to undertake necessary amendments of policy, act, and regulations pertaining to the water tariff, whenever it is necessary.

Lessons Learned for JICA

- Regarding the effectiveness, it is observed that water supply services have partially improved mainly because most of the pipes were very old and had leakage, which needed to be replaced. However, in some areas, old existing pipes have not been replaced which led to the lack of safe and sustainable water supply and then to less collection water tariff. In order to reach the intended project objectives and for ZAWA to improve water supply system, technical cooperation should have been formulated in conjunction with the improvement of physical facilities through financial support (either Grants or ODA Loans) under the overall design of the cooperation programme". However, this project was commenced 2 years later than the completion of the Grant Aid projects, leading less synergetic effect between the two modalities. Taking this into consideration, JICA has strategized its operations for water supply sector in Zanzibar in a more programmatic manner, where a ODA Loan project and a technical cooperation project complement to one another are currently underway in the formulation stage.
- When JICA formulates a new technical cooperation project with an aim of reducing NRW including leakage in the place where worn-out existing system is dominantly laid, it would be highly effective to consider loan or grant project in parallel with it. A financial support needs to include financing for the replacement of deteriorated distribution network to create a synergy with NRW reduction technologies, frameworks and better customer management (e.g. tariff collection) to be introduced by the technical cooperation project.



Manifold showing the water meters installed for house connection for ten households introduced by the phase 2 project (At Makadara area)



The water meter connected to single household; old style used by the phase 1 project (At Makadara area)

Country Name	[Phase 1] Institutional and Human Resource Development Project For One Village
	One Product Programme (OVOP)
Republic of Malawi	[Phase 2] Strengthening the Capacity of OVOP Programme for Delivering Services
	to OVOP Group in Malawi

# I. Project Outline

Background	Since 2003, when President Muluzi (then) visited Oita Prefecture of Japan along with attending the Third Tokyo International Conference on African Development (TICAD III), the Government of Malawi had implemented OVOP activities by establishing OVOP Secretariat and replicating the initiatives implemented in Oita Prefecture. To support such self-help efforts by the government and people of the country, JICA implemented Phase 1 of this technical cooperation project between 2005 and 2010. Through the implementation of the project, some achievements were observed on the capacity development of OVOP secretariat officials and OVOP group members. However, there were remaining areas and challenges for further development, such as improving access to the markets, quality control, and business management. In response to the situation faced by the OVOP activities in Malawi, Phase 2 of this project was started in 2011.					
Objectives of the	The project aimed to strengthen the capacity of OVOP Secretariat and Assistant Cooperative Liaison Officers (ACLOs) <sup>*</sup> for delivering services to OVOP activities at the local level in Malawi through the institutional arrangement, human capacity development (in the OVOP concept, value-added production technologies, and business development), the building of good practices, information sharing, promotion of quality control, and strengthening of domestic and international market linkages, thereby enabling the local community to produce value-added goods and services that are marketable nationally and internationally by using locally available resources and to increase their income level. *ACLO was changed to Assistant District Trade Officer (ADTO) after they were incorporated into the government system. [Phase 1]					
Project	<ol> <li>Overall Goal: Using locally available resources, the high quality of goods and services with comparative advantage are generated.</li> <li>Project Purpose: Institutional capacity &amp; human resources of OVOP Secretariat &amp; other related institutions are developed to create sound environment for communities to start business activities using locally available resources for higher quality products &amp; services.</li> <li>[Phase 2]</li> <li>Overall Goal: Income level of the local community engaged in OVOP movement is increased by producing value-added goods and services which are marketable nationally and internationally, by using locally available resources.</li> <li>Project Purpose: Capacity of OVOP Secretariat and ACLOs for delivering services to OVOP activities at local</li> </ol>					
Activities of the Project	level is strengthened.         1. Project Site: Malawi         2. Main Activities: [Phase 1]         (1) Establish mechanisms of OVOP planning, screening, project funding, and product marketing.         (2) Conduct training in OVOP concepts, small-scale business management, and production technologies.         (3) Verify model OVOP groups; publish "Business Manual," "Food Processing Manual," and "OVOP Technical Operation Guideline."         (4) Facilitate Assistant Cooperative Liaison Officers (ACLOs) to submit an activity report to districts; publish information dissemination materials. [Phase 2]         (1) Operationalize OVOP Extension Centres with OVOP Secretariat and OVOP Award; organize study tours; organize OVOP Exhibitions and Fairs; send OVOP groups to trade fairs.         (2) Conduct training in product development, etc.; develop a Business Development Service providers database and the Resource Person list (not completed).         (3) Facilitate OVOP groups for Malawi Bureau of Standards (MBS) verification; train ACLOs in quality control of OVOP groups.         (4) Conduct business training for ACLOs and OVOP groups.         (5) Establish OVOP Cooperative Support Fund as an entity that purchases and sells OVOP products (including OVOP Antenna Shops).         3. Inputs (to carry out above activities) Japanese Side       Malawian Side [Phase 1] * As of Terminal Evaluation         1) Experts: 6 persons       1) Staff allocated: 5 persons         2) Volunteers: 9 persons       2) Office space and furniture         3) Trainees received: 36 persons       3)					
	[Phase 2] * As of Project Completion [Phase 2] * As of Terminal Evaluation					

	<ol> <li>Experts: 7 persons</li> <li>Trainees received: 63 persons</li> <li>Equipment: Vehicles, office equipment</li> <li>Operation cost</li> </ol>	<ol> <li>Staff allocated: 11 persons</li> <li>Office space and furniture</li> <li>Operation cost</li> </ol>				
Project Period	[Phase 1] October 2005 – September 2010 [Phase 2] April 2011 – April 2017 (Extension period: April 2016 – April 2017)	Project Cost	[Phase 1] (ex-ante) 300 million yen (actual) 263 million yen [Phase 2] (ex-ante) 341 million yen (actual) 382 million yen			
Implementing Agency	<ul> <li>National One Village One Product (OVOP) Secretariat, Ministry of Local Government and Rural Development (MLGRD)</li> <li>* OVOP Secretariat was renamed to Value Addition Division under the Department of SMEs and Cooperatives, Ministry of Industry and Trade, in the Financial Year 2016/17. For readers' convenience, this report consistently uses the name "OVO Secretariat" when referring to Value Addition Division.</li> <li>* The national level counterpart agency was changed from the Ministry of Agriculture to MLGRD in July 2005, and to the Ministry of Industry and Trade in July 2009. Then, the Ministry was split to into two Ministries, namely Ministry of Industry and Ministry of Trade, in July 2020. The Value Addition Division is currently under the Ministry of Industry.</li> </ul>					
Cooperation Agency in Japan	-					

### II. Result of the Evaluation

<Constraints on Evaluation>

• Due to the impact of the COVID-19 pandemic, we were unable to conduct a field survey. Therefore, this evaluation is based solely on the information provided by OVOP Secretariat (Acting OVOP National Coordinator (Acting Deputy Director for Value Addition) of Value Addition Division), and neither interviews with local groups nor on-site confirmation of the situation were conducted. Accordingly, detailed information, especially factors behind the provided information, was not available.

< Special Perspectives Considered in the Ex-Post Evaluation >

• Phase-integrated evaluation: Since Phase 2 was to continue what was built under Phase 1, we evaluated the two phases together by regarding them as an integrated project. We used the Overall Goal and Project Purpose of Phase 2 as those of the integrated project. As Phase 2 did not set indicators for the Overall Goal, we verified its achievement using the indicators of Phase 1's Overall Goal, which were logically found to be compatible with the Overall Goal of Phase 2. However, we omitted the target years mentioned in these indicators (i.e., 2010) as they do not fit as target years after Phase 2. Instead, we examined whether these indicators showed an upward trend after Phase 2 completion to the time of ex-post evaluation.

Project Purpose Indicator 2 "Performance level of ACLOs Annual Plan": The Mid-term Review Team and the Terminal Evaluation Team for Phase 2 concluded that this indicator was not practical to use since the degree of implementation of the annual plans would be influenced by the budget disbursement, an external factor. As an alternative, the Terminal Evaluation Team used "Performance level of ACLOs." We supported this idea and used "Performance level of ACLOs" as Supplementary Information.

 Overall Goal Indicator 2 "Number of OVOP groups which generate real net profit from the level of each group's starting year" (Use of Supplementary Information): The Terminal Evaluation Team used "Total real net profit" and "Real net profit per group" instead of this indicator as it was considered difficult to collect the actual value of the original indicator. We supported this idea and used these two alternative indicators as Supplementary Information while trying to measure the original indicator as well.

### 1 Relevance

<Consistency with the Development Policy of Malawi at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation of Phase 1, this project was consistent with the Government of Malawi's designation of OVOP as a national program. It was also consistent with the Poverty Reduction Strategic Paper (MPRPS) (2002), which aimed at realizing "sustainable poverty reduction through the empowerment of the poor." At the time of ex-ante evaluation of Phase 2, the Malawi Growth and Development Strategy (2006) mentioned the OVOP programme as a key strategy for promoting rural people's economic empowerment. Consistency with the Development Needs of Malawi at the Time of Ex-Ante Evaluation>

By the time of ex-ante evaluation of Phase 1, OVOP Secretariat had already been set up, and activities had started. There were strong requests for technical support and business management from farmers' associations who had been supported as pilots. At the time of ex-ante evaluation of Phase 2, people continued to have high expectations from OVOP activities of value addition utilizing local resources, which were deemed to contribute to the rural economy.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation of Phase 1, this project was consistent with "assistance in the diversification of rural livelihood" and "promotion of small-scale business," which were sub-areas of "food security" and "sustainable economic growth," respectively, two of the three priority areas of Japanese assistance for Malawi as of 2005. At the time of ex-ante evaluation of Phase 2, this project was consistent with "sustainable economic growth (agricultural and rural development)," one of the three priority areas of Japanese assistance for Malawi as of 2011.<sup>1</sup>

<Evaluation Result>

In light of the above, the relevance of the project is high.

#### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the time of Phase 2 completion. Through the activities mentioned above, OVOP Secretariat became able to formulate Annual Plan and deliver and promote OVOP activities. They were satisfied with the performance level of implementation of the Annual Plan (Indicator 1). ACLOs (then) made their respective Annual Plans under the guidance of OVOP Secretariat and District Council (DC) offices. The performance level of ACLOs was improved between 2014 and 2015 in some activities such as loan management and support to groups, but there were rooms for improvement. Information was not available on the performance level in other years (Indicator 2). OVOP groups' satisfaction with services provided by the OVOP programme increased (Indicator 3). While the satisfaction

<sup>&</sup>lt;sup>1</sup> Source: Ministry of Foreign Affairs, ODA Country Data Book 2005, 2011.

with the OVOP programme among community members who did not belong to OVOP group was not measured, it was confirmed that they sold raw materials to OVOP groups and thus might have benefitted from the programme (Indicator 4). Besides, based on the OVOP National Strategy approved in December 2014, a cooperative union of OVOP groups called Maluso Cooperative Union was established in October 2015 and completed the registration to Malawi Revenue Authority in January 2017. This project supported the Union for making it functional (the OVOP Cooperative Support Fund established and supported by the project was also incorporated into Maluso Union). As of March 2017, ten OVOP groups were registered as "full members," and seven were registered as "partly payment."

The project's effects have partially continued to the time of ex-post evaluation. OVOP Secretariat has continued to formulate the Annual Plan after project completion. The implementation rate of the Annual Plan increased from 75% in 2014 to 100% in 2019. According to OVOP Secretariat, they have monitored OVOP groups with ADTOs and encouraged sharing of experiences among OVOP groups through Extension Centres and referral groups as recommended by the Terminal Evaluation Team of Phase 2. OVOP Secretariat has found ADTOs' performance good in general. Major activities performed by ADTOs are the provision of support and training in business management, linking OVOP groups to market opportunities, and enforcing loan adherence to loan repayments for OVOP groups in production. Regarding OVOP groups' satisfaction level, OVOP Secretariat commented that it varies depending on whether they have working capital to able to utilize the facilities the Secretariat supported with and to be in actual production.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved by the time of ex-post evaluation. The number of OVOP groups in Malawi increased from 18 in 2005 to 122 in 2019 (Indicator 1). Most of which have been upgraded to cooperatives. Also, Maluso Union has been functional with 15 member groups (cooperatives) as of 2019. The number of member groups has increased each year because they are able to find the readily available market for their products from the Union. The Union also acts as a package center to add values to products from primary producers. The real net profit of all OVOP groups in Malawi is unknown because OVOP Secretariat has only monitored the net profit of a model of some 20 groups. All of these 20 groups have shown an increase in net profit (Indicator 2). The number of OVOP products certified by MBS increased to six (cooking oil, rice, honey, baobab oil, lime, and potato crisps) by 2019. These products (e.g., hibiscus products, moringa powder/soap, cassava flour, chitenje products) have not been certified because the groups have failed to meet the MBS's standards (Indicator 3). During the project period, there was a discussion that the MBS required too high standards for OVOP products since the MBS's standards were rather for medium sized industry, not for cottage industry like OVOP groups. Considering this, although not all products have been certified as expected in this indicator, it is commendable that a number of OVOP products including major products meet the standards. <Other Impacts at the time of Ex-post Evaluation>

OVOP Secretariat pointed out a possibility of an adverse environmental impact of OVOP activities because some machinery for production required the use of firewood to heat the boiler, which might lead to improper cutting of trees. As a countermeasure, those groups using firewood are encouraged to plant trees and have woodlots within their factory area at each group member's home. Positive impacts of OVOP activities pointed out by OVOP Secretariat include empowerment of women (many women are holding high positions in OVOP groups and some are chairpersons) and an increase in assets of some group members (they bought assets such as goats and bicycles thanks to the increased income).

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Aim	Indicators	leveme	Results									
(Project Purpose)	Indicator 1: Performance	Status	Status of the Achievement: achieved (continued)									
Capacity of OVOP	level of OVOP Secretariat	(Proje	Project Completion)									
Secretariat and ACLOs for	Annual Plan	- OV(	OP Secre	tariat was	s satisfied	l with the	perform	ance of i	ts Annual	Plan in t	hat 75%	of the
delivering services to		plan v	vas imple	emented i	in 2014-2	015.						
OVOP activities at local		(Ex-p	ost Evalı	uation)								
level is strengthened.		- OV(	OP Secre	tariat kep	t formula	ting the	Annual P	lan. The	implemen	ntation ra	te of the	Annual
		Plan v	vas appro	oximately	7 80% in	2017-20	18 and 10	00% in 2	019.			
		- Maj	or activit	ies imple	mented in	n 2019:						
		i. (	Completi	on of con	struction	of 8 min	i factory	shells.				
		ii.	Rehabilit	tation of (	6 mini fao	ctory she	lls					
		iii.	Installat	ion of 10	small sca	ale proces	ssing and	value-a	dding mae	chinery		
		iv.	Capacity	v building	g of 1,000	OVOP g	group me	mbers be	elonging t	o 17 valu	e-adding	groups
		in	business	managen	nent, mar	keting, a	nd quality	y control	issues			
		v. 1	Promotio	n of 15 p	roducts a	t various	national	and dist	rict fairs			
	Indicator 2: Performance	Status	s of the A	chievem	ent: not v	erifiable	(continue	ed)				
	level of ACLOs <sup>*</sup> Annual	(Proje	ect Comp	letion)								
	Plan	Perfor	rmance o	f ACLOs	evaluate	d by OV	OP Secre	tariat (5	points bei	ing full m	nark)	
	<b>C</b> 1	Year	Report submis-	Loan manage-	Support to	OVOP concept	Value addition	Quality control	Basic business	Market linkage	Sales	Average
	Supplementary		sion	ment	groups	1				5		
	Information: ACLO's*	2014	-	1.57	3.00	5.00	-	1.70	3.78	2.61	-	2.94
	performance level	2015 2.33 3.19 3.20 2.90 2.58 2.14 2.90 2.38 1.24 2.54						2.54				
	* Currently ADTOs	(Ex-post Evaluation)										
		- OV(	- OVOP Secretariat considers that the ADTOs' performance has been good (above average in									
		gener	al), coop	erative, a	nd knowl	edgeable	e, as they	are able	to train g	roups on	their own	n with
		minin	nal suppo	ort from t	he Secret	ariat. No	major iss	sues relat	ting to the	ir perform	nance ha	as been

Achievement of Project Purpose and Overall Goal

		noticed.									
	Indicator 3: Satisfaction	Status of the Achievement: achi	eved	(partially	continued)	)					
	level of services provided	(Project Completion)			,						
	by OVOP Programme - According to the end-line survey of 275 members from 54 OVOP groups (January 20										
		nong OVOP groups. satisfaction level increased by 4.7% from 50% as of the baseline survey (2011). Also, 97% of									
	uniong of or groups.	the respondents said they wante				-					
								one hv			
	<ul> <li>A focus group discussion result also described the achievement of social expectations by OVOP group members, such as gaining new skills from the training the members received</li> </ul>										
			gam	ing new sk		ne training the		cerveu			
		through the OVOP programme.									
		(Ex-post Evaluation)		1.0				1.1			
		- OVOP Secretariat considers th		general, C	OVOP grou	ips are well co	onversant wit	th the			
		OVOP programme and activitie									
		- The Secretariat considers that									
		production and those not utilizing	-								
		production are satisfied, but tho									
	Indicator 4: Satisfaction	Status of the Achievement: not	verifi	iable (conti	inuation st	atus being not	t verifiable, e	either)			
	level of services provided	(Project Completion)									
	by OVOP Programme	- The satisfaction level of services provided by the OVOP programme among									
	among	communities/groups was not collected since it was not included in the end-line survey, the									
	communities/groups	reason of which is uncertain.									
	engaged in business	- However, many OVOP groups purchased raw materials from non OVOP group members in									
		their surrounding communities, which might have contributed to their income.									
		C ,		e							
		(Ex-post Evaluation)									
		No information was available.									
,	Indicator 1: The number	(Ex-post Evaluation) achieved									
	of OVOP groups increases cumulatively from the	(Ex post Evaluation) demoved		2005	2010	2017	2018	2019			
community engaged in		No. of OVOP groups in Malawi		18	104		122	12			
OVOP movement is	level of Oct. 2005.										
increased by producing	level 01 Oct. 2005.										
value-added goods and	Indicator 2: The number	(Ex-post Evaluation) partially a	ahiar	rad							
services which are					1	· 1.1	<b>C</b> , <b>C</b>	1.1			
	of OVOP groups which	- Indicator 2 is not verifiable sin		OVOP Secr	etariat has	monitored the	e profit of me	odel group			
	generate real net profit	only, not that of all OVOP group	-	•• ••			~				
internationally, by using	from the level of each	- Between 2017 and 2019, all of				-					
ocally available	group's starting year	- The overall trend of all OVOP	-	-							
resources.	-	are not monitored. Therefore, th	ie per	rformance	of the mod	lel groups rep	resents part of	of the			
	from the level of Oct.	achievement of this indicator.									
	2005.										
		Net profit of the model OVOP g	group								
	Supplementary		_	2005	2009	2017	2018	2019			
	Information: Total net	No. of model groups monitored Total net profit of the model OVOP		5	17	20	20	20			
	profit of OVOP groups;	groups (thousand MK)		715	4,760	42,000	62,000	82,000			
	Real net profit per group	Net profit per group (thousand MK)	)	143	280	2,100	3,100	4,100			
		* Note: Although not clearly mentio	ned, t	the data of n	net profit see	ems to represen	t nominal valu	es.			
					1	1					
	Indicator 3: All of the	(Ex-post Evaluation) not achiev	ed								
	OVOP products are	- The major OVOP products are		New Rice a	nd Cookin	ممنا					
	-		)10	2015	2017	2018	201	9			
	certified by MBS.	No. of OVOP products	0		]	2010	201	<del>,</del>			
			2	-	-	-					
		certified by MBS		(Cooking	(Cooking	(Rice,		ney, Baobał			
	uestionnaire and interviews	certified by MBS (Name of products certified)		(Cooking oil)	(Cooking oil)	(Rice, Cooking oil)	(Rice, Hor oil, Lime, Po				

Operating Performance of Maluso Cooperative Union							
	2017	2018	2019				
Number of member groups	8	11	15				
Purchase (thousand MK)	24,532	27,142	87,770				
Sales (thousand MK)	39,942	41,376	110,436				
Total net profit (thousand MK)	234	591	2,133				

Source: Maluso Business Manager

### 3 Efficiency

Both project cost and project period exceeded the plan (ratio against the plan: 101% and 110%, respectively). The project period of Phase 2 was extended to achieve the Project Purpose and its sustainability fully. The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The OVOP National Strategy (2014) expired. Subsequently, OVOP Secretariat is in the process of finalizing the National Rural Industrialization Strategy that aims at building the capacity of cooperatives to enhance their contribution to rural industrialization, thereby accelerating export growth and promoting inclusive economic growth. Regarding policies that are effective at the time of ex-post evaluation, the Malawi Growth and Development Strategy III (MGDS III) (2017-2022) and the Trade Policy (2016-2021) support micro small and medium-sized enterprises (MSMEs), under which OVOP groups fall.

<Institutional/Organizational Aspect>

OVOP Secretariat was rebranded to Value Addition Division in the Financial Year 2016/17. It was one of the three Divisions under the newly formed Department of SMEs and Cooperatives but under the same Ministry of Industry and Trade. The organizational structure to promote OVOP activities is still functional. According to OVOP Secretariat, there are five Technical Officers and eight Support Staff. They have three vacant positions for Technical Officers. The fact that ADTOs were incorporated into the government system as permanent staff under District Councils, hence there is a security of their jobs, is considered as a promoting factor for the continued good performance of them.<sup>2</sup>

#### <Technical Aspect>

The staff of OVOP Secretariat still have skills and knowledge. This is evidenced by that they are able to conduct training. The organization has maintained the staff who were involved during the project period. When conducting training, they utilize manuals prepared under this project, such as the monitoring checklist for groups, the record-keeping and business management manuals, and the

marketing and quality control training manuals. As mentioned in "Effectiveness/Impact" above, it is considered that ADTOs also have skills to support OVOP groups.

#### <Financial Aspect>

OVOP Secretariat has managed to secure budget allocation continuously, but they commented that the recurrent budget continued to decrease although no data was available. Also, the development budget fluctuates as indicated in the table.

Budget for OVOP Secretariat (thousand MK)							
	2017/18	2018/19	2019/20				
Development budget	210,000	100,000	200,000				
Source: OVOP Secretariat							

Thus, while there have been no major hindrances to date, there is some concern about securing a budget for the future. <Evaluation Result>

In light of the above, a financial problem has been observed in terms of unstable budget allocation for the implementing agency. Therefore, the sustainability of the project effects is fair.

#### 5 Summary of the Evaluation

This project, consisting of Phase 1 and Phase 2, partially achieved the Project Purpose by the time of Phase 2 completion. The capacity of OVOP Secretariat was strengthened satisfactorily, and that of ACLOs (currently known as ADTOs) was also strengthened but did not reach the expected level. The effects have partially continued after project completion. While OVOP Secretariat and ADTOs have continued to provide services related to OVOP activities, the satisfaction level of OVOP groups are mixed depending on whether they are in production, utilizing the services they receive. The Overall Goal has been partially achieved. The number of OVOP groups and the net profit of model groups have increased, but the profits of other groups are unknown, and not all products were certified by MBS. Regarding the sustainability, some problem has been observed in the financial aspect due to the budget decline for OVOP Secretariat. As for the efficiency, both project cost and project period exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• Basing on the outcome of the survey, there were a number of issues that were identified. These among others include: (i) Not all OVOP groups are monitored as well as that all OVOP products meet the minimum MBS's standards for certifications. (ii) There are different satisfaction levels among the OVOP groups. (iii) The recurrent budget is decreasing (although no data is available) and the allocation of development budget is not stable. We therefore recommend that OVOP Secretariat needs to lobby for increase in budget allocation or source external funding. The sufficient budget will assist OVOP Secretariat to monitor the groups, have unified satisfaction level among all the groups and improve on MBS certification standards. The OVOP Secretariat can utilize the dedicated and knowledgeable staff to monitor the groups improve on the certification of all OVOP products to meet the MBS's standards. This will assist the groups realize more profits and improve livelihoods.

Lessons Learned for JICA:

• The following lessons can be drawn from this project from the outcome of the project survey: The survey results indicate that the formation of the cooperative union, like Maluso is a good initiative. This assists in sustainability of the OVOP concept and they are able to find reliable markets for the groups' products, thereby able to negotiate for the price and able to realize profit. This has improved the economic status of the rural community. Hence, the project can be replicated in other countries. However, in future projects, when providing resources (facilities) to the groups, there need to put measures that groups need to have adequate working capital for smooth running of their business. This will minimize variations in satisfaction among the groups on OVOP activities and thereby improve on certifications of their products.

<sup>&</sup>lt;sup>2</sup> At the same time, although not undermining the sustainability greatly, ADTOs pointed out some issues such as their low rank in the District hierarchy, funding challenges, and competing demands from the Council Superiors where they are assigned to do other activities.



Training of One OVOP group (left) and display of OVOP products during 2018 Malawi Trade Fair (Right).

Country Name		Rice Post-Harvest Processing and Marketing Pilot Project in Nasarawa and Niger States					
Federal Republic of Nig	geria		,	g			
I. Project Outline							
Background	was g were i price o loss ra	Nigeria was the country with the highest rice production in Africa, however, the quality of domestic rice was generally low. Inadequate drying and milling resulted in a high rate of broken grains. Also pebbles that were mixed during harvesting and drying were not removed during the rice polishing process. As a result, the price of domestic rice became low, reducing the willingness to expand rice production, and the post-harvest loss rate reached 15 to 20%, which hindered the improvement of the income of farmers and rural people engaged in production and processing.					
Objectives of the Project	Through identifying measures to promote distribution of high quality domestic rice, developing and improving rice grading standards for domestic rice, and capacity development of counterpart agencies and small-scale rice millers, parboilers, rice farmers and traders, the project aimed at improving the quality of the standards for domestic rice.						
<ol> <li>Overall Goal: Quality of domestic rice is improved in the target states.</li> <li>Project Purpose: Quality of domestic rice is improved in the target areas.</li> </ol>							
Activities of the project	<ol> <li>M. dd</li> <li>A. po</li> <li>ri</li> <li>Japano</li> <li>1) E</li> <li>2) Ti</li> <li>3) E</li> <li>R</li> <li>4) C</li> <li>5) O</li> <li>tr</li> </ol>	<ul> <li>Niger State</li> <li>o promote distribution of high quality domestic rice, 2) standards for domestic rice, 3) enhancing capacity of aff regarding training implementation on marketing, nhancing capacity of small-scale rice millers, parboilers, ag and business management.</li> <li>Nigerian Side <ol> <li>Staff allocated: 59 persons</li> <li>Project office (Agri-Business and Marketing Department, Nasarawa State, Niger State)</li> <li>Operation cost: running cost, staff salary, cost for training venue, etc.</li> </ol> </li> </ul>					
Project Period	July 2011 - April 2016 (Extended Period: August 2015-April 2016)Project Cost(ex-ante) 413 million yen, (actual) 610 million yen						
Implementing Agency	Federal Ministry of Agriculture and Rural Development (FMARD) Agri-Business and Marketing Department (ABM), Nasarawa State Agricultural Development Program (NADP), Niger State Agricultural and Mechanization Development Authority (NAMDA)						
Cooperation Agency in Japan		t Limited					

### **II. Result of the Evaluation**

<Constraints on Evaluation>

• Due to COVID-19 pandemic, interstate movement was banned during the period of information collection for the ex-post evaluation and so site visit could not be conducted to collect information. Therefore, the information was gathered through questionnaires, telephone interviews and online meetings.

< Special Perspectives Considered in the Ex-Post Evaluation >

- Indicators for the Overall Goal. Although "At least 2.5% of rice traders in the target States handle quality domestic rice satisfying Grade A level of Rice Grade Standard developed by the Project" was set as an indicator to measure the Overall Goal, the project proposed to use alternative indicators as it is difficult to collect any official data for "Grade A" rice. At the time of project completion, the project regarded the rice of "Grade A", if 1) the rice is parboiled with the false bottom, and 2) the rice parboiled using the false bottom has gone through the de-stoner, both of which are the technologies recommended by the project. This ex-post evaluation uses the alternative indicators based on this measurement approach.
- Continuation of the Project Purpose is analyzed as a factor for achieving the Overall Goal.

### 1 Relevance

<Consistency with the Development Policy of Nigeria at the Time of Ex-Ante Evaluation >

The project was consistent with the development policy of Nigeria. Improvement of post-harvest loss was prioritized policy documents such as the "Nigeria Vision20: 2020", the "National Agricultural and Food Security Strategy" (2010), the "National Rice Development Strategy: NRDS" (2009).

<Consistency with the Development Needs of Nigeria at the Time of Ex-Ante Evaluation >

The project was consistent with the development needs of Nigeria for improvement of rice post-harvest processing, as the quality of domestic rice was low as mentioned above ("Background").

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy to Nigeria. "Agriculture and rural development" was one of the prioritized areas under the policy dialogue between Nigeria and Japan in 2007<sup>1</sup>.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved at the project completion whereby over 2.5% of target groups handled quality domestic rice (indicator 1), while the amount of Grade A traded rice was less than 2.5% (indicator 2) and this was because destoners had not been affordable for small rice processors and it has not been easy to provide subsidy for de-stoners. However, false bottoms introduced which were relatively affordable and accessible resulted in significant improvement of quality of rice and additional value and thus suggested that the quality of rice handled can be significantly improved through increased adoption of false bottom technology. <Status of Continuation of the Project Effects>

The effects of the project partially continued. As mentioned above, the status of continuation of the project effects at the time of ex-post evaluation was verified as the part of the verifiable indicators of the Overall Goal and the factors affecting the achievement levels of the verifiable indicators of the Overall Goal. Throughout the capacity development of NADP and NAMDA, the project has developed and improved rice grading standards for domestic rice, and such technique has continuously expanded in other areas after the completion of project. So far, it has contributed to achieve the Overall Goal

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved by the time of ex-post evaluation because the results show that above 2.5% of local parboiled milled rice was destoned (indicator 1) and above 16% of local parboiled rice was processed using improved method (indicator 2) in Nasarawa and Niger States.

As for the indicator 1, based on a randomized sample survey at the time of ex-post evaluation (of users of the incubation plant), 100% utilization of destoners has been observed in Nasarawa state due to support of NADP with destoners by the Embassy of Japan and thus many processors have access to destoners. In Niger state, utilization of destoners has not been up to 100% because of the high cost of destoners which were also not locally fabricated. However, due to provision of destoners through subsidy provided by NAMDA and development partners such as International Fund for Agricultural Development (IFAD)/Value Chain Development Program (VCDP), more than 2.5% of the processors can process their rice using destoners.

As for the indicator 2, an adoption rate higher than 16% has been obtained because the false bottoms are affordable, accessible and locally available. In Niger state, provision of false bottoms to parboilers on credit also allowed them to easily adopt the improved parboiling method (the procedure to steam rice with false bottom and lid). In Nasarawa State, the adoption rate has been less than 50% because the parboilers have used a traditional method (a big tank) to parboil rice. It has been more difficult to fabricate the false bottom to fit into the tank than one for the small pots.

<Other Impacts at the time of Ex-post Evaluation>

Positive impacts have been observed. As a result of the success of the project, especially the technologies developed which have markedly improved the quality of rice, there has been a widespread dissemination and adoption of the parboiling technologies by stakeholders. As of March 2020, the Improved Parboiling Technology (IPT) has been disseminated to 27 other states in Nigeria with 27,968 parboilers trained and 16,679 of them have adopted the technology in collaboration with FMARD, JICA and other Development Partners. In addition, trainings of paddy grading standard and paddy quality checking methods have been conducted in nine states. So far 571 extension agents and 776 farmers/processors have been trained.

Some good impacts have been observed from the gender perspective. According to NADP and NAMDA, the technologies promoted by the project helped women acquire new skills and increase job opportunity. As the result of quality rice, women earn more money than when they use the conventional method.

There have been no negative impacts on environment according to NADP and NAMDA.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Aim	Indicators	Results
(Project Purpose)	Indicator 1: At least 2.5% of rice traders of	Status of the Achievement: achieved
Quality of domestic rice is	the target groups in the target areas handle	(Project Completion)
improved in the target	quality domestic rice satisfying Grade A	More than 2.5% of rice traders of the target groups in the target areas have
areas.	level of Rice Grade Standard developed by	handled quality domestic rice, satisfying Grade A level of Rice Grade
	the Project.	Standard developed by the Project.
	Indicator 2: At least 2.5% of total quantity	Status of the Achievement: not achieved
	of rice handled by rice traders of the target	(Project Completion)
	groups in the target areas is Grade A level of Based on the sample survey, the ratio of domestic rice s	
	Rice Grade Standard developed by the	which is handled by the target groups is calculated as follows:
	Project.	1) Lafia association, Nasarawa State: 28.1 t/15,800 t = 0.17% (Reference
		value)
		2) Taimako/Haske association, Niger State: 8 t/43,200 t=0.02%
		3) Rural areas of Niger State: 7.6 t/3,200 t= 0.23%
		The amount of Grade A rice traded did not reached 2.5%. However, with

Achievement of Project Purpose and Overall Goal

		ratio in Nasarawa S	State reached 80%; in	ratio was very high. Th Niger State, it is 21%. rink of an escalation in	It exceeded
(Overall Goal)	Alternative Indicator 1: At least 2.5% of	(Ex-post Evaluation	n) achieved		
	local parboiled milled rice processed by		Total milled rice	Total traded milled	Percentage
•	small-scale millers and handled by traders		trade per week	rice de-stoned of	
	in major rice growing areas of both states is		of samples (kg)	samples (kg)	
	de-stoned.	Nasarawa state	166,600	166,600	100%
		Niger state	54,800	31,350	57%
	Alternative Indictor 2: At least 16% of local parboiled milled rice processed by small-scale millers and handled by traders in major rice growing areas of both states is parboiled utilizing an improved method.	(Ex-post Evaluatio	n) achieved Total milled rice trade per week of the samples (kg)	Total traded milled rice of the samples which utilized the improved method (kg)	percentage
		Nasarawa state	166,600	58,600	35%
		Niger state	54,800	53,300	97%

#### Source : NADP and NAMDA

Note: 1) The same survey methods used for collecting data for the project purpose at the project completion were adopted as a means for verifying the indicators for the Overall Goal The extension officers of the NADP and NAMDA conducted a sampling survey and randomly interviewed 20-30 small-scale millers cum traders or parboilers cum traders trained by the project or those use the incubation plant under the project.

2) Number of samples: 30 in Nasarawa State and 27 in Niger State

### 3 Efficiency

Both project cost and project period exceeded the plan (the ratio against the plan: 148%, 120%). Activities from the second year were limited due to travel restriction to the target sites and that training to strengthen the capacity of the beneficiaries in both states was not enough, and the project needed to extend a half of a year. The outputs were produces as planned.

Therefore, the efficiency of the project is fair.

#### 4 Sustainability <Policy Aspect>

There has been policy support to disseminate the technologies under the project; however, financial backup to implement policies has been limited in both states. NAMDA mainstreamed the RIPMAPP<sup>2</sup> dissemination plan in the Annual Work Plan and budget at the time of ex-post evaluation. NADP also made plans such as "False bottom (Improved parboiling technology)" (2016-2019).

<Institutional/Organizational Aspect>

Both NAMDA and NADP have had appropriate organizational structure and enough staff to disseminate and promote RIPMAPP activities. As for NAMDA, to promote and disseminate RIPMAPP technologies, the Extension Service has been functioning and the activities have been monitored by the Monitoring and Evaluation (M&E) Department. For NADP, the Extension Department of NADP monitors and supervise the activities.

Both also established a system to lease the incubation plants in order to train operators and to generate the revolving funds from leasing fees for further RIPMAPP activities. However, since there have been still some issues in the leasing system such as inability to find appropriate operators, the future prospects are uncertain.

<Technical Aspect>

Sustainability in technical aspect is secured as both NAMDA and NADP have had master trainers with appropriate skills and knowledge and conducted step-down training by utilizing manuals and guideline.

<Financial Aspect>

As for NAMDA, after the completion of the project, no fund has been allocated even though they budgeted annually. During the project period and thereafter, the project leased the destoners to innovators and also leased the incubation plant to an operator who pay the loan amount and leasing fee into revolving fund account. In 2017 the innovators concluded payment for the loaned destoners, while the operator of the incubation plant continues to pay leasing fee into the account till date. About 2 million naira is contained in the account. In order to utilize these funds, NAMDA requires approval from FMARD; however, NAMDA has not obtained the approval due to poor communication, and therefore, unable to utilize the funds.

NADP has received funds from the state government annually, which has been used for maintenance of the rice incubation plant. Overall, the future prospects for securing fund are not certain in both states.

<Evaluation Result>

In light of the above, the technical sustainability is high as the improved technology developed in the project is widely spread in Nigeria as well as in target states. However, some problems have been observed in terms of the policy, institutional and financial aspects of the implementing agencies. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

<sup>&</sup>lt;sup>2</sup> RIPMAPP is a name of the project which stands for Rice Post-Harvest Processing and Marketing Pilot Project in Nasarawa and Niger States

The project partially achieved the Project Purpose at the project completion, as the target values on the percentage of target groups who handled quality domestic rice handled reached the target. The Overall Goal was achieved because above 2.5% of local parboiled milled rice was destoned and above 16% of local parboiled rice was processed using improved method in Nasarawa and Niger States. As for the sustainability, the improved technology has been adopted in various states including target states and is highly evaluated. However, some problems have been observed in terms of the policy, institutional and financial aspects of the implementing agencies. As for the efficiency, both project cost and project period exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- NAMDA is strongly recommended to follow up FMARD through official channels and also organize a high-level meeting between the Commissioner of Agriculture, Niger State and Permanent Secretary, FMARD to obtain approval for utilization of the funds domiciled in the revolving fund account. Access to these funds would allow NAMDA disseminate RIPMAPP technologies to other parts of Niger State.
- NAMDA and NADP should review the leasing plan of the incubation plant to ensure that the terms and conditions are attractive to prospective operators and opportunities to lease the plant is open to other qualified operators residing in locations outside the states where the incubation plants are located.

Lessons Learned for JICA:

- Introduction of simple, affordable and easily accessible technologies to small scale processors allows for easy adoption of the technologies. In the case of IPT, since it is simple, cheap and locally available materials can be used, it facilitated the widespread adoption of the technology.
- In order to ensure the widespread dissemination of technologies, it is important to share the positive outcomes to other stakeholders intervening in other areas. Due to sharing of the positives of IPT with development partners and other stakeholders at various fora, they were able to integrate IPT into their dissemination plan targeting small scale processors in their intervention states.



Women rice processor group in Doko, Niger State supported by the project conducting parboiling utilizing the improved method



1.5ton/hr modern rice mill installed by the project in Lafia, Nasarawa State

Country Name Republic of Mauri		Project for Landslide Management		
I. Project Outline				
Background	Mauritius is a small volcanic island state which is geographically characterized by steep slopes causing high risk of landslides. Besides, in the recent years, the population growth and expansion of urban areas brought about an increase in the number of houses and inhabitants on slope areas. In March 2005, 54 houses in Chitrakoot, located in the northern part of the capital city of Port Louis, were seriously damaged by large-scale landslides. In order to cope with that situation, the government of Mauritius has taken disaster prevention measures by formulating committees and establishing the Landslide Management Unit (LMU) in the Ministry of Public Infrastructure and Land Transport (MPI) in September 2009. Since then, under the "Cyclone and Other Natural Disasters Scheme" prepared by the Prime Minister's Office, MPI has been responsible for the monitoring of landslides and emergency response. However, the disaster prevention measures have been limited due to insufficient human resources and technical capacities of MPI. Therefore, identification and monitoring of landslide risks and improvement of land-use in risk areas based on scientific and technical analysis have not been sufficiently implemented.			
Objectives of the Project	<ul> <li>Through preparing a landslide management plan and a project implementation plan for LMU, the project aimed at implementation of a feasibility study and pilot projects by selecting urgent projects, thereby contributing to mitigation of landslide risks and safety of residents in the high-risk areas of landslide.</li> <li>1. Expected goals through the proposed plan<sup>1</sup>: The risk of landslide and other slope disasters is mitigated, and residents in the high-risk areas of landslides are secured.</li> <li>2. Expected utilization of the proposed plan: A landslide management plan and feasibility study are approved by the government of Mauritius and implemented by the responsible organizations.</li> </ul>			
Activities of the Project	<ol> <li>Project site: Mauritus and implemented by the responsible organizations.</li> <li>Project site: Mauritus Island</li> <li>Main activities: (1) basic survey, (2) formulation of a landslide management plan, (3) feasibility study, (4) pilot project, (5) technical transfer.</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Mauritian Side</li> <li>Mauritian Side</li> <li>Mission members: 14 persons</li> <li>Staff allocated: 8 persons</li> <li>Facilities and equipment: office</li> <li>Equipment: equipment for survey (distance meter, GPS, stereo scope, GIS, PC and others)</li> </ol>			
Project Period	(extens 2015)	012 - April 2015 ion: September 2014 - April	Project Cost	(ex-ante) 400 million yen, (actual) 306 million yen
Implementing Agency				PI) (since December 2014) (former Ministry of Public ort and Shinning)
Cooperation Agency in Japan	Infrastructure, National Development Unit, Land Transport and Shipping) Kokusai Kogyo Co., Ltd., Nippon Koei Co., Ltd., Central Consultant Inc., Futaba Inc.			

### II. Result of the Evaluation

#### 1 Relevance

<Consistency with the Development Policy of Mauritius at the Time of Ex-Ante Evaluation and Project Completion>

The Prime Minister's Office had formulated the "Cyclone and Other Natural Disasters Scheme" (2011-2012) and kept updating annually. The Scheme organized the emergency response system and responsibility sharing among related ministries for landslide disasters. The Scheme has been updated as the "National Disasters Scheme 2015" including the Landslide Emergency Scheme and has regularly updated. Therefore, the project was consistent with the development policy of Mauritius at the time of ex-ante evaluation and project completion. <Consistency with the Development Needs of Mauritius at the Time of Ex-Ante Evaluation and Project Completion>

Landslides have become serious issues due to increasing natural disasters caused by the climate change along with the increasing land development on slope areas for housing and tourism. Therefore, the project was consistent with the development needs of Mauritius at the time of ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA policy for Mauritius at the time of ex-ante evaluation. Mauritius is a small island state and vulnerable to climate change and negative impacts by the natural environment. Therefore, the Japanese government continued its economic cooperation focuing on the measures for environment and climet changes and disaster prevention.<sup>2</sup> <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Objectives at the time of Project Completion>

The objectives of the project were achieved by the time of project completion. The Landslide Management Plan has been formulated (Output 1) and a feasibility study and a pilot project were conducted (Output 2) by the project. According to the Final Report (2015) of the

<sup>1</sup> The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

<sup>2</sup> Ministry of Foreign Affairs, "ODA Country Data Book 2012"

project and the interview survey with the officials of MPI and the Geotechnical Unit (GU), the former LMU, which was restructured on July 2018, the technical capacity of GU and other agencies involved were enhanced through the activities of the project (Output 3). <Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

The Landslide Management Plan prepared by the project has been utilized. Legislation and institutionalization of the Landslide Management Plan is waiting for the formalization of GU (Indicator 1). Although the Landslide Management Plan has been utilized by GU as a reference for their daily works and its proposed plans have been partially implemented, the Plan has not been periodically updated and distributed due to the limited manpower and technical capacity of GU (Indicator 2). Out of 26 proposals made by the Landslide Management Plan, 13 of them have been commenced and other 8 of them have been completed. Out of 9 rank A areas (high-risk areas) classified by the project, in which countermeasure construction works were expected to be completed by 2015, the works have been completed in 3 areas but not in other 6 areas (Indicator 3). Implementation arrangements for landslide management including the monitoring system involving local inhabitants, application of the Technical Guidelines, land use plans and emergency landslide response plans and others have been progressing in the 3 project target areas (Indicator 4).

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

The expected goals through the proposed plan has been partially achieved at the time of ex-post evaluation. The monitoring of the landslide high risk areas has been routinely conducted by GU and the National Disaster Risk Reduction and Management Centre (NDRRMC). The early warning system has been applied in accordance with the National Disasters Scheme. The awareness raising activities and simulation training for local people have been conducted according to the Landslide Management Plan (Indicator 1). Development of the high-risk slope areas has been restricted and controlled by the city councils (Indicator 2). However, these activities have been implemented in the 3 project target areas but not in other areas. The emergency response plans for the high-risk slope areas have been reviewed and updated by the City Councils, NDRRMC and MPI every after an emergency including cyclone and torrential rain taken place (Indicator 3). As a result of these activities, there has been no serious landslide or casualty in the 3 project target areas for the past 5 years from 2014 to 2018 (Indicator 4).

<Other Impacts at the time of Ex-post Evaluation>

The government has acquired a total land area of 2,462m<sup>2</sup> in Chitrakoot for constructing drains as landslide countermeasures. Thirteen affected households have been relocated to state-owned lands. The land acquisitions and relocations were carried out according to the Land Acquisition Act and the State Land Act of Mauritius. No environmental or social negative impact and complain from local residents has been reported until the time of ex-post evaluation.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is fair.

Aim	Indicators	Results
Utilization Status of the Proposed Plan: A landslide management plan and feasibility study are approved by the government of Mauritius and implemented by the responsible organizations.	Indicator 1: Progress of legislation and institutionalization of the Landslide Management Plan as a plan for MPI and LMU.	(Ex-post Evaluation) Partially achieved The legislation and institutionalization of the Landslide Management Plan was prepared but has been stagnated waiting for the formalization of GU. Although LMU established by the project was reorganized into GU on July 2018 with broader responsibilities, the formalization of the mandates of GU has been delayed and its timetable is not fixed. Therefore, only the skeleton staffs were assigned to GU and its manpower and technical capacities are limited. Including the preparation for the approval, the operation of the Landslide Management Plan is supposed to be a mandate of GU, thus the legislation and institutionalization of the Plan is waiting for the formalization of GU.
	Indicator 2: Situation of periodical updating and distribution of the Landslide Management Plan to the stakeholders. Indicator 3: Situation of implementation of measures proposed in the Landslide Management Plan.	(Ex-post Evaluation) Not achieved Since the Landslide Management Plan is waiting for the approval, its periodical update and distribution has not been done. Although GU is using the Plan as a reference for their daily works, GU does not update and distribute the Plan due to the limited manpower and technical capacities. (Ex-post Evaluation) Partially achieved Out of 26 proposals made by the Landslide Management Plan, 13 of them have been commenced and 8 of them has been completed. Out of 9 rank A areas (high-risk areas) classified by the project, in which countermeasure construction works were expected to be completed by 2015, the works have been completed in 3 areas. The Plan and Technical Guidelines have been referred after the project to identify high-risk areas and to implement measures to the newly identified risk areas.
	Indicator 4: Progress of the system formulation in Mauritius for landslide management (monitoring system by the participation of stakeholders, application of the Technical Guidelines, preparations for the recommendations and reviewing of the related laws and regulations including the land use plan and emergency landslide response plan, etc.).	(Ex-post Evaluation) Achieved In Chitrakoot, one of the 3 project target areas, the monitoring system involving stakeholders including local residents was formulated, and the monitoring has been conducted and NDRRMC keeps recording the results of the monitoring. The landslide monitoring has been carried out also in Vallee Pitot and Quatre Soeurs, other 2 project target areas on a priority basis. The application system of the Technical Guidelines was established by the project in the 3 areas and has been continuously applied according to the protocol. In Chitrakoot, the land use plan and emergency landslide response plan of the "Development Management Map of Port Louis Outline Planning Scheme" (OPS) was prepared in line with the "Policy EC2" for building on steep slope and approved by the government in May 2015.
Expected Goals through the Proposed Plan (not to be assessed): The risk of landslide and	Indicator 1: Situation of the landslide high risk areas after the implementation of plans prepared by the Landslide Management Plan	(Ex-post Evaluation) Partially achieved The monitoring of the landslide high risk areas has been routinely conducted by GU and NDRRMC but only in the 3 target areas of the project. The early warning system has been applied according to the National Disasters Scheme

Status of Achievement of Utilization Status of the Proposed Plan and Expected Goals through the Proposed Plan

-	(situation of landslide monitoring system, evacuation warning system, etc.). Indicator 2:	also in the 3 areas. Some problems of the monitoring equipment provided by the project have not been fixed and affected the accuracy and transmission of data and function of the early warning system. The awareness raising activities and simulation training for local people have been conducted according to the Landslide Management Plan and, according to the officials of GU, the awareness of the local residents on the warning and evacuation protocol has been increased. (Ex-post Evaluation) Partially achieved
	Suppression of development of the high-risk slope areas designated in the Landslide Management Plan.	Development of high-risk slope areas has been restricted and controlled by the city councils according to the Policy EC2 for Building on Steep Slopes. According to the Policy, a primary school building was demolished in Chitrakoot, and several households have been relocated and their houses were taken down in Quatres Soeurs. Households relocation also has been progressing in Vallee Pitot. The land acquisitions and relocations were carried out according to the Land Acquisition Act and the State Land Act of Mauritius.
the high-risk slope areas designate Landslide Management Plan. Indicator 4: Decrease of the cases of damage (i dead, etc.) due to the development	Review of the emergency response plans for the high-risk slope areas designated in the	(Ex-post Evaluation) Achieved The emergency response plans for the high-risk slope areas have been reviewed and updated by the city councils, NDRRMC and MPI every after an emergency including cyclone and torrential rain taken place.
	Decrease of the cases of damage (injured, dead, etc.) due to the development of landslide management system and	(Ex-post Evaluation) Achieved There has been no serious landslide or casualty in the 3 project target areas for the past 5 years from 2014 to 2018. According to MPI and GU, this was due to the implementation of ground stabilization works, relocation of households and demolition of structures in high-risk areas, the early warning and evacuation protocol, and other countermeasures proposed by the Landslide Management Plan.

Source: MPI, the Ministry of Housing and Lands, and the MPI local site offices in Chitrakoot, Vallee Pitot and Quatre Soeurs.

3 Efficiency

Although the project cost was within the plan (the ratio against the plan: 77%), the project period exceeded the plan (the ratio against the plan: 123%). The outputs were produced as planned. Therefore, efficiency of the project was fair.

4 Sustainability <Policy Aspect>

The "National Disasters Scheme 2015" including the Landslide Emergency Scheme is effective at the time of this ex-post evaluation and has been regularly updated since 2015. MPI is currently preparing a bill to obligate all major construction works in the country to conduct geotechnical studies.

<Institutional Aspect>

LMU was restructured as GU in July 2018 by expanding its responsibilities and mandates for geotechnical issues including landslides. GU is still in the process of formalization and its responsibilities and mandates have not yet been officially defined. Besides, although the Landslide Management Plan proposed to assign 6 engineers to LMU, the current number of the engineer in GU has been 3. The deficiency in the number of staff and technical capacity of GU and the delay of its formalization have been one of the main causes of the delay of implementation of the projects planned by the Landslide Management Plan. A staff member of GU is expected to come back from the study in Japan in 2021.

<Technical Aspect>

Out of the 8 staff members involved in the project as counterparts, 7 of them have left their positions. Therefore, the knowledge and skills transferred in the project has not been sustained, and the technical capacity of GU has not been sufficient for prompt implementation of the projects planned by the Landslide Management Plan. Besides, maintenance of equipment provided by the project in the 3 target areas has not necessarily been properly done and some equipment is left damaged. This has caused the delay in data collection and early warning to local inhabitants. For the capacity development of and technical support for GU, one of the Japanese experts of the project has been contracted with MPI and assigned as a technical advisor. In addition, one staff member has come back in 2018 and the another one is expected to come back in 2021 from the studies in Japan, and their technical contributions to geotechnical activities of GU is highly expected.

<Financial Aspect>

The amount of national budget for landslide control has not been planned but prepared as the situation demands. For instance, while the budget of 40 million Mauritius Rupee (Rs) was prepared for the countermeasures' construction projects in Chitrakoot in 2016, 1 million Rs was prepared for a structure demolition work in Quatres Soeurs in 2017. Although the budget for the 3 project target areas has been provided as necessary, the total amount of budget has not been sufficient for monitoring 37 landslide hazard areas designated by the "National Disasters Scheme 2015."

<Evaluation Result>

In light of the above, some problems have been observed in terms of the institutional, technical and financial aspects. Therefore, the sustainability of the effectiveness through the project is fair.

### 5 Summary of the Evaluation

The objectives of the project were achieved by the time of project completion by preparing the Landslide Management Plan and implementing a feasibility study and a pilot project. Although the legislation of the Plan has not been completed yet, half the number of projects proposed by the Plan has been completed or ongoing. As for sustainability, there have been some problems in the institutional, technical and technical aspects. As for efficiency, the project period exceeded the plan. Considering all of the above points, this project is evaluated to be partially satisfactory.

### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- Formalization and strengthening of GU is an urgent issue. It is recommended MPI to accelerate the formalization process of GU and its capacity building.
- Since the damaged equipment provided by the project has affected proper warning to local residents, it is recommended MPI to allocate budget, staff and technical support for GU to fix the equipment and conduct routine maintenance of them.
- It is recommended MPI to take an initiative for mobilizing GU, local authorities, NDRRMC and other relevant stakeholders to establish landslide monitoring system involving local residents in order to implement the monitoring of 37 designated landslide hazard areas in the country.
- It is recommended MPI to find external funding agencies including private sectors and development partners and to start the negotiation for funding in order to accelerate the implementation of the projects proposed by the Landslide Management Plan and landslide monitoring of 37 designated landslide hazard areas.
- Lessons Learned for JICA:
  - LMU which was the major implementing entity of the project was restructured as GU by the initiative of MPI by expanding its responsibilities and mandates after the project in order to implement the landslide management in a unified and comprehensive manner. However, the formalization and capacity development of GU has been unexpectedly delayed, and this has negatively affected the progress of the landslide countermeasures projects proposed by the project. Restructuring of the major implementing entity of a project soon after the project completion is not recommendable in general. If a possibility of restructuring is foreseen during the period of the project, it is desirable for the project to make an intervention within the realms of possibility. When the project recognizes the restructuring necessary, the specific restructuring plan and a supervising system for its process should be planned in the project; and seek for the follow-up means by other schemes such as a technical cooperation project or a dispatch of a long-term expert if possible.
  - The landslide countermeasures projects proposed by the Landslide Management Plan have been partially and slowly implemented. One of the major causes of this is financial constraints of the government. Irrespective of whether the funding for projects is promised or not during the period of the project, funding could be a critical factor in projects' implementation for most developing countries. If specific financing strategies could be incorporated in the Plan prepared by the project and the project starts its initial activities with the implementing agency during the period of the project, it might increase the possibility of implementation of projects.



Countermeasure works at Chitrakoot were duly implemented and preventing danger to local inhabitants.



Rain gauge at Quatres Soeurs, installed by Mauritius Meteorological Services as a complementary tool for the MPI's monitoring system

# Internal Ex-Post Evaluation for Technical Cooperation Project

	conducted by Senegal Office: December, 2020
Country Name	
Republic of Seneg	Amélioration de l'Environnnement Soclaorie :PAES)
I. Project Outline	
Background	Senegal aimed at the enrollment rate of primary education of 100% by 2010. Although the enrollment rate reached to 82.5% in the year of 2004/2005, the completion rate, the proportion of pupils completing the primary education without retention remained at around 50%. Issues of educational environment to hamper the completion rate varied by school and it was necessary to cope with those issues at school level. On the other hand, since the schools had limited resources, supports by parents and local communities were essential for improvement of educational environment. The school management committee (Comité de Gestion de l'École: CGE) system was introduced in the country for improvement of educational environment by the Presidential Decree in July 2002. However, there were schools without CGE or CGEs not functioning. Therefore, it was necessary to functionalize CGEs and to enhance support systems for CGEs, such as technical supports and monitoring by local education administrations.
Objectives of the Project	<ul> <li>Through capacity development of CGE members, enhancement of support system for CGEs and dissemination system of the improved CGE model, the project aimed at establishment and dissemination of the improved CGE model in all the 14 regions, thereby contributing to improvement of school environment and reinforcement of access and quality of education.</li> <li><phase i=""></phase></li> <li>1. Overall Goal: 1) Improvement of school environment through community participation, 2) Dissemination of new model of school management by functional CGE in other regions.</li> <li>2. Project Purpose: A new model of school management by functional CGE is established and implemented.</li> <li><phase ii=""></phase></li> <li>1. Overall Goal: 1) School environment and PDEF (10 Year Program of Education and Training) management system are improved by functional CGE, 2) Access and quality of education is reinforced.</li> <li>2. Project Purpose: The model of functional CGE is stabilized and disseminated in all the regions.</li> </ul>
Activities of the Project	<ol> <li>Project site: <phase i=""> Louga Region, <phase ii=""> All the 14 regions (Pilot regions: Fatick Region and Kaffrine Region)</phase></phase></li> <li>Main activities:         <phase i=""> i) Workshops and training for establishment of functional CGEs, ii) Trainings on planning of Voluntary Action Plan (Plan d'Action Volontariste: PAV) and CGE management for the CGE members, iii) Capacity enhancement of support system at regional level and workshops for promotion of CGEs, iv) Trainings for planning and management of School Project (Projet d'Ecole: PE).     </phase></li> <li><phase ii=""> i) Revision and improvement of the functional CGE model developed by the Phase I, ii)Trainings on establishment of CGE and planning of PAV for school directors, teachers and CGE members, iii) National workshops for approval on the revised model of functional CGE and for validation on the model of functional CGE Union (UCGE), iv) planning of dissemination of the revised CGE model and capacity enhancement of the dissemination system.</phase></li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li><phase i=""></phase></li> <li>Experts from Japan: 3 persons</li> <li>Experts from Japan: 7 persons</li> <li>Training in Japan: 6 persons</li> <li>Third country training: 19 persons (7 in Niger, 8 in Burkina Faso, 4 in Niger)</li> <li>Equipment: Vehicle, photocopy</li> <li>Operation cost: cost for project implementation</li> </ol>
Project Period	<phase i=""> <phase i="">         May, 2007 – May, 2010          <phase ii="">       (ex-ante) 230 million yen (actual) 265 million yen         September 2010 – August, 2015       Project Cost         (Extension: August 2014 – August 2015)       Project Cost</phase></phase></phase>
Implementing	<phase and="" i="" ii="" phase=""> Ministry of National Education (The Ministry of Education changed to the Ministry of National Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education changed to the Ministry of National Education (The Ministry of Education (The Ministry of National Education (The Ministry of Education (The Ministry of National Education (The Ministry of Education (The Ministry of National Education (The Ministry of N</phase>
Agency Cooperation Agency	National Education since 2012)
in Japan	<phase and="" i="" ii="" phase=""> None</phase>

### **II. Result of the Evaluation**

< Special Perspectives Considered in the Ex-Post Evaluation >

[Verification of Overall Goal]

Since the Overall Goals for the Phase I can be covered by the Overall Goals for the Phase II, this ex-post evaluation integrally verified the achievement level of the Overall Goals for the two projects by using the verifiable indicators for the Overall Goals for the Phase II.

1)

[Continuation of the Project Effect]

For verifying continuation status of the project effects by the Phase I and Phase II, the indicators for the Project Purpose of the Phase II are used since the Phase I was implemented as a pilot basis in only one region (Louga) and the Overall Goal of the Phase I is dissemination of the functional CGE model. 1 Relevance

<Consistency with the Development Policy of Senegal at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policies of the government of Senegal aiming at the primary education enrollment rate of 100% and prioritizing functionalization of management organizations in "the 10 Year Plan of Education and Training (Plan décennal d'éducation et de formation: PDEF)" (2000-2015) which policy priorities had not changed throughout the project periods. In addition, CGE has been institutionalized as management organization of PDEF by the "Declaration No. 2002-652" (2002).

<Consistency with the Development Needs of Senegal at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the development needs of Senegal for improvement of school management and school environment by functional CGEs because of the limited dissemination of the functional CGEs model for improving school management. The development needs had not changed throughout the project periods.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA Policy to Senegal. One of two priority areas for the "Country Assistance Program for Senegal" (the draft version in 2007 and the final version in 2009) was "Improvement of living conditions of the rural poor" including improvement of basic services for the rural poor.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose of Phase II at the time of Project Completion>

The Project Purpose for the Phase II was partially achieved. 8,285 out of total 9,328 schools (88.8%) in the country established CGEs in a democratic way, and CGEs were established by more than 80% of the schools in 13 regions except Dakar (Indicator 1). Three regions of Kaolack, Fatick and Kaffrine organized education forum and 100% of the commune in each region established UCGE in the three regions (Indicator 2). 4,028 out of total 8,285 CGEs (48.6%) in the country submitted PAV to the Education and Training Inspector Office (Inspection d'Education and de Formation: IEF) and only three regions of Diourbel, Fatick and Kaffrine achieved the target value of 80% of CGEs submitting PAV to IEF (Indicator 3).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued. In 13 regions except Dakar<sup>1</sup>, 98% of the schools established CGEs in 2019. CGEs has continued to submit their PAVs to IEFs since the project completion. The proportion of CGEs submitting their PAVs to IEF has improved to 65% since the project completion. On the other hand, there was no data available on the number of UCGEs established after the project completion because there has been no obligation for CGE to set up UCGEs and no follow-ups for them by the Ministry of Education. In terms of support for CGEs, each time inspectors carry out pedagogical supervision, they are dealing with issues related to the organization and functioning of the CGEs at the same time. In addition to this, the Ministry of Education, through the Directorate of General Administration and Equipment (Direction de l'Administration Générale et de l'Equipement: DAGE), has organized an annual mission to monitor and evaluate the subsidies allocated to schools. This monitoring and evaluation mission is also a means of support and follow up the CGEs and this mission produces a report that gives an overall situation. The support and follow up system are part of the inspectors' visits to schools and the activities have been carried out by the inspectors at IEF level for all the primary schools. However, the monitoring of the CGEs is not done at the regional level. The monitoring to strengthen the functioning of CGEs is the direct responsibility of IEFs. <Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal 1 has been partially achieved by the time of ex-post evaluation. According to the monitoring report of CGEs by the Ministry of National Education, CGEs have contributed to improvement of school environment through implementation of small construction and rehabilitation works for school facilities including classrooms, kitchen canteens, blackboards in classrooms, and so on, which have been included in their PAV and financed with the community contributions. On the other hand, it was not clear whether CGEs had contributed to improvement of capability of teachers, initiatives of school directors and people's awareness for education. The Overall Goal 2 has been partially achieved by the time of ex-post evaluation. The educational indicators to verify improvement of access and quality of primary education, such as the proportion of entrance age population entered in primary school (TBA), the numbers of students in the 1<sup>st</sup> grade, the repetition rate and the certification rate for primary education, were improved in more than 8 regions. For the period from 2015 to 2018, with the World Bank-funded Project for "the Improvement of Quality and Equity in Basic Education (PAQEEB)", the Ministry of Education initiated the implementation of Quality Improvement Contracts (Contrat d'Amélioration de la Qualité: CAQ) which essentially focused on issues of improving the quality of teaching and learning. However, this new initiative (CAO) has not been developed in all schools. Although there is no data on the number of CGEs that have implemented CAQs in their schools, a significant number of schools have begun to take action on education quality issues. On the other hand, the CGEs invested a lot in the aspect of accessibility to school through sensitization activities to ensure that parents enroll their children in school. This explains the evolution of the number of pupils enrolled in the first grade from 2015 to 2018. It is only in 2019 that the PAV take charge of activities related to quality with the organization of reinforcement courses and so on.

<Other Impacts at the time of Ex-post Evaluation>

<sup>&</sup>lt;sup>1</sup> Since Dakar is divided into three academies (Rufisque department, Pikine department and Guédiawaye department, and Dakar department) by the Ministerial Order No.13508 issued in August 2013.

Some positive impacts by the project have been observed at the time of ex-post evaluation. The project has enabled some women to take on more responsibility in the management of the school as CGE members. There are women who hold treasurer and president positions in some schools. In addition, women are more interested in the education of their children, especially girls. Before the project, the allocation of the grant to the CGEs was done through the IEFs, now the allocation has been done directly to the school's account which is managed by the CGE. The direct allocation of the grant to the CGEs facilitate the implementation of PAVs.

No negative impact was observed at the time of ex-post evaluation.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Pro	iect Purnose and	d Overall Goal
Achievement of 110	feet I uipose an	

A :		ject Purpose and Ov			
Aim	Indicators		Results		
(Project Purpose)	Indicator 1	Status of the Achievement: Achieved (Continued)			
<phase ii=""></phase>	80% of schools in all the regions	(Project Completion)			
	established CGE with members elected	- 88.8% of schools in the country established CGEs democratically.			
CGE is stabilized and	-	[Proportion of the schools establishing CGEs by region]			
disseminated in all the		Level	Reg	ion	
regions.		100%	Kaolack, Kédougou, Fatic, Ma	itam	
		More than 90%	Kolda, Louga, Saint-Louis, Sé Ziguinchor, Kaffrine	èdhiou, Tambacounda,	
		More than 80%	Diourbel, Thiès		
		Less than 50%	Dakar		
		(Ex-post Evaluation			
		<ul> <li>In 13 regions of CGEs.</li> <li>The 13 regions</li> </ul>	except Dakar, 7,926 out of 8,05 s except Dakar reached 96-99%		
		2019.			
	Indicator 2		vement: Achieved (Not verified	)	
	70% of communes which has organized a	(Project Completion			
	forum in all the regions establish UCGE		unes established UCGE in Fatic	ck, Kaffrine and Kaolack	
	with support of the Project.	-	anized a forum.		
		(Ex-post Evaluation			
			ble a there is no obligation for	-	
		-	c follow-ups for CGEs by the N		
	Indicator 3		vement: Not achieved (Achieve	ed)	
	80% of the CGE submit PAV to UCGE and	(Project Completion)			
	IEF respectively.	- 48.6% of CGEs in the country submitted PAV to IEF.			
		- More than 80% of CGEs submitted PAV to UCGE in Diourbel, Fatick and			
		Kaffrine but the necessary trainings to set up UCGE were not delivered in			
		other 11 regions.			
		(Ex-post Evaluation	n)		
		- In the 13 regions except Dakar, 65% of CGEs have submitted their PAV to			
(0	Indicator 1	IEF. Status of Achievement: Partially achieved.			
(Overall Goal 1)		(Ex-post Evaluation			
School environment and	Improvement of school environment at	According to the	monitoring report of CGEs	by the Ministry of National	
PDEF (10 Year Program	school level (infrastructure, furniture,	Education, CGEs contribute to the improvement of school environment through			
of Education and	textbook, school hours,	the implementation of the following activities: small constructions related to the			
Training) management	motivation/capability of teachers, initiative	repair of ceilings, enclosing walls, classrooms, doors, windows and even kitchen constructions for schools with school canteens, sinking of wells and so on. These			
system are improved by	of school directors, people's awareness of		are included in the PAV and are		
functional CGE	education, etc.)		ever, it was not clearly verified		
		to improvement of motivation/capability of teachers, initiative of school			
			le's awareness of education oth	ner than physical improvement	
			ture and equipment.		
(Overall Goal 2)	Indicator 2: Improvement of educational	(F)	ent: Partially achieved		
Access and quality of	indicators (the gross enrollment rate (TBS)*	[Educational Indica			
education is reinforced.	for primary education, the gross access rate		Regions with	Regions without	
	(TBA)**, the number of students in 1st		improvement/achievement	improvement	
	grade, the repetition rate, the completion		to the sufficient level		
	rate, the certification rate for primary	TBS	7 regions: Dakar, Thiès,	7 regions: Louga, Fatick,	
	education)		Diourbel, Saint-Louis,	Kaffrine, Kaolack,	
			Kolda, Kédougou,	Matam, Tambacounda,	
	*TBS: the proportion of school age		Ziguinchor	Sèdhiou	
	population enrolled in primary school				
	**TBA: the proportion of entrance age population entered in primary school.	TBA	10 regions: Fatick, Dakar, Thiès, Diourbel, Saint-Louis,	4 regions: Louga, Kaffrine, Kaolack, Matam	
			Tambacounda, Kolda,		

	Kédougou, Ziguinchor, Sèdhiou	
No. of students in 1 <sup>st</sup> grade	12 regions: Louga, Fatick, Kaffrine, Thiès, Diourbel,	2 regions: Dakar, Sèdhiou
1 grude	Kaolack, Saint-Louis,	
	Matam, Tambacounda,	
	Kolda, Kédougou,	
	Ziguinchor	
Repetition rate*	8 regions, Lourga, Fatick,	6 regions: Kaffrine, Thiès,
(Data not	Dakar, Saint-Louis,	Diourbel, Kaolack,
available for	Matam, Kolda,	Tambacounda, Ziguinchor
2018)	Kédougou, Sèdhiou	
Completion rate	6 regions: Dakar,	8 regions: Lourga, Fatick,
_	Diourbel, Saint-Louis,	Kaffrine, Thiès, Kaolack,
	Kolda, Kédougou,	Matam, Tambacounda,
	Sèdhiou	Ziguinchor
Certification rate	All the 14 regions	None
for primary		
education		

Source : Terminal Evaluation Reports (Phase I and II), Information provided by Directorate of Planning and Education Reform (Direction de la Planification et de la Réforme de l'Education: DPRE), Monitoring Report of CGEs by the Ministry of National Education, Questionnaire survey to 5 regions of Louga, Fatick, Saint Louis, Kaolack and Kaffrine

3 Efficiency

The total project cost and the total project period exceeded the plan (ratio against the plan: 138% and 114%, respectively. The outputs were produced as planned. Therefore, the efficiency of the project is fair. 4 Sustainability

<Policy Aspect>

The decentralized management policy has been still maintained. The proof is that all the major projects implemented by the Ministry of National Education have articulated about community involvement. Dissemination of the functional CGE has been well supported by the Sectorial Policy Letter developed in 2013 which gave the main orientations of the educational policy and the sectoral program called "Program for Improving the Quality, Equity and Transparency in Education and Training (Programme d'Amélioration dela Qualité, del'Equité et de la Transparence en Education et Formation: PAQUET-EF" (2018-2030) as the operationalization framework. One of the components of PAQUET-EF remains "participatory and inclusive governance". Through the implementation of PAQEEB, the generalization of the establishment of functional CGE has been insured. Currently, as part of several projects (Project for the Improvement of Learning of Mathematics at the Elemental School/Projet d'Amélioration des Apprentissages des Mathématiques à l'Elémentaire-PAAME, (supported by JICA), Reading For All/Lecture Pour Tous-LPT (supported by USAID), Girls' Education Improvement Project/Projet d'Amélioration des Fille, Plus-PAE by Italian Cooperation, etc.) the community involvement policy is strengthened through the improvement of the PAV which has been internalized in the system and used by projects funded by other partners. Community involvement is an important part of many donor-funded projects such as "Reading for All" (LPT), like PAEF Plus financed by and so on. As part of the support provided to the CGEs, emphasis has been placed on planning with the PAV, its implementation and evaluation. At the school level, this will result in the establishment of the functional CGEs. <Institutional Aspect>

The diffusion of the model is maintained, all the public elementary schools of Senegal are required to have a CGE to be able to benefit from the funds allocated by the Government and the PAQEEB grants which affect all the elementary schools. In addition, as part of the implementation of the PAQEEB, the new CGEs of the new schools are trained in implementation and functionalization. In the same vein, each year IEFs organize capacity building training for CGEs, especially in financial management. However, there is no specific staff in charge of the CGEs in the Ministry of National Education.

At the level of the IEFs, it is the inspectors themselves who deal with issues relating to CGEs The IEF is divided into Districts. In each District there are a number of schools supervised by an inspector. The inspectors use their pedagogical supervision to monitor the functioning of the CGEs. However, even if there is one inspector in charge of a District, field supervision is done in teams of several inspectors. This is an internal organization at the level of each IEF. <Technical Aspect>

In fact, every year, the Directorate in charge of Elementary Education (DEE) and the Directorate of General Administration and Equipment (DAGE) organize, within the framework of the PAQEEB, meetings with the holding of pools of sharing and reinforcement of inspectors' ability for supervising CGEs. Although the Offices of Academic Inspection (IAs) and IEFs have sustained sufficient skills/knowledge to provide follow-ups and technical support for CGEs but not to deliver CGE trainings.

In general, the trained actors have kept their basic skills, especially with the implementation of the PAQEEB where the operation of the CGEs is annually evaluated. In this same process, the PAQEEB under the aegis of the World Bank and the MEN conducted an evaluation of the operation of the CGEs with a view to making recommendations in the direction of improving the functions of the CGEs and UCGEs. The DEE has been implementing its annual action plan works to integrate the recommendations into a strategy document which will ultimately be addressed to the capacity building trainings of the members of the CGEs.

The manuals prepared by the projects have been well used. There is now a document called "Manuel de procedures de gestion des fonds alloués par l'Etat aux écoles élémentaires" (Manual for procedures of management of fund allocated by the government to elementary school), the first part of which is a review of the guides developed by the Phase II, except for the management of financial and material resources. This is understandable because the resource management guide produced by the Phase II only took into account the resources collected by the community (endogenous resources). At the time of the Phase II, the government of Senegal had not yet started allocating funds to the CGEs. This manual of procedures that integrates the implementation guide and the planning guide is used by all actors as it is the reference document.

<Financial Aspect>

For each year, in the implementation of the PAQEEB, an annual budget for the training of CGE members has been transferred to IEFs. The amount of budget depends on size of IEF and the number of schools covered by IEF. For the improvement plan, the DEE has been working to produce a document that incorporates recommendations from the CGE Performance Assessment Report to strengthen the capacity of members of management bodies to improve their functioning. As part of the PAQEEB, the budget allocated to the activities every year and even other projects that have resources to strengthen the functional of CGEs. On the other hand, there is no budget in Senegal exclusively for the implementation of PAV. However, there is an operating budget allocated by the government of Senegal and the development partners to schools, the use of which, in principle, goes to the development and implementation of PAV. Besides that, municipalities can create specific budget lines for the functional CGEs.

#### <Evaluation Result>

In light of the above, there has been some problems in institutional and technical aspects. Therefore, the sustainability of the effectiveness through the project is fair.

### 5 Summary of the Evaluation

The project achieved the Project Purpose and the Overall Goal 1 and partially achieved the Overall Goal 2 through the dissemination of the model of functional CGEs to improve school environments and accessibility and quality of primary education. As for sustainability, there have been some issues on the institutional and technical aspects while the educational policies have endorsed the activities to promote establishment of CGEs at primary schools. As for efficiency, the total project cost and the total project period exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

(For the Ministry of National Education)

- The Ministry of National Education needs to set up and institutionalize a monitoring system. In fact, it is important to create a directorate or division specifically in charge of monitoring CGEs at the national and regional levels (IA and IEF).
- In order to better ensure the sustainability of project results, it is important to teach the model for setting up and operating the CGEs during initial teacher training. at the level of regional centers for teacher training called the Regional Training Center for Education Staff (Centre Régional de Formation des Personnels de l'Education: CRFPE). The Ministry may make arrangements to include the training module on CGEs in the pre-service teacher training programme with a view to making the practices sustainable.
- The Ministry of National Education must put in place a mechanism to facilitate access to data related to the CGE, especially with respect to the budget.

(For IEFs)

- The IEFs need plan and implement follow-up and support the CGEs in terms of renewal, the setting up of commissions, and the regular holding of general assemblies and meetings.
- Instead of taking advantage of the pedagogical supervisions to deal at the same time with issues related to the organization and operation of the CGEs, inspectors should plan missions specifically reserved for the CGEs. This will encourage the renewal of the CGE office's bodies and monitor their functioning to ensure the sustainability of the CGE model.

(For CGEs)

• The CGEs must increasingly take into consideration the quality of education in their PAV in order to contribute to the improvement of student performance. Beyond activities related to promoting access to education, activities and initiatives that contribute to the improvement of student performance must be at the forefront, for example, the organization of reinforcement courses for weak students, sensitization of parents for the follow-up of students at home. Contributing to the improvement of student performance is a challenge to be taken up by the CGEs.

• It is necessary that a regular renewal of the (enlarged) bureau of the CGE be carried out every two years through a real General Assembly in order to avoid any weariness or lethargy harmful to the good functioning of the management body.

### Lessons Learned for JICA:

- There are assets to be consolidated within the framework of Community involvement. Certain practices that have been in place for 5 years need to be revisited at the time of ex-post evaluation (the modality of capacity building for CGE actors, etc.) in order to draw useful lessons learned for future projects. As the Ministry of National Education should provide their leadership in the implementation of any activities in the education sector and have responsibility for taking initiatives to improve performance and for conducting evaluation of their practices. While it is up to the Ministry of National Education to take initiatives and evaluate everything that has been done with a view to deriving all good practices. it is preferable for JICA support to such initiative from the implementation stage to the ex-post evaluation stage. For example, JICA can support for a study that provides information on good practices in terms of the functionality of CGEs or difficulties and challenges, as well as formulation of strong recommendation that enables to help strengthen community participation in the management of education in order to improve quality of education.
- -Senegal should organize exchange visits with other countries such as Niger, which is well ahead of the education decentralization policy, and Madagascar, where communities are taking charge of issues related to quality of education in order to further improve the CGE model based on the good practices in other countries. JICA needs to support Senegal to realize such "knowledge sharing" among the countries with experiences of CGEs because JICA has a lot of experience in the field of community involvement for a better management of education.



Kitchen for school canteen built by a CGE

AGA. FHICKHNA. FHICKHNA. The de melden Ide Viele A & Viele A & Viele 2510/2 rolaire LOUGA THIOKHINA, PLAN NACTION A THIOKHINA, VOLANTARISTE Activity & Realized Actives Responsellas Thetics grand do Pade CGE Patrice Anne Pett du CGE tes clas Filt 119 GE tilladi 13 CGE 30/02/13. E.P. E.P 10/02/15 E.P strefto. E.P. 30/11/10 THIOKHNA Inte

Action Plan of CGE

conducted by Kenya Office: May 2020

Country Name	Project for Technical Assistance to Kenya Ports Authority on Dongo Kundu
Republic of Kenya	Port, Mombasa Master Plan

### I. Project Outline

I. Project Outline			
Background	Mombasa Port, located in Mombasa City of Kenya, is the largest port in the East Africa region. Mombasa Port is used not only for the trade of Kenya but also for neighboring inland countries such as Uganda and Rwanda. Due to the rapid economic development in the East Africa region and the increasing container handling volume, JICA supported the Kenya Ports Authority (KPA) in expanding the container terminal on the northern side of the port ("Mombasa Port Development Project" (2007-2016). Also, JICA commenced the "Project on Master plan for Development of <i>Dongo Kundu</i> , Mombasa Special Economic Zone" (2014-2015) for acceleration of economic growth in Kenya and the East Africa region. As the cargo handling volume of Mombasa port was increasing much more than forecast at the time of formulation of this project, it was required to formulate the master plan for development of Mombasa Port which would propose the vision and concept of Mombasa Port development.		
Objectives of the Project	<ul> <li>By revising Mombasa Port Master Plan, improving the strategic planning and management system in KPA, improving the future capacity and forecast method in KPA, and preparing the comprehensive Mombasa Port development implementation/investment plan, the project aimed at enhancing the capacity of KPA staff regarding port development.</li> <li>1. Expected Goals through the proposed plan<sup>1</sup>: Projects are to be implemented in accordance with the Mombasa Port Master Plan.</li> <li>2. Expected utilization of the proposed plan: N/A.</li> </ul>		
Activities of the Project	<ol> <li>Expected diffusion of the proposed plant 1911</li> <li>Project site: Mombasa Port</li> <li>Main activities: 1) Review and revision of the existing Mombasa Port master plan, 2) Demand forecasting by cargo type, 3) Training of KPA personnel on strategic planning and managemen and demand forecast, 4) Development of port development implementation and investment plan etc.</li> <li>Inputs (to carry out above activities) Japanese Side</li> <li>Mission members: 12 persons</li> <li>Staff allocated: 10 persons.</li> <li>Training in Japan: 8 persons</li> <li>Equipment: office equipment, etc.</li> <li>Operational cost</li> <li>Operational cost</li> <li>Development of port development implementation etc.</li> </ol>		
Project Period	August 2014 to October 2015	Project Cost	(ex-ante) 250 million yen, (actual) 245 million yen
Implementing Agency	*Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works (MOTIHUDPW), Kenya Ports Authority (KPA)		
Cooperation Agency in Japan	Overseas Coastal Area Development Institute of Japan, Oriental Consultants Global Co., Ltd., Nippon Koei Co., Ltd.		

\*Note: In 2018, the Ministry of Transport and Infrastructure (MOTI) was restructured into Ministry of Transport Infrastructure, Housing, Urban Development and Public Works (MOTIHUDPW).

# II. Result of the Evaluation

< Special perspectives considered at the ex-post evaluation >

- At the ex-ante evaluation, no indicator was set for verifying the expected utilization of the proposed plan, although the Project Purpose (objective to be achieved by the time of project completion) was set as "Capacity of KPA staff regarding port development is enhanced." At the ex-post evaluation, utilization of the proposed Master Plan was verified.

### 1 Relevance

<Consistency with the Development Policy of Kenya at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policy of Kenya at the time of both ex-ante evaluation and project completion, as the national plan of the "Kenya Vision 2030" describes the importance of infrastructure development and positions development of Mombasa Port as one of the most prioritized programs.

<Consistency with the Development Needs of Kenya at the Time of Ex-Ante Evaluation and Project Completion >

The cargo handling volume of Mombasa Port was increasing much more than forecast at the time of ex-ante evaluation, but due to the poor structural condition of the Mbaraki Wharf, the number of calling vessels and car volumes capable of handling decreased. Thus, as port development plan was required to allow capacity development of cargo handling of Mombasa Port, the project was consistent with the development needs of Kenya.

<sup>&</sup>lt;sup>1</sup> This goal is expected to be realized through mid-term / long-term time period and therefore is beyond the time frame of this evaluation. Therefore, in principle, it will not be considered within this evaluated.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy for Kenya at the time of ex-ante evaluation, as one of the priority areas is economic infrastructure development in the Country Assistance Program for Kenya (2012).

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Objectives at the Time of Project Completion>

Through the project activities, A) various related plans such as the "Strategic Plan 2013-2030" were reviewed, B) the strategic planning and management system in KPA was improved, C) KPA staff's capacity for the demand forecast was improved, and D) the final draft of "Mombasa Port Master Plan including *Dongo Kundu*" was prepared and reviewed and shared by KPA and MOTIHUDPW with related agencies. Furthermore, all necessary documents were prepared and included in the Master Plan. <Utilization Status of the Proposed Plan at the Time of Ex-post Evaluation>

The proposed plan has been utilized. The draft Master Plan, as it was, has not been officially approved, because KPA wanted the plan not only to cover the Mombasa Port but all other seaports, inland waterways and dry ports. However, KPA has utilized data and information which were in the draft Master Plan to activities including but not limited to (i) formulate the port master plan for entire Kenya including the Mombasa Port, (ii) implement Mombasa Port Development Project (Phase 1 and 2) (Container Terminal Berth 20 and 21), (iii) prepare for implementation of the Dongo Kundu Special Economic Zone Project (including Multi-purpose Berth DK-1), and (iv) develop the Kipevu oil terminal.

<Status of Achievement for Expected Goals through the Proposed Plan at the Time of Ex-post Evaluation>

The Expected Goal has been achieved by the time of ex-post evaluation. As of February 2020, among the projects which were recommended as actions to be taken by 2020, some have been already completed and under operation. For example, Mombasa Port Development Project (Phase 1) (Berth No. 20 and 21; Completed in February 2016) is complete. The berth 20 and 21 have yard capacity of 4,135 TEU (Twenty-foot Equivalent Unit), for Panamax and Post-Panamax container vessels of 20,000 DWT (Dead Weigh Ton) and 60,000 DWT respectively and are currently under operation. While Berth 22 is still under construction through Mombasa Port Development Project (Phase 2), it is anticipated to be complete within 2022. As improvement of the existing facility was be taken by 2020, the length of berth No. 19 was extended to the largest berth, which allows three Panamax vessels of up to 250 meters in length to unload containers at any given moment. Rehabilitation of the general cargo terminal (berth No.11-14) has been in the designing phase.

<Other Impact at the time of Ex-post Evaluation>

Besides the actions to be recommended by 2020, some construction projects have been started or even completed, such as the cruise ship terminal (Completed in December 2019) and the Kipevu Oil Terminal (to be completed by 2022). Since the completion of the Berth 20 and 21, total of 831,741 TEU has been handled, and the container ship turnaround time has been improved from 5.13 days in 2008 to 2.71 days in 2018. The commodity and cargo handling volume has increased. For facility construction, the concept of universal design has been reflected to assure easy access for persons with disabilities, by having wheelchair ramps and elevators at the office, etc.

Sand harvesting during construction work has been suggested to have brought some negative impact. For example, fishermen have claimed that continued sand harvesting at Diani Beach resulted in chocking and killing of some marine life and taking away their income sources. KPA is currently conducting an environmental impact assessment with consultation of stakeholders. <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Aim	Indicators	Results
(Status of achievement of	1. Dongo Kundu Port,	Status of achievement: Achieved.
the Objectives)	Mombasa development plan	(Project Completion)
	is established and shared by	- "Mombasa Port Master Plan including Dongo Kundu" (final draft) was prepared
Capacity of KPA staff	KPA and MOTIHUDPW.	and shared by KPA and MOTIHUDPW.
regarding port	2. All necessary documents	Status of achievement: Achieved.
development is enhanced.	including port development	(Project Completion)
	policy are prepared.	- All necessary documents including port development policy were prepared in the
		Master Plan.
(Utilization Status of the	(Utilization of the proposed	Status of achievement: Achieved
Proposed Plan)	Master Plan)	(Ex-post evaluation)
1		- "Mombasa Port Master Plan including Dongo Kundu" has not been approved,
		but it has been incorporated into the plan for all of the sea and dry ports and inland
		waterways in the country.
		- KPA has utilized data and information on the draft Master Plan.
(Expected Goals through	1. At least one project is	Status of achievement: Achieved.
the proposed plan)	implemented among the	(Ex-post Evaluation)
5	several number of	- Among the recommended actions up to 2020 in the Master Plan, the new
-		container terminal of Kipevu (berths No. 20 and 21) was constructed and has been
	-	under operation.
Mombasa Port Master	Mombasa Master Plan.	- The berth No. 19 was extended and has been under operation.
Plan.		- The cargo terminal (berth No.11-14) has been in the designing phase.
(Source: Project Completion	n Report, Final Report, and info	ormation from KPA.)
3 Efficiency		

#### Utilization of the Proposed Plan

Both of the project cost and period were within the plan (ratios against the plan: 98% and 100%, respectively). Outputs were produced as planned. Therefore, the efficiency of the project is high.

### 4 Sustainability

### <Policy Aspect>

The "Third Medium Term Plan (MTP III)" (2018-2022) of the "Kenya Vision 2030," has identified the improvement of shipping and maritime facilities including development of Mombasa Port. <Institutional Aspect>

The Corporate Development Department (CDD) of KPA has been mandated to prepare and review short- and long-term development strategies for ports in the country. CDD was involved in development of the Master Plan, and it has developed the "Port Strategic Plan for 2018-2022" in 2018. CDD has six technical staff for demand forecast and planning, and as it has developed the said plan and other key plans of KPA, the number of the staff has been sufficient.

<Technical Aspect>

Although many technical staff of MOTIHUDPW and KPA were trained on demand forecast by the project, they have needs for in-depth training for sustaining the techniques that were developed. MOTIHUDPW considers that they have not sufficient skills for implementation of the Master Plan, relying on external consultants to undertake demand forecast and develop long-term plans. Implementation of the Master Plan has been spearheaded by CDD and the Project Office within KPA. They have wellskilled managers, economists, and engineers. KPA has trained its management staff on port management in the country or abroad every year. Initial training mainly on Port Management and Development program has been conducted at Bandari Maritime Academy, and training has been offered for senior managers on maritime affairs or port management at World Maritime University.

<Financial Aspect>

As the table shows, the revenue has increased, and it is projected to continue increasing at 7% annually. While the operating cost is also expected to increase, but at 4% during the same period. Therefore, KPA expects that the profit would increase.

<Evaluation Result>

Statement of profit and loss of KPA (million KSHS)

		(	,				
	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
				plan	plan	plan	plan
Revenue	40,618	45,352	48,402	53,648	56,779	60,328	64,093
Operating cost	30,149	35,048	35,685	37,888	40,161	42,571	45,125
Profit before tax	x 10,469	10,304	12,717	15,760	16,618	17,757	18,968
Source: KPA Financial Report							

Source: KPA Financial Rep

In the light above, there have been some problems in the technical aspect of MOTIHUDPW. Therefore, sustainability of the effectiveness through the project is fair.

#### 5 Summary of the Evaluation

In the project, the "Mombasa Port Master Plan including Dongo Kundu" was drafted, including recommended actions. Since the time of project completion, the draft Master Plan has not been approved, but it has been part of the plan for development of all ports in the country. Most of the actions which had been recommended to be taken for 2020 have been implemented. The commodity and cargo handling volume has increased, although the project's attribution could not be strictly confirmed. Regarding sustainability, small challenges have been raised, including capacity building of MOTIHUDPW staff. However, there have not been problems in other aspects.

Considering all of the above points, this project is evaluated to be highly satisfactory.

### **III. Recommendations & Lessons Learned**

### Recommendations for Implementing Agency:

- It is recommended to establish a port division within MOTIHUDPW fully resourced to be able to coordinate port matters in the country for smooth implementation of the projects recommended by the Master Plan.

Lessons Learned:

- Among the emergent actions projects recommended by the project, some have been already completed or under operation. CDD of KPA has been in charge of preparation and review of port development strategies for ports. The project made efforts for capacity development of CDD through its participation in training and seminars and involvement in development of the master plan. Establishment and capacity development of the port planning division/department within the line ministry is important for the smoother realization of the priority project proposed by the port masterplan.

				conducted by Viet Nam Office: March, 2020	
Country Nam					
Socialist Republic of Viet		Project for Improving Public Transportation in Hanoi			
Nam					
I. Project Outline					
Background	In Hanoi City, traffic congestions had worsened due to the rapid increase in the number of vehicles. Thus, the "Transportation Plan of Hanoi City toward 2020" was formulated in 2008, and development of Urban Mass Rapid Transit (UMRT) such as subway and Bus Rapid Transit (BRT) was to be initiated with assistance from Japan, France, the Asian Development Bank (ADB) and the World Bank. Under the circumstance, it was required for bus transportation to strengthen a wide area network as a feeder transport in conjunction with UMRT such as subway, and it was also required to improve convenience and comfort in the public transportation as a whole. However, the level of service of bus transportation in Hanoi at the time of ex-ante evaluation was not necessarily high, and it was an urgent issue to promote comprehensive efforts (capacity development) in the city for service improvement of bus transportation and improvement of road transport and control of private transport modes by the Hanoi Department of Transport (HDOT) in cooperation with the traffic police etc.				
Objectives of the Project	manag transpo the ne organiz conven 1. Ov us 2. Pr	<ul> <li>Through improving capacities of the related organizations in Hanoi to conduct public transport planning and nanagement, infrastructure development, traffic control/management, promotion of modal shift from private ransport modes to public transportation and implementing improvement measures on public bus services to meet he needs of bus users, the project aimed at improving public transport management capacity of the related organizations in Hanoi, thereby promoting an increase of the number of public transport users and improvement of convenience and comfort of bus transportation.</li> <li>Overall Goal: In Hanoi, user of public transport is increased in number, and bus transportation becomes more user-friendly and comfortable.</li> </ul>			
Activities of the Project	thm           1.         Pr           2.         M           ne         lan           of         pu           Cl         pr           pr         op           3.         In           Japane         1)           2)         T           3)         T           W         4)	rough pilot activities for promoting pure oject Site: Hanoi City ain Activities: (1) Develop a database tworks and bus fare and subsidy pol- nes, bus-priority traffic signal control bus transfers and pedestrian (pilot ac- iblic debate sessions on urban transpo- lub, conduct activities to increase per comote public transportation, and deve- comote transition from private transpo-	e for public transportati e for public transpo licies; (2) Analyze system, and change stivities were not im rt problems and UM eople's awareness o elop manuals and co ort modes to public in important bus rou oduction pilot project	on. rt planning, and analyze the most appropriate bus implementation of pilot activities for bus-priority so of bus stop locations for improving convenience plemented due to the lack of budget); (3) Conduct IRT development in Hanoi, establish the Journalist on existing problems in urban transportation and induct group activities on mobility management to the transportation; and (4) Provide on-schedule bus tes in suburbs, develop instruction manuals on safe	
Project Period		July 2011 – June 2015 Ision Period: July 2014 – June 2015	Project Cost	(ex-ante) 320 million yen, (actual) 516 million yen	

Agency	
Cooperation Agency in Japan	Ministry of Land, Infrastructure, Transport and Tourism, ALMEC Corporation

Hanoi Department of Transport (HDOT)

### **II.** Result of the Evaluation

<Constraints on Evaluation>

There are gaps among Outputs > Project Purpose > Overall Goal in the assumed steps (logics) for tackling development issues stated in the Project Design Matrix (PDM, a matrix which shows the project framework) of this project. In particular, promotion of transition from private transport modes to public transportation through opening of UMRT and BRT in Hanoi is required for achieving the Indicators 1 to 3 of the Overall Goal, however, this was not stated in the PDM and UMRT was not yet operated by the time of ex-post evaluation. Thus, the achievement level of Overall Goal indicators at the time of ex-post evaluation was limited. However, as stated below, various measures analyzed under this project have been incorporated into the development plan of Hanoi city and implemented by the city's efforts since project completion, and thus in this ex-post evaluation, the evaluation was conducted taking into account various measures implemented after project completion and gaps of PDM logics as supplemental information.

1 Relevance

Implementing

<Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Viet Nam's development policy such as "development of public transportation networks including UMRT" and "reducing traffic congestions" as set forth in the "Transportation Master Plan for Hanoi City until 2020" (approved in 2008) and the "Transportation Plan of Hanoi City toward 2020" (formulated in 2008 and effective at the time of project completion) at the times of both ex-ante evaluation and project completion.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Viet Nam's development needs for improving convenience and comfort of bus transportation as a feeder transport for promotion of the use of UMRT which was under construction in Hanoi, at the times of both ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy as stated in the "Country Assistance Program for Viet Nam" (2009), which included "development of urban transportation" under "promotion of economic growth and strengthening of international competitiveness". <Evaluation Result>

In light of the above, the relevance of the project is high.

### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the time of project completion. While various activities were implemented under the project in order to promote the use of bus transportation, activities which involve facility improvements such as the bus priority lanes pilot project (including bus-priority traffic signal control system and changes of bus stop locations for improving convenience of bus transfers) could not be implemented due to the lack of budget in Hanoi city. The pilot activity on bus operation services based on time tables (departure/arrival time display in major bus stops), which was planned in the same section as the above pilot project, was also limited to providing time at the point of departure only<sup>1</sup>. However, the pilot activity on service improvement such as safe bus driving and the improvement of customer service from bus crews was successfully implemented. In the IC card introduction pilot project targeted at bus commuter pass users on the bus No.6 (the section between Hanoi station and Cau Gie), development and operational testing of the IC card issuing and renewal system and the on-board verification system were conducted. However, many problems were encountered in each system, which required one-year extension of the project period and countermeasures for improvements.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have partially continued to the time of ex-post evaluation. The activity on safe bus driving and the improvement of customer service from bus crews has continuously been implemented since project completion. The activity has been incorporated into mobility management and trainings at Hanoi Urban Transport Management and Operation Centre (TRAMOC), which is a subordinate organization of HDOT, bus operators, Hanoi Public Transportation Association and Hanoi Traffic Safety Committee. Provision of departure time at the point of bus departure has also been continued, and a smartphone application which provides a real-time bus operation status has been developed and used by many users. However, regarding the IC card introduction pilot project, while the system developed under the project was utilized until December 2015, it has not been used since then. The reasons are: (1) the system has not been operated stably including unstable internet connection, and (2) IC cards to be used in the system became out-of-stock and SIM cards for the communication devices also expired<sup>2</sup>.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved by the time of ex-post evaluation. Various measures analyzed under this project have been incorporated into the development plan of Hanoi city and implemented since project completion as follows: (1) changes/additions of bus stop locations for improving convenience of bus transfers (1,340 bus stops in total were newly established and 214 bus stops in total were relocated between 2016 and the first half of 2019), (2) bus-priority in several intersections in the city, (3) renovation of approximately 26km of sidewalks along roads which have many bus routes in the city for improving pedestrian environment, and (4) reduction of congestion in intersections by traffic control (the number of congested intersections in the city decreased from 124 in total in 2010 to 33 in total in 2018). However, regarding the Indicator 1 (travel time/speed of bus transport), according to TRAMOC, the average traveling speed of buses running within and around Hanoi city in April 2019 was 23.8km/h, of which the average speed of buses running inside of the city was 16.7km/h. It is not possible to judge whether the travel time/speed has been improved or not, as no survey on bus speed was conducted before project implementation until the time of ex-post evaluation. However, based on the situation where the number of private cars and motorbikes has increased and construction works of large facilities have been undertaken in the city, it is considered that the travel time/speed has not been improved since project completion. In this connection, regarding the Indicator 2 (the number of public transport passengers), the number of bus users in the city decreased at the time of ex-post evaluation (2018) compared with the number before project implementation (2011) by 6% (the number of bus users in 2011: approximately 483 million per year, the number of bus users in 2018: approximately 455 million per year). On the other hand, the number of users of BRT Line 1 (Kim Mã - Yên Nghĩa), which started operation in 2017, increased by 6% from 2017 to 2018 (the number of BRT Line 1 users in 2017: approximately 5 million, the number of BRT Line 1 users in 2018: approximately 5.3 million). TRAMOC analyzes that what was learned from this project such as introduction of priority bus lane which enables on-time operation based on time tables and provision of convenient bus services including information boards and audio guidance on a bus, which were all effective under the project, has been utilized in BRT. Regarding the Indicator 3 (perception of the public transport users), while there is no comparative data, according to the results of the assessment survey of the quality of public bus transport for passengers conducted by the University of Transport and Communications in 2016<sup>3</sup>, as evaluation of bus services as a whole, 20.77% answered "good/relatively good", 49.54% answered "moderate", and 29.69% answered "relatively bad/bad".

<sup>&</sup>lt;sup>1</sup> This activity was planned to display time in major bus stops based on the condition that smooth bus operation would be assured by the bus priority lanes pilot project. As the bus priority lanes pilot project was not implemented, this activity was limited to providing time at the point of departure only.

<sup>&</sup>lt;sup>2</sup> While the system developed under the project has not been utilized since 2016, the experience and lessons learnt from this project has been effectively transferred to the implementation of "Project for Supporting Development of Interoperable Smart Card System for Public Transportation in Hanoi (2017)", which aims to introduce IC cards to the public transportation system, including bus services, in Hanoi city.

<sup>&</sup>lt;sup>3</sup> The breakdown of the survey respondents was not available.

Over 80% answered that there was no problem regarding the number of bus stops, and over 90% answered "higher than moderate" for customer services provided by drivers and crews, while over 90% answered that improvements were necessary for appropriateness of bus routes. On the other hand, the proportion of BRT users who shifted from private modes of transport to BRT was 58.6% in 2018, increased by 36% from 2017, and thus, it is considered necessary to improve bus routes by increasing connectivity with BRT.

<Other Impacts at the time of Ex-post Evaluation>

No negative impact on natural environment has been observed and no land acquisition or resettlement has been occurred under the project.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement	of Project	Purpose	and Ov	erall Goal
1 Ionite , contente	01 1 10 000	1 41 0000	una o i	oran oour

Aim	Indicators	Results
(Project Purpose)	The pilot corridor is successfully	Status of the Achievement: partially achieved (partially continued)
Public transport	implemented and bus service on this	(Project Completion) The pilot activity on safe bus driving and the improvement of
management capacity of	pilot corridor is improved.	customer service from bus crews and the IC card introduction pilot project were
the related organizations		successfully implemented. However, the pilot activity on bus operation services
in Hanoi is improved		based on time tables was limited to providing time at the point of departure only,
through pilot activities for		and the bus priority lanes pilot project was not implemented.
promoting public		(Ex-post Evaluation) Since project completion, the activity on safe bus driving and
transportation.		the improvement of customer service from bus crews and provision of departure
		time at the point of bus departure have continuously been implemented, however,
		the IC card introduction pilot project has not been continued.
(Overall Goal)	1. Travel Time/Speed	(Ex-post Evaluation) not achieved
In Hanoi, user of public	1	It is not possible to judge whether the travel time/speed has been improved or not
transport is increased in		due to the lack of information. However, it is considered that the travel time/speed
number, and bus		has not been improved based on the situation where the average traveling speed of
· · · · · · · · · · · · · · · · · · ·		buses running within and around Hanoi city in April 2019 was as low as 23.8km/h,
transportation becomes		of which the average speed inside of the city was as low as 16.7km/h, the number
more user-friendly and		of private cars and motorbikes has increased and construction works of large facilities have been undertaken in the city.
comfortable.		(Ex-post Evaluation) partially achieved
	2. Number of public transport	The number of bus users in the city was decreased at the time of ex-post evaluation
	passenger/ modal share of public	(2018) compared with the number before project implementation (2011) by 6%.
	transportation	However, the proportion of BRT users who shifted from private modes of transport
		to BRT was 58.6% in 2018, increased by 36% from 2017.
	3. Perception of the public transport	(Ex-post Evaluation) partially achieved
	users	While there is no comparative data, according to the results of the assessment
	users	survey of the quality of public bus transport for passengers conducted in
		2016, as evaluation of bus services as a whole, 20.77% answered "good/relatively
		good", 49.54% answered "moderate", and 29.69% answered "relatively bad/bad".

Source: Project Completion Report, the questionnaire survey and interview with HDOT, the assessment survey of the quality of public bus transport for passengers conducted by the University of Transport and Communications (2016)

#### 3 Efficiency

Both the project cost and project period exceeded the plan (ratio against plan: 161%, 133%, respectively). However, the IC card introduction pilot project was added to project outputs during project implementation, and the planned project cost was revised to 504 million yen and the planned project period was revised to 48 months. Comparing the revised plan and result of the project cost and project period, the ratio against the plan was 102% and 100%, respectively. Therefore, the efficiency of the project is fair.

#### 4 Sustainability

<Policy Aspect>

The needs for promoting the use of public transportation in Hanoi city are stated in the "Resolution on approving the plan to strengthen road transport management for reduction of traffic congestions and environmental pollution in Hanoi city in period 2017 - 2020 and vision to 2030" (resolution number 04/2017/NQ-HDND issued on July 4<sup>th</sup> 2017) and the "Resolution on prioritizing the development of mass public passenger transport system, encouraging investment in the construction and operation of bus terminal and parking, application of high technologies in managing and operating the transportation system" (resolution number 07/2019/NQ-HDND issued on July 10<sup>th</sup> 2019). <Institutional Aspect>

Main organizations related to promotion of the use of public transportation centering on improvement of convenience and comfort of bus transportation in Hanoi city are TRAMOC, which is a subordinate organization of HDOT, and Transport and Services Corporation (TRANSERCO). TRAMOC is in charge of approval of bus routes planning/routes, analyses of fare policies, management and supervision of bus operators, subsidy management for bus operation, and activities for promoting the use of public transportation. The number of staff in charge of these tasks is 55 in total (one Deputy Director, Planning Department and Infrastructure Department:16, and Service Supervision Office: 38). According to TRAMOC, the number of staff is sufficient to properly undertake its tasks, as staff is assigned in the same way as during project implementation and planned tasks have been properly conducted every year. TRANSERCO is a state-owned enterprise in charge of bus operations services (a subordinate organization under Hanoi city People's Committee), and the number of staff is approximately 7,000. According to TRANSERCO, the number of staff is sufficient to properly undertake its tasks, as it has been able to manage various works on bus operations (i.e. policy recommendations, promotion activities, development of bus networks, bus operations, facility procurement and operation of customer centers). It should be noted however, that it is expected that tasks on opening and O&M of UMRT, coordination with various public transport management centers in the city, management of interoperable IC card system and so on would increase in the city in future, and thus a system/structure to manage them needs to be established. However, it is still under consideration in the city.

#### <Technical Aspect>

Project counterparts (C/Ps) for whom necessary technical skills were transferred under the project still work at HDOT (including TRAMOC) and TRANSERCO. C/Ps have continuously implemented many transport planning related tasks in the city after project completion, and as stated above, various measures analyzed under this project have been incorporated into the development plan of Hanoi city and implemented, and thus, the level of knowledge and skills of HDOT (including TRAMOC) is considered to be sufficient. As for staff of TRANSERCO, in addition to the knowledge and skills acquired under the project, they have aimed at streamlining and improving operations through real-time bus operation management utilizing technologies such as GPS, RFID (radio-frequency identification device) and traffic monitoring cameras and provision of services to inform bus users of bus operation status by a smartphone application, and thus, their level of knowledge and skills is considered to be sufficient to properly undertake their tasks. Regarding staff training, Hanoi Public Transportation Association provides trainings for bus drivers and crews every year, in which approximately 1,000 to 5,000 staff have participated per year. TRANSERCO also conducts staff training every year, and 236 trainings for 3,317 bus drivers, crews and operators were conducted in 2018. Manuals produced under the project (the mobility management activity manual, training manual for drivers and crews and so on) have been used as reference materials in TRANSERCO. Equipment procured under the project has continuously been utilized, however, as stated above, equipment for the IC card introduction pilot project is no longer used.

The amount of subsidy allocation for bus businesses from Hanoi city to TRAMOC was 912 billion VND in 2016, 1,297 billion VND in 2017, and 1,697 billion VND in 2018. In addition, approximately 8 billion VND was disbursed for infrastructure development such as bus stops and approximately 2 billion VND was disbursed for promotion activities in 2018. As stated above, various measures analyzed under this project have been incorporated into the development plan of Hanoi city and implemented, and thus, it is considered that a sufficient amount of budget has been secured.

<Evaluation Result>

In light of the above, slight problems have been observed in terms of the institutional aspect of the implementing agency. Therefore, the sustainability of the project's effectiveness is fair.

### 5 Summary of the Evaluation

The project had partially achieved the Project Purpose at project completion, and it partially achieved the Overall Goal at ex-post evaluation. While a part of pilot projects was successfully implemented by project completion and various measures analyzed under this project have been incorporated into the development plan of Hanoi city and implemented through the City's effort by the time of ex-post evaluation, the achievement level of Overall Goal indicators was limited. Regarding the sustainability, a slight problem was observed in the institutional aspect. Regarding the efficiency, the project cost exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

### III. Recommendations & Lessons Learned

#### Lessons Learned for JICA:

- As stated above, there are gaps in the logics of Outputs > Project Purpose > Overall Goal stated in the PDM of this project, and evaluation indicators are largely affected by external factors (such as influences of the increase in private modes of transport on traffic congestion and bus speed). Therefore, it was difficult to properly evaluate this project. In future projects, the logical framework should be designed more carefully and appropriate indicators should be set at the beginning. Baseline data should also be obtained before project implementation and kept in order to evaluate the impact of the project properly.
- As stated above, the bus priority lanes pilot project could not be implemented due to the lack of budget in Hanoi city. For activities that require the budget approval and allocation from the C/P side, JICA should ascertain its sufficient feasibility before including them into the project.



Bus Operation Center in TRANSERCO



Mobile Application for Searching Bus

Country Name					
Federal Democratic Rep	Capacity Development Project for Countermeasure Works for Landslide				
of Ethiopia					
I. Project Outline					
Background	Background The National Road No. 3, one of the main trunk roads, runs across Amhara Region, one of the largest gran of Ethiopia. It is also an important route for a crude oil transport from Sudan to Ethiopia. Among them, section that passes the Abay Gorge is a steep gorge with an altitude difference of 1,500 m, and in the ra season from June to September, a large-scale landslide covering 2 km in width repeatedly occurred, and road function was threatened.				
Objectives of the ProjectThrough (1) establishing an operational mechanism in the Ethiopian Roads Authority (ERA), (2) im emergency landslide countermeasures in a project pilot site, (3) preparing and implementing milliong-term landslide measure works in the pilot site, (4) training to ERM to enhance consultancy ca (5) conducting road disaster inspection, data collection for landslides, the project aimed at build capacity to mitigate landslide problems, thereby contributing to mitigating landslide problems					
	<ol> <li>Overall Goal: To mitigate landslide problems along the national road in Ethiopia.</li> <li>Project Purpose: To build the capacity of ERA to mitigate landslide problems</li> </ol>				
Activities of the project	<ol> <li>Project site: Pilot project site in Abay Gorge</li> <li>Main activities: (1) establishing an operational mechanism of Ethiopian Roads Authority (EF implementing emergency landslide countermeasures in the pilot site, (3) preparing and implementing emergency landslide measure works in the pilot site, (4) training to ERM to consultancy capacity and (5) conducting road disaster inspection and data collection for landslides</li> <li>Inputs (to carry out above activities)</li> <li>Inputs (to carry out above activities)</li> <li>Inputs (to carry out above activities)</li> <li>Experts: 20 persons</li> <li>Trainees received: 19 persons</li> <li>Equipment: Equipment for emergency</li> <li>Local Operational Cost: Employment of local staff, maintenance of equipment, consumables, printing, and rental fee</li> </ol>				
Project Period	June 2011-March 2016Project Cost(ex-ante) 760 million yen, (actual) 801 million yen				
Implementing Agency	Ethiopian Roads Authority (ERA)				
Cooperation Agency in Japan II. Result of the Evaluat	Kokusai Kogyo Co., Ltd. and OYO International				

### II. Result of the Evaluation

### 1 Relevance

<Consistency with the Development Policy of Ethiopia at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policy of Ethiopia. At the time of ex-ante evaluation, the "Plan for Accelerated and Sustainable Development End Poverty" (PASDEP) (2005/06-2009/10) prioritized the road sector for the socioeconomic development. At the time of project completion, the country's five-year "Growth and Transformation Plan" (GTP) (2010-2015) envisaged an accelerated growth in the agriculture and industrial sectors underpinned by massive projects of economic and infrastructural development including road network expansion.

\*Note: The above-mentioned documents were effective at the time of the surveys conducted at ex-ante evaluation and the terminal evaluation.

<Consistency with the Development Needs of Ethiopia at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the development of Ethiopia for the landslide countermeasures. At the time of ex-ante evaluation, in the section that passes the Abay Gorge of the National Road No.3 a large-scale landslide repeatedly occurred in the rainy season, and the road function was threatened. At the time of project completion, land development of road networks extended to rural and mountainous areas demanded to take appropriate technical countermeasures to control landslides.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy to Ethiopia. The "Country Assistance Program to Ethiopia" (2008) prioritized the socioeconomic infrastructure development.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved at the project completion, as both indicators namely, "Planning and implementation of landslide countermeasure for road is implemented 2 or more locations/year from 2011 to 2015" (indicator 1) and "The extent of ground subsistence is reduced in locations where countermeasure works have been implemented" (indicator 2) were attained, although no quantitative data was

#### available for the latter.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The effects of the project have partially continued after the project was completed. Planning and implementation of landslide countermeasure for road have been implemented in two or more locations every year since the project was completed up to now.

As to the ground conditions of locations where countermeasures works were implemented, some sections have been in better conditions while other sections have had subsidence and related deformations. To investigate the causes and mitigate the problem, ERA and Addis Ababa University (AAU) has planned to work together in the area and prepared a draft action plan. ERA Research Center has also prepared questionnaire to review the utilization of the results of project and review their plan.

During the project period, the scope of capacity development of ERA covered use of the landslide inventory database for planning, implementing, and maintaining landslide countermeasure works. However, after the project was completed, GIS landslide inventory database update and inspection based on GIS data has not been regularly conducted because of absence of GIS & remote sensing specialized expert in ERA. On the other hand, annual regular inspection work has continued for the pilot area (Abay Gorge) using previous findings and visual inspection. To solve the problem, ERA has planned to hire GIS Expert in the near future.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has not been verified due to the lack of data. In general, the frequency and extent of disruption have rather increased because of the following reasons: (1) ERA concentrates on controlling work (gabions, ditches and retaining wall) around landslide prone areas and emergency maintenance. Restrain works which bring better solution have not been conducted because of lack of detailed investigation, data/information and budget. (2) Increasing quarry sites and construction around the gorge disturb the ecology and make the area more susceptible to landslide. However, there is no organized data to quantify the extent of the problem. <0 the problem.

No negative impact on the natural environment by this project has been observed. During the project implementation, mitigation measures on problematic section, road realignment and construction of detour caused temporary and insignificant loss of farmland. Since the loss was temporary, the farmers have got back their land. No information on the compensation was obtained. <Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal				
Aim	Indicators		Result	ts
(Project Purpose)	Indicator 1: Planning and implementation of	Status of the Achie	evement: achieved (c	ontinued)
To build the capacity of	landslide countermeasure for road is implemented 2	(Project Completio	on)	
ERA to mitigate landslide	or more locations/year from 2011 to 2015.			oject, works of far more than 2
problems		points and more th	an 2 work methods w	were implemented.
-		Year	No. of locations	*
		2012	2 points and Emerger	ncy works before/after rainy season
		2013	6 points and Emerge	ncy works before/after rainy season
		2014	8 points and Emerger	ncy works before/after rainy season
		2015 (up to July)	4 points	
		(Ex-post Evaluation	on)	
		Year	No. of locations	
		2016	12 points	
		2017	22 points	
		2018	12 points	
		2019 up to April	7 points	
	Indicator 2: The extent of ground subsistence is	Status of the Achie	evement: achieved (p	artially continued)
	reduced in locations where countermeasure works	(Project Completio	on)	
	have been implemented	There was no quar	ntitative data to prove	e decreased numbers of extent of
		ground subsidence	. However, as a resul	It of countermeasures taken, it is
		assumed and evalu	ated extent ground s	ubsidence has been stabilized as
		compared before.	U	
		(Ex-post evaluation	n)	
		` <b>`</b>	·	), is currently in better condition
		-		ubsidence and related
				26, 30, 31, 33, 34 and 35 have
				re, rock fall, debris flow. Station
		· ·		s gabion damage, ditch collapse
		uplift on the road s	•	s gabion damage, atten conapse
(Oreginal)	Ludianten 1. En man et diamentina d'un d'un d'	Status of Achieven		
(Overall Goal)	Indicator 1: Frequency of disruption of road traffic	(Ex-post Evaluatio		
To mitigate landslide	by landslide is decreased on 2016-2020 compared	Year	Restricted Hours	No. of Occurrence (point)
problems along the	to that of before the project focusing on pilot	2010	6.5	6
national road in Ethiopia.	project area	2011	6.5	8
		2012	12.5	6
		2013	0	8
		2014	13.5	19 D.t
		2015-2018	Data missing	Data missing
		L		
	questionnaires and interviews with ERA			
3 Efficiency				

Achievement of Project Purpose and Overall Goal

Both the project cost and project period slightly exceeded the plan (the ratio against the plan: 105%, 102%). The outputs were produced as planned. Therefore, the efficiency of the project is fair.

#### 4 Sustainability <Policy Aspect>

There has been no government policy which gives special emphasis to promote landslide countermeasures. However, the importance of developing road sector and maintaining the available road for economic development has been given due emphasis in both GTP II and RSDP V (both 2015-2020).

### <Institutional Aspect>

The organizational structure for landslide countermeasures at ERA has been appropriate. Landslide and Slope Stability Team (LSST) which was established to be in charge of landslide countermeasures have been upgraded to Landslide and Geotechnical Research Team (LGST) accommodating geotechnical issues. LGST consults Regional Directorates of ERA to solve landslide and geotechnical problems and make research on the issues. Though the organizational structure has been appropriate, there has been shortage of staff at all levels at ERA. In case of LGST, the number of staff was five at the time of survey for this ex-post evaluation. ERA considered that four more staff members were needed.

#### <Technical Aspect>

In addition to the number of staff, the knowledge/skill of staff in LGST has not been enough to plan and implement landslide countermeasures. Except two staff, all other staff joined LGRT after the project was completed. ERA as a whole, twelve counterparts under the project have been still working in ERA, and two counterparts have been working on landslide, however, most ex-counterparts left ERA for better opportunities. There is no capable institution who is able to provide landslide countermeasure training adequately to the new staff. ERA exchanged Minutes of Undertaking (MoU) with Geological Survey of Ethiopia (GSE) on data collection, who were provided with the most of landslide monitoring instruments under the project and previous project. However, the most of those instruments have been unfunctional. GSE has also stopped collecting data from the functional instruments because the contract period finished. Therefore, most jobs have been done by ERA through visual inspection and secondary data reference.

In order to solve the technical problem, ERA has a plan to provide in house training for new staff, invite experts from universities for experience sharing and send staff abroad for short term trainings. Regarding the data collection, ERA signed MoU with GSE to continue the cooperation in data collection, analysis and other related areas. Though the manuals and guidelines developed under the project have not been updated, they have been utilized as reference for daily work, countermeasure work design and site assessment. <Financial Aspect>

The budget allocated for landslide measures has not been enough to apply the long-term mitigation measures introduced by the project such as soil nailing and horizontal drilling. However, it has been enough for emergency work and controlling measures, according to ERA.

		(U	Init: Ethiopian birr)
	2016/17	2017/18	2018/19
Approved Budget (1+2) *	47,554,721,000	47,102,285,638	40,416,309,832
of which, budget for landslide countermeasures	85,000,000	109,000,000	197,000,000
Source			
General Budget (1)	46,394,721,000	45,849,819,000	38,916,307,000
Road Fund(2)	1,160,000,000	1,252,466,638	1,500,002,832

#### **Budget of ERA**

### <Evaluation Result>

Therefore, the sustainability of the effects through the project is fair.

#### 5 Summary of the Evaluation

The project achieved the Project Purpose at the project completion as the both indicators set to measure the effects of the project were attained. The effects of the project have partially continued. Planning and implementation of landslide countermeasure for road have been carried out since the project was completed up to now. As to the ground conditions of locations where countermeasures works were implemented, some sections are in better conditions while other sections have subsidence and related deformations. The Overall Goal was not achieved because the disruption rather increases due to natural and human factors. As to sustainability, some problems have been observed in the policy, institutional, technical and financial aspects such as high turnover and lack of training opportunities, and the insufficient budget for long-term mitigation measures. As to the efficiency, both the project cost and project period slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

### III. Recommendations & Lessons Learned

#### **Recommendations for Implementing Agency:**

- ERA needs to coordinate its activities with all stakeholders in the area. It needs to coordinate its activities with GSE and Ethiopian Geospatial Information Agency (EGIA) to collect data and information necessary for mid and long-term planning. Also, it needs coordination with Ministry of Mines and Petroleum, which was Ministry of Mines and Energy during the project implementation, to properly manage the quarry sites and mitigate their effect on the road.
- Ministry of Transport and ERA need to coordinate their effort on long and medium term landslide countermeasure planning and resource mobilization to conduct restrain works instead of concentrating on control work and emergency maintenance.

**Lessons Learned for JICA** Considering serious capacity limitation in landslide countermeasure in the Ethiopia and complex nature of the problem, it would have been possible to improve the sustainability by planning long-term training in Japanese universities at the beginning of the project.



Retaining wall constructed by Ethiopian Roads Authority



Ditch constructed by Ethiopian Roads Authority

# Internal Ex-Post Evaluation for Technical Assistance under Finance and Investment Account

Country Name			
Republic of Per	Project for Improving Livelihood of Small-Scale Farmers in Cajamarca		
I. Project Outline	A		
Background	The macro economy of Peru was growing steadily. On the other hand, the GINI coefficient, which indicates income distribution among the population, was as high as 0.48 (2010), and the gap between the rich and the poor was still large. Thus, poverty reduction was an important issue for the country. Cajamarca Region is located in "Sierra", the mountainous areas and the poverty rate of the region was 64.5% (2007). Most of the population in the region was engaged in agriculture. Especially, a lot of small -farmers extensively produced traditional crops such as corn and potatoes under rain-fed conditions, for self-consumption and for sale in nearby markets. The average arable land of a household of the small-scale farmer was quite small. As a result, they had practically little cash income from agriculture.		
Objectives of the Project	Through established farmers' groups, improved cultivation techniques of the target crops, strengthened production chain, and improved soil conservation in Cajamarca Region, the project aimed at establishing a model to increase the income of small farmers, thereby contributing to improvement of the livelihood of small-scale farmers and the practical use of the established model in the enlightenment area. 1. Overall Goal: 1) To improve the livelihood of small-scale farmers in the target area. 2) The practical use of the established model by the Project in the enlightenment area. 2. Project Purpose: A model is created to improve the income of small farmers in the target area.		
Activities of the project	<ol> <li>Project site: Provincial Municipality of Cajabamba, Cajamarca, San Marcos, San Miguel and San Pablo of the Cajamarca Region.</li> <li>Main activities: Creation and strengthening of farmers' organizations, seed distribution of target crops (garlic, peas and purple corn), agricultural extension to farmers (sowing, fertilization, soil management, etc.), set-up of facilities for agricultural processing, support for marketing, training of farmers on soil conservation, awareness raising of the project model, etc.</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Experts from Japan: 10 persons</li> <li>Staff allocated: 85 persons</li> <li>Training in Japan: 18 persons</li> <li>Equipment: Vehicles, motorbikes, PC, equipment for seed production, equipment for agricultural</li> <li>Local cost: hiring local consultants, etc.</li> </ol>		
Project Period	July 2011 to July 2016 Project Cost (ex-ante) 657 million yen, (actual) 736 million yen		
Implementing	National Institute of Agricultural Innovation (INIA), Program of Compensations for the Competitiveness (AGRO		
Agency	RURAL), Government of Cajamarca		
Cooperation Agency in Japan	Nippon Koei Co., Ltd.		

### **II. Result of the Evaluation**

#### 1 Relevance

<Consistency with the Development Policy of Peru at the time of Ex-ante Evaluation>

As one of the strategic objectives was the "Agriculture Sector Strategic Plan" (2007-2011) was to ensure the access of the small-scale farmers to basic production services, the project was consistent with the development policies of Peru at the time of ex-ante evaluation. <Consistency with the Development Needs of Peru at the time of Ex-ante Evaluation>

Although the country economy was growing steadily, the gap between the rich and the poor was still large, as indicated by the GINI coefficient being 0.48 (2010). Most of the population was engaged in agriculture in the poverty area, and improvement of the cultivation technology for gaining cash income were needed. Thus, the project was consistent with the development needs of Peru at the time of exante evaluation.

<Consistency with Japan's ODA Policy at the time of Ex-ante Evaluation>

In the "Country Assistance Program for Peru" (2000), one of the priority areas was poverty countermeasures. Related to this, it was described that assistance would be provided through projects for improvement of living environments in impoverished regions. Thus, the project was consistent with Japan's ODA policy at the time of ex-ante evaluation. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. The "Guidelines for the Establishment of Commercial Agriculture for Small-scale Farmers" was prepared as a document that summarized the methodology and technology theory for improving the livelihood of small-scale farmers (Indicator 1), and it was approved by the Ministry of Agriculture and Irrigation. The guidelines explained the model for unifying product quality, stabilizing quantity, reducing production costs, by establishing a "systematic joint purchase, production and joint direct sales system" through collaboration among farmers and other stakeholders in the production chain. <Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued. The model for improving small farmers' income established by the project has been utilized in the target area (Provincial Municipality of Cajabamba, Cajamarca, San Marcos, San Miguel and San Pablo of the Cajamarca Region). INIA and the Regional Government (GORE) of Cajamarca have continued the technical assistance activities based on the model. Municipalities have hired technical staff who know the Model and have disseminated it within the communities. Farmer's associations have utilized the model to plan production, joint purchase (equipment, seed and fertilizer) and joint sales. According to a survey carried out by Agro Rural, 85% of farmers had a decrease in costs due to joint purchase of agricultural inputs and joint sale of their production.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goals have been achieved. The Overall Goal 1 was to increase the beneficiary farmers' income average. It was 394 Peruvian Soles (PES) during the growing period of corn (six months) in 2019, increased from 260 PES before the project, increasing by 52% (Indicator 1). According to a survey carried out by Agro Rural, out of the surveyed 65 farmers, 62 farmers (95%) answered that their income increased by more than 30% by applying the model introduced by the project, although heavy rainfall, frosts or droughts have affected their production.

The Overall Goal 2 was to diffuse the model in the enlightenment area. In the ex-post evaluation survey, it was confirmed that the model has been applied in at least 22 villages in Regions of Cajamarca, Ancash and La Libertad, where farmers' organizations have managed a production plot or growing organic purple corn (Indicator 2). INIA has conducted agricultural fairs and workshops for introducing the model in Cajamarca and also other regions including Ancash, Huancavelica, Ayacucho, Junín, La Libertad, Lambayeque and Amazonas, in cooperation with GORE Cajamarca and some local governments (district and provincial) of Cajabamba, San Miguel, San Marcos and Cajamarca. It also presented the model in the national and international events in Ecuador and Colombia. However, the model has not been applied yet as expected in other than the mentioned three regions (Piura, Amazonas, Junín, Huancavelica, Ayacucho and Huánuco). One of the possible factors is that the succeeding project for diffusing the model has not been started yet by Agro Rural. According to Agro Rural, due to the budget shortage, the pre-investment in final studies has been delayed. The project has been scheduled to start in 2021/2022, as the budget has been already allocated for the year. The model developed by the project have been applied in some areas of the two ODA loan projects, "Sierra-Natural Resources Management and Poverty Alleviation I, II, III (1997, 1999, 2000)" and "Sierra Small and Medium Irrigation Project" (2012), but expected synergy effects with these projects could not be confirmed in the expost evaluation. It was presumed as a reason that the project experience has not been much shared in the section in charge of the loan projects, and the synergy effects have not been generated so much.

<Other Impacts at the time of Ex-post Evaluation>

Firstly, a positive impact related to gender was confirmed in the ex-post evaluation. Women have come more involved in agricultural activities including planning, production process, primary processing and trade activities, through the project efforts for inviting them to training events to provide them with technical information. Secondly, INIA's efforts for diffusing the model have increased authorities' interest in growing purple corn in other regions. Thirdly, discipline in the community work has been regained, as there used to be "minga" (collaborative work in the community), according to GORE Cajamarca.

There was no negative impact on the natural environment. <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of the Project Purpose and Overall Goal				
Aim	Indicators	Results		
(Project Purpose) A model is created to improve the income of small farmers in the target area.		<ul> <li><u>Status of achievement: Achieved (Continued).</u></li> <li>(Project Completion)</li> <li>The "Guidelines for the Establishment of Commercial Agriculture for Small-scale Farmers" was prepared and approved by the Ministry of Agriculture and Irrigation.</li> <li>(Ex-post Evaluation)</li> <li>The established model has been utilized in the target area. INIA and GORE Cajamarca have continued the technical assistance activities based on the model. Farmer's associations have utilized the model to plan production, joint purchase (equipment, seed and fertilizer) and joint sales.</li> </ul>		
	<ol> <li>The income of beneficiary farmers increase by more than 30% from that of the project commencement.</li> <li>Activities of the model are applied in 27 villages in the</li> </ol>			
	enlightenment area.	<ul> <li>In Cajamarca Region, the model has been applied in 19 villages which belong to 3 provinces (Hualgayoc, Chota and Cutervo). In the 19 villages, there are five associations that have applied planned production, joint purchase and joint sales.</li> <li>In Ancash Region, a farmers' organization of Quenuayoc Village used the model during the 2017-2018 agricultural season and they managed a production plot. A small business owner has been working with INIA 601 purple corn and the model.</li> <li>In Uchuy and Vista Florida villages, located in the province of Pataz of La Libertad Region, in cooperation with private companies, purple corn sowing were conducted during 2017/2018 and 2018/2019 agricultural seasons. There has</li> </ul>		

been a farmers' organization using organically-certified purple corn.	
Source: Project Completion Report and information provided by INIA and Agro Rural.	
3 Efficiency	

Although the project period was as planned, the project cost exceeded the plan (ratio against the plan: 100% and 112%, respectively). The outputs were produced as planned. Therefore, the project efficiency is fair.

### 4 Sustainability <Policy Aspect>

Promotion of the model established by the project or support for small-scale farmers have been prioritized in "Multiyear Strategic Plan of the Agriculture Sector" (2015-2021). It has been also based on the "Law for Strengthening Productive Chains and Business Conglomerates" (2006), "Law for Transforming Agricultural and Livestock Production" (2011), "National Strategy of Rural Development" (2004), "Law for Establishing Provisions to Support Productive Competitiveness" (2019) and "Regional Agricultural Agenda of Cajamarca" (2019).

<Institutional/Organizational Aspect>

There has been no change in INIA's organizational structure to promote the model developed by the project, and it has been functioning. INIA has coordinated activities with GORE Cajamarca, AGRO RURAL, local municipalities and farmers' organizations. It has also provided technical assistance so that local technical groups could support farmers in their area, and has carried out dissemination activities in Cajamarca and other regions. INIA and AGRO RURAL, together with: GORE Cajamarca, local governments of San Miguel Province and Matara District; have held monthly meetings to prepare the proposal of the succeeding project. The number of technical personnel of INIA of Cajamarca Region has not been sufficient to further promote the model in the region due to the budget shortage. On the other hand, AGRO RURAL has the sufficient number of technical personnel working for livelihood improvement in the rural areas. <Technical Aspect>

INIA has not sufficiently sustained necessary skills to disseminate the model developed by the project. Although two experts from the Experimental Stations of Baños and Inca have worked for disseminating the model, due to budget restrictions, no new technical personnel have not been incorporated for the model diffusion, and some of the personnel who knew know-hows of the project have left the positions. On the other hand, AGRO RURAL has sustained necessary skills to disseminate the model. Its Human Resources Management Unit has strengthened their personnel's skills through the feedback for a better performance. The guidelines developed by the project have been utilized by INIA and AGRO RURAL, by distributing them to interested farmers and local governments as consultation documents, including "Manual of Commercial Production of Peas", "Manual of Commercial Production of Purple Corn" and "Guideline 'Model for establishment of the Commercial-oriented Agriculture for Increasing Farmers' Incomes through Collaboration of Stakeholders of the Productive Chain". Some materials have been shared with the "Sierra Small and Medium Irrigation Project" (2012) for training and technical assistance activities.

#### <Financial Aspect>

Both INIA and AGRO RURAL have not secured sufficient budgets to disseminate the model developed by the project. However, as agricultural development covers various sectors, and in a program which has aimed at decreasing soil degradation in the Cajamarca Region, the model has been applied, according to INIA. AGRO RURAL, regardless its budget restrictions, has carried out rural extension activities incorporating the model. To start the succeeding project, the budget has been secured for 2021/2022. <Evaluation Result>

In the light above, there have been slight issues in the institutional/organizational, technical and financial aspects. Therefore, the sustainability of the effects is fair.

# 5 Summary of the Evaluation

The Project Purpose was achieved by the time of project completion. The guidelines for improving the livelihood of small-scale farmers was developed, and the established model has been utilized in the target areas. Regarding sustainability, human and financial shortages have hindered the diffusion of the model, but the organizational structure to promote the model developed has been sustained. As for efficiency, the project cost exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

Recommendations for Implementing agency:

- It is recommended to INIA and AGRO RURAL to make use of the guidelines and other materials developed by the project in the succeeding project to accelerate the diffusion of the model in the enlightenment area in eight regions.
- It is recommended to INIA to promote the diffusion of the model in the eight regions of the enlightenment area, and also to take advantages of the sectorial budgetary programs in order to assign more personnel for further promotion of the model in the region. Lessons Learned:
- Since the time of project completion, some of the personnel who knew know-hows of the project left their positions due to the internal rotations, which has led to institutional memory losses. In counties where personnel rotations occur frequently, it is necessary that some mechanism must be established to avoid losing institutional knowledge or experiences every time there are changes in management personnel. For example, it is necessary to establish an information system, by gathering the project's information and know-hows for sustaining the project effects, storing them in reports, technical guidelines, and list of personnel involved in the project, and handing over them to new personnel.
- For a technical cooperation project related to loan projects, it is important to make a mechanism where benefits of technical cooperation project will be shown more directly to loan projects. For example, it would be effective to set indicators which are directly related to loan projects and also to have committee or conference where related agencies of loan projects participate in order to know benefits of cooperation projects from the beginning of projects.



Production of purple corn



Farmers participating in the field day

Country Name	Project on Community Tourism Development through Public-Private Partnership in Simien
Federal Democratic Republic	Mountains National Park and Surrounding Areas
of Ethiopia	

# I. Project Outline

In order to solve p	11 $(1 1 1 - 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 +$			
Background by the expansion promoted voluntar for the community as increase in for sufficient.	In order to solve problems of damaged environment of the Simien Mountains National Park (SMNP), caused by the expansion of agricultural land as well as grazing, the Ethiopian federal and regional governments promoted voluntary immigration as well as alternative livelihood measures including tourism as an incentive for the community people within the core zone to resettle in the buffer zone of SMNP. Although progress such as increase in foreign visitors and tourism revenue, measures for sustainable tourism promotion was not sufficient.			
ObjectivesoftheProject1.Overall Goal: through increat 2.Projectworld Heritag	<ul> <li>Through (1) mutual cooperation by establishing working groups of tourism related organizations and providing training, (2) providing training on tourism marketing and promotion, (3) developing tourism products, and (4) developing Simien Community Tourism Management and Development Plan (SIMCOT-MDP), the project aimed at establishing mechanism for the community tourism to benefit local communities, thereby contributing to improvement in livelihood of the local communities and realization of sustainable community tourism.</li> <li>1. Overall Goal: Local communities improve level of livelihood and realize sustainable community tourism through increasing participation in tourism activities in the Simien Mountains National Park.</li> </ul>			
Activities of the project Debark Town, 2. Main activitie and providing products, and 3. Inputs (to carry Japanese Side 1) Experts: 14 2) Trainees receiv 3) Equipment: facsimile, proj 4) Local Operation	$ \lambda$ Hacilities we obtain the space in Conder Lown and			
Project Period November 2011-Fe (Extended perio 2014-Februray 201	od: December Project Cost (ex-ante) 270 million yen, (actual) 481 million yen			
Implementing Agency -	Ethiopian Wildlife Conservation Authority (EWCA), Amhara National Regional State, Bureau of Culture, Tourism and Parks Development (ANRS-BCTPD)			
Cooperation Agency in Japan Hokkaido Universi	<sup>1</sup> Hokkaido University, PADECO Co., Ltd.			

# II. Result of the Evaluation

<Special perspective of evaluation to be considered)

• Continuation Status of the project effects (Indicator 1 and 2) was evaluated under the Overall Goal, as some indicators of the Overall Goal were set as the continuing status of project effects.

1 Relevance

<Consistency with the Development Policy of Ethiopia at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policy of Ethiopia. At the time of ex-ante evaluation, the "Growth and Transformation Plan" (GTP) (2010/11-2014/15), the five-year national development plan, articulated that culture and tourism play a critical role in socio economic and political strategy of Ethiopia. The objectives of the culture and tourism sector in GTP included sustainable tourism development and promotion of community participation. At the time of project completion, the policy on the tourism development stipulated that the promotion of Community Based Tourism (CBT) was one of the important elements for the development.

<Consistency with the Development Needs of Ethiopia at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the development needs of Ethiopia for community tourism. At the time of ex-ante evaluation, SMNP was described in the world heritage list in 1978. However, the environment was damaged by the expansion of agricultural land as well as grazing, and the park was put on the list of the World Heritage sites in danger in 1996. At the time of project completion, the risk of environmental damage by the society continued as though there is no clear data, as even during project implementation, the number of people in the premises of SMNP was increasing.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy to Ethiopia. Poverty reduction was an objective of the "Country Assistance Program for the Federal Democratic Republic of Ethiopia" (June 2008). It prioritized agriculture and rural development.

<Appropriateness of Project Design/Approach>

Although the project design was consistent with the needs, the project lacks coordination of the two counterparts (Amhara Culture and tourism Bureau and Ethiopian wild life conservation authority) as well as follow-up problem due to political instability in the area after project completion.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved at the project completion. While Simien Mountains Community Charity Association: SIMCOT-CA, as a destination marketing organization, was established and community fund was proposed (Indicator 1), viable public policy support program for community tourism was not included in SIMCOT-MDP, though the project developed concrete and specific knowhow to implement the activities indicated in the plan and tried to disseminate that plan to other sectors (Indicator 2) and the meetings on the preparation of ordinances or other policies regarding the promotion of community tourism and PPP were not held (Indicator 3). <Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has not been achieved by the time of ex-post evaluation. During the project implementation, the project established two community cooperative associations (number of founding members were 152 and 99 respectively) in Argin Joana Kebele<sup>1</sup> as model associations for which community tourism products were developed to scale up to other communities under SMNP (Indicator 1), have not been functional (Indicator 2), due to lack of support from the governments and limited revenue sources. However, community people were benefitted from the tourism products developed under the project such as coffee ceremony, Injera baking, local beer, weaving, and black smith, hair dressing and herbs as products to attract tourists and to improve the livelihood of the community, according to the officials of the Kebele and community people. No information was obtained on the number of community members who participated in tourism activities. Some positive effects on a newly established eco-tourism association was found as some members participated in the training under the project and developed the idea given by the project.

A mechanism of community tourism established by the project has not continued, as SIMCOT-CA which was established in order to market community tourism with its own fund has not been active and functional after the project was completed, because SIMCOT-CA was not institutionalized and cooperation mechanism with the government organizations was not set up before the project was terminated. Hence, no community tourism fund has been established (Indicator 3).

There is no clear evidence that show SIMCOT-MDP referred during the preparation of tourism development strategies (Indicator 4). However, during annual plan preparation by Office of Culture and Tourism at Debark Woreda and North Gonder Zone, the tourist destination identified by the project has been taken as a good model to use it as source of tourism.

<Other Impacts at the time of Ex-post Evaluation>

No negative impact on the natural environment by this project has been observed. During the project period, resettlement of communities was done two times by continuous efforts by the Government of Ethiopia to protect the park from endanger. The resettlement program was carried out and compensation was paid. 206 household left their farmland and resettled around Debark City. Out of 206 households, 166 households have gotten residence land from Debark City Administration freely and 40 of them are still waiting. After the resettlement program, UNESCO erase the park from the endanger list. Those people were farmers and may not have exposure to generate their own income in the urban area, and they may suffer to improve their livelihood in their future life.

The project may have created a sense of unfairness among the communities. Although two model communities were selected as a pilot to use this experience to scale up throughout the park, other communities located in different area of SMNP did not understand this higher goal and complained about the unfair selection of the tourist destination.

Some positive impacts have been observed on gender aspect. The project encouraged the involvement of the women in the tourism sectors. In rural area of Ethiopia, people consider, as women are not generating their income. However, the project introduced new products as source of tourism and some of those products were prepared by women. Thus, women started to be involved with the income generation through tourism.

# <Evaluation Result>

Therefore, the effectiveness/impact of the project is low.

Achievement of Project Purpose and Overall Goal					
Aim	Indicators	Results			
(Project Purpose)	Indicator 1: As a result of evolution of Project	Status of the Achievement: Achieved (Not continued)			
Mechanism for the	Coordination Committee (PCC) and Working	(Project Completion)			
community tourism to	Group (WG), the establishment of a kind of	Establishment of the organization: On 10 June 2015, SIMCOT-CA was			
benefit local communities	destination marketing organization (DMO) and	formally registered. SIMCOT-CA was established with the participation			
is established through	community tourism fund are proposed for the	of various stakeholders in order to market community tourism with their			
Public-Private Partnership	promotion of community tourism, and necessary	own fund.			
(PPP) in the Simien	legal framework is proposed, in consideration of	Source of fund: The following source of fund was proposed.			
Mountains National Park,	mainstreaming/integration into the existing	a. Heritage Cooperation Donation: In addition to the entrance fee, a			
which is registered as	institutional mechanism.	certain amount of money will be collected from tourists as a Heritage			
World Heritage Site.		Cooperation Fund by clarifying the use of said funds.			
		b. Revenue from tour operations: Revenue from tour operations through			
		the activities of SIMCOT-CA is one of expected sources of funds.			
		c. Donations: Clear explanations of the objective or activity plan of the			
		foundation will be made to domestic and international donors, to acquire			
		donations.			
		Heritage Cooperation Donation requires changes in the current regulation			

<sup>&</sup>lt;sup>1</sup> Kebel is an administrative unit under Woreda, which belongs to Zone, then Region

(Overall Goal)         Indicator 1: Number of least 20%.         Status of the Approxement is a social of a property and the property organs are included in splans indicated in the SIMCOT-MDP.           (Overall Goal)         Indicator 1: Number of least 20%.         Status of the Approxement is a social of a splans indicated in the SIMCOT-MDP.           (Coverall Goal)         Indicator 1: Number of least 20%.         The meetings on the propartice of community tourism and PPP seed on the community coursement is a social of a splans with the sets of the active set statement is a spendion of community tourism and PPP sets of the Activement is the active set statemed (Nat activeed.)           (Coverall Goal)         Indicator 1: Number of least community courses and PPP sets of the active set statement is a spendion of community tourism and PPP sets of a during the propartice of the active set statement is a spendion of community tourism and PPP sets of the active set statemed (Nat activeed.)           (Coverall Goal)         Indicator 1: Number of least community courses and PPP sets of the active set statement is a spendion of community tourism and PPP sets of the active set statement is a spendion of a spendion in the SIMCOT-MDP.           (Coverall Goal)         Indicator 1: Number of least community courses and PPP sets of the active set statement is a spendion of community tourism and PPP sets of the active set statement is a spendion of community tourism and PPP sets of the active set statement is a spendion of community tourism and PPP sets of the active set statement is a spendion of the active set statement is a spendion of community tourism and PPP sets is a spendion of the active set statement is participating in stouris activities with lenges of the acopy set subalismet			
(Overall Goal)         Indicator 1: Number of local community tourism and plans indicated in the SIMCOT-MDP.         (Expost evaluation)           (Overall Goal)         Indicator 1: Number of local community tourism and plans indicated in the SIMCOT-MDP.         (Frequencing the promotion of community tourism based on the recommendations and plans indicated in the SIMCOT-MDP.           (Overall Goal)         Indicator 1: Number of local community tourism activities will increase from the preparation of ordinances or other policies regarding the promotion of community tourism serve for and the SIMCOT-MDP.         - The meetings on the preparation of ordinances or other policies regarding the promotion of community tourism server found that EWCA have been prevent the control of the communities in the SIMCOT-MDP.           (Overall Goal)         Indicator 1: Number of local community members         Indicator 1: Number of local community members           Increasing participation in tourism activities will increase from increasing participation in tourism activities in the curve, after the project have not be activities. However, after the project have not be second through percent with the save in figure.           Indicator 2: A mechanism of community tourism fund, which will be cased for management of courism destination, will be cased for management of courism destination, will be cased for management of courism destination, will be cashibished by the Project is continonally working in some of the con-ourism association mababator 7.000 memerkers. SIMCOT-MDP refered		viable public policy support programs are included in SIMCOT-MDP for executing and promoting	<ul> <li>(Ex-post evaluation)</li> <li>Refer to Indicator 2 of Overall Goal</li> <li>Status of the Achievement: Partially achieved (Partially continued)</li> <li>(Project Completion)</li> <li>The project developed concrete and specific knowhow to implement the activities indicated in the plan such as promotion and developing community tourism products and tried to disseminate that plan to other</li> </ul>
At least concerned 3 Woredas and 1 Town hold meetings on the preparation of ordinances or other policies regarding the promotion of community tourism and PPP, based on the recommendations and plans indicated in the SIMCOT-MDP.       (Project Completion)         • The meetings on the preparation of ordinances or other policies regarding the promotion of community tourism and PPP, were held       • The meetings on the preparation of ordinances or other policie regarding the promotion of Ecotourism         (Overall Goal) Local communities improve level of itvelihood and realize sustainable community tourism activities will increase from fuctorism participating in tourism activities will increase from fuctorism through increasing participating in tourism activities will increase from fuctorism participating in tourism activities will increase from fuctorism through increasing participation in tourism activities in the Simien Mountains National Park.       Indicator 1: Number of local community members participating in tourism activities will increase from 4.200 participants by at least 50%.       Status of Achievement: Partially achieved (Ex-post evaluation) - The charity association at the time of the ex-post evaluation. Interviewed with personnel at Argin Jona Kebele indicated that communities had stated to get benefit through participating to activities. Indexet that shows how many people are getting benefit from project and that have developed the idea of SIM on how to participated in the training that was prov by SIMCOT-CA have been strongly working in SIMNP. This association members. Some of the eco-tourism association members. Some of the eco-tourism association members. Participated in the training that was prov by SIMCOT project and they have developed the idea of SIM on how to participated in the training that was prov by SIMCOT project and thave activeded have no been functioning.			project life. However, no policy support programs were included in SIMCOT-MDP. (Ex-post evaluation) Refer to Indicator 4 of Overall Goal
Indicator         Indicator <thindicator< th="">         Indicator         <thindicator< th="">         Indicator         <thindity th="" tourism<=""> <thindicator< th="">         &lt;</thindicator<></thindity></thindicator<></thindicator<>		At least concerned 3 Woredas and 1 Town hold meetings on the preparation of ordinances or other policies regarding the promotion of community tourism and PPP, based on the recommendations	<ul> <li>(Project Completion)</li> <li>They did not prepare any kind of policies regarding the promotion of community tourism based on the recommendation plans indicate</li> </ul>
<ul> <li>(Ex-post Evaluation)</li> <li>(Ex-post Evaluation)</li></ul>	(Overall Goal)	Indicator 1: Number of local community members	(Ex-post evaluation) At the time of ex-post evaluation, though no policies have been prepared the ex-post evaluation survey found that EWCA have been developing a strategy that incorporates promotion of Ecotourism
<ul> <li>Both of SIMCOT-CA, as well as two Argin Jona cooperative associative associatity associat</li></ul>	Local communities improve level of livelihood and realize sustainable community tourism through increasing participation in tourism activities in the Simien Mountains	participating in tourism activities will increase from 4,200 participants by at least 50%.	<ul> <li>(Ex-post Evaluation)</li> <li>The charity associations established by the project have not been active and functional at the time of the ex-post evaluation. Interviewed with personnel at Argin Jona Kebele indicated that the communities had started to get benefit through participating tourism activities. However, after the project termination, there is no evidence that shows how many people are getting benefit from the project and it is not possible to compare status with the base line figure.</li> <li>However, an eco-tourism association that was established after SIMCOT-CA have been strongly working in SMNP. This association has about 7,000 members. Some of the eco-tourism association members participated in the training that was provided by SIMCOT project and they have developed the idea of SIMCOT on how to participate on tourism activities.</li> </ul>
<ul> <li>will be established by contribution from local tourism revenue.</li> <li>Indicator 4: There will be a clear evidence that the SIMCOT-MDP is referred to during the preparation of national tourism strategies.</li> <li>Status of Achievement: partially achieved</li> <li>There is no clear evidence that shows SIMCOT-MDP referred during the preparation of tourism development strategies. How during annual plan preparation by Office of Culture and Tourist the tourist destination identified by SIMCOT has been taken a good model to use it as source of tourism.</li> <li>In addition, there was an agreement between ANRS-BCTPD EWCA has been started to develop the overall master plan for tourism sector in Amhara Region based on SIMCOT project identified by SIMCOT project iden</li></ul>		established by the Project is continuously working through PPP. Indicator 3: A community tourism fund, which will	Both of SIMCOT-CA, as well as two Argin Jona cooperative association have not been functioning. Status of Achievement: Not achieved
<ul> <li>SIMCOT-MDP is referred to during the preparation of national tourism strategies.</li> <li>There is no clear evidence that shows SIMCOT-MDP referred during the preparation of tourism development strategies. How during annual plan preparation by Office of Culture and Touris the tourist destination identified by SIMCOT has been taken a good model to use it as source of tourism.</li> <li>In addition, there was an agreement between ANRS-BCTPD EWCA has been started to develop the overall master plan for tourism sector in Amhara Region based on SIMCOT project identified by SI</li></ul>		will be established by contribution from local tourism revenue.	
turnover of officiers and officials and others.		SIMCOT-MDP is referred to during the preparation	<ul> <li>There is no clear evidence that shows SIMCOT-MDP referred during the preparation of tourism development strategies. However, during annual plan preparation by Office of Culture and Tourism, the tourist destination identified by SIMCOT has been taken as a good model to use it as source of tourism.</li> <li>In addition, there was an agreement between ANRS-BCTPD and EWCA has been started to develop the overall master plan for tourism sector in Amhara Region based on SIMCOT project idea. However, not yet implemented because of budget constraint, high</li> </ul>
Source : JICA documents, questionnaires and interviews with ANRS-BCTPD, Debark Zone and Debark Woreda Culture and tourism office and EW 3 Efficiency		questionnaires and interviews with ANRS-BCTPD, I	Debark Zone and Debark Woreda Culture and tourism office and EWCA

The project cost significantly exceeded the plan (the ratio against the plan: 178%) and the project period exceeded the plan (the ratio against the plan: 142%). The project period exceeded the plan because in accordance with the result of terminal evaluation, the project was extended in order to improve village tour products and strengthen the promotion. The outputs were produced as planned. Therefore, the

efficiency of the project is low.

# 4 Sustainability

# <Policy Aspect>

The government policy has given special emphasis to promote tourism. After H.E. Dr. Abiy Ahmed came to power, he made drastic reforms to strengthen the tourism industry. This organizational reform has been done and published by the Federal Negarit Gazette on 29 November 2018 by proclamation No. 1097/2018. The duties and power of Tourism Ethiopia, which is a new organization formed under Prime Minister Office have been mentioned clearly on this proclamation. The tourism sector was reorganized under Prime Minister Office to give high emphasis for the tourism sector. And tourism is a pillar on the new economic reform by the government. However, there has been no specific policy on promoting community tourism.

<Institutional Aspect>

SIMCOT-CA, which was established during the project and was expected to market community tourism with its own fund, however, it has not been functioning at the time of ex-post evaluation. It was found that both EWCA and ANRS-BCTPD had no clear demarcation to support the tourism sector in general and SIMCOT-CA or SITCOM-MDP in particular. At the time or ex-post evaluation, the interviewed government officials both at tourism organizations at different level and EWCA said that they would support SIMCOT-CA and SIMCOT-MDP, however, there has been no written document or they have not been incorporated on their annual plan. <Technical Aspect>

Although SIMCOT-CA was not active, still one of the community associations (ArginJona Kebele Chennek Community Handicraft Cooperative Association)") wanted to reactivate the association to be actively involved on the tourism sectors. The community had an idea how to attract the tourist in their area. However, they need refreshment training and support from the government officials. On the government side, due to budget and logistic constraint, it has been difficult to give special support to the associations in Argin Kebele, because of the distance from the Debark city where the North Gondar and Debark Woreda Culture and Tourism office is located. <Financial Aspect>

No budget was secured as no institutional set up is clear.

<Evaluation Result>

Problems have been observed in terms of institutional, technical and financial aspects as a result of discontinuity of institutional setup, the sustainability of the effects through the project is low.

# 5 Summary of the Evaluation

The project achieved the Project Purpose was partially achieved at the project completion. SIMCOT-CA as the destination marketing organization was established, however, viable public policy support program for community tourism was not developed and the meetings on the preparation of ordinances or other policies were not held. The Overall Goal has not been achieved. There has been no clear evidence on the number of community members who has participated in the community tourism activities, SIMCOT-CA, which was expected to function as a mechanism of community tourism has not continued. As for sustainability, some problems have been observed in institutional, technical and financial aspect. As to the efficiency, both the project cost and the project period considerably exceeded the plan.

Considering all of the above points, this project is evaluated to be unsatisfactory.

# **III. Recommendations & Lessons Learned**

# **Recommendations for Implementing Agency:**

- SIMCOT-CA and community cooperative associations should reactivate their functions to generate income for the community and to improve the livelihood of the community in the park. In addition to that, there should be a discussion with responsible government organizations such as North Gondar Zone and Debark Woreda Culture and Tourism Office, Ethiopian Wildlife Conservation Authority, Debark Woreda Micro and Small Scale Enterprises to include SIMCOT-CA support into their annual plan. Especially, North Gondar Zone and Debark Woreda Culture and Tourism Office need to take initiatives. Also, it is recommended that sufficient resource has to be allocated to provide refreshment training for all relevant counterparts, as reshuffling of the higher officials as well as turnover of experts happen frequently.
- The Government of Ethiopia needs to provide the way to generate their sustainable income to improve their livelihood. Also, the government may need to raise awareness on resettlement to appreciate the resettlement program rather than complain.

# Lessons Learned for JICA:

Considering the situation that SIMCOT-CA, ArginJona Kebele Chennek Community Handicraft Cooperative Association, and ArginJona Kebele Ambarass Community Cultural Production Processing Cooperative Association have not been functional after the project was completed, JICA has to take into consideration about the sustainability of the project that have more than one counterpart organization.



The interview with Ambarass local community

The satellite center at Ambarass local Community

Country Name	Technical Cooperation in Capacity Development for the ASDP Monitoring and Evaluation System			
United Republic of Tan	(The Phase 1 Project) ia Project for Capacity Development for the ASDP Monitoring and Evaluation System Phase 2 (The Phase 2 Project)			
I. Project Outline				
Background	<ul> <li>The Agricultural Sector Development Programme (ASDP) became operational in 2006, which was a long-term process designed to implement the Agricultural Sector Development Strategy (ASDS). In order to implement and further improve the ASDP, it was important to establish an effective and feasible monitoring and evaluation (M&amp;E) framework. The ASDP M&amp;E Thematic Working Group (M&amp;E TWG) was established and one of the tasks of M&amp;E TWG was to improve routine data system in the agricultural sector. Since the agricultural routine data system (ARDS) which delivers agricultural data from Local Government Authorities (LGAs) to the Agricultural Sector Lead Ministries (ASLMs) had not been functioning properly, it had hindered effective monitoring of the ASDP.</li> <li>Based on the success of the implementation of ARDS in pilot LGAs, it was planned to roll-out the improvement of ARDS nationwide.</li> <li>Through formulating ARDS, providing training, test implementation of ARDS in the pilot LGA and others, the project aimed at establishing ARDS and conducting M&amp;E based on it, thereby contributing efficient operation of ASDP M&amp;E in a coordinated manner.</li> <li>[Phase 1]</li> <li>Overall Goal: Agricultural Routine Data System is effectively used nationwide for Monitoring and Evaluation of the ASDP.</li> <li>Project Purpose: An effective Agricultural Routine Data System for the ASDP M&amp;E framework to be developed from village to central levels is established</li> <li>[Phase 2]</li> <li>Overall Goal: ASDP Monitoring and Evaluation (M&amp;E) is improved through interactive operation of relevant activities such as National Sample Census of Agriculture, National Panel Survey and Agricultural Routine Data System (ARDS).</li> <li>Project Purpose: ASDP M&amp;E is conducted on the basis of national agricultural data collected through Routine Data System (ARDS).</li> </ul>			
Objectives of the Project				
Activities of the project	<ul> <li>improvement of ARDS.</li> <li>Project site: <ul> <li>[Phase 1] 4 pilot LGAs in Morogoro and Dodoma regions</li> <li>[Phase 2] Entire Tanzania (All 133 LGAs as at ex-ante evaluation, 168 as at project completion)</li> </ul> </li> <li>Main activities: <ul> <li>[Phase 2] Entire Tanzania (All 133 LGAs as at ex-ante evaluation, 168 as at project completion)</li> </ul> </li> <li>Main activities: <ul> <li>[Phase 1] 1. Development of a ARDS model, 2. Training, 3. Revision of ASDP M&amp;E guidelines and others</li> <li>[Phase 2] 1. Conducting training on ARDS, 2. Strengthening M&amp;E TWG's backstopping activities for ARDS, and 3. Coordination of ASDP M&amp;E</li> </ul> </li> <li>Inputs (to carry out above activities) <ul> <li>[Phase 1]</li> <li>Japanese Side</li> <li>Tanzanian Side</li> <li>1) Experts: 4 persons</li> <li>2) Offices for JICA project team and arrangement of vehicle</li> <li>and others</li> <li>4) Local expenses: Operating cost, training expenses and others</li> <li>[Phase 2]</li> <li>Japanese Side</li> <li>Tanzanian Side</li> <li>1) Experts: 5 persons</li> <li>2) Trainees received: 13 persons</li> <li>2) Local cost: Training expenses and others</li> <li>3) Equipment: Cars, motorcycles, computers, 3) Local cost: Training expenses and others</li> <li>and and facilities: Project office</li> <li>3) Equipment: Cars, motorcycles, computers, 3) Local cost: Training expenses and others</li> <li>4) Local expenses: Training expenses and others</li> </ul> </li> </ul>			
Project Period	[Phase 1][Phase 1]March 2008-March 2011Project Cost[Phase 1][Phase 2]August 2011-June 2015[Phase 2](ex-ante) 560 million yen, (actual) 733 million yen			
Implementing Agency	<ul> <li>[Phase 1] &amp; [Phase 2]</li> <li>Agriculture Sector Lead Ministries (ASLMs) : Ministry of Agriculture, Food Security and Cooperatives (MAFC, Currently Ministry of Agriculture, MoA), Ministry of Livestock Fisheries Development (MLFD), Ministry of Industry and Trade (MIT), and President's Office - Regional Administration and Local Government (PO-RALG) (Formerly, Prime Minister's Office - Regional Administration and Local</li> </ul>			

	Government (PMO-RALG) - M&E TWG
Cooperation Agency in Japan	[Phase 1] & [Phase 2] International Development Center of Japan Inc.

# **II. Result of the Evaluation**

# [Special perspective to be considered by the ex-post evaluation]

As objectives of the Phase 1 project and the Phase 2 project are common, the Overall Goal of the Phase 2 project is used as the common Overall Goal of the two projects. As the indicators of the Project Purpose of the Phase 1 project is embraced in the Phase 2 project, the continuation status is verified under the Phase 2 project.

1 Relevance

<Consistency with the Development Policy of Tanzania at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policy of Tanzania. Both at the time of ex-ante evaluation and project completion of the Phase 1 project as well as the ex-ante evaluation of the Phase 2 project, ASDS delineated how the agricultural sector contributes to the "National Strategy for Growth and Reduction of Poverty" (NSGRP) (2005). The project aiming to strengthening M&E institutional structure was indispensable to measure the degree of achievement of outcome of ASDP as well as that of its superior policy of NSGRP. At the time of project completion of the Phase 2 project, ARDS which was the target of the project, occupied an important position in the overall Tanzania agricultural data (statistics) system as defined in the "Agricultural Statistics Strategic Plan" (June 2014). Moreover, a program document was under preparation for ASDP 2, within which a M&E system was envisioned, including ARDS as part of the overall arrangement.

<Consistency with the Development Needs of Tanzania at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the development of Tanzania for the strengthening of M&E for agricultural sector. At the time of ex-ante evaluation of the Phase 1 project, in order to further improve the ASDP, it was important to establish an effective and feasible M&E framework. At the time of project completion of the Phase 2 project, ARDS occupied an important position in the overall Tanzania agricultural data (statistics) system as defined in the Agricultural Statistics Strategic Plan, as described above.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy to Tanzania. Growth and Reduction of Income Poverty was one of the priority areas under the "Country Assistance Program for Tanzania" (June 2008). Agriculture was one of the most important sectors under this category. <Evaluation Result>

In light of the above, the relevance of the project is high.

## 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

[Phase 1]

The Project Purpose was achieved by the time of project completion, as all indicators set to measure the effects of the project were achieved and ARDS was established.

[Phase 2]

The Project Purpose was partially achieved by the time of project completion, as "Utilization of data collected through ARDS by ASDP etc." (indicator 1) was not achieved and "A number of the DADPs (District Agriculture Development Plans) planned or revised based on the results of analyzing the data collected through the ARDS." (indicator 2) was partially achieved.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The effects of the project have partially continued after the project was completed. Submission rate of ARDS monthly reports by wards to LGAs has reached 90%. The rate has increased because of (1) improvement of ARDS web portal usability, (2) understanding of usefulness of ARDS, (3) improvement of internet access in rural area, (4) follow-up by the central government. The ARDS data submission rate and its use in LGAs level have increased last three years. However, the data utilization in the central government has not partly progressed due to government delay of establishing M&E framework. 109 out of 184 LGAs have developed DADPs. The number of LGAs which have developed DADPs has been limited because agricultural budget disbursement from the central government to LGAs have been continuously low since 2016. Therefore, many LGAs have lost their motivation to formulate DADPs. Nonetheless, most of the LGAs that developed DADPs have utilized the ARDS data.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved by the time of ex-post evaluation. Although challenges exist (e.g. limited budget, unstable working environment caused by government shift to Dodoma), established coordination around ARDS has been maintained. There were overlap among agricultural statistics (e.g. National Sample Census of Agriculture (NSCA), Annual Agricultural Sample Survey (AASS), Small Area Estimate (SAE), National Food Security Survey, etc.) with less coordination before. However, Government led by M&E TWG and stakeholders gradually understood pros and cons of each tools then finally came up with ASDP 2 Result Framework with clarifying data sources of each indicators. The meetings on ASDP M&E coordination have been regularly conducted, though less than the expected, and has discussed mainly monitoring, training planning, and area to improve. In addition, the meetings have talked about M&E overall issues such as ASDP 2 Result Framework.

<Other Impacts at the time of Ex-post Evaluation>

No negative impact on the natural environment by this project has been observed, and there has been no land acquisition and resettlement.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

	remevement of ridgeet rupose and overall doar					
Aim	Indicators	Results				
[Phase 1]	Indicator 1: Routine agricultural reports (latest	Status of the achievement: achieved				

financewark to be developed from village and work level at plict developed from village to approve the plict show and work level at plict Directive are made would finally reach the central level (ASIM softicials).         Status of the achievement: extreved the central level (ASIM softicials).           Indicator 1-1: ASLMS (Direct).         Director is are made would be plict Director through LGMD2 (LGMI softicials).           Indicator 1-2: Within the determined perind, the plict Relative schede and period schede and period through LGMD2.         Status of the achievement: partially achieved plict Relative schede and period schede and per	(Project Purpose) An effective Agricultural Routine Data System for	version of Ward Agriculture Extension Officer (WAEO)/Village Agriculture Extension Officer (VAEO) format & Integrated Data Collection		e pilot districts were available at each ding the members of the M&E TWG (ASLMs
entral levels is established         Districts are made variables, and finally reach the established         Status of the achievement: achieved (Project Completion) (Morthers of the M&F TWG were able to access the the data wither ac abunicated the pilot Brierics through LGMD2 (Local Government Montering Databases 2).           Indicator 1-1: 2Whith the determined period, the pilot Regime sched and papers the data without period statistics through LGMD2.         Status of the achievement: achieved (Project Completion)           Indicator 1-3: The 4 pilot districts through LGMD2.         Indicator 1-3: The 4 pilot districts through LGMD2.           Indicator 1-3: The 4 pilot districts through LGMD2.         The pilot regions checked the data submitted by the pilot districts through request requests through (CMDC) to review mission figures and errors in role to improve the adva of the achievement: achieved (Project Completion)         The pilot regions through LGMD2.           Indicator 1-1: Vilita to represerve pilot Region in the form mission figures and errors in role to improve the adva of the achievement: achieved (Project Completion)         Status of the achievement: achieved (Project Completion)           Indicator 2: Progress and final results of ARDS development is reported to Containte of ARDS development is reported to Containte of ARDS development is achieved at the achieved of threids the XMD ArD format is latest form regularly.           Philes 2] (Project Completion)         Status of the achievement: achieved (project Completion)           ARDS by ASDP etc.         ARDS by ASDP etc.           ARDS by ASDP etc.         SARD Ard to Saburest of the ARDS that for ARDS and fithe Alevene	the ASDP M&E framework to be		- · · ·	
the data which are advorted by the pilot Districts (brough LOMD2 (Local Government Monitoring, Database 2).         (Project Completion) Members of te MAE TWG were able to access the data of the pilot districts through LOMD2.           Indicator 1-3: The 4 pilot districts through LOMD2.         Status of the achievement: partially achieved (Project Completion)           Indicator 1-3: The 4 pilot districts theods the data which are submitted by WAEO-VAEOs and request respective WAEO-VAEOs to review masked figures and errors in order to improve the data. Within the determined period, required data asked for revision an accessary: They also submitted the data to the pilot data. Within the determined period, required data asked for revision an accessary: They also submitted the data to the pilot data. Within the determined period, required data asked for revision an accessary: They also submitted the data to the pilot data. Within the determined period, required data is reporter using LGMD2.           Indicator 1-4: Villages and ward extension offfer which data using the latter version of WAEO-VAEO format to respective District.         Status of the achievement: achieved (Project Completion)           WAEO-VAEO format to respective District.         Status of the achievement: partially achieved (Project Completion)           WAEO-VAEO format to respective District.         Status of the achievement: partially achieved (Project Completion)           WAEO-VAEO format to respective District.         Status of the achievement: partially achieved (Project Completion)           WAEO-VAEO format to respective District.         Status of the achievement: partially achieved (Project Completion)           WAEO-VAEO format to respectiv	developed from village to central levels is established	Districts) are made available, and finally reach the central level (ASLMs officials).		
pilot Regions check and approve the data which are (Preject Completion)         The pilot regions checked the data submitted by the pilot districts through (TrAID2)           Indicator 1-3: The 4 pilot districts check the data which are submitted by WAEO/VAEOs and the pilot districts checked the data submitted by WAEO/VAEO and the pilot districts checked the data submitted by WAEO/VAEO and the pilot districts checked the data submitted by WAEO/VAEO and the pilot districts checked the data submitted by WAEO/VAEO and the pilot districts checked the data submitted by WAEO/VAEO and the pilot districts checked the data submitted by WAEO/VAEO and the pilot districts checked the data submitted by WAEO/VAEO and the pilot districts submitted by WAEO/VAEO and the pilot districts submitted the data to the pilot districts submitted the data to the pilot districts submitted by WAEO/VAEO format to the pilot districts submitted the VAEO/VAEO format to respective pilot Region in the form of "Integrated Data Collection Format".         Status of the achievement: achieved           Indicator 1: Utilization of data collected through activation of the achievement: not alweed (prepier Completion)         The approved by the MAET TWG is the achievement of ASDM (Project Completion)           Phones 2] (Project 2] (Project Completion)         The achievement: not alweed (prepier Completion)         The achievement of ASDM (Project Completion)           ARDS MAET is conducted on the basis of for respective pilot districts and by the MAET TWG is was not autional quark and the character problem of ARDS LOM22 (Web attrict of the achievement of LOAs that submit ARDS reports was not aution quark and ARDS has not been published in must the submit of the ASDM (Project Completion)           Relex 4 []         ARDS AsDP ec.		the data which are submitted by the pilot Districts through LGMD2 (Local Government Monitoring	(Project Completion) Members of the M&E TWG were able to	
which are submitted by WAE0/VAE0x and request respective WAE0/VAE0x for ververy mistakem figures and errors in order to improve the data. Within the determined period, required data is entered to 1 (AU2) utilings the submitted format, and submit it to respective pilot Region in the form of "Integrated Data Collection Format.".         The pilot districts checked the data submitted the data to the pilot asked for revision as necessary. They also submitted the data to the pilot of "Integrated Data Collection Format.".           Indicator 1-4: Villages and ward extension of watero 1-4: Villages and ward extension of watero 1-4: Villages and ward extension of watero 1-4: Villages and ward extension of the achievement achieved (Project Completion)         Status of the achievement achieved (Project Completion)           Indicator 1: Progress and final results of ARIN development is reported to Committee of ARIM bits of national agricultural data collected through ARDP M&E is conducted on the basis of national agricultural data collected through ARDS.         Indicator 1: Usilization of data collected through ARDS by ASDP etc.         Indicator 1: Usilization of data collected through ARDS.           Report through improvement of ARDS.         Indicator 1: Usilization of data collected through ARDS.         No. MAA has not been published annual text for reports who as "Agricultural Basic Data" last and in yet to be used at the central approxemic of ARDS LogDD2/Web portal (Web-based application developed under the project), the ARDS data is yet to be used at the central aproblem of ARDS-LogD2/Web portal (Web-based application developed under the project), the ARDS data is yet to be used at the central aproblem of ARDS-LogD2/Web portal (Web-based application developed under the project), the ARDS data is yet to be used at the central aproblem of ARDS-LogD2/Web portal		pilot Regions check and approve the data which are	(Project Completion) The pilot regions checked	
Image: constraints of the second se		-		t: achieved
mixulen figures and errors in order to improve the data. Within the determined period, required data is entered to LGMD2 utilizing the submitted format, and submit it or respective pilot Region in the form         regions using LGMD2.           off         Integrated Data Collection Format.         Status of the achievement: achieved (Project Completion)           VAEO/VAEO format to respective District.         Status of the achievement: achieved (Project Completion)           VAEO/VAEO format to respective District.         Status of the achievement: partially achieved (Project Completion)           The improved ARDS has been approved by the M&E TWG It was expected to be submitted the VAEO/VAEO formatice of ASLMS development is reported to Committee of ASLMS           (Project Completion)         The improved ARDS has been approved by the M&E TWG It was expected to be automitted the TWG.           (Project Completion)         The improved ARDS has been approved by the M&E TWG It was expected to be automitted the TWG.           (Project Completion)         The improved ARDS has been approved by the M&E TWG It was expected to be automitted the TWG.           (Project Completion)         The improved ARDS has been approved by the M&E TWG It was expected to be automitted to the TWG.           (Project Completion)         The uniprove ARDS has been approved by the M&E TWG It was expected to be technical problem of ARDS-LGMD2 Web portal (Web-based application developed under the project), the ARDS data is yet to be used the central level.           ARDS.         To use the datu to the MoA'As annual report "Agricultural sector Review)		-		d the data submitted by WAEO/VAEO and
entered to LGMD2 utilizing the submitted format.       indicator 14: Villages and ward extension officers         Status of the achievement: achieved       (Project Completion)         WAEO/VAEO format to respective District.       Status of the achievement: achieved         Indicator 12: Progress and final results of ARDS       Status of the achievement: partially achieved         Indicator 2: Progress and final results of ARDS       Status of the achievement: partially achieved         Indicator 2: Progress and final results of ARDS       Status of the achievement: partially achieved         (Project Purpose)       ASDP McE is conducted       The improved ARDS has been approved by the MkE TWG It was expected to be ashmitted to the ASLMs Committee of Directors         ARDS hy ASDP etc.       Status of the achievement: not achieved (partially achieved)         ARDS hy ASDP etc.       Status of the achievement: not achieved (partially achieved)         ARDS.       Indicator 1: Utilization of data collected through agricultural data collected         htrough improvement of ARDS       Status of the achievement is the central level.         (Project Purpose)       ARDS         ARDS.       To use the data for No. Result framework of ASDP 2 is still not ARDS.         ARDS.       To use the data for No. Result framework of ASDP 2 is still not ASDP 2 is still not the MoX's annual report aches as "Agricultural Basic Data" last copet "Agricultural Esci Cost statexport "Agricultural Esci Cost states report "Agricultural Esci Co			-	-
and submit it to respective pilot Region in the form       Status of the achievement: achieved         indicator 1-4: Villages and ward extension officers       Status of the achievement: achieved         watery OVARD format to respective District.       Vational districts submitted the VAEO/WAEO format in its latest form regularly.         Indicator 2: Progress and final results of ARDS       Status of the achievement: partially achieved         development is reported to Committee of ASLMS       The improved ARDS has been approved by the M&E TWG I true accepted to be submitted to the ASLMS Committee of Directors through the Chairperson of the TWG achieved         [Phase 2]       Indicator 1: Utilization of data collected through Status of the achievement: to achieved (parially achieved)         (Project Completion)       The improved ARDS has been approved by the M&E TWG activity of the ASLMS Committee of Directors through the Chairperson of the TWG activity of the achievement: to achieved (parially achieved)         (Project Completion)       The improved active the project.         ASDP M&E is conducted on the basis of national agricultural data collected through improvement of ARDS status of the achievement: to achieved report and achieves and the project ochystatus active actintered torestrest actine active active active active act			regions using LGMD2.	
of "Integrated Data Collection Format".     Indicator 1-4: Villages and ward extension offloces     Status of the achievement: achieved       umber 1-4: Villages and ward extension offloces     WAEO/VAEO format to respective District.     Status of the achievement: achieved       indicator 2: Progress and final results of ASDBs     Indicator 2: Progress and final results of ASDBs     Status of the achievement: partially achieved       (Project Completion)     VAEO/VAEO is the achievement: achieved the ASLMS Committee of Directors through the Chairperson of the TWG.     Indicator 1: Utilization of data collected through after through the Chairperson of the TWG.       (Project Purpose)     ASDP M&E is conducted on the basis of rational agricultural data collected through ingrovement of ARDS.     Status of the achievement: not achieved (partially achieved)       (Project Completion)     Recause the number of I GAs that submit ARDS reports was not apprication data collected through ingrovement of ARDS.     Status of the achievement: not achieved (partially achieved)       (Project Completion)     No Result framework of ASDP2 is still not fastic and annual the data for the work of central level.     Status of the achievement: not achieved (partially achieved)       (Project Completion)     No Result framework of ASDP2 is still not fastic annual the data for the work of central level.     Status of the achievement: not achieved (partially achieved)       (Project Completion)     No Result framework of ASDP2 is still not fastic annual the MoA's annual report scale at the central level.     Status of the achievement is achieved and the central level.		_		
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Image 1       Indicator 1: Utilization of data collected through (Project Purpose) ASDP M&E is conducted on the basis of national agricultural data collected through improvement of ARDS.       Indicator 1: Utilization of data collected through agricultural data collected through improvement of ARDS.       Indicator 1: Utilization of data collected through improvement of ARDS.       Indicator 1: Utilization of data collected through improvement of ARDS.       Indicator 1: Utilization ARDS.       Indicator 1: Utilization ARDS       Indicator 1: Utilizat		Directors, and finally submitted		
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Outbreak         report         (managed         by         crop           development         department)         respectively.           *Expected         utilization         at the time of project completion			Veterinary Services,	Department (NFSD)), GDP data (managed
development department) respectively.           *Expected utilization at the time of project completion			etc.)	-
*Expected utilization at the time of project completion				
			*Expected utilization at t	
2) Proportion of wards (around 3900 wards are in Tanzania) which timely			2) Proportion of wards (a	round 3900 wards are in Tanzania) which timely

		anhumittad AD	DS monthly re	manta ta tha	LCA		
				Mar 2017		2019	
		Mar 2015	Mar 2016				
		21.0%	25.0%	85.9%	93.5	<i>/</i> 0	
(Overall Goal)	Indicator 2: A number of the DADPs (District Agriculture Development Plans) planned or revised based on the results of analyzing the data collected through the ARDS	<ul> <li>For valid 67.6%</li> <li>For exam</li> <li>For under</li> <li>For exam 73.5%</li> <li>For estim (Ex-post evalu</li> <li>Accordin LGAs sta DADPs a</li> </ul>	the questionna he LGA level a oletion) P preparation: ation of VADF standing prese ination of scop nation of future nation) g to a question iff participatin and 224 staff o cornulation.	ire survey, t are as follow 76.5% (Village A ential crops ent situation pe and scale e state of cro maire surve g ARDS tra ut of 268 ar	he example vs: griculture or areas for of the sec of develo op and live y in July 2 ining answered the	Development or development or development opment activ estock: 81.6° 2019, 268 ou vered they d	data nt Plan) : ent: 84.6% ities: % ut of 334 eveloped
	collections including ARDS are improved through	(Ex-post Evalu		5			
•	the coordination among them.	Government g	radually recog				
		then came up					
improved through		sources of eac			e indicator	s are availat	ole, but
interactive operation of		some are not of Status of Achi					
relevant activities such as	Indicator 2: The meetings on ASDP M&E	(Ex-post Evalu		eved			
-	coordination are continuously conducted.			2015	2016	2017	2018
of Agriculture, National		Number of n	aating	no data	11	4	5
Panel Survey and			licenings	no uata	11	4	5
Agricultural Routine Data							
System (ARDS)							
Source : Terminal Evaluati	on reports, project completion reports, and results of	questionnaire s	survey and inte	erviews wit	n MoA		

#### 3 Efficiency

Although the total project period for the Phase 1 and Phase 2 projects was as planned (the ratio against the plan: 100%), the total project cost slightly exceeded the plan (the ratio against the plan: 111%). The outputs were produced as planned. Therefore, the efficiency of the both projects is fair.

### 4 Sustainability <Policy Aspect>

Importance of the M&E system has been written in several government core documents for agriculture sector. ASDP 2 (June 2018), as the most important government document for the agriculture sector in Tanzania, has described ARDS as one of the important M&E tools. Furthermore, ARDS has been described as one of the principles of ASDP 2 as "need to ensure ARDS have sufficient resources in order to provide analysis and results on time". The Budget Speech of the Minister for Agriculture (May 2019) mentioned that "Every year, government discloses its last financial achievement and plan for next financial year in June, and achievement of ARDS has been continuously mentioned".

# <Institutional Aspect>

The organization structure has been well established at the national and LGA levels, and manpower has been also somehow sufficient though it has not been ideal level in LGAs. At the national level, there has been well established structure under the ASDP2 framework. M&E TWG has been well established as one of two TWGs under ASDP2, and members have been mostly continuing from M&E TWG under ASDP. TWG has discussed technical issues, then Assistant Director, and the Director of Planning Department in MoA will make a decision.

#### <Technical Aspect>

According to MoA, the skills of national level staff on data analysis and IT contract management needs to be improved. Although there have been a lot of projects supported by Development Partners around M&E, there has been no regulated government mechanism for this kind of training. Skills of some Ward Agriculture Extension Officers (WAEO)/Village Agriculture Extension Officers (VAEO) have been insufficient level but measures, including training on the ARDS data collection by Ministry of Agriculture Training Institutes (MATIs) have been already taken. There has been a mechanism in LGAs to improve skills of them, but not functioning in all LGAs <Financial Aspect>

The TWG team estimated that 5 to 7 million Tanzanian shillings (Tsh) is required for running ARDS in LGAs level. The cost consists of fuel, paper, printing, internet access, etc. Most of LGAs has managed to submit data for the last two years although cost needed for running ARDS is not reported as "cost for ARDS". This fact supports financial sustainability in LGAs level.

For national level, cost has been budgeted (=approved) but not disbursed fully due to less development budget allocation from Ministry of Finance to ASLMs last several years. However, recently, the importance of ARDS began to attract more attention than before, from high-rank government official and other DPs. It is thanks to the fact that ARDS is the only available source of comprehensive agriculture data in Tanzania, collected in a regular basis and nationwide. Therefore, more allocation of budget should be expected. In addition, one of the DPs expresses the interest to assist ARDS-related activities to complement Government efforts to strengthen M&E.

<Evaluation Result>

Therefore, as there have been some problems in the institutional, technical and financial aspects, the sustainability of the effects through the project is fair.

### .5 Summary of the Evaluation

The phase 1 project achieved the Project Purpose while the phase 2 project partially achieved the ones by the time of project completion. The effects of the projects have partially continued, as ARDS data submission rate and its use in LGA level have been increased, however, the data utilization in the central level has not progressed. The number of LGAs which have developed DADP is somewhat limited. Nonetheless, most of the LGAs has utilized ARDS data. The Overall Goal has been partially achieved, as coordination around ARDS has kept improving, though challenges exist, and ASDP M&E coordination meetings have been conducted. As for the Sustainability, some problems have been oberserved in the institutional, technical and financial aspects. As for the efficiency, the project cost slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

# III. Recommendations & Lessons Learned

# **Recommendations for Implementing Agency:**

- MoA, as lead ministry of ASDP, is recommended to secure and disburse necessary budget at the national level for maintaining the ARDS system such as fee for sub-contractor and server hosting cost. Also, President's Office, Regional Administration Local Government (PORALG) should improve budget allocations and disbursement for LGAs specifically to the ARDS activities by supporting and providing the extension officers (VAEO&WAEO) with equipment like GPS, means of transport and internet and disburse the fund as planned to carry out the intended activities in a timely manner.
- MoA is also recommended to improve data analysis skills as well as IT contract management skills at the national level.
- · MoA is recommended to monitor and follow-up effectiveness of ARDS lecture in MATIs
- The LGA governments are recommended to ensure enough M&E staff at the LGAs level for consistency in data consolidation from wards. Also, improving/increasing the number of extension officers at the both village and ward levels is necessary.

# Lessons Learned for JICA:

- When JICA needs to be involved specific sectors, strengthening M&E system is one of effective approach. Firstly, M&E is normally weak areas in developing country. Secondly, all stakeholders are keen to grasp quantitative data to measure development progress. Therefore, JICA can have many interactions with both CPs (incl. high rank officials) and DPs, which contribute to show presence in the sector.
- Encouraging competition among Regions and LGAs by sharing the status with figures (e.g. submission rate), contribute to rise and maintain higher submission rate. The evaluation team observed that managements seriously asked their staff to submit once they found low rate. M&E TWG applies same approach for data quality improvement by sharing rate of data within realistic range.



Log-in screen of ARDS Web-portal



Central Government counterpart discusses with LGAs staff how to improve ARDS system

Country Name	Project for Enhancing Capacity of Public Investment Program
Lao People's Democratic Republic	Management (Phase 2 project) Project for Establishing Public Investment Plan under NSEDP (Phase 3 project)

# I. Project Outline

Background	As an organization with responsibility and authority for overall supervision and management of public investment projects, the Ministry of Planning and Investment (MPI) has a role to review the budget for public investment projects to be approved by the National Assembly, to verify the relevance of projects in each area, to conduct regular monitoring and evaluation, and to report the results to the National Assembly. However, MPI as well as the Provincial Department for Planning and Investment (DPI) and the District Planning and Investment Office (DPIO) lacked the business management monitoring capabilities of public investment projects implemented with the national budget, and they were not effectively implemented. Therefore, their contribution to achieving the goals of the National Socio-Economic Development Plan (NSEDP) was unclear. Under such circumstances, the "Project for Capacity Building in PIP Management" (the "Phase 1 project") was implemented which developed a project review tool and management supervision methods in accordance with the development budget in Laos, and had written them in manuals and handbooks. After the completion of the Phase 1 project, a technical cooperation project called "Project for Enhancing Capacity of Public Investment Program Management" (the "Phase 2 project") was implemented to support further improvement of the developed methods. Public investment projects were positioned as national institutions by the law. The implementation of project screening increased transparency and accountability of the selection of public investment projects, however, it was necessary to continue dissemination and training of the methods and forms in more ministries and provinces. In order to further improve the management of public investment projects in a medium-term planning the acacity to supervise the management of public investment projects in a medium-term planning the capacity to supervise the management of public investment projects in a medium-term planning the methods and financial m
Objectives of the Project	<ul> <li>The projects aimed at strengthening the managing capacity of MPI and its subordinate organizations on Public Investment Program (PIP), thereby contributing to the appropriate management of PIP through (i) enhancing the knowledge on PIP of officials in provinces and ministries, (ii) upgrading manuals and handbooks on PIP management, (iii) strengthening a legal framework, (iv) incorporating ODA counterpart management and District-level PIP management into manuals and handbooks, (v) drafting Mid-Term Public Investment Plan and Mid-term Public Investment Financial Management Guideline, (vi) strengthening a system for carrying out terminal and ex-post evaluation, (vii) developing a framework for ODA project information management, and (viii) strengthening district-level public investment project management.</li> <li><phase 2=""></phase></li> <li>Project Purpose: MPI and DPI process PIP projects through a new assessment procedure introduced by the Project within strict budget ceiling, and conduct monitoring and evaluation.</li> <li>Overall Goal: Sector ministries and provincial sector departments effectively and efficiently implement PIP projects on schedule and in accordance with planned budget execution under an upgraded sector program.</li> <li>Phase 3&gt;</li> <li>Project Purpose: The Ministry of Planning and Investment and its subordinate organizations manage public investment projects through a Mid-Term Public Investment Plan and a comprehensive framework.</li> <li>Overall Goal: Sector ministries, government organizations and provincial/district sector departments manage public investment projects based on the mid-term public investment</li> </ul>
Activities of the Project	framework under the NSEDP. 1. Project site: <phase 2=""> Vientiane capital, Khammouan, Oudomxay and Salavan Provinces <phase 3=""> Vientiane capital, Oudomxay Province (Pilot province), Bolikhamxai and Champasak Provinces (Monitor provinces) 2. Main activities: <phase 2=""> (i) enhancing the knowledge on PIP of officials in provinces and ministries, (ii) upgrading manuals and handbooks on PIP management, (iii) strengthening a legal framework, and (iv) incorporating ODA counterpart management and District-level PIP management into manuals and handbooks <phase 3=""> (i) drafting Mid-Term Public Investment Plan and Mid-term Public Investment Financial Management Guideline, (ii) strengthening a system for carrying out terminal and ex-post evaluation, (iii) developing a framework for ODA project information management, and (iv)</phase></phase></phase></phase>

	strengthening district-level public investment project management				
	3. Inputs (to carry out above activities)	1 5 0			
	Japanese Side	Lao Side			
	<phase 2=""></phase>	<phase 2=""></phase>			
	1) Expert: 10 persons	1) Staff allocated:	-		
	2) Local Cost: travel allowance,	/	ies: Project Office		
	rental fee of training rooms and	· · · · · · · · · · · · · · · · · · ·	ary for counterpart staff, utility fee		
	vehicles, communication cost, and	and others			
	translation expenses.				
	<phase 3=""></phase>	<phase 3=""></phase>			
	1) Experts: 9 persons				
	2) Operation cost: Lao consultants	2) Land and facilities: project offices, meeting rooms			
	and other staff members to	<ul><li>and training roo</li><li>3) Operation cost:</li></ul>			
	<pre>support experts <phase 2=""></phase></pre>	5) Operation cost:	partial cost for training		
			<phase 2=""></phase>		
Drainat Dariad	March 2008-August 2011 <phase 3=""></phase>		(ex-ante) 373 million yen		
Project Period	March 2012-September 2015	Project Cost	(actual) 320 million yen <phase 3=""></phase>		
	(Extended period: October		(ex-ante) 307 million yen		
	2015-September 2016)		(actual) 420million yen		
	Ministry of Planning and Investment (M	PI): Department of Eva			
Implementing Agency	Planning (MPI-DOP), and Department of	, <b>1</b>			
Cooperation Agency in Japan	IC Net Limited		()		

# II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

 As the Phase 2 and Phase 3 projects share the common goal, the indicators for the Phase 3 project are verified to check the level of achievement of the Project Purpose and the Overall Goal.

Continuation of the project purpose was analyzed as factors to achieve the Overall Goal.

#### 1 Relevance

<Consistency with the Development Policy of Laos at the Time of Ex-Ante Evaluation >

The project was consistent with the development policy of Laos. Lao PDR set a long-term national development goal of breaking away from Least Developed Countries (LDCs) by 2020, and formulated the 6th NSEDP (2006-2010) to embody the goal. PIP was positioned as an action plan to implement this medium-term plan.

<Consistency with the Development Needs of Laos at the Time of Ex-Ante Evaluation >

The project was consistent with the development needs of Laos for improvement of public investment, as the public investment projects were not effectively implemented, as mentioned above (See background above).

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy to Laos. At the time of the Phase 2 project, improvement of administrative capacity and institutional building was one of the priority areas under the "Country Assistance Program for Lao PDR" (September 2006). At the time of the Phase 3 project, as one of the "issues to be kept in mind", "Pay attention to the necessity of improving governance such as administrative capacity, institutional building and the judicial system from the viewpoints of promoting development and raising the effects of assistance." was mentioned in the "Country Assistance Policy for Lao People's Democratic Republic" (April 2012). <Evaluation Result>

In light of the above, the relevance of the project is high.

# 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved at the project completion. The "Guideline on establishing the Vision to 2030, Ten years Social Economic Strategy (2016-2025)" was issued and the 8th National Social Economic Development Plan (2016-2020)" contained the mid-term public investment plan guideline (Indicator 1). Four terminal evaluation and three ex-post evaluation studies were conducted (Indicator 2). However, utilization of Simplified Project Information Sheet (SPIS) was somewhat limited (Indicator 3) and whether or not the number of public investment projects managed at the district level was not able to be verified (Indicator 4).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The effects of the project have partially continued. As mentioned above, the status of continuation of the project effects at the time of ex-post evaluation were taken as the part of the verifiable indicators of the Overall Goal (such as utilization of the monitoring tool) and the factors affecting the achievement levels of the verifiable indicators of the Overall Goal.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved. As for the indicator 1, many public investment projects in Laos have been monitored in a large number; however, the quality has been low. The implementation of PIP faced some problems, such as the delay of documents submission from the project owners, the changes in regulations and lack of pragmatic usage in some provinces accordingly. (Indicator 1). Nonetheless, sharing the working mechanism and principles of evaluation fostered the linkage between the central and provincial departments according to DOE. As for the Indicator 2, , it was not able to confirm that expenditure control has led to a reduction in debt because it was difficult to obtain publicly available information (Indicator 2). Annually, the capital expenditure for PIP has been managed by the Ministry of Finance and its amount has accounted for around 9-10% of the total revenue collection including providing for debt reduction. As for the performance of NSEDP (Indicator 3), DOE has not finished the summary for the Actual Performance at the time of ex post evaluation. Nevertheless, the nature of the projects has continued towards Public Investment Management (PIM) development

including upgrade of projects' tools (Indicator 3). DOE believes a range of problems on public investment projects are solved due to the benefit of utilizing good tools of evaluation which the project developed.

As for the continuation of the project effects and activities, evaluation skills of DOE's staff have been well improved. And tools (the guidelines, manuals and formats) under the projects have not been entirely updated since the Investment Law has been changed. Some parts of those publications are adjusted including formats for PIP proposals and instruction for PIP. In 2018, limited budget was provided for monitoring and evaluation, as a result, the monitoring has not been comprehensive.

<Other Impacts at the time of Ex-post Evaluation>

No impact on the natural environment has been observed.

There have been no positive/negative impacts by the project which were not expected at the time of the ex-ante evaluation <Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

		ct Purpose and Overall Goal	<b>D</b> 1				
Aim	Indicators		Results				
(Project Purpose)	Indicator 1. A guideline to draft Mid-Term	Status of the Achievement: Achie	ved				
The Ministry of Planning	Public Investment Plan 2016-2020 that is	(Project Completion)					
and Investment and its	related to the NSEDP 2016-2020 is	- MPI issued "Guideline on estal	blishing t	he Vision	to 2030	, Ten yea	ars Social
subordinate organizations	officially announced from the Ministry of	Economic Strategy (2016-2025) a	and the 8t	h Nation	al Social	Econom	ic
manage public investment	Planning and Investment to ministries,	Development Plan (2016-2020)"	which co	ntains the	e mid-ter	m public	;
projects through a	government organizations, provinces and	investment plan guideline.					
Mid-Term Public	districts.						
Investment Plan and a	Indicator 2. Evaluation studies for	Status of achievement: Achieved					
comprehensive	completed public investment projects are	(Project Completion)					
framework.	conducted for projects to be selected by the	Four terminal evaluations and thr	ee ex-nos	st evaluat	ions wer	e conduc	ted
nume work.	relevant authorities with operation and	respectively. The operation and m	-				ieu
	maintenance plans attached.	respectively. The operation and h	lamenan	ee plans		eneu.	
		Status of achievement: Not verifi	- J				
	Indicator 3. Accuracy of information is		ea				
	confirmed through ODA counterpart fund	(Project Completion)	11 /1		1.		
	request documents that the Lao side applies,	Utilization of SPIS form develop	-				
	and the information is shared with the donor	1 1 5					1 ODA
	projects	projects including counterpart fur			ared yet	among	
		development partners and the Lac	-				
		Data to verify the achievement w	-		-	ementing	Agency
		because NSEDP (2016-2020) targ		not appro	oved.		
	Indicator 4. Increased number of projects	Status of the Achievement: Not v	erified				
	that are managed in the district levels.						
		It is not known whether the numb	-		-	-	-
		the district has been increased or	decreased	l, as the r	number o	of approv	ed
		projects for FY 2016, after "the P	rime Min	ister's D	ecree on	Impleme	entation
		of Investment Law" was issued, w	vas yet to	be anno	unced.		
(Overall Goal)	Indicator 1: The Mid-Term Public	(Ex-post Evaluation) Partially ach					
Sector ministries,	Investment Plan 2016-2020 is utilized by	- The positive effect is that the	e guidelin	ne, manua	l and for	mat deve	eloped in
government organizations	the Lao Government in ministries,	the project were utilized for					
and provincial/district	government organizations, provinces and	the coordination between pro project proposal and project					
sector departments	districts as the standard development budget	PIP has been low and PIP ma					
-	planning and monitoring tool.	was that some critical approx					
projects based on the		pragmatic enough due to the					
mid-term public		Implementation of new proje					
investment framework		new procedure including rep		ission and	d new pr	oject pro	posal,
under the NSEDP.	Indicator2: The capital expenditure is	(Ex-post Evaluation) Not verified	1			(Unit hi	llion kip)
under the robbit.	managed in a mid-term basis and its debt is		2016	2017	2018	2019	2020
	seeing reduction	Budget for PIP	3.800	3.300	2.800	4.000	4.500
		Actual Capital Expenditure	3.300	3.300	2.800	2.450	2.600
		(PIP projects)					
		Public Debt	N/A	N/A	N/A	N/A	N/A
		Now Government of Laos is tryin	ng to limi	t the new	project	proposal	and
		prioritize the most important proj					
		There were no information on Put therefore we cannot verify the im				d to the p	oublic,
		incretore we cannot verify the Im		ie project	•		
	Indicator 3: Positive and continuous effects	(Ex-post Evaluation) Not verified	1				
	that are contributing to the achievement of	The positive and continuous effect	ts of the				
	the NSEDP targets are found in completed	including the "upgrade" of the Pu	blic Inve	stment La	aw No.72	2" in Dec	
	public investment projects that are	2015, and the MPI/Ministry/Prov					
		tools developed under the project					
	completed, operated and maintained as	further manage the projects and b	ouaget, se	lecting ap	opropriat	e project	.8.
	planned.	NSEDP target					

	Target	Actual Performance at the time of ex-post evaluation
Poverty Rate	10%	-
GNI per capita	2,354USD	2,570USD
Annual GDP growth rate	7.2%	4.8%
Revenue of GDP (%)	18.6%	N/A
Budget Revenue of GDP (%)	16.4%	N/A
Expenditure of GDP (%)	N/A	N/A
Budget deficit of GDP (%)	4.23%	N/A
Gini coefficient	N/A	N/A
Exports of goods of GDP (%)	N/A	N/A

### 3 Efficiency

Both the project cost and project period slightly exceeded the plan (the ratio against the plan: 109%, 114%). Outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability <Policy Aspect>

Development planning and budgeting aligned though PIP rolling programme is one of the performance indicators for the outcome of sustained inclusive economic growth under the 8<sup>th</sup> NSEDP (2016-2020)<sup>1</sup>.

< Institutional/Organizational Aspect>

DOE has assigned staff in coordination for their responsibilities and their roles for PIP by establishing the Technical unit and Coordination unit responsible for the task. The total number of staff of DOE was 55 persons at the time of ex-post evaluation, which was sufficient for the assignment.

<Technical Aspect>

DOE has conducted the annual meeting every year to share the problems from the previous year and the on-going problems of the implementation. DOE has conducted the capacity building for officials to implement the investment projects and has instruction on the guidelines and manuals which were developed by the projects for central and provinces for deeper understanding in the implementation procedures.

Some staff in the provinces who received the training and improved skills and knowledge were transferred to other offices or promoted to higher position, while new staff have very limited capacity.

<Financial Aspect>

DOE has spent some budget from MPI for activities including site visiting, monitoring of the projects in provinces; however, the budget allocated has been still insufficient.

<Evaluation Result>

In light of the above, some problems have been observed in terms of the technical and financial aspects. Therefore, the sustainability of the effectiveness through the project is fair.

# 5 Summary of the Evaluation

The project partially achieved the Project Purpose, as the guideline was included in the 8<sup>th</sup> NSEDP, evaluation studies were carried out, while the information of ODA projects was not shared and the number of projects managed in the district levels was not verified. The Overall Goal was partially achieved as the monitoring of public investment projects has been carried out; however, the quality has not improved and inefficient. As for the sustainability, some problems have been observed in the technical and financial aspects. As for the efficiency, both the project cost and project period slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

# III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- To make sure that the sustainable and effective PIP continues, MPI is requested to secure budget for monitoring and evaluation of PIP projects.
- At the Provincial Offices, number of the well-trained and qualified staff were moved to other departments without transferring skills and knowledge to the new comers, therefore, it is necessary to ensure the training system to transfer appropriate skills and knowledge to new staff when implementing agencies conduct personnel changes and regular trainings. Implementing Agency should also establish work transferring system, such as making work transfer document and having a briefing work session for new comers to make sure that they understand what they have to do.
- DOE-MPI needs to secure budget for updating the guideline, manual and format, and conduct trainings for project owners in provinces, in accordance to the revision of law and regulation. In this evaluation survey, it was identified that the project owner made some mistake due to the lack of understanding of how to use the format following the new law, and the delay was caused.

Lessons Learned for JICA:

It was obvious that the Phase 2 and Phase 3 projects supported MPI and DPI by introducing the new assessment procedure for management of PIP projects. However, MPI and DPI has faced some difficulties in implementing that new assessment procedure

<sup>&</sup>lt;sup>1</sup> At the time of ex-post evaluation, the next 9th plan was under planning process and will be set early of 2021.

especially monitoring and evaluation of PIP project effectively and efficiently due to the lack of budget allocation. Therefore, from the stage of project planning, JICA should have requested MPI to include the arrangement of counterpart budget for M&E after the project completion. Or, the project should have considered ways and mechanisms to minimize the impact on the supervision of the implementation of public works projects in the case that local agencies experience budget or capacity shortages. JICA should have designed appropriate size of the project, making sure that all targeted DPI has enough budget and ability to PIP projects, and helped them to set up the on-the-job training program system and that new staff and that they can continue their work effectively.

The following three construction projects were implemented based on the tools developed under the technical cooperation projects such as guideline, manual and format in the procedure of document submission.





Education Development Institute, Ministry of Education, VTE

<image>

Irrigation Canal from mountain for farming in Cadet School, Champasack Province

	try Name			e mitigation of climate change in Vietnam		
* * * * * * * * * * * * * * * * * * *	ublic of Viet Nam		builtnes by dev	velopment of biomass energy		
I. Project Outline						
Background	consumption of renew biomass resources. BD it contains fewer conta that of fossil fuel. Sev technology for the dev actual environmental a	vable energy, notably F was considered ben minants, and the total veral national strategi elopment of promising nd socio-economic im	the development eficial for climate carbon dioxide em es and policies in g raw materials, pr upacts of BDF proc	Jam adopted policies to promote the production and of biodiesel fuel (BDF) using Jatropha and other change mitigation and prevention of air pollution, as ission by BDF production and utilization is less than favor of BDF promotion were in place; however, oduction of high-quality BDF, and researches on the huction were scarce in Viet Nam. As a consequence, were still slow.		
Objectives of the Project	<ul> <li>development and investment in BDF and its commercialization were still slow.</li> <li>The project aimed to come up with measures to mitigate climate change, environmental pollution, and poverty in Viet Nam and other Indochina countries by establishing cultivation, production and utilization of biomass energy cycle through (i) the development of oil materials for producing BDF, (ii) the development of a countermeasure technology for polluted soil and corresponding plantation techniques, (iii) the production of BDF from raw material oil with green technologies, (iv) the development of an environmental monitoring method for evaluating the impact of BDF utilization, and (v) the verification of the feasibility of the developed results in Viet Nam, thereby contributing to the promotion of the production and utilization of BDF.</li> <li>1. Expected Overall Goal: Establish the economically and environmentally superior cultivation-production-utilization of biomass energy cycle and broad use of above system in the world.</li> <li>2. Project Purpose: Realize the effective measure for the mitigation of climate change, improvement of environmental pollution and overcome the poverty in Viet Nam and Indochina Countries by establishing cultivation, production and utilization of biomass energy cycle.</li> </ul>					
Activities of the Project	<ol> <li>Project Site: Viet N</li> <li>Main activities: (i) out of them; (ii) D</li> <li>Jatropha; (iii) Des byproducts such atmospheric pollu feasibility, prepara</li> <li>Inputs (to carry ou Japanese Side</li> <li>Experts: 23 person</li> <li>Trainees received: persons for master course</li> <li>Equipment: BDF monitoring system</li> <li>Operation cost</li> </ol>	Nam Identification of spec- ioxin pollution survey, sign and construction as glycerine; (iv) Co- tants in BDF exhaus- tion of policy recomm t above activities) s 84 persons for shor r course, and 15 per production plant, am , laboratory equipmen	cies and cultivation drawing a soil pol of a pilot plant ollection of monit t gas, (v) Develo endations. t-term training, 4 sons for doctoral abient air quality	<ul> <li>techniques of the materials and production of BDF lution map, investigation of soil pollutants transfer to for BDF production and production of BDF and toring data for air quality, identification of novel pment and use of an evaluation method for BDF</li> <li>Vietnamese Side <ol> <li>Staff allocated: 19 persons</li> <li>Facilities: Project coordination Office in VNU and six laboratories/facilities</li> </ol> </li> </ul>		
Project Period	October 2011 – Septem	1ber 2016	Project Cost	(ex-ante) 372 million yen, (actual) 322 million yen		
Implementing Agency	Vietnam National University Hanoi (VNU) Vietnam National University Ho Chi Minh City (VNU-HCM) The Institute for Improvement of Forest Genetic Resources and Product Development (IIFPD) of the Ministry of Agriculture and Rural Development (MARD) Institute of Environmental Technology (IET) of Vietnam Academy of Science and Technology (VAST) Institute of Tropical Biology (ITB) of VAST Department of Development of Forestry (DDF) of MARD Center for Environmental Monitoring (CEM) of the Ministry of Natural Resources and Environment (MONRE) Institute of Oil and Oil Plants (IOOP) of the Ministry of Industry and Trade (MOIT)					
Cooperation				CU); Ehime University; Japan International Research		
Agency in Japan	Center for Agricultural	•	,, (o.	,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,		
II. Result of the Ev	aluation					

< Special Perspectives Considered in the Ex-Post Evaluation >

For this SATREPS project, a Project Design Matrix (logical framework) was not prepared. The Record of Discussion (R/D) (September 12, 2011) stated the Overall Goal as "Establish the economically and environmentally superior cultivation-production-utilization of biomass energy cycle and broad use of the above system in the world," and the mid-term review report acknowledged the same Overall Goal. No indicator was set for this Overall Goal. On the other hand, the terminal evaluation report stated that the Overall Goal did not exist for this project while expecting the promotion of production and utilization of BDF as actions towards the social application of the research outputs/outcomes after project completion. Based on the analysis of this situation within the framework of the ex-post evaluation of STAREPS projects, this ex-post evaluation keeps the text of the Overall Goal stated in the R/D but assesses its achievement by whether the production and utilization of BDF are being promoted in Viet Nam and other Indochina countries using the

<sup>&</sup>lt;sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development

### 1 Relevance

<Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation>

This project was consistent with Viet Nam's development policies such as the "National Energy Strategy" (2007) and the "National Target Program to Respond to Climate Change (NTP-RCC)" (2008-2020), which all promoted the development of renewable energy as a climate change countermeasure. Also, the "Roadmap for Biofuel Development to 2015 and Vision to 2025" approved by the Decision No. 177/2007/QD-TTG promoted the biofuel development.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation>

As mentioned in "Background" above, this project was consistent with the need to develop and invest in BDF and its commercialization.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

This project was consistent with the "Country Assistance Program for Viet Nam" (2009), which held "Stable Supplies for Resource and Energy" (under "Promotion of Economic Growth and Strengthening of International Competitiveness"), "Natural Environment Conservation" (under "Environmental Conservation"), and "Rural Development and Improvements in Livelihood" (under "Improvements in Livelihood").

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The project achieved the Project Purpose at the time of project completion. An optimal cultivation technique using tissue culture technology was developed to produce elite varieties of Jatropha, enabling the productivity of more than 5 t/ha. It was found that Jatropha grows well on the degraded lands in Quang Tri Province in the north-central region but is not suitable for the weather conditions of the northern region of Viet Nam. Therefore, the project explored other oil-plants that can grow well in the northern region, such as Pongamia Pinnata (Indicator 1). Regarding the production of BDF, the project successfully produced it at VNU using the co-solvent method. It proved a potential use of the technology for future scaled-up production of BDF (Indicator 2). In terms of promotion on the utilization of BDF, at the time of project completion, the project completed an assessment of socio-economic and environmental impacts of BDF (Indicator 3) and the first draft of a policy recommendation on BDF utilization, which went through consultations with state agencies and was submitted to the Ministry of Industry and Trade (MOIT) at the end of 2016 (Indicator 4).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued to the time of ex-post evaluation. Most of the equipment/experimental sites provided under this project have been continuously used for researches by respective implementing agencies. VNU, the main counterpart, established the Key Laboratory for Bioenergy Development (VNU Key-Lab) at the VNU Hoa Lac campus in 2016 for bioenergy development and with funding from VNU itself and other sources such as Ministry of Science and Technology (MOST). The professor who is the former Project Director of this project and currently the Director of the VNU Key-Lab and his team have succeeded in improving the co-solvent technology for BDF production by replacing acetone with non-volatile biodiesel. This is a significant improvement that can help to reduce the production cost. Moreover, further research focusing on byproducts of BDF production, such as plasticizers and heat stabilizers, shows that byproducts could bring added value to BDF, making it more competitive with other fossil fuels.

Other outputs of this project, such as the tissue culture technology to create Jatropha variety with higher productivity (by IOOP/MOIT), cultivation techniques of BDF source plants suitable for the northern region such as Pongamia Pinnata and Vernicia Montana (by Quang Ninh Center for Science and Forestry-Agriculture Production (CSFAP), IIFPD/MARD, and VNU Key-Lab), and the quick test for dioxin analysis (by VNU HCM and CEM/MONRE), are continuously studied and utilized for further projects.

<Status of Achievement for Expected Overall Goal at the time of Ex-post Evaluation>

The Expected Overall Goal has been achieved by the time of ex-post evaluation. First, in Viet Nam, some progress in promoting BDF production and utilization has been made based on this project's outcomes. For example, VNU Key-Lab has cooperated with some local governments such as Lao Cai Province to develop forestation programs with oil plants, such as those mentioned above, that are suitable for the weather conditions. Unfortunately, some activities have been suspended due to the fall of the market price of fossil fuel, which is almost the same as the price of biofuel, making it difficult to increase biofuel preference by consumers.<sup>2</sup>

Second, regarding other Indochina countries, VNU has transferred the BDF production technology to some private companies from Laos and Cambodia to disseminate the results of the project. These companies are preparing to establish a production line, although they are facing difficulty competing with fossil fuel due to its plummeting price.

<Other Impacts at the time of Ex-post Evaluation>

No negative impact was observed. Positive impacts pointed out by VNU include the following. (1) Researchers involved in the project improved their search capacity in respective fields by participating in short-term training courses, scientific seminars and workshops organized by the project, and particularly when working directly with Japanese experts in the lab and conducting field surveys. After the project was completed, their research capacity has continued to be improved by "learning by doing" through conducting scientific projects and research and development projects funded by the Vietnamese Government, participating in scientific conferences and seminars, and

<sup>&</sup>lt;sup>2</sup> However, a plan in Quang Ninh Province to restore a coal mine site with planting suitable source plants has been reconsidered since 2017 due to a plummet of the petrol price. For the same reason, a cruise boat company at Ha Long Bay once bought high-quality BDF from VNU Key-Lab at a cheaper price than fossil fuel but has temporarily stopped using BDF.

joining oversea training. (2) Government agencies improved their scientific literacy/realized the importance of using the technology developed by this project by being shared documents and involved in related projects. (3) Farmers increased income in some project areas such as Huong Hoa District, Quang Tri Province, and Si Ma Kai District in Lao Cai Province, by cultivating and breeding BDF source plants in once-polluted land areas (the project found the level of dioxin residue in the soil to be lower than the allowed level in these areas).<sup>3</sup> (4) The simultaneous air monitoring methods became an effective technology and continue to be used to assess air quality in Hanoi and HCMC. (5) VNU and OPU cooperated with Hanoi Department of Natural Resources and Environment (DONRE) to develop a proposal for the JICA Partnership Program scheme on sanitary and environmental improvement in cattle slaughterhouses in Hanoi, and JICA approved the proposal in March 2019. As a part of this project, fat from cattle slaughterhouses will be collected and used for BDF production using the pilot plant at the VNU Key-Lab.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

		Achievement of Project Purpose and Overall Goal
Aim	Indicators	Results
(Project Purpose)	Indicator 1: Optimal	Status of the Achievement: partially achieved (continued)
Realize the effective	cultivation technique of	(Project Completion)
measure for the	BDF-source plant species	- The optimal cultivation technique of Jatropha Curcas was established for the southern region
mitigation of climate	in degraded lands and	(annual yield: 5.4 t/ha). However, the species was confirmed not suitable in the northern region.
change, improvement of		- The results from other BDF-source plant species suggested that the appropriate species for each
environmental pollution	established.	region would be planting both Vernicia Montana and Hibiscus, or Pongamia Pinnata in the north,
and overcome the		extracting raw material oil from existing rubber tree seeds in the middle, and planting Jatropha
poverty in Viet Nam and		Curcas in the south of Viet Nam, respectively.
Indochina Countries by		(Ex-post Evaluation)
establishing cultivation,		- IOOP/MOIT continues to use the tissue culture technology for researches on diversification of oil
production and		plant varieties. It maintains the 6-ha experimental Jatropha site with more than 60 varieties, including
utilization of biomass		three elite varieties with high productivity of more than 5 t/ha/year.
energy cycle.		- Quang Ninh CSFAP continues to use the weather monitoring methods to maintain the 3-ha pilot
		site of Pongamia Pinnata and other oil-bearing varieties. The result confirmed that Pongamia Pinnata
		could adapt well to the soil of abandoned open mining sites in Quang Ninh Province in the northeast.
		- IIFPD/MARD continues to use the tissue culture technology to develop the 3-ha Pongamia Pinnata
		experimental site in Ba Vi, Hanoi. It plans to expand the experiment to choose the best variety.
	Indicator 2: A production	Status of the Achievement: achieved (continued)
	method of high-quality	(Project Completion)
	BDF by the co-solvent	- A BDF pilot plant system produced high-quality BDF and valuable byproducts by the co-solvent
	method is cooperatively	method from various kinds of raw material oil.
	developed.	- One of the research papers produced was the world's first report of BDF production by the
		co-solvent method. <sup>4</sup>
		(Ex-post Evaluation)
		- VNU Key-Lab promoted bioenergy production. It continued to use the transferred production
		technology and further improved it: (1) the volatile acetone was replaced with the non-volatile
		biodiesel, which made the process more environmental-friendly and efficient (40% cheaper than
		other production technology); (2) the integrated technology for the production of biodiesel and high
		value-added plasticizers and heat stabilizers from inedible oils and fats have been developed; (3)
		one-pot method for the simultaneous production of biodiesel and heat stabilizers from waste oils and
		fats, using the heterogeneous catalysts has been developed.
	Indicator 3: Results of	Status of the Achievement: achieved (continued)
	assessment of	(Project Completion)
	socio-economic and	- Assessment of socio-economic and environmental impacts of BDF was completed.
	environmental impacts in	- One of the research papers produced was the world's first report of emissions of new pollutants
	the case where produced	(low molecular weight-methyl esters (LMW-ME)) from BDF combustion. <sup>5</sup>
	BDF is utilized in Viet	(Ex-post Evaluation)
	Nam.	- CEM/MONRE continues to use bioassay (investigation of the effects of chemical substances using
		living organisms) and other methods to monitor industrial dioxin contamination in soil.
		- VAST provided funding to IET to assess the creativeness and preciseness of data obtained from the
		air monitoring station installed at VAST by this project.
		- Faculty of Environmental Sciences/VNU-HCMC continues to use the transferred air quality and
		weather monitoring methods in researches and education.
	Indicator 4: A plan of	Status of the Achievement: partially achieved by project completion, and achieved soon after project
	utilization of high-quality	completion (continuation status is not verifiable)

<sup>&</sup>lt;sup>3</sup> For example, the project's recommendation on multi-benefits afforestation, i.e., taking the oil and making watershed forests to prevent floods and erosion, helped Si Ma Kai farmers get additional income from selling Vernicia Montana seeds, as part of the payment they receive from the Government for afforestation.

<sup>&</sup>lt;sup>4</sup> Y. Maeda, L.T. Thanh, K. Imamura, K. Izutani, K. Okitsu, L.V. Boi, P. N. Lan, N.C.Tuan, Y.E. Yoo, N. Takenaka, "New Technology for The Production of Biodiesel Fuel" Green Chem. Vol. 13, pp. 1124-1128, (2011).

<sup>&</sup>lt;sup>5</sup> Phan Quang Thang, Yasuaki Maeda, Nguyen Quang Trung, and Norimichi Takenaka, Detailed Chemical Kinetics for Thermal Decomposition of Low Molecular Weight-Methyl Esters Generated by Using Biodiesel Fuel, Environ. Progress & Sustainable Energy, 2016, March, 1-8.

	1	T
	BDF is proposed to the	(Project Completion)
	Government of Viet Nam	- The recommendations to the Vietnamese government agencies were summarized by the end of the
	as a potential policy.	project period. Based on discussions with state agencies, VNU completed a proposal on bioenergy
		policies and submitted it to the Science and Technology Department of MOIT at the end of 2016.
		(Ex-post Evaluation)
		- No information is available about how MOIT handled the above-mentioned proposal to MOIT.
(Expected Overall Goal)	Contribution to the	(Ex-post Evaluation) achieved
Establish the	promotion of the	In Viet Nam
economically and	production and utilization	- To implement the plan of oil plant diversification scenario and to implement the MARD Circular
environmentally	of BDF.	No. 23/2017/BNNPTNT on Alternative Afforestation, the VNU Key-Lab has been cooperating with
superior cultivation-		Lao Cai Provincial Department of Agriculture and Rural Development (DARD) to develop 40 ha of
production-utilization of		elite Vernicia Montana at Si Ma Kai District, Lao Cai Province. From this nursery, seeds will be
biomass energy cycle		collected for the improvement of 900 ha of existing forests.
and broad use of above		In Other Indochina countries
system in the world.		- The improved co-solvent method was transferred to a Cambodian company to produce BDF from
		Jatropha seed oil.
		- VNU Key-Lab has signed a Memorandum of Understanding to transfer the technology to a
		company in Laos for the production of biodiesel from Vernicia Montana seed oil.
Source: Terminal Evalua	tion Report; Final Report; C	Questionnaire with the implementing agencies
2 Efficiency		

3 Efficiency

Both the project cost and the project period were within the plan (ratio against the plan: 87% and 100%, respectively). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability <Policy Aspect>

The Vietnamese Government has continuously promoted the use of biofuel such as ethanol mixed petrol (E5, E50, E100) or biodiesel (B5, B100) through various policies such as the "Development Strategy of Renewable Energy of Vietnam by 2030 with a vision to 2050," the "Roadmap for Biofuel Development to 2015 and Vision to 2025," the "Roadmap for Application of Ratios for Blending Biofuels with Fossil Fuel," and the "Vietnam's Renewable Energy Development Strategy up to 2030 with an Outlook to 2050." MOIT has issued ministerial decisions and circulars to focus on the implementation of these plans. Also, the three regional sustainable development in the North-west Region," the "Science and Technology Program for the Central Highlands Region," and the "Science and Technology Program for Sustainable Development in the South-western Region," have been implemented up to 2025. VNU Key-Lab has received funding from these programs to continue research on the improvement of the BDF production technology.

The questionnaire survey confirmed that the implementing agencies, which are key institutes of the respective organizations, have a solid and working organizational arrangement to continue their research and development activities.<sup>6</sup> Many of the counterpart personnel were promoted to directors. It was also found that each institute clearly defines the operation and maintenance responsibility for the equipment provided by this project. Further, VNU Key-Lab has been cooperating with some private companies to develop a plantation of oil plants and collect waste animal fats for BDF production.

<Technical Aspect>

Much ex-counterpart personnel remains in the same implementing agencies. The questionnaire survey confirmed that researchers at each implementing agency have sufficient research capacity to continue their research by being involved in projects and attending various training/scholar exchanges organized by international organizations. They retain skills to operate and maintain the equipment provided by the project.

<Financial Aspect>

Each research institute has secured the budget to continue its research and development activities. Only fragmentary data were available on the Government's relevant policy implementation budget. However, based on the information described above, it can be inferred that the government authority has spent a certain budget for the continuation of project effects.

	Funding fo	or the implementing agency
Institute	Routine budget including operation and	Major research grants in the related fields
	maintenance of equipment	
VNU Key-Lab	250 million VND/year from VNU (Hanoi)	2,650 million VND from MOIT (2016-2017), 949.7 million VND from VNU
		(2017-2018), 5,970 million VND from MOST (2019-2020)
VNU-HCM	100 million VND/year to Faculty of	900 million VND from the Department of Science and Technology of Ho Chi
	Environment from VNU-HCM; 6 billion VND	Minh City (2017-2018), 1,100 million VND from Newton-UK (2019-2021)
	from their own research activities	
IET/VAST	100 million VND/year to the Environmental	300 million VND from VAST (2017-2019), 150 million VND from VAST
	Toxic Division from IET	(2018-2020)
CEM/MONRE	10 billion VND/year from MONRE	3,000 million VND from National Academy of Sciences-USA (2018-2020),
		1,500 million VND from MONRE (2018-2021)
Source: Questionna	aire with the implementing agencies	

Funding for the implementing agency

<sup>6</sup> For example, VNU Key-Lab has six staff members: full-time researchers and the other ten staffs from the Department of Chemistry/VNU working as part-time researchers.

<Evaluation Result> Therefore, the sustainability of the effects through the project is high.

# 5 Summary of the Evaluation

The project achieved the Project Purpose to come up with measures to mitigate climate change, environmental pollution, and poverty by establishing cultivation, production and utilization of biomass energy cycle. The project's effects have continued, i.e., VNU Key-Lab and other implementing agencies have continued and further expanded the research, and the Expected Overall Goal of contributing to the promotion of the production and utilization of BDF has been achieved. Regarding sustainability, no problem has been found in any of the policy, institutional/organizational, technical, and financial aspects. Considering all of the above points, this project is evaluated to be highly satisfactory.

# III. Recommendations & Lessons Learned

# Recommendations for Implementing Agency:

As a line agency of the project, VNU is recommended to review all achievements and experiences of BDF production piloted in this project and subsequent research and development activities in order to provide policy advisory service to the Government (MARD and MOIT) on the roadmap for the development of BDF production in Viet Nam.

# Lessons Learned for JICA:

(1) The project's design focused on Jatropha as the main feedstock of BDF production. However, during implementation, it was found that the climate of the northern region of Viet Nam was not suitable for the cultivation of Jatropha. Therefore, additional activities were conducted to explore other plant species. A positive lesson learned from those activities is that a flexible change in project activities in response to research findings could enhance the effectiveness and impact of the project. At the same time, the project could have handled this change in a better way from a project management perspective. Despite this change, the project outputs and indicators were not revised, making the assessment of the achievement rather difficult. Although, SATREPS Project is a Technical Cooperation (TC) Project, Japanese and Vietnamese researchers involved in the project were not familiar with the principles and procedures of a TC. JICA should have provided some information/briefing on project design, R/D signing, and revision to both research institutes in Viet Nam and Japan who were implementing agencies of the project.

(2) With the strong leadership of the professor who was the Project Director of this project/Director of the Faculty of Chemistry of VNU, the project was able to secure a considerable amount of counterpart fund to construct the building of BDF research at the campus of Faculty of Chemistry and cover for some ad-hoc expenses such as domestic transportation of equipment, custom procedures of imported equipment, rental of a workshop to install the BDF pilot plant, etc. With sufficient counterpart funds, the project was able to cover the necessary expense that could not be paid by ODA provided by JICA. It helped to increase the efficiency of the project and also links to the sustainability of the project. Also, it is important that the timing of R/D signing aligns with the schedule of the approval procedures and budget planning at the Vietnamese side to ensure a decision on allocation of counterpart budget for the project is made timely.

(3) After project completion, JICA should consider to utilize its ongoing advocacy supports to help the project's outputs be reflected in related policies of the central government. In case of this project, JICA could have addressed MARD that is responsible for building up a plan for raw material plantation development to supply the biofuel production industry or the program of MOIT who is in charge of promotion of biofuel use.



Visit to biofuel production pilot plant in VNU for ex-post evaluation Analytical equipment provided by the SATREPS project at VNU

Country Name         Project for Strengthening the Enforcement of Intellectual Property Rights in V           Socialist Republic of Viet Nam         Nam				
I. Project Outline				
Background	with ra enactme Viet Na Admini (2005-2 infrastr	Viet Nam, the importance of protecting the Intellectual Property Rights (IPRs) had been recognized along pid industrial development, and the legal framework to prevent counterfeit products was strengthened by ent of the Intellectual Property (IP) Law in 2005. JICA assisted Intellectual Property Office of Viet Nam (IP am, here called IPVN)* with two technical cooperation projects titled "Modernization of Industrial Property istration Project (2000-2004)" and "Utilization of Intellectual Property Information in Viet Nam (2009)", under which the computer system related to IPRs was developed and expanded. With the ucture of IPRs acquisition being operational/made available, it was time to pay due attention to hening the enforcement of IPRs. Renamed from National Office of Intellectual Property (NOIP) in 2018.		
Objectives of the Project	Authori capacity Authori 1. Ov (IP 2. Pro imj *	e project aimed to improve the capacity of IPVN; through i) organizing training for the IPRs Enforcement ities*, ii) strengthening information sharing with the IPRs Enforcement Authorities, and iii) enhancing y for raising public awareness of IPRs; thereby strengthening the capacity of the IPRs Enforcement ities to enforce and protect Intellectual IPRs in Viet Nam. erall Goal: The capacity of concerned authorities to protect and to enforce Intellectual Property Rights Rs) is strengthened. oject Purpose: The capacity of IPVN to strengthen protection and enforcement of IPRs in Viet Nam is proved**. "IPRs Enforcement Authorities", in this report, refer to the four authorities listed below, and mean the same as "concerned authorities to protect and to enforce IPRs". Among intellectual properties, the project mainly focuses on patent, trademark, industrial design, taking into consideration of IPVN's competence.		
Activities of the Project	<ol> <li>Ma and bet ma</li> <li>Inp Japanes</li> <li>Ex 2) Tra</li> <li>Loc</li> </ol>	oject Site: Hanoiuin Activities: i) To develop training materials and conduct training 12 times by 14 Master Trainers of IPVNd the four IPRs Enforcement Authorities; ii) To develop the system for information gathering and sharingween IPVN and the four IPRs Enforcement Authorities; and iii) To develop public awareness raisingterials such as an animation, and to hold meetings with journalists, etc.outs (to carry out above activities)se Sideperts: 10 persons (cumulative)uinees Received: 92 personscal costs (office and training equipment, 3)Local costssystem for information sharing, etc.)		
Project Period	(Extens	112-March 2017     Project Cost     (ex-ante) 124 million yen, (actual) 213 million yen		
Implementing Agency	(IP Viet Cooper i) Ecc crir ii) Ger iii) Insp	al Office of Intellectual Property of Viet Nam (NOIP), renamed to Intellectual Property Office of Viet Nam a Nam, here called IPVN) in 2018. ation Organizations (IPRs Enforcement Authorities) promotic Police (EP), merged to Police Department investigating Corruption, Economic and Smuggling nes (here called PDCES) in 2018. neral Department of Customs (GDC) pectorate of Science and Technology (IST) rket Surveillance Agency (MSA), upgraded to General Department of Market Surveillance (DMS) in 2018.		
Cooperation Agency in Japan II. Result of the Evalu	Japan P	Patent Office under Ministry of Economy, Trade and Industry; Japan Customs under Ministry of Finance		

<Constraints on Evaluation>

 Due to Coronavirus Disease (COVID)-19 pandemic, the evaluation judgement was made by analyzing information acquired by sending and collecting questionnaires, and through telephone interviews with officials concerned. Neither face-to-face interviews nor site visits were conducted.
 <Special Perspectives Considered in the Ex-Post Evaluation>

- During the terminal evaluation of this project, the achievement of the Project Purpose (strengthening of IPVN's capacity) was assessed through a questionnaire by Japanese Experts, IPVN and the four IPRs Enforcement Authorities. Since such manner of assessment cannot be replicated, this ex-post evaluation verified the continuation status of project effects by checking if the activities introduced by the project were still being continued by IPVN and the four IPRs Enforcement Authorities.
- There are two indicators set for the Project Purpose: i) Degree of knowledge acquisition by IPVN, and ii) Degree of resources/tools and working methodology of IPVN. Under this ex-post evaluation, the continuation of project effects was assessed under the two indicators together, since these indicators are interrelated.

<sup>&</sup>lt;sup>1</sup> This project is under the account of a Japanese ODA Loan Project, "Poverty Reduction Support Credit", which was implemented in phases of Development Policy Loans, i.e. loans to support Viet Nam to improve national policies and to carry out institutional reforms.

#### 1 Relevance

<Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation>

The project was consistent with "Socio-Economic Development Strategy for the period of 2011 to 2020", which emphasized that science and technology development was the key motivation for process of fast and sustainable development, and serious implementation of regulations on IPRs was required.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation>

The project was consistent with development needs of Viet Nam for strengthening the enforcement of IPRs. Although IPVN had the overall responsibility on IPRs, enforcement of IPRs was under the jurisdiction of the four IPRs Enforcement Authorities. Under such situation, capacity development and effective information sharing were strongly needed among IPVN and the IPRs Enforcement Authorities. At the same time, awareness of firms and the general public on IPRs was not yet adequate, and raising public awareness was also needed to protect IPRs.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with "Country Assistance Program for Viet Nam (2009)", including "Business Environment Improvement and Private Sector Development" under "Promotion of Economic Growth and Strengthening of International Competitiveness". In addition, Vietnam-Japan Economic Partnership Agreement signed in 2008 listed the protection of IPRs as a priority. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The project achieved its Project Purpose at the time of project completion. Through a questionnaire survey during the terminal evaluation, Japanese Experts, IPVN and the four IPRs Enforcement Authorities assessed that the degree of knowledge, resources/tools and working methodology of IPVN had been increased (Indicator 1 and 2). Regarding training, for example, IPVN facilitated 12 training courses conducted by Master Trainers<sup>2</sup> on a pilot basis. The course duration was two to four days and the cumulative number of participants was 913.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued till the time of ex-post evaluation, since activities under three Outputs, i.e. i) training, ii) information sharing, and iii) public awareness raising, have been implemented by IPVN together with the four IPRs Enforcement Authorities. Firstly, it is remarkable that training courses, with Master Trainers as main lecturers, have been conducted on a regular basis and expanded to provincial levels to cover more than 2,000 participants annually. For example, every year, IPVN conducts an in-depth six-month course on IP legal framework and skills to register rights for industrial design. Each of the four IPRs Enforcement Authorities has its own course specified for its mandates, such as enforcement against counterfeit goods (PDCES), and procedure of examining and handling IP infringement (DMS). Secondly, regarding information sharing, although the IT system<sup>3</sup> under the project was hacked in 2017 and still under recovery, IPVN continues to regularly exchange information (such as IPR disputes and infringement cases) with the four IPRs Enforcement Authorities via Vietnam National Public Service Portal (allowing inter-ministerial exchange) and traditional methods such as meetings, emails and phones. Since the IT system was useful, IPVN has been recovering it, and trying to make it fully function in 2021<sup>4</sup>. Thirdly, public awareness raising activities are also being conducted by IPVN through: a) training as well as events such as technical festivals, business start-up seminars, conferences, etc.; and b) mass media by utilizing the network with journalists built under the project.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved. The number of infringement cases handled by the four IPRs Enforcement Authorities has been generally increasing. Regarding the recent decrease in handling cases by PDCES and DMS, IPVN considers it reflects decreasing infringement cases due to strengthened enforcement of IPRs (Indicator 1). Under this ex-post evaluation study, Japan External Trade Organizations (JETRO) and three Japanese companies were questioned about the IPRs enforcement in Viet Nam. All respondents evaluate that the capacity for IPRs enforcement has been strengthened, on the grounds that enforcement authorities handle more cases more quickly and efficiently in wider areas of the country (Indicator 2)<sup>5</sup>.

<Other Impacts at the time of Ex-post Evaluation>

According to PDCES and IST, the project has brought positive impact, particularly to set up a good network of Master Trainers to continue internal training, as well as enhancing strong collaboration among IPVN and the four IPRs Enforcement Authorities, thereby contributing to the achievement of the Overall Goal. On the other hand, no negative impacts have been observed. <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

<sup>&</sup>lt;sup>2</sup> Under the project, 14 Master Trainers from IPVN and each of the four IPRs Enforcement Authorities were trained, and they developed teaching materials and implemented the training courses for each authorities' staff.

<sup>&</sup>lt;sup>3</sup> Introduction of an IT system was decided in January 2015, which was specifically designed for IPVN and the four IPR Enforcement Authorities to share information in a timely manner.

<sup>&</sup>lt;sup>4</sup> Right after the hacking of the IT system, IPVN identified how to recover the system, and tried to entrust the recovery work to the IT vendor who had developed the system. Also, IPVN attempted to integrate the system within a new project to upgrade IPVN's overall IT system. Although neither measures were materialized, by August 2019, IPVN finally found an IT company to help restore the system.

<sup>&</sup>lt;sup>5</sup> The study also questioned about the aspects to be improved. With regards to GDC, it was recommended: i) to set a longer time (not current three working days) to apply for a customs injunction; and ii) to improve skills of GDC officers to reduce the cases to mistakenly stop genuine products.

		Achievem	ent of Project Purpos	e and Overall (	Goal					
Aim		Indicators			Re	sults				
(Project Purpose)	1.	Degree of knowledge	Status of the Achievement for both Indicator 1 and 2: achieved (continued)							
The capacity of IPVN* to		acquisition by IPVN	(Project Completion)							
strengthen protection and		concerning protection and	Through a quest	ionnaire surve	ey, Japa	nese	Experts,	IPVN an	d the f	our IP
enforcement of		enforcement to continue	Enforcement Authorities assessed that "the degree of IPVN's knowled				nowledg			
Intellectual Property		activities of each Output	resources/tools and working methodology" had increased.							
Rights (IPRs) in Viet Nam	2.	Degree of resources/tools	(Ex-post Evaluation)	)						
is improved.		and working methodology	Activities under ea	ch Output intro	duced by	y the p	roject have	e been cor	tinued as	s follow
-		of IPVN to continue	Output 1)							
* Renamed from NOIP		activities of each Output	Number of T	raining Courses	s and Par	ticipar	nts (annual	average c	of 2018-2	019)
after project completion.				0		PVN	PDCES	GDC	IST	DMS
			No. of Training Co	urses/vear		6-23	1	2	1	2
			No. of Training Pa			,570	120	100	300	300
			Output 2) IPVN							
			- ·	ement Authorit				-		
			hacked		,	1			5	
			Output 3) IPVN o	continues raisin	g public	aware	ness of IPI	Rs.		
(Overall Goal)	1.	Trend in the number of	(Ex-post Evaluation)		81					
The capacity of concerned		enforcement	Number of Infringement Cases Handled by IPRs Enforcement Authorities							
authorities to protect and			Yea		PDCES		GDC	IST	DN	
to enforce Intellectual			2012 (ex-ante	evaluation)	276	5		18	n/a	
Property Rights (IPRs) is			2015		631	14	1	60	3,740	
strengthened.			2016		619	20		46	4,483	
0			2017 (project o	ompletion)	521	18		38	4,521	
			2018 2019		467 369	30		40 50	5,000	
				(DMG : 201						
			(Note) The data		to is only	up to	October, c	iue to chai	nge in the	2
	2	T	counting (Ex-post Evaluation)							
	2.	Investors and companies'			_					
		evaluation on the capacity of IPR related authorities	Evaluation of J		ee Comp	anies			it in Viet	Nam
			Organizations	Evaluation				rounds		
		in regard to protection and enforcement	JETRO	Strengthened			, administ			nd
		emorcement					ons have b	-	-	
							nber of ca			•
							as been inc			
			Three Japanese	Strengthened			ecome mu			
			companies				nd DMS ar	-	-	
			interviewed				ng the infri	ingement	of patents	s is
						trengtł				
							ng infringe		-	
							ed and bec	ome quick	er in wic	ler areas
			11		0	f Viet	Nam			

Source: Terminal Evaluation Report and other JICA documents, questionnaires and phone-interviews with/via IPVN about IPVN and the four IPRs Enforcement Authorities, and responses to questions (through emails) by JETRO and the staff in charge of IP in three Japanese companies.

# 3 Efficiency

Both the project cost and period significantly exceeded the plan (ratio against the plan: 172% and 158% respectively). This is mainly due to introduction of "IT system", which was originally not included in the project, but through surveys and trials, the project confirmed its necessity and JICA made a contract with an IT vendor in January 2015. (At the time of ex-ante evaluation, "information sharing system" was defined as "framework to gather and provide information, including work flow, division of roles among related authorities, etc., which does not necessarily mean web system".) The project's Outputs were produced as planned, except the IT system added later. However, the project cost after deducting the contract amount with the IT vendor still exceeds the original project cost (143% against the plan). Moreover, regarding the project period, an issue of timely decision-making for introducing the IT system still remains. Therefore, the efficiency of the project is low.

#### 4 Sustainability

<Policy Aspect>

"National Strategy on Intellectual Property Strategy (2019-2030)" was set forth in 2019, which aimed to (i) improve effectiveness and enforcement of State management over IP; (ii) improve and enhance effectiveness of IPRs enforcement; (iii) strengthen human resources for IP activities; and (iv) develop IP culture in the society. Aside from this strategy, there are several programs for anti-smuggling, etc. It is also notable that Viet Nam ratified the Hague Agreement, an international treaty on industrial designs, in December 2019. <Institutional/Organizational Aspect>

Both IPVN and the four Enforcement Authorities sustain their institutions with sufficient members of staff, or with the plan to recruit more staff members. For example, in IPVN, 16 staff are assigned for training, and 22 for information sharing, which IPVN considers sufficient. It is notable that, in 2018, MSA set up a vertical system of market surveillance force, namely General Department of Market Surveillance, and strengthened its management over 63 branches in provinces and cities.

<Technical Aspect>

Both IPVN and the four Enforcement Authorities have maintained the necessary skills and knowledge, through their daily work and participating in domestic and foreign training courses. Master Trainers under the project keep conducting training, and share the obtained theory and skills to their colleagues during daily work. Training materials developed by the project have been utilized and updated to incorporate new regulations and typical cases. Also, the animation made under the project for public awareness raising is still being utilized at the time of training and events.

<Financial Aspect>

IPVN, PDCES and GDC utilize their recurrent expenditure for sustaining project effects, while DMS will have further budget in line with upgrading to the General Department of Market Surveillance<sup>6</sup>.

<Evaluation Result>

In light of the above, no problem has been observed in terms of the policy, institutional/organizational, technical and financial aspects. Therefore, the sustainability of project effects is high.

### 5 Summary of the Evaluation

The project achieved the Project Purpose (i.e. The capacity of IPVN to strengthen protection and enforcement of IPRs in Viet Nam is improved). The project effects have continued, and the Overall Goal (i.e. The capacity of the four IPRs Enforcement Authorities is strengthened.) has been achieved. Regarding the Sustainability, no major problems have been observed in terms of the policy, institutional/organizational, technical, and financial aspects. As for the Efficiency, both the project cost and period significantly exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

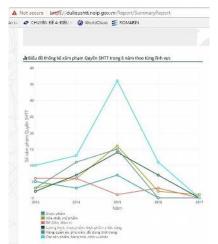
It is recommended that IPVN make sure to implement its plan to recover the full function of the IT system for information sharing in 2021. For this task, IPVN needs to arrange its own budget and human resources, and to lead the discussion with the four Enforcement Authorities for loading back the hacked data and uploading the new data. The IT system was effective to promote and facilitate collaboration and information sharing. The IT system also costs time and money for both Vietnamese and Japanese sides, and IPVN committed to maintaining it accordingly.

### Lessons Learned for JICA:

- Under the project, IT system was introduced but hacked in 2017. In general, IT system is quite costly to develop and maintain, and requires strong commitment from the counterpart agency. At the same time, IT system might be easily hacked and gets out-of-date, while difficult to recover or update. Therefore, JICA should not focus on IT system for planning technical cooperation projects, but rather pay attention to Japan's comparative advantages of capacity building and technical transfer as well as experience sharing.
- Under the project, Master Trainers became a key resource to train the staff in IPVN and the four IRP Enforcement Authorities, which
  also assured project sustainability through self-conducted training courses by Master Trainers as well as forming a collaboration
  network among Master Trainers and among the five agencies. During the project, IPVN requested JICA to pay for Master Trainers'
  overtime payment to develop the training materials from scratch, which became a big controversy between both parties. In JICA's
  technical cooperation projects, it is good to develop the model of Master Trainers, but both parties need to have a common
  understanding that any payment for Master Trainers should come from the counterpart budget to assure sustainability. It is also
  important for JICA to request counterpart agencies to commit to maintaining Master Trainers as well as other outputs on their own
  cost and time, even after project completion.



Training by a Master Trainer



Analysis Data shared on the IT System (before being hacked)



Distributing IP Awareness Raising Materials during a Technology Festival

 $<sup>^{\</sup>rm 6}\,$  IST does not have a separate budget, and collaborate with IPVN.

	Nama			conu	ucted by Viet Nam Office: May, 2020
Country Socialist Republ		Establishmen	it of Energy Ma	nagemen	t Training Center
*	ic of viet Nam				
I. Project Outline					
BackgroundIn Viet Nam, the increase rate of energy consumption exceeded the economic growth rate. In Vietnamese government implemented the Law on Energy Efficiency and Conservation in January to establish rules for energy conservation, including a system for energy management and a syst audit. Accordingly, the Ministry of Industry and Trade (MOIT) issued ministerial ordinances to preconsideration of organizations and an approprite training site, training and the qualification syst establishment of the Energy Management Training Center (EMTC) to develop human resources to persons for energy management and energy audit.*For implementation of the project, the project activities were divided into two stages. "The September 2012 as the preparation stage, and the site of the EMTC was decided as Plastic-Rubble and Energy Conservation Training Center (PRET) in Ho Chi Minh City (HCMC). Following the stage of the project (this project) started.					
Objectives of the Project	<ul> <li>(EA), enabling counter capacity to disseminal management of the E management in design</li> <li>1. Overall Goal: Under the Law or enhanced.</li> <li>2. Project Purpose:</li> </ul>	rparts (C/Ps) to in te energy conserva nergy Managemen ated enterprises un n Energy Efficien	nplement practical ation activities for at Training Center der the Law on Ene cy and Conservatio	training for enterprises, for training rgy Efficier on, energy 1	nergy Manager (EM) and Energy Auditor EM and EA, and strengthening of C/Ps' the project aimed at establishment and EM and EA, thereby enhancing energy ney and Conservation. management in designated enterprises is
Activities of the Project	<ol> <li>Project Site: Hand</li> <li>Main Activities:         <ol> <li>Main Activities:                 <ol> <li>Preparation training facil EM and EA,</li> <li>Appointmen practical tra Implementat factories and</li> <li>Implementat network of M</li> <li>Inputs (to carry or Japanese Side</li> <li>Experts: 9 person</li> <li>Trainees received</li> </ol> </li> </ol> </li> </ol>	of the curriculum ities and equipmer etc. t of instructors of ining on operatio ion of trial trainin buildings, etc. ion of workshops of AOIT and related on t above activities) ts (short-term) l: 15 persons pment for practica	, program and tex nt, Establishment of f training courses on and maintenanc ng courses for EM on energy conservat organizations.	an examination of EM and e of the E and EA, tion technology Vietnames 1) Staff In ac enga 2) Loca	practical training courses, Installation of ation system and a qualification system of I EA to the EMTC, Implementation of EMTC as well as energy conservation, Implementation of trial energy audit in ogy and regulations, Establishment of the se Side fallocated: 8 persons Idition, staff at local governments were ged in the project. I expenses: Expenses for renovation of $\Gamma^1$ in HCMC
Project Period	July 2013 – March 20 (Extension period: Jan March 2016)	uary 2016 –	Project Cost	× /	300 million yen, (actual) 398 million yen
Implementing Agency	Ministry of Industry at (DOIT-HCMC)	nd Trade (MOIT), I	Department of Indu	stry and Tra	de under Ho Chi Minh City
Cooperation Agency in Japan	The Energy Conservat	ion Center, Japan (	(ECCJ), Nippon Ste	el & Sumik	in Management Co., Ltd. (NSSMC)

# **II. Result of the Evaluation**

1 Relevance

<Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion> At the time of ex-ante evaluation, the Viet Nam Government implemented the Viet Nam Energy Efficiency Program (VNEEP: 2006-2015) to promote energy efficiency. At the time of project completion, the VNEEP (2016-2019) included solutions to improve legislative framework on energy efficiency and public awareness on energy efficiency and to develop and promote the use of equipment with less energy intensity, as well as solutions for energy efficiency in industrial enterprises, buildings and transport sector.

<sup>&</sup>lt;sup>1</sup> ETMC was managed by PRET and its trainers include PRET staff and outside resources assigned by PRET.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion>

At the time of ex-ante evaluation, it was required to develop human resources to train qualified persons for energy management and energy audit. No change in the needs was observed at the time of project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

In the Country Assistance Program for Viet Nam (2009), promotion of economic growth and strengthening of international competitiveness was one of the four priority areas. In this priority area, stable supplies for resource and energy was mentioned, including promotion of energy conservation.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the project completion. At the time of project completion, the training and qualification system of EM and EA as well as the curriculum and textbooks were established and in use. There was also a prospect for issuance of MOIT's circular that stipulated the use of the curriculum and textbooks.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued to the time of ex-post evaluation. The training and qualification system as well as the curriculum and textbooks developed by the project are still functioning and utilized at the Center for Supporting and Enterprise Development (CSED<sup>2</sup>). Regarding the Guiding Document, as a part of the administrative procedure reform, the conditions required to become a training facility for EM and EA were abolished. With this legislative change, training services for EM and EA can be conducted not only by agencies with the required conditions, such as the EMTC, but by other training agencies as well, and other training agencies can use their own curriculum and textbooks. Therefore, there is no Guiding Document set by MOIT for the curriculum and textbooks for EM and EA. However, the curriculum and textbook have been used effectively and updated by EMTC. The EMTC has been conducting training as expected and has an advantage in providing practical training with systematic training equipment. At the EMTC in HCMC<sup>3</sup>, a total of 34 training courses for EM and EA were held during the period between 2016 and 2019, and the number of trainees has been increased year by year. Considering these facts, it is judged that the expected project effects have been continued.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved. According to the internal data of MOIT, the energy intensity has been reduced by more than 5% during the period from2016 to 2019. Although the comprehensive statistical data was not disclosed, the current status of energy intensity was confirmed by the evaluator at the time of ex-post evaluation during the interview with MOIT. Every year, MOIT updates and discloses the list of designated energy users (firms and buildings that consume more than 1,000 Tons of Oil Equivalent per year) in all sectors. Designated energy users, according to legal regulations, have to assign their staff to attend training and get the certificate of EM. As the number of EM and EA trained in the practical courses at the EMTC has increased, many enterprises raised their awareness of impact of energy management to their operational efficiency and effectiveness.

<Other Impacts at the time of Ex-post Evaluation>

The training system established by the project, including the training facility, has been highly evaluated by the ASEAN Center for Energy (ACE) and ACE started conducting regional training courses at CSED in 2019 with the participation of trainers from CSED and in collaboration with ECCJ. No negative impact has been observed.

A abiavament of Project Dumass and Overall Coal

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

<u>.</u>		Achievement of Project Purpose and Overall Goal			
Aim	Indicators	Results			
(Project Purpose)	(Indicator 1)	Status of the Achievement: achieved (continued)			
The Energy	Establishment of	Project Completion)			
Management Training	training and	• Through the activities of the project, equipment for practical training was installed in the EMTC in			
Center is established	qualification system	HCMC and the technical staff in the EMTC were trained for maintaining the equipment. Trainers for			
and managed for	of energy manager	EM and EA training courses became capable trainers through some training courses implemented in the			
training Energy	and energy auditor.	project such as trainers' training for EM and EA and on-site EA training.			
Managers and Energy		(Ex-post Evaluation)			
Auditors.		The training system of EM and EA including the curriculum and textbooks developed by the project			
		has still been used by the EMTC under CSED (under DOIT-HCMC).			
	(Indicator 2)	Status of the Achievement: partially achieved (partially continued)			
	Curriculum and	(Project Completion)			
	textbook are	• Training materials, including theoretical and practical slides and practical guidelines, were completed			
	completed as Guiding	and these training materials were used in training courses substantially. The training materials were			
	Document of the	expected to be the Guiding Document of the MOIT. According to MOIT, the revision of the related			
	Minister.	document, i.e., the Circular 39/2011/TT-BCT, was planned to be set in process in 2016 and be enacted			
		in 2017.			
		(Ex-post Evaluation)			
		· Due to a legislative change, the above-mentioned circular has not been enacted, and hence the			
		curriculum and textbooks were not issued as MOIT's Guiding Document. However, curriculum and text			

<sup>&</sup>lt;sup>2</sup> PRET was reorganized to CSED by HCMC People's Committee's Decision in November 2016.

<sup>&</sup>lt;sup>3</sup> During the project, it was planned to establish the second EMTC in Hanoi. The EMTC in Hanoi is located in Hoa Lac High Tech Park, under DOIT, but still under construction at the time of ex-post evaluation, due to budget shortage from Hanoi People's Committee to invest in training equipment.

		book have still been updated and utilized effectively at EMTC in HCMC. The EMTC in HCMC has
		been offering training courses for EM and EA as one of the leading training facilities and helping
		trainees to complete the qualification test.
(Overall Goal)	(Indicator 1)	(Ex-post Evaluation) achieved
Under the Law on	Energy intensity of	• As there was not comprehensive national statistics report <sup>4</sup> , MOIT has calculated some internal data on
Energy Efficiency and	designated enterprises	energy intensity and it was confirmed through the interview with MOIT that it had been surely reduced
Conservation, energy	is reduced by 5%,	by more than 5%, although the data was not official so was not disclosed.
management in	comparing the data	
designated enterprises	between 2016 and	
is enhanced.	2020.	
Source: Terminal Evaluation Report, Project Completion Report, Questionnaire and interview to MOIT, DOIT, and CSED		

3 Efficiency

Both the project cost and the project period exceeded the plan (ratio against the plan: 133% and 110%, respectively). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

# 4 Sustainability

<Policy Aspect>

The VNEEP (2019-2030) focuses on improving legislative framework; providing financial and technical support to promote projects on energy efficiency in manufacturing and renovating production lines; developing national energy database center and IT application in energy management.

<Institutional Aspect>

After the project completion, there was organizational reform at MOIT, and PRET was reorganized to CSED under DOIT. At the time of ex-post evaluation, MOIT has two officials and CSED has six. The current organizational structure and manpower is sufficient to sustain project effects as these organizations assume necessary tasks. MOIT performs state management and supervises the issuance of national certificates for EM and EA. At the EMTC, they can manage the training courses and the qualification system for EM and EA. In the long term, it may be necessary to recruit and train the next generation staff to manage and maintain the EMTC. CSED cooperates with MOIT in issuing certificates for EM and EA. Under the national program on economical and efficient use of energy, CSED also conducts some training courses upon request of MOIT. Both the EMTC and CSED cooperate with universities to mobilize trainers for training courses and CSED also collaborates with auditing firms to conduct energy auditing upon request from enterprises.

<Technical Aspect>

At MOIT, DOIT-HCMC and CSED, at least one member of those involved in the project is still working and engaged in their duties. At CSED, the staff has updated knowledge and the training curriculum by themselves. However, CSED is not capable for in-depth maintenance of the training equipment such as software update, and currently they conduct simple periodical maintenance. CSED needs assistance for in-depth maintenance of the training equipment.

Staff allocate	ed during the project and at the	e time of ex-post evaluation

Organization	No. of members involved	No. of members still
	in the Project	working
MOIT	3	3
DOIT-HCMC	2	1
PRET/CSED	3 (PRET)	1 (CSED)

<Financial Aspect>

As training for EM and EA can be conducted not only at training facilities with required conditions but at other agencies as well, it is now operated based on a market mechanism without any financial support from central state budget (MOIT). In HCMC, DOIT allocates some budget to support enterprises located in HCMC (not those in other provinces or other cities) that attend EM and EA training courses by CSED. The estimated annual amount is 960 million Viet Nam Dong (VND) for 2018 and 2019. Except for such budget support by DOIT, CSED has to balance expenditure and revenue by gaining tuition fees of the training courses. In addition, CSED has to compete with other training agencies in the market to maintain the operation of the training center. The maintenance budget has also been allocated from the revenue from the training courses, and there is no budget support from DOIT for maintenance.

In light of the above, some problems have been observed in terms of the technical and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

# 5 Summary of the Evaluation

The project partially achieved the Project Purpose of establishing and managing the EMTC for training of EM and EA, as training and qualification system of EM and EA was established though the Circular regarding the Guiding Document on the curriculum and textbook was not issued by project completion. At the time of the ex-post evaluation, the project effects have been continued, as the training system of EM and EA including the curriculum and textbooks developed by the project has still been utilized by the EMTC, although the Guiding Document for the curriculum and textbooks has not been issued due to the legislative change. The Overall Goal of enhancement of energy management in designated enterprises has been achieved, as MOIT confirmed the reduction of energy intensity of designated enterprises. Sustainability is ensured in the policy and institutional aspects, but some problems have been observed in the technical and financial aspects, as CSED staff conduct only periodic maintenance and no budget is allocated to CSED by government. As to the efficiency, both the project cost and the project period exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

# III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

<sup>&</sup>lt;sup>4</sup> Under the VNEEP (2006-2015), there was report on energy consuming. However, since 2015 MOIT has been unable to make any national statistics report, as there was no budget allocated from the national program.

DOIT-HCMC is recommended to allocate necessary budget for the maintenance of facilities at the EMTC in the medium and long terms. The in-depth or more complex maintenance requires financial and technical resources that cannot be covered by own financial resource of CSED.

- CSED is recommended to assign and train more staff that are capable to manage and operate the facilities at the EMTC, including the in-depth maintenance of training equipment, for the sustainable operation of the training center.
- As some trainers joining TOT courses conducted under the project have been nearly retirement age, CSED is recommended to train more trainers to ensure the quality and sustainability of the training courses"

Lessons learned for JICA:

• The statistical information for the indicator of energy intensity reduction by 5% to evaluate the achievement of the Overall Goal was not available, although it was expected to be collected and disclosed at the time of project completion. In addition, one of the indicators of the Project Purpose, the curriculum and textbooks completed as the Guiding Document of MOIT was not applicable due to the change of the legislative system, and was not very appropriate to evaluate the project effects. Therefore, the indicators should have been carefully selected with consideration of actual and continuous availability of such data, and of the political and social environment especially as to the indicator relating to a legislative matter, as such unexpected changes in external environment cannot be controlled.



The Energy Management Training Center in HCMC



The training facility at Energy Management Training Center in HCMC

Country Name	
1	Development of Landslide Risk Assessment Technology along Transport Arteries in Viet Nam
of Viet Nam	

## I. Project Outline

1. 1 Toject Outline			
Background	Viet Nam had a wide area of mountainous terrain with a dangerous cleavage terrain due to earth crust's powerful tectonics. It also had the complex geological structures with grave cleavages of soil layers. Besides, as Viet Nam's geographical location was bordered by the Pacific Ocean, it was influenced by the monsoon climate with the average annual rainfall from as much as 3,000-4,500 mm per year. In this regard, it was said that the phenomenon of landslides was one of the most serious natural disasters in Viet Nam. According to statistics, the annual volume of landslides on the roads after rainy season in Viet Nam amounted to several hundred thousand cubic meters, which not only interrupted the arterial roads causing serious economic loss but also victimized some people, affecting communities in the mountainous areas. (Figures at the time of ex-ante evaluation.)		
1) Experts: 2 persons (long-term), 51 persons (short-term)1) Staff Allo		ter simulation, (iii) development of early opment of integrated guidelines for the project aimed to develop landslide risk ps (WGs)* to reduce landslide disasters ective use of the technology in Viet Nam, ne developed landslide risk assessment arteries in Viet Nam.	
		and identification of risk area, (ii) To esting for computer simulation, (iii) To ing, and (iv) To develop the integrated nent technology. Vietnamese Side 1) Staff Allocated: 53 persons	
Project Period	November 2011- November 2016	Project Cost	(ex-ante) 323 million yen, (actual) 377 million yen
Implementing Agency	Ministry of Transport (MOT); Institute of Transportation	tion Science and	Technology (ITST)
Cooperation Agency in Japan			

**II. Result of the Evaluation** 

< Special Perspectives Considered in the Ex-Post Evaluation >

• In the terminal evaluation, achievement status of the Project Purpose Indicator 1 ("Landslide risk such as area, depth, volume, speed of landslide motion is identified by incorporating results of mapping, testing and monitoring") was judged based on the progress on the research conducted by the WGs and incorporation of the results into the integrated guidelines. In order to maintain the same perspective as that of the terminal evaluation, the same criteria were used in making evaluation judgement in this ex-post evaluation.

1 Relevance

<Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, the project was consistent with the development policies of the Vietnamese government, including "The National Strategy for Natural Disaster Prevention, Response and Mitigation to 2020", which highlighted disaster prevention, response and mitigation as a priority issue for economic and social development, and "The National Transport Strategy to 2020", which put "Conducting research on and establishing standards…in surveys, design, construction, handover and O&M" as one of the main solutions.

<sup>&</sup>lt;sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation >

As stated in "Background", the project was consistent with the development needs of Viet Nam for development of landslide risk assessment technology at the time of ex-ante evaluation.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with "The Country Assistance Program for Viet Nam" (2009) that included the assistance to strengthen the capacity to maintain the infrastructure of transportation and traffic as well as the capacity to maintain the quality and safety management under the pillar of "Promotion of economic growth and strengthening of competitiveness in the international market" and the assistance to strengthen the capacity of disaster responses for central and local administrations under the pillar of "Improvements in Living and Social Conditions and Corrections of Disparities".

<Evaluation Result>

In light of the above, the relevance of the project is high.

# 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The project achieved the Project Purpose at the time of project completion. All the three WGs (mapping, test, and monitoring) completed their respective research and achieved their respective intended objectives. Incorporating the results, the draft of "Integrated Guidelines for landslide risk assessment" with 33 chapters was developed and submitted to MOT, which was expected to be finalized in the consultation process of MOT after the project completion (Indicator 1). Capacity of ITST staff in the field of landslide risk assessment was improved through participating in the joint research. Further, through training in Japan, six ITST researchers obtained the advanced degrees (one Ph.D. and five Masters of Science (M.Sc.)) in the fields of mapping, test, or monitoring, who, back in ITST, gave explanation in Vietnamese to and worked with their colleagues, thus significantly contributing to the capacity development of overall ITST staff. By the project completion, one more ITST researcher obtained the advanced degree (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued. ITST has continued research activities related to the research outputs using the technology developed by the project and the equipment provided under the project except for a few items for landslide monitoring.<sup>2</sup> For example, landslide monitoring in Hai Van Station was continued until 2019 with approval of MOT. Compiling the monitoring results during and after the project, ITST has produced the draft of "Integrated Guidelines for early warning of large-scale land slide" with reference to the draft of "Integrated Guidelines for landslide risk assessment" developed under the project as well as landslide risk alert criteria for Hai Van area, which have been submitted to MOT. MOT has given instruction to Vietnam Railways (VRs) to utilize the criteria to monitor the landslide risk in Hai Van area and to plan solutions to mitigate landslide risks. ITST has also submitted a proposal to MOT to upgrade the draft of "Integrated Guidelines for landslide risk assessment" based on the results of continued monitoring in Hai Van, and to develop Basic Standards<sup>3</sup> for landslide risk assessment based on the upgraded guidelines. In August 2020, MOT approved ITST's proposal to develop the Basic Standards and requested ITST, upon the completion of the Basic Standards, to propose some of the Basic Standards that can be upgraded to Vietnam Standards.<sup>4</sup> ITST has also shared the research outputs with the related government organizations, private sector, other research institutions, etc. under the format of seminars, technical exchanges, or meetings. Directorate for Roads of Vietnam (DRVN) has used the landslide mapping and Hai Van monitoring data as reference to draft a road maintenance technical manual, which has a component on management of landslides along transport arteries. VRs is planning solutions to mitigate landslide risks in Hai Van area, using the research outputs on landslide risk distribution and mechanism as well as Hai Van monitoring data. Lao Cai Provincial Department of Agriculture and Rural Development are using the landslide mapping for its project for capacity building of local community for slope disaster risk (2020-2023). In addition, four new research projects based on the research outputs have been initiated by University of Natural Science-Vietnam National University, Ministry of Science and Technology, ICL-JICA<sup>5</sup>, and ITST-Tohoku Gakuin University, respectively. The researchers of ITST have sustained and improved their research capacity through joining landslide related research, providing consultation to other organizations about landslide risk management or following Ph.D. courses (three researchers have obtained Ph.D. degrees and three are pursuing Ph.D. program).

<Status of Achievement for Expected Overall Goal at the time of Ex-post Evaluation>

The Expected Overall Goal has been achieved. Early warning system in Hai Van landslide area has been established by the landslide risk assessment technology developed and the equipment provided under the project as well as the landslide risk alert criteria for Hai Van area, such as rainfall thresholds, developed by ITST after the project completion, which MOT has instructed VRs to utilize (Indicator 1). Landslide risk slopes have been identified and assessed by ITST at three locations each within and outside the project site in Viet Nam (Indicator 2).

<Other Impacts at the time of Ex-post Evaluation>

No negative impacts have been observed. Other positive impacts have been mentioned by ITST. Scientific literacy of the related government organizations was improved by the project through approving related research proposals and reviewing their reports. In the three years of monitoring of Hai Van Station (2017-2019), ITST shared landslide monitoring data with VRs regularly and proposed them to have a plan for regular monitoring of landslide risks, using certain criteria such as rainfall thresholds (the same criteria which MOT has just instructed to VRs to use) and adjust train schedule when necessary in rainy season. VRs followed the recommendations by ITST. In those

 $<sup>^2</sup>$  Due to thunder, a borehole inclinometer was broken before the project completion in 2016 and two out of five pieces of GNSS were broken in 2018. They have not been repaired or replaced because ITST was able to identify the ways to continue the monitoring by using project experience and could still collect the necessary data using other equipment types provided under the project. It is noted that the provided equipment for landslide monitoring is temporarily not utilized as of ex-post evaluation because Hai Van landslide monitoring was completed in 2019. However, ITST has submitted a proposal to MOT to duplicate the landslide risk assessment model developed in and after the project to other important arteries. If the proposal is approved by MOT, the provided equipment would be used again.

<sup>&</sup>lt;sup>3</sup> Technical standards for a sector in Viet Nam.

<sup>&</sup>lt;sup>4</sup> National standards of Vietnam.

<sup>&</sup>lt;sup>5</sup> Through a technical cooperation project "Development of early warning technology of rain-induced rapid and long-travelling landslides in Sri Lanka" (2020-2025).

three years, landslide risks were sufficiently shared with VRs and railway safety in the typhoon season was ensured. <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement	of Project	Purpose	and	Overall Goal	
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Aim	Indicators	Results	
Aim (Project Purpose) Landslide risk assessment technology incorporating outcomes of all working groups (WGs) is developed to reduce landslide disasters along main transport arteries through the collaborative research based on the Japanese pioneer technology, and capacity development for the effective use of this technology is undertaken in Viet Nam.	Indicators         1. Landslide risk such as area, depth, volume, speed of landslide motion is identified by incorporating results of mapping, testing and monitoring.         2. Capacity of ITST staff in the field of landslide risk assessment is developed.	<ul> <li>Status of the Achievement: achieved (continued)</li> <li>(Project Completion)</li> <li>-Landslide risk assessment technology was developed, incorporating results of mapping, testing, and monitoring, and the draft of the integrated guidelines was made.</li> <li>(Ex-post Evaluation)</li> <li>-ITST has continued landslide related research, including continued monitoring in Hai</li> <li>Van Station (2017-2019), using the developed technology and most of the equipment provided by the project and has shared the research outputs with other research institutes, government organizations, and private sector.</li> <li>-Other research institutes have started new research based on the research outputs.</li> <li>-MOT is considering the proposal from ITST to upgrade the draft of the integrated guidelines developed by the project based on the Hai Van monitoring data (2017-2019) and develop Basic Standards for landslide risk assessment based on the upgraded guidelines. DRVN has used and VR is using the research outputs to reduce landslide risks.</li> <li>*Also see the results of Expected Overall Goal.</li> <li>Status of the Achievement: achieved (continued)</li> <li>(Project Completion)</li> <li>-Capacity of ITST staff in the field of landslide risk assessment was improved through participating in the joint research.</li> <li>-ITST researchers, who obtained the advanced degrees through training in Japan, gave explanation in Victnamese to and worked with their colleagues back in ITST.</li> <li>(Ex-post evaluation)</li> <li>-The researchers of ITST sustained and improved their research capacity through joining landslide related research, providing consultation to other organizations about landslide risk management or following Ph.D. courses.</li> </ul>	
(Expected Overall Goal) Social implementation of the developed landslide risk assessment technology and early warning system is realized to contribute to the safety ensuring of transport arteries in Viet Nam.	<ol> <li>Early warning system in Hai Van landslide area is established by using technology and equipment of the project.</li> <li>Landslide risk slopes are identified and assessed both within and outside the target areas</li> </ol>		

Source : Terminal Evaluation Report; Japan Science Technology Agency (JST) Terminal Evaluation Report; questionnaire and interview survey to ITST

3 Efficiency

While the project period was within the plan (ratio against the plan: 100%), the project cost exceeded the plan (ratio against the plan: 117%). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair. 4 Sustainability

<Policy Aspect>

"The National Strategy for Natural Disaster Prevention, Response and Mitigation to 2020" as well as "The National Transport Strategy to 2020" mentioned in "Relevance" is still effective.

<Institutional/Organizational Aspect>

Organizational structure required to utilize the research outputs/outcomes is well established. MOT, ITST, Vietnam Landslide Association for Transport (VLAT) and universities are involved in landslide related research. MOT is responsible for evaluation of research proposals or policy recommendations from universities and research institutes as well as budget allocation. Universities and research institutes, including ITST, conduct independent research or joint research. VLAT is invited to make comments to the research reports. The research outputs are also shared by ITST with local authorities through training courses and/or seminars. In addition, ITST has established Institute of Geotechnical and Disaster Prevention, a specialized agency for disaster prevention including landslide induced disaster, which will use and develop the research outputs, utilizing the researchers involved in the project and the provided equipment.

The researchers of ITST have sustained and improved their research capacity as mentioned in "Effectiveness/Impact" and MOT has sustained and improved their scientific literacy through appraising research proposals, approving research reports, attending workshops and seminars. The researchers of ITST have been also sustaining and improving their skills and knowledge to properly operate and maintain the provided equipment through continued monitoring in Hai Van Station and joining new research after the project completion.

### <Financial Aspect>

ITST has secured financial resources by budget allocation from MOT and ITST's own budget for continuing and starting related research activities. The budget has been sufficient for regular operation and maintenance as well as small repair and replacement of the provided equipment. ITST also stated that, as MOT approved the proposal from ITST to develop the Basic Standards, it will allocate the necessary budget to organize consultation and appraisal meetings from their own budget.

<Evaluation Result>

Therefore, the sustainability of the effects through the project is high.

### 5 Summary of the Evaluation

The project achieved the Project Purpose (i.e. Landslide risk assessment technology incorporating outcomes of all working groups (WGs) is developed to reduce landslide disasters along main transport arteries through the collaborative research based on the Japanese pioneer technology, and capacity development for the effective use of this technology is undertaken in Viet Nam). The project effects have continued, and the Expected Overall Goal (i.e. Social implementation of the developed landslide risk assessment technology and early warning system is realized to contribute to the safety ensuring of transport arteries in Viet Nam) has been achieved. Regarding the Sustainability, no problems have been observed in terms of policy, institutional/organizational, technical, and financial aspects. As for the Efficiency, the project cost exceeded the plan. Considering all of the above points, this project is evaluated to be highly satisfactory.

# III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- It is recommended that ITST continuously follow up with MOT to get approval on the proposal to develop the Basic Standards so as to increase the utilization of the research outputs of the project.
- It is recommended that, in the future, ITST take necessary measures to prevent equipment to be installed from thunder and other possible effect of weather.
- Lessons Learned for JICA:
- Some equipment items provided by the project were broken by thunder at the project site during and after the project implementation due to lack of preventive measures. When installing equipment in high locations and prone to weather hazards, some preventive measures like installing lightning rods could have been taken to protect the equipment.



Data analysis at ITST



Monitoring at Hai Van area

Country Name		Production Improvement a	nd Extension of	Shellfish Aquaculture Project
Republic of El Salvador		1 roduction improvement a	nd Extension of	
I. Project Outline				
BackgroundFisheries and aquaculture play an important role in the economy and second activity of the fisher industry, including fishering distribution. Particularly, shellfish harvesting has been an important activity and was considered as the main income source of most residents there. Ho shellfish in the coastal area, the size became smaller and the fishing groun the "Project for Shellfish Aquaculture Development" (2005-2010) with the Development (CENDEPESCA) and established the system for seeds proceeding.				y, including fisheries, aquaculture, fish processing and an important activity for the economy of the coastal area residents there. However, due to excessive extraction of d the fishing ground became farther. JICA implemented 2005-2010) with the Center for Fishery and Aquaculture stem for seeds production and aquaculture of Curil and
Objectives of the Project	of shell contrib Overall	fish aquaculture, the project air uting to the extension of shellfis	med at consolidati h aquaculture to th extended to the sn	esters seeds and strengthened marketing extension system ng the extension system of shellfish aquaculture, thereby ne small-scale fishermen in the eastern part of El Salvador. nall-scale fishermen in the eastern part of El Salvador. ure is consolidated.
Activities of the project 1. H 2. N t 3. I Japa 1) H 2) H 3) T 4) T 5) H f		onseca). n activities: research for imp	rovement for sea ENDEPESCA pe ) le): 1 person sons (Chile) tools, equipment ing, hiring local	<ul> <li>Ivador (Bahia de Jiquilisco, Bahia de La Union de Golfo eds production, training on the improved aquaculture rsonnel and fishermen, manual development, linkage</li> <li>Salvadorian Side <ol> <li>Staff allocated: 13 persons</li> <li>Land and facilities: Office space, lodge for JICA experts, facility for seeds production, etc.</li> <li>Local cost for fuels, hiring security guards, electricity bills, etc.</li> </ol> </li> </ul>
		Project Cost	(ex-ante) 192 million yen, (actual) 201 million yen	
Implementing Agency	Departi	ment of the Fishery and the Aqu	aculture (CENDE	EPESCA), Ministry of Agriculture and Livestock (MAG)
Cooperation Agency in Japan	None.			

< Special perspectives considered at the ex-post evaluation >

- Achievement of the Overall Goal had been expected five years after the project completion (2020). As the ex-post evaluation survey was conducted in 2019 (four years after the project completion), its achievement was verified based on the data available as of the ex-post evaluation.

- In El Salvador, the security situations became deteriorated toward the last stage of the project period. The number of homicides per 100,000 persons in the country increased to 39.6 in 2013, 61.3 in 2014 and 103.0 in 2015. The eastern region, where the project target sites were covered, also had a large number of homicides (in 2015, more than 150 in Jiquilisco and more than 100 in La Union). About three million Salvadorans, equivalent to about half of the country's 6.4 million population have emigrate to the United States and other countries, with about 40,000 leaving the country each year<sup>1</sup>. It has been noted that these migrations are not only for economic reasons, but also for security reasons in many cases. The issues of insecurity and immigration had been beyond expectations of the project and it was considered that these largely affected continuity of the project effects. Evaluation judgement was made also by considering these factors.

### 1 Relevance

<Consistency with the Development Policy of El Salvador at the time of ex-ante evaluation and project completion>

The project was consistent with the development policy of El Salvador at the time of both ex-ante evaluation and project completion, as the "Five-year Development Plan" (2009-2014) included a priority area of economic growth and building of development infrastructure and the "Five-year Development Plan" (2014-2019) had a priority area of promotion of employment for improvement of the productivity through the sustainable economic growth model.

<Consistency with the Development Needs of El Salvador at the time of ex-ante evaluation and project completion>

Shellfish production was the main income source of most residents in the coastal area. However, due to excessive extraction of shellfish in the coastal area, the size of shellfish became smaller and the fishing ground became farther. As the fishermen had needs for improvement of shellfish aquaculture technology and marketing, the project was consistent with such needs at the time of both ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

One of the priority areas of the "Country Assistance Policy for El Salvador" (2012) was activation of the economy and expansion of

<sup>&</sup>lt;sup>1</sup> https://www.infosegura.org/perfiles/el-salvador/, https://issuu.com/lpglaprensagrafica/docs/infonac13022017homics (accessed on May 1st, 2020).

employment, which included promotion of the local industry in the eastern region. Thus, the project was consistent with Japan's ODA policy.

<Appropriateness of the Project Design/Approach>

More fishermen than planned were trained on the aquaculture technology for production of Curil and Pacific Oysters by the project. However, since the project completion, most fishermen have discontinued aquaculture activities and a limited number of fishermen have newly started aquaculture activities. Discontinuity of aquaculture activities has mainly depended on security issues at the target sites. Although the project approach for improving and diffusing the extension system of shellfish aquaculture based on the achievement of the preceding project was appropriate for the fishermen who depended on shellfish aquaculture as income sources, the project effects have been hindered by the security issues. They had not been expected at the project formulation stage, and they became deteriorated especially in the last stage of the project period. The country became very insecure after the project completion, recording the worst murder rate in the world in 2015 and 2016.

<Evaluation Result>

In light of the above, the relevance of the project is high.

### 2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the project completion. Technical training was given to 258 fishermen of 11 groups on Curil aquaculture technology and to 162 fishermen of 8 groups on Pacific Oyster aquaculture (Indicator 1), exceeding the target. More than 15 fishermen obtained knowledge about how to access the market. More than 15 fishermen participated in training on organizational strengthening and marketing in 2013 and 2014 (Indicator 2). Besides, workshops for fishermen on marketing and branding were conducted twice in 2012, and thus, it was possible that more than 15 fishermen had acquired knowledge of marketing.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have partially continued until the time of ex-post evaluation. Five fishermen out of 258 and 15 out of 162 have continued aquaculture of Curil and Pacific Oyster, respectively. Out of 19 groups supported by the project, three groups have continued activities related to aquaculture. The reason why 16 groups have not continued is mainly because delinquency groups became active in the target sites approximately in 2014, which was not expected in the beginning of the Project. In fact, all the 16 groups who could not continue aquaculture activities had confronted crimes and/or direct attacks to the workplaces by the delinquency groups. As a result, most of the fishermen had to emigrate to other countries for escaping from dangers and seeking a better life. The three groups have resided and worked in areas at relatively small risks and therefore continued aquaculture activities. Thus, it can be said that the deteriorating security have enormously affected the continuation of the project effects, not only interrupting aquaculture activities but also forcing migration.

Regarding seed production, the quantity of production and distribution of Curil have increased (distribution: 825,000 in 2015 to 1,116,875 in 2017), exceeding the annual plan. On the other hand, that of Pacific Oyster have decreased (distribution: 2,226,000 in 2015 to 423,332 in 2017) because there were not many Pacific Oyster seeds left from the previous years.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

It is judged that the Overall Goal has been partially achieved. There have been approximately 100 new fishermen who adopted the aquaculture technology introduced by the project, against the target 1,400 because not many fishermen were willing to begin aquaculture knowing the possible risk of insecurity. However, despite the deterioration of the security situation and the resulting dissolution of cooperative groups, these 100 fishermen have continued to use the aquaculture technology.

<Other Impacts at the time of Ex-post Evaluation>

First, women have got more active in aquaculture activities. During the project, their participation was encouraged, and they became the group president or took other important positions. There have been three new groups including a women's group that produce Curil and Pacific Oyster in cooperation with the Station of Puerto El Triunfo of CENDEPESCA (CPT). Second, the aquaculture technology of Casco de Burro which had been started during the project period was completed, and its seed has been produced and distributed since 2017. A new group has been working for its production and sales in the local market. Third, the aquaculture technology developed by the project has been diffused to neighbor countries, by receiving trainees from the University of Honduras and the University of San Carlos of Guatemala. Also, CENDEPESCA has discussed on possibility of a regional project for developing the shellfish production technology with the Central American Fisheries and Aquaculture Organization (OSPESCA).

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Aim	Indicators	Results
(Project Purpose)		Status of achievement: Achieved (Partially continued).
	adopted the improved shellfish	
aquaculture is consolidated.	aquaculture technology.	- Technology transfer was done to 258 fishermen on Curil aquaculture and 162
		fishermen on Pacific Oyster aquaculture.
		(Ex-post Evaluation)
		- Among the 11 fishermen's groups, five fishermen of one group have continued
		aquaculture of Curil.
		- Among the eight fishermen's groups, 15 fishermen of two groups have
		continued aquaculture of Pacific Oyster.
	U	Status of achievement: Partially achieved (Partially continued).
		(Project Completion)
	knowledge to access market.	- 15 fishermen were trained on organizational strengthening and marketing.
		(Ex-post Evaluation)
		- At least one fisherman trained by the project on access to the market has
		partially continued marketing activities, and new fishermen are doing marketing activities with the support of the fisherman trained by the project.
(Overall goal)	1 After 5 years from the and of the	Status of achievement: Partially achieved.
	Project, the transferred shellfish	
		- After the project completion, the shellfish cultivation technology has been
		transferred to approximately 100 fishermen.
insuccimen in the eastern part of	1,400 sman scale fishermen.	transferred to approximately 100 insterment.

Achievement of the Project Purpose and Overall Goal

El Salvador.					
Source: Project Completion Report and information provided by CENDEPESCA.					

#### 3 Efficiency

Although the project period was as planned (ratio against the plan: 100%), the project cost slightly exceeded the plan (ratio against the plan: 105%). Outputs were produced as planned except seeds production. Therefore, the project efficiency is fair.

### 4 Sustainability <Policy Aspect>

Promotion of aquaculture as a whole is prioritized in the "Plan Cuscatlan," the proposed plan by the Bukele administration when he was elected, and seed production and shellfish aquaculture in Jiquilisco Gulf are included in the "Annual Operational Plan of CENDEPESCA" (2015-2019).

#### <Institutional Aspect>

The number of technicians at CPT has been limited, as two technicians and five assistants have been assigned for seed production, and one in charge of extension planning, seed distribution, support for fishermen, product delivery, links for commercialization and breeder selection. After the technicians were moved to other stations in 2016, no more have been recruited due to budget shortages of CENDEPESCA. The committee for sales of Pacific Oysters trained by the project has not been functioning due to disintegration of fishermen groups, lack of technical support from CPT, and lack of production of Pacific Oysters. Despite the situation given before, however, the authorities of CENDEPESCA have shown willingness to continue the project achievements and improve the conditions of CPT in terms of support for production technicians as well as of the fishermen. CENDEPESCA has planned to restock shellfish especially in La Union as stated in their annual operation plan for the year 2020. The Aquaculture Department of CENDEPESCA has been headed by the project C/P personnel as of the time of ex-post evaluation.

The facility for seed production has been functioning. However, the facility for purification of Pacific Oysters at Meanguera has not been utilized, because no fishermen have worked there anymore. The operation of the purification facility at Conchaguita has been limited, too, as fishermen do not have sufficient Pacific Oysters. According to the leader of a group, some equipment has been damaged due to the saltpeter and needs to be repaired, although they still can work.

#### <Technical Aspect>

Technicians who have remained at CPT have sustained sufficient knowledge and skills for production and dissemination of Curil and Pacific Oysters, as they worked on the project and got training in Japan and Chile. Training of new personnel is conducted through on-thejob training on conditioning of breeders, seed selection, feeding, change of water, data gathering and management, seed distribution, etc. When a group newly start aquaculture activities, fishermen receive training on biology of the species, reproduction, and selection of growing site and farming method from CPT, where the training materials developed by the project are used. For marketing, they receive advice from the production technician of CPT or technician of CENDEPESCA who is in charge of the area. <Financial Aspect>

Since the time of project completion, annually 55,000 US dollars (USD) have been allocated and disbursed at CENDEPESCA. There has been no revenue from selling seed. The budgets have been for personnel salaries and administrative expenditures, and thus the budget for seed production, extension services, and operation and maintenance of the related facilities is limited. <Evaluation Result>

In the light above, there have been issues in the institutional and financial aspects. Therefore, the sustainability of the effects is fair. 5 Summary of the Evaluation

The Project Purpose was partially achieved. More fishermen than planned were trained on the aquaculture technology for production of Curil and Pacific Oysters, though training for marketing was limited. The Overall Goal has been partially achieved, as approximately 100 new fishermen have adopted the aquaculture technology introduced by the Project, despite the security issues. Regarding sustainability, the limitation on personnel and budgets have been obstacles for continuing and extending the aquaculture technology improved by the Project. However, it is in accordance with the plan of the government, and technicians at CPT have sufficient knowledge and skills, and they can conduct trainings to new personnel and fishermen. As for efficiency, the project cost slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

# III. Recommendations & Lessons Learned

#### Recommendations for Implementing agency:

- It is recommended to CENDEPESCA to allocate budgets to CPT for conducting aquaculture activities and maintenance of the related facilities. CPT's technicians have sustained skills and efforts to execute activities with limited budgets, and if budgets and a marketing technician are assigned, they could expand their seed production especially for Pacific Oysters and marketing support.

- It is recommended to CENDEPESCA to increase the number of fishermen for aquaculture of Curil and Pacific Oysters, by approaching local NGOs or organizations and training as facilitators, so that the project experience could be replicated.

# Lessons Learned:

- In many areas in El Salvador, there are insecurity issues that could affect the development of activities during their execution or after the project completion. In such countries, it is important to have a strong relationship with the local security authorities (municipal police and National Civilian Police) to monitor the situations and avoid incidents with the benefiters, counterpart personnel and Japanese experts. It is necessary to identify security issues at the project formulation stage, if any security is supposed, and to include mitigation measures in the project activities.



Curil produced with support of CPT.



Equipment provided by the project at CPT for production of Pacific Oyster and Curil.

# Internal Ex-Post Evaluation for Technical Cooperation Project

	Country Name	The Project for Enhancing Integrated Service Delivery for Social Risk Prevention and
Republic of Nicaragua		Attention for Families and Communities
	I. Project Outline	
	a mar adoles allega	n Nicaragua, the number of crimes increased from 104,103 cases in 2005 to 161,757 cases in 2010, indicating ked deterioration in security. 12% of those crime victims were minors, while 6.1% of the perpetrators were excents, and the magnitude of the social risks faced by them was a serious issue. Besides, the number of tions of domestic violence and sexual abuse increased from 29,489 cases in 2007 to 34,763 cases in 2010.

Dealermound	JICA implemented the "Project to Strengthen	of Civil Securit	ty Network for Youth and His Family" (2007-2010).					
Background	The project established a social risk prev	vention service	model through the government and community					
	collaboration. This model was integrated into a policy of the Ministry of Family, Adolescents and Children. On							
	the other hand, in addition to these preventive	activities, there	was a need to strengthen the response (care) to issues					
	that had been already occurring at homes and	communities and	d to establish a system that integrates service delivery					
	for social risk prevention and attention.							
	Through development of guidelines and	l protocols, vali	idation of them in the pilot districts, and capacity					
	development of technicians the project aimed	at developing an	d implementing the mechanism to provide integrated					
	service delivery for social risk prevention a	and attention in	the pilot delegation areas, thereby contributing to					
Objectives of the	expansion and implementation of the mechan	ism to other del	egations in Managua City.					
Project	1. Overall Goal: The mechanism developed	by the project is	expanded and implemented in other delegations in					
	Managua City.							
	2. Project Purpose: In pilot delegation areas, the mechanism to provide integrated service delivery for social risk							
	prevention and attention is developed and im	plemented.						
	1. Project site: Managua City							
	2. Main activities: preparation and validation of the draft of guidelines and protocols for integrated services for							
	social risk prevention and attention, preparation of training materials, training of technicians on practical and							
	managerial capacities, etc.							
Activities of the	3. Inputs (to carry out above activities)							
project	Japanese Side	Nic	araguan Side					
project	1) Experts from Japan: 8 persons	1)	Staff allocated: 10 persons					
	2) Training in Japan: 23 persons	2)	Land and facilities: Office space, etc.					
	3) Equipment: Vehicles, PC, etc.	3)	Local cost: Fuels, office maintenance,					
	4) Local cost: Cost for hiring local co	4) Local cost: Cost for hiring local consultants, communication costs, etc.						
	implementation of training and worksho	ops, etc.						
	January 2012 to November 2016							
Project Period	(Extended period: January 2016 to	Project Cost	(ex-ante) 298 million yen, (actual) 244million yen					
	November 2016)							
Implementing	Ministry of Family, Adolescents and Childrer	MIFAN)						
Agency	winnsu'y of Fanniy, Adorescents and Children							
Cooperation Agency	None.							
in Japan								

# II. Result of the Evaluation

<Special Perspectives Considered in the Ex-post Evaluation>

• At the terminal evaluation, three indicators were used to verify the achievement of the Project Purpose: development of the guidelines and protocols, strengthened internal coordination, and strengthened external coordination. As they were elements for providing services of social risk prevention and attention, at the ex-post evaluation, they were confirmed as part of the institutional aspect of sustainability. To confirm continuation of the project effects, it was verified if the services have been provided based on the guidelines and protocols developed by the project.

1 Relevance

<Consistency with the Development Policy of Nicaragua at the time of Ex-ante Evaluation>

The "National Human Development Plan" (2009-2011) stipulated the importance of protecting people who are vulnerable and at risk, and one of the priority policies was to improve social welfare and achieve social equality. Thus, the project was consistent with the development policies of Nicaragua at the time of ex-ante evaluation.

<Consistency with the Development Needs of Nicaragua at the time of Ex-ante Evaluation>

The number of crimes was increasing, and also allegations of domestic violence and sexual abuse were issues. The project was consistent with the development needs of Nicaragua for strengthening its service provision for the social risk prevention and response. <Consistency with Japan's ODA Policy at the time of Ex-ante Evaluation >

One of the priority areas in the Country Assistance Program for Nicaragua (2002) was support for democratization, which aimed at establishing democracy in a more equitable social and political system.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. The Guidelines for the Delivery for Integrated Care/Attention Services (ESAI) and protocols were officially approved by MIFAN (Indicator 1). As there were constantly remitted cases from Attention Services to prevention technicians and participants in Schools of Value (parental schools), it can be said that there was coordination for ESAI within pilot District Delegations (Indicator 2). As well, coordination was strengthened for ESAI among the District Delegations, external institutions and community residents (Indicator 3), as the data such as constant referred cases between external institutions and increased graduates of Schools of Value are shown.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued. Seven services of ESAI strengthened by the project have been provided based on the Guidelines and protocols have continued (1. Family support for alimony, 2. Support for replacement of birth certificates, 3. Integrated prevention and care service for boys, girls and adolescents, 4. Family counseling, 5. Integrated support in early childhood, 6. Schools of Value (Table 1), and 7. Attention to elderly persons), in collaboration with external institutions. The numbers of referred cases from external institutions to MIFAN and vice versa have decreased since the project completion (Table 2, Table 3), because the Directorate for Psychosocial Care of MIFAN established in 2016 has directly attended the cases. Another reason was considered as that violence cases themselves have decreased due to its efforts such as Schools of Value and other campaigns in collaboration with the Ministry of Education (MINED) and the Ministry of Health (MINSA), according to MIFAN and District Delegations.

All the Guidelines and protocols have been updated in accordance with the situation and observations of the District Delegations. A protocol of the Directorate for Psychosocial Care would be included in the next revised version of ESAI. In addition, a protocol for the Information and Orientation Center was being developed with funding from the United Nation International Children's Emergency Fund (UNICEF) at the time of ex-post evaluation.

Table 1: Number of organized Schools of Value and graduates

	2017		2	018	2019		
	Schools	Graduates	Schools	Graduates	Schools	Graduates	
D IV	25	567	22	509	22	559	
D VI	24	594	7	157	25	618	
Total	49	1,161	29	666	47	1,177	

Source: District Delegations IV and VI.

Table 2: N	umber of r	eferred cas	ses from	external	institutio	ns to MIFAN

	2016	2017	2018	2019		
D IV	7	3	1	4		
D VI	15	8	2	3		
Total	22	11	3	7		
Source: District Delegations IV and VI.						

Table 3: Number of referred violence cases from MIFAN to external

institution	15			
	2016	2017	2018	2019
D IV	5	1	0	0
D VI	6	4	0	0
Total	11	5	0	0

Source: District Delegations IV and VI.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved. The mechanism has functioned in other District Delegations in Managua City, as the earlier mentioned seven services of prevention and attention have been provided based on the Guidelines and protocols of ESAI, and in collaboration with external institutions (Indicator 1). Since the time of project completion, besides training for delegation technicians, efforts have been made for diffusion of the ESAI mechanism, such as visits to communities, homes and schools have been conducted for familiarization of ESAI, reproduction of the Guidelines, monitoring carried out by each District Delegation and follow-up by the Planning Directorate of MIFAN, etc. Furthermore, the violence prevention campaign has been organized together with MINED and MINSA, and joint activities have been carried out in communities, schools, and health units.

<Other Impacts at the time of Ex-post Evaluation>

Positive impacts of the project have been confirmed, as follows. First, the ESAI mechanism has been extended to all municipalities in the country. MIFAN has conducted training for its technical personnel of all of 15 departments and two autonomous regions on the ESAI mechanism, and the trained personnel replicated the training for technicians in their districts. Also, experiences of the practice have been fed back from the District Delegations for validation of the Guidelines and protocols. In particular, following the positive results of Schools of Value, they have become one of main services of MIFAN and implemented nationwide.

Second, the project incorporated gender viewpoints and such approaches have continued, which have resulted in positive changes. For example, the Guidelines and protocols were developed from a gender perspective. Both users (delegation technicians) and beneficiaries have increased understandings on gender, by organizing or participating in Schools of Value. There, both men and women learned together about women's rights and duties, which resulted in practice of family values at home, for instance, some counselors and beneficiaries overcame situations of violence within the family or with their partners, improved communication and respect with their children, improved their self-esteem. Also responsible parenthood has come to the attention as there has been greater presence and involvement of fathers in the education of their children. Another example was gender training. According to the Municipal Delegation of Managua and the pilot District Delegations, as a result of the training, the technicians have got empowered and aware of gender issues, and they have improved work skills including reflective listening for providing attention services.

Third, attributed to the violence prevention campaign, following changes have been reported by the District Delegation IV, such as an increased in the number of demands for alimony, better identification of warning signs of violence, greater compliance with commitments to care for and protect children and adolescents who have faced violation of their rights. In the District Delegation VI, people have come to identify subtle situations that might occur in interpersonal relationships such as control in dating relationships and emotional blackmail. Also in non-pilot Districts, technicians have acquired technical skills for identification and care for victims of gender violence (District II), better care for users in relation to taking into account the aspect of gender (District III), acceptance of women in making complaints against violence (District V), and service provision in conciliations and family counseling (District VII).

Therefore, the effectiveness/impact of the project is high.

	Achievement of the Pro	iect Purnose	and Overa	ll Goal				
Aim	Indicators	jeet i uipose		.11 0001	Results			
(Project Purpose)	Indicators:	Status of ac	hievement	: Achieved				
	1. The Guidelines of ESAI and	(Project Co						
	protocols are developed.			SAI and pr	otocols we	re annrove	d by MIFA	N as official
integrated service delivery for		documents.		or in unite pr		re approve	u oʻy 111111	i v ub officiul
social risk prevention and		Status of ac	hievement	· Achieved	1			
	Delegations for ESAI based on the	(Project Co		. Acmeved	<u>.</u>			
implemented.	Guidelines of ESAI and protocols.			unted cost	a from pre	wantion to	chnicians	to Attention
implemented.	(1) Number of remitted cases from							al document
	prevention technicians to Attention							
	Services (Restitution of Rights)							cases from District VI in
	(2) Number of participants in the	2016, as fol		prevention	technician	is in Distri	ct iv and i	Jistrict vi in
	Schools of Value (Parental Schools)	2010, as 101	lows.					
	exclusively for Attention Service	Mumberof	aaaaa fuama	Attantion	Samiaaa ta		n taabmiaia	ma in 2016
		Number of				-		
	users for the secondary prevention.	DU	March	April	May	June	July	Aug.
		DIV	1	4	0	0	0	18
		D VI	15	4	19	26	3	5
		Total	16	8	19	26	3	23
						of Value ex	clusively f	for Attention
		Service use				1		
			2015		2016			
		D IV		3 (1.8%)		1 (12%)		
		D VI		15 (13%)		19 (7%)		
		Total		28		60		
								ols of Value
			for Attenti	ion Service	e users in th	ne participa	ants in the t	total Schools
		of Value.						
	3. There is coordination among the	Status of ac		: Achieved	l <u>.</u>			
	Delegations, external institutions and	(Project Co						
	community residents, based on the	(1) Number		d cases from	m external	institution	s to MIFAI	
	Guidelines of ESAI and protocols.		March	April	May	June	July	Aug.
	(Number of referrals, cases of	D IV	19	13	15	6	18	24
	attended cases via referral on gender-	D VI	5	10	14	10	9	13
	related violence such as domestic	Total	24	23	29	16	27	37
	violence, sexual abuse, number of							
	organized Schools of Value, number	Number of	referred ca	ses from N	/IFAN to e	external ins	stitutions in	2016
	of school graduates)		March	April	May	June	July	Aug.
		D IV	18		33		8	9
		D VI	29	39	7	17	12	6
		Total	47	65	40	34	20	15
				of sexual	abuse ret	ferred by	external in	stitutions to
		MIFAN in 2			•	•	1	
			March	April	May	June	July	Aug.
		D IV	0	0	0	1	0	1
		D VI	0	0	0	1	0	0
		Total	0	0	0	2	0	1
							ing domest	tic violence)
		referred fro	m MIFAN	to externa	l institution	ns in 2016		
			March	April	May	June	July	Aug.
		D IV	2	3		4	3	0
		D VI	1	3	0	0	5	2
		Total	3	6	5	4	8	2
		(3) Number				<u> </u>		l
			2012	2013	2014	2015	2016	
		D IV	5	NA	NA	NA	16	
		D VI	11	NA	NA	NA	3	
		Total	16	NA	NA	NA	19	
		_						
		(4) Number	of graduat	tes of Scho	ols of Valu	ıe		
			2012	2013	2014	2015	2016	
		D IV	65	34	385	401	339	
		D VI	243	110		90	281	
		Total	308	144		491	620	
		10,000	500	1 1 1	,0)	171	520	Į
(Overall goal)	1. Number of District Delegations	Status of ac	hievement	·Achieved	1			
(Overall goal)	1. rumber of District Delegations	Sunus UI de	mevenicilt					

The mechanism developed by (not pilot) which implement and	(Ex-post Evaluation)				
the project is expanded and utilize the mechanism of ESAI.	- All non-pilot District Delegations in Managua City (Districts I, II, III, V and				
implemented in other	VII) have provided prevention and attention services based on ESAI				
delegations in Managua City.	Guidelines and protocols.				
Source: Terminal Evaluation Report, questionnaire and interview surveys with MIFAN, Municipal Delegation of Managua, and District Delegations I.					

II, III, IV, V and VI.

3 Efficiency

Although the project cost was within the plan, the project period exceeded the plan (ratio against the plan: 82% and 121%, respectively). The reason of the excess was that the project expanded the coverage of the protocols for family counseling and Schools of Value, and it took time for validation of the related documents and tools. Outputs were produced as planned. Therefore, the project efficiency is fair. 4 Sustainability

### <Policy Aspect>

The Government of Nicaraguan issued the "State Policy for the Strengthening of the Nicaraguan Family and the Prevention of Violence" (2014) through the Decree No. 43-2014. The policy contains strategic objectives including prevention of violence and strengthening of coordinated care.

<Institutional/Organizational Aspect>

The organizational structure, including the horizontal collaboration between prevention and attention and vertical referral route, has not changed to sustain the mechanism of ESAI developed by the project. The ESAI Guidelines and protocols have been officially utilized, and as of May 2020, they were under review and revision in order to respond to changes in the society and users' needs. MIFAN Headquarters (HQs) has needed more personnel to monitor all issues in a timely manner, but they have covered comprehensive areas and worked with the network support in the territory and community leaders and volunteers. MIFAN also has collaborated with MINED and MINSA. Thus, it can be judged that a minimum number of personnel has been secured to maintain the ESAI mechanism. Regarding Managua City, four of the seven District Delegations have considered that the number of personnel was sufficient. The rest three District Delegations answered that they would need more personnel to cover more communities or strengthen services. The Municipal Delegation of Managua which supervises the District Delegations has had one delegate, and four technicians, which has been sufficient to sustain the ESAI Mechanism in the municipality, though it considered it would be ideal to have more personnel to strengthen the services. <Technical Aspect>

MIFAN technicians have maintained skills and knowledge necessary to sustain the ESAI mechanism, through constant training of technical and new staff. In 2017, a total of 630 technicians including representatives of all delegations were trained on Schools of Values and early childhood issues, and they shared training learnings with their colleagues. In Managua City, training has been conducted for new staff including the ESAI mechanism. Technicians of the District Delegations have sustained their skills and knowledge by receiving the follow-up from MIFAN HQs and sharing their experiences. Training manuals developed by the project have been utilized by all of the Municipal and District Delegations of Managua City, especially the one for Schools of Value. <Financial Aspect>

The budget to maintain the ESAI mechanism has been guaranteed through the national funds, external grant funds from the World Bank and World Vision. The necessary budget to maintain the ESAI mechanism has been estimated as 425,312,533 Nicaraguan Cordoba, which was already guaranteed for 2020. The Municipal Delegation of Managua has received the necessary funds to maintain the ESAI mechanism from MIFAN HQs.

<Evaluation Result>

In the light above, the sustainability of the effects is high.

### 5 Summary of the Evaluation

The Project Purpose was achieved, and the project effects have continued. The guidelines and protocols for the integrated care and attention services were developed and officially approved. Although the project period exceeded the plan, the mechanism was piloted in the two districts in Managua City, and since the project completion it has been expanded to all municipalities in the country. Considering all of the above points, this project is evaluated to be highly satisfactory.

### **III. Recommendations & Lessons Learned**

Recommendations for Implementing agency:

- It is recommended to MIFAN to allocate more budget to assign technical personnel to further strengthen the provision of wider services of ESAI at the central, municipal and district delegation levels. Besides the new recruitment, an internship program with national universities could be an option to provide more services at the district delegation level at a lower cost. Lessons Learned:
- The mechanism for providing integrated care and attention services was developed, and its guidelines and protocols were approved as official documents during the project period. This has resulted in dissemination to all municipalities in the country after the project completion, although only two districts were mainly targeted in the project. It is important to include even the approval process of the mechanism including manuals in the project design, not only development and pilot implementation of the mechanism. And, the experience of the trial and validation of the mechanism would be effective so that it could be continuously used and revised even after the project completion, thereby ensuring the continuity of project benefits.
- The project period exceeded the plan, because it took more time to go through the approval and confirmation process of the guidelines and protocols for validation purposes than expected since the project expanded the coverage of the protocols for family counseling and Schools of Value. It is important to carefully consider the sufficient time for such a purpose when formulating the project, since each government or ministry has its own process and timeframe. This should be again well confirmed in the ex-ante evaluation.



School of Value



Integrated support in early childhood

	conducted by child of defined. I coldary 2021
Country Name Republic of Chile	Research Project on Enhancement of Technology to Develop Tsunami-Resilient Community
I. Project Outline	
Background	Chile was a country located in the circum-Pacific seismic belt, and prone to earthquakes and tsunami. In 2010, an earthquake of magnitude 8.8, which was the sixth-largest earthquake in the world, occurred and caused widespread damage. In particular, damages caused by Tsunami were serious and left us many lessons learned, such as: 1) secondary damages in residential areas and distant coastal areas caused by containers which drifted from ports, 2) delay of tsunami alert, 3) further human suffering by the second and third tsunami due to some wrong announcement and hasty cancellation of alert by the government made people return to their residents, 4) slow reconstruction and rehabilitation of port infrastructure which has important role for reconstruction of the local economies and communities. To deal with these issues, some countermeasures were taken in Chile such as installation of seismometers and simplification of tsunami warning procedure. However, research on tsunami was not accumulated sufficiently and the number of researchers in this field was limited.
Objectives of the Project	<ul> <li>Through development of mathematical simulation models for tsunami damage, precise tsunami warning method as well as proposal of tsunami disaster estimation and mitigation measures, the project aimed at developing technologies and measures to improve resilience of communities and people in Chile against tsunamis.</li> <li>1. Expected Overall Goal: N.A.</li> <li>2. Project Purpose: Technologies and measures are developed to improve communities and people in Chile, Japan and across the world to be well-prepared and resilient against tsunamis.</li> </ul>
Activities of the Project	<ol> <li>Project Site: Santiago, Valparaiso, Talcahuano, Iquique, Antofagasta, Chile</li> <li>Main Activities: 1) Development of mathematical simulation models for tsunami damage, 2) Development of tsunami disaster mitigation measures including development of a guideline for tsunami disaster estimation, 3) development of precise tsunami warning systems, 4) Development of programs to create well prepared and resilient people against tsunamis, and 5) Development of a methodology to improve recovery capacity by utilizing ports and harbors after a tsunami disaster with use of Japanese experiences as references.</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Experts: 37 persons</li> <li>Trainees received: 54 persons</li> <li>Equipment: Simulation and data analysis equipment (parallel computation equipment) and UPS.</li> <li>Local operation cost: travel cost, employment of local consultants, etc.</li> </ol>
Project Period	January 2012 – March 2016 Project Cost (ex-ante) 383 million yen, (actual) 344 million yen
Implementing Agency	Department of Port Works, Ministry of Public Works (DOP/MOP), National Hydraulic Institute (INH), Hydrographic and Oceanographic Service, Chilean Navy (SHOA), National Emergency Office, Ministry of Interior (ONEMI), Pontifical Catholic University of Chile (PUC), Catholic University of the Most Holy Concepcion (UCSC), Federico Santa María Technical University (UTFSM), North Catholic University (UCN), Concepcion University (UdeC), Valparaiso University (UV)
Cooperation Agency in Japan	Port and Airport Research Institute (PARI), Urban Disaster Research Institute, Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japan Meteorological Agency, Kansai University, Disaster Prevention Research Institute (Kyoto University), Nagoya University, Chuo University, Tsukuba University, Tokushima University, Shizuoka University, Gunma University, Hiroshima University, Yamaguchi University

<Special Perspectives Considered in the Ex-Post Evaluation>

- Since the Overall Goal for the SATREPS project was not set in the project design, "Utilization of the research outcomes" was verified by this ex-post evaluation as a part of expected positive impacts by the SATREPS project.
- Since indicators1-2 of Project Purpose are indicators for validating opportunities for sharing research outcomes during the project implementation period, the continuation status of indicator 1-2 was not verified by this ex-post evaluation.
- Since indicator 3 of Project Purpose is an indicator for verifying capacity enhancement of Chilean counterparts who were dispatched to Japan, its continuation status was verified in sustainability.

1 Relevance

<Consistency with the Development Policy of Chile at the Time of Ex-Ante Evaluation>

The project was consistent with the Chile's development policy of "the National Civil Protection Plan" (2002) and "the National Policy for the Disaster Risk Management" (2014) emphasizing on the capacity enhancement of disaster prevention and management of the country.

<sup>&</sup>lt;sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development.

<Consistency with the Development Needs of Chile at the Time of Ex-Ante Evaluation>

The project was consistent with the Chile's development needs of strengthening of preparedness and resilience of people and community in Chile against tsunami.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's Country Assistance Policy for the Republic of Chile at the time of ex-ante evaluation putting priority on the environmental policy centered on disaster prevention as mentioned in its basic policy for the assistance<sup>2</sup>.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. Six symposiums were held in the operation period of the project to show project activities and their results. These symposiums were organized jointly with on-going SATREPS projects in Peru, Colombia, Mexico and Turkey as well as JICA technical cooperation project in Ecuador (Indicator 1). The Symposium on Earthquake and Tsunami Disaster Prevention in Latin America was organized in Tokyo in March 2014 jointly with on-going SATREPS projects in Peru, Mexico and Turkey as well as JICA technical cooperation project in Ecuador<sup>3</sup> (Indicator 2). In addition, the Chilean members involved in the SATREPS project made a presentation on the project activities at the International Symposium on Earthquake and Tsunami Disaster Mitigation co-hosted by JICA, Japan Science and Technology Agency (JST), and National Research Institute for Earth Science and Disaster Prevention (NIED) organized in Sendai in March 2012. Total 54 Chilean researchers and government officials were invited to Japan to patriciate to trainings, seminars/workshops and international symposiums for their capacity enhancement on tsunami risk management (Indicator 3). A guideline for estimation of tsunami inundation and damage which contained the methodologies of tsunami propagation and inundation simulation, as well as damage estimation was established. In addition, various guidelines and materials were developed (Indicator 4).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued by the time of ex-post evaluation. The guidelines developed by the project have been utilized by counterpart agencies. For example, the National Research Center for Integrated Natural Disasters Management (CIGIDEN), which is an inter-university research organization established in 2012 based on the proposal of this target project and PUC, UTFSM, UCN are its member universities, and UV, UCSC, UdeC are collaborated universities), has utilized the guidelines established by the project for further research activities including: a) Guideline for breakwater anti-tsunami design, b) Guideline for estimation of tsunami inundation and damage, c) Guideline for mathematical simulation models for estimation of tsunami damage, d) Guideline for Integrated System for Tsunami Prediction and Warning (SIPAT), e) Guideline for Implementation of Disaster Imagination Game (DIG), f) Guideline for disaster education, g) Tsunami Mitigation Measures Menu, and h) Guideline for Port Business Continuity Management (BCM). UdeC has utilized e) and f) for research activities on evacuation model in the city of Talcahuano. DOP/MOP and INH have utilized a)-c) for design of port and mitigation of damage. SHOA has utilized b) and d) for early warning system and tsunami inundation estimation. UV supported to introduce h) to the port of Valparaiso.

Also, research activities based on the project outputs have been continued. For example, CIGIDEN continues research activities on tsunami estimation of damage, simulation of inundation, prediction and warning system, vertical evacuation, education of communities, etc. UTFSM continue research activities to improve the SIPAT as well as to contribute to the strengthening of the warning system of tsunami manage by SHOA. UV continues research activities related to the BCM of ports and coastal cities. UdeC continues activities related to the effective evacuation, including not only the communities but also to the industries, and the vertical evacuation. The high-performance computer and UPS are still utilized by CIGIDEN and PUC to analyze the data collected for research activities and for share it with other universities involved in CIGIDEN.

<Status of Achievement for Expected Overall Goal at the time of Ex-post Evaluation>

Since no Overall Goal was set, utilization of the research outcomes was verified as a part of expected positive impacts. The utilization of the research outcomes of the SATREPS project have been promoted at the time of ex-post evaluation. SIPAT has been still utilized by SHOA and improved over the years. After the project for two years with the Fund for the Promotion of Scientific and Technological Development (FONDEF), the database of tsunami was completed. The following years with SHOA funds have trained system operators, developed an automatic calculation system and the software was upgraded. Since the end of 2019, a new project is being developed with the FONDEF which seeks to develop a real-time modelling, and can be determined where they will not reach tsunami waves. All these initiatives have been led by UTFSM. DOP/MOP continues utilizing the Storm Surge and Tsunami Simulator in Oceans and Costal Areas (STOC) model to simulate the damage of the port infrastructure. UV has a collaboration with the port of Valparaiso-San Antonio, the regional government of Valparaiso, municipalities of Valparaiso and San Antonio, and industries to introduce the BCM activities. CIGIDEN developed the policy paper on vertical evacuation based on the multiple research and publications developed in recent years, which was delivered to ONEMI in 2019. Based on this, a working group was formed between ONEMI, the Ministry of Housing and Urbanism (MINVU), CIGIDEN and others to analyze and discuss the necessary regulations for the implementation of a vertical evacuation.

<Other Impacts at the time of Ex-post Evaluation>

The results of this SATREPS Project was taken over and disseminated by the on-going JICA technical cooperation "Disaster Risk Reduction Training Program for Latin America and the Caribbean" (2015-2020) (so called the Kizuna project) to the Latin America and the Caribbean countries to contribute to resilience to natural disasters.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

<sup>&</sup>lt;sup>2</sup> Japan's ODA Data Book by Country (2012), Ministry of Foreign Affairs, Japan.

<sup>&</sup>lt;sup>3</sup> The Project for Enhancement of Tsunamigenic Earthquake Monitoring Capability (2014-2017).

	Achievement of Project Purpose and Overall Goal				
Aim	Indicators	Results			
(Project Purpose)	(Indicator 1)	Status of the Achievement: Achieved (Not verified)			
Technologies and	Four symposiums are held in the operation	(Project Completion)			
measures are developed	period of the project to show project	• Total six (6) symposiums were held during the project period, which			
to improve communities	activities and their results.	were organized jointly with on-going SATREPS projects in Peru,			
and people in Chile,		Colombia, Mexico and Turkey as well as JICA technical cooperation			
Japan and across the		project in Ecuador.			
world to be		(Ex-post Evaluation)			
well-prepared and		• Not verified.			
resilient against	(Indicator 2)	Status of the Achievement: Achieved (Not verified)			
tsunamis.	One international symposium with	(Project Completion)			
	participation of other countries than Chile	• With participation of other countries than Chile and Japan, the			
	and Japan will be held at the end of the	Symposium on Earthquake and Tsunami Disaster Prevention in Latin			
	project.	America was organized in Tokyo in March 2014.			
		(Ex-post Evaluation)			
		• Not verified.			
	(Indicator 3)	Status of the Achievement: Achieved (Continued)			
	Fifty Chilean researchers and officials are	(Project Completion)			
	dispatched to Japan for enhancement of	• Total 54 Chilean researchers and government officials were invited to			
	their capabilities on tsunami risk	Japan to patriciate to trainings, seminars/workshops and international			
	management.	symposiums for their capacity enhancement on tsunami risk			
		management.			
		(Ex-post Evaluation)			
		Verified as "Sustainability".			
	(Indicator 4)	Status of the Achievement: Achieved (Continued)			
	A guideline is developed to show a	(Project Completion)			
	method to estimate tsunami damage	• A guideline for estimation of tsunami inundation and damage which			
	especially applied in Chile.	contained the methodologies of tsunami propagation and inundation			
		simulation, as well as damage estimation was established.			
		• In addition, various guidelines and manuals were developed.			
		(Ex-post Evaluation)			
		• The guidelines developed by the project have been utilized by			
		counterpart agencies.			
		CIGIDEN members have continuously conducted researches on			
		Guideline for mathematical simulation models for estimation of tsunami			
		damage, Guideline for Integrated System for Tsunami Prediction and			
		Warning (SIPAT), BCM guideline, Vertical evacuation, and on			
		estimation of potential damage caused by tsunami in coastal cities, such			
		as Iquique, Vina del Mar and others.			
Source: Questionnaire and	interviews				

#### 3 Efficiency

Both the project cost and project period were within the plan (90% and 100% respectively). The outputs were produced as planned. Therefore, efficiency of the project is high.

4 Sustainability

<Policy Aspect>

The National Policy for the Disaster Risk Reduction (2019-2030) addresses five priority issues such as: 1) understanding of disaster risk, 2) strengthening the governance; 3) planning and investing on DRR for resilience; 4) efficient response; and 5) promote a sustainable recovery.

<Institutional/Organizational Aspect>

Almost all the researchers involved to the project are still engaged to research activities. CIGIDEN has 50 staff including principal researchers, associate researchers, researcher for some topics, postdoc students, administrative staff. CIGIDEN promotes the DRR mainstreaming and shares the new research outputs through participating to the National Platform of DRR coordinated by ONEMI. Also, CIGIDEN becomes known in the country as one of the most important research centers on natural disasters and that makes public proposals. DOP/MOP established a new department in charge of DRR management, and utilizes STOC to able to estimate the possible damage of port facility. SHOA, ONEMI, PUC, UCSC, UTFSM (CIGIDEN members) have been working for maintaining and improving the SIPAT for early warning with the support from FONDEF.

<Technical Aspect>

There are more than 48 domestic and international journals, paper and others published after the project, in topics such as tsunami mitigation, mitigation measures, numerical model, tsunami evacuation, wave propagation, tsunami early warning, etc. Through the Kizuna project, researchers have been able to maintain contact with Japanese researchers and this has contributed to developing and expanding new research topics. The government authorities have sustained/improved their scientific literacy to utilize the research outcomes by the STREPS project. SHOA in collaboration with UFSTM (CIGIDEN) continue to improve SIPAT and to incorporate an inundation estimation model. ONEMI continue to improve the evacuation drill based on the guideline generated by the project. CIGIDEN collaborated with MINVU and ONEMI to develop a guideline for evacuation. Also, the researchers have been sustaining their skills and knowledge to properly operate and maintain the research facilities/equipment installed by the STREPS project. The high-performance computer for

running the numerical model installed by the project has been operated and maintained without major issues. CIGIDEN and PUC have a team in charge of mathematical estimation and calculation, and they have consistently improved their skills. All the data obtain are being store and share in CIGIDEN website<sup>4</sup>.

<Financial Aspect>

CIGIDEN received a fund of approximately USD 5,600,000 for the period of 2018-2022 from FONDAP managed by the National Commission for Scientific and Technological Research, Ministry of Education (CONICYT). They also obtained a fund from CONICYT for specific research for technological development with practical application. The operation and maintenance budget for the project equipment is secured by related organizations.

<Evaluation Result>

Therefore, the sustainability of the effects through the project is high.

5 Summary of the Evaluation

The project achieved the Project Purpose and the project outcomes have been utilized through the continuous research works on disasters of tsunami as well as the continuous activities for disaster management based on the research output by the project. The efficiency and sustainability of the project are high. Considering all of the above points, this project is evaluated to be highly satisfactory.

## III. Recommendations & Lessons Learned

### Recommendations for Implementing Agency:

• Considering that the FONDAP funding period will end to 2022, it will be necessary to take steps to obtain financial resources to continue improving the research activities and promote the DRR in the public policies of Chile. For this aim, it is important to continue to develop research that helps to solve the challenges that the country faces and that have a practical application. In addition to maintaining the close relationship with public and private institutions built during the project implementation period, it will be beneficial.

Lessons Learned for JICA:

- From the beginning and during the project implementation period, the involvement of all institutions that would possibly be the beneficiaries of the project results was considered. In order to promote the better understanding and build a confident relationship, seminars were also organized with the participation of, or jointly organized with these institutions. In addition, the Japanese researchers periodically shared the progress of the project with stakeholders. This promoted the collaborative work of academia central and local government, and the participation of multi-stakeholders in the project facilitated the outputs to be utilized. Therefore, it was found that the sharing information, promoting understanding, and collaborating with beneficiaries of the outcome of SATREPS in a proactive manner during the project implementation period had led to promote the utilization of the outcome of SATREPS. This approach will be a good reference to other SATREPS.
- Since the beginning of the project, the importance of sharing the project results through south-south cooperation with Latin American countries that have the same natural disasters was considered to contribute to the resilience of this Region. In this regard, in order to ensure that the beneficiary countries of Kizuna Project could smoothly accept the SATREPS project results, the SATREPS implementing agencies actively exchanged information with DRR projects in the Region which were based on the same Japanese experiences and technologies. In addition, Kizuna project was designed, based on the assumption that the highly qualified human resources and administrative officers trained by SATREPS project would be utilized as valuable project resources. Therefore, it was found that a collaboration with other projects aiming to solve common problems with the SATREPS was useful for sharing and utilizing the outcome of SATREPS. This approach will be a good reference to other SATREPS projects.



Meeting with Chilean stakeholders on evacuation training against Tsunami in Antofagasta Region



Test tank facilities at National Hydraulic Institute

<sup>&</sup>lt;sup>4</sup> https://ide-cigiden.hub.arcgis.com

Country Name		Integrated Sustainable Rural Development in the Province of Chimborazo					
Republic of Ecuador							
I. Project Outline							
Background	income by lack natural Strengt Chimbo Chimbo	Province of Chimborazo in the Sierra Region had serious problems of poverty due to the low level of from agriculture, which was the main economic activity of the population, poor social conditions caused of education and health services as well as undeveloped infrastructure. There existed also degradation of resources, such as deforestation, deterioration of watersheds and soil erosion. Through the "Structural hening for Integrated Sustainable Rural Development for Poverty Reduction in the Province of orazo" (2009-2011), the "Strategy of Integrated Sustainable Rural Development in the Province of orazo" was proposed, on which the development plan was prepared. In order to implement the prepared rther assistance was requested to the Government of Japan by the Government of Ecuador.					
Objectives of the Project	Through implementation of integrated rural development projects for verification, capacity development of the personnel engaged in integrated rural development, and enhancement of the network among the related organizations, the project aimed at improving incomes and living environment of the target farmers and also developing the extension structure to farmers in other areas, thereby contributing to improvement of the quality or life in rural areas of the Province of Chimborazo. 1. Overall Goal: Quality of life in rural areas of the Province of Chimborazo is improved. 2. Project Purpose: Incomes and living environment of the population living in the areas of verification have beer improved, and the project implementation structure to improve the quality of life in the areas of extension has beer developed.						
Activities of the project	<ol> <li>Proj</li> <li>Mairing</li> <li>Mairing</li> <li>staff</li> <li>integ</li> <li>Inj</li> <li>Japanes</li> <li>1) Ez</li> <li>2) Tr</li> <li>3) Tr</li> <li>4) Ea</li> <li>tra</li> <li>5) Lo</li> </ol>	ect site: Province of Chimborazo n activities: baseline survey of the target areas, organization and training of the target farmers' groups, ementation of integrated rural development projects for verification, training of the related organizations' c, establishment of the collaboration network, development of manuals and guidelines for the provincial grated rural development, etc. buts (to carry out above activities)					
Project Period	March	2012 to March 2017Project Cost(ex-ante) 412 million yen, (actual) 529 million yen					
Implementing Agency		mous Decentralized Government of Chimborazo (GADPCH), Ministry of Agriculture, Livestock and luture and Fisheries, Ministry of Environment, Ministry of Education, Ministry of Public Health.					
Cooperation Agency in Japan	Forum	to One, Co., Ltd.					

<Special perspectives to be considered in the ex-post evaluation>

Continuation of the project effects was verified by confirming the utilization status of the guidelines developed by the project (Indicator 3 of the Project Purpose). Indicators 1 and 2 were not utilized for verification of the continuation of the project effects, because they were set for measuring pilot activities' effect.

1 Relevance

<Consistency with the Development Policy of Ecuador at the time of Ex-ante Evaluation>

One of the goals of the "National Development Plan (Plan Nacional para el Buen Vivir 2009-2013)" was to improve the quality of life of the people. "Minga II 2009-2014" also aimed to support sustainable integrated development in rural areas to achieve "good living." Thus, the project was consistent with the development policies of Ecuador at the time of ex-ante evaluation.

<Consistency with the Development Needs of Ecuador at the time of Ex-ante Evaluation>

The Province of Chimborazo had serious problems of poverty due to the low level of agricultural income, where micro- and smallscale farmers had needs for livelihood improvement by increasing agricultural productivity and sales promotion and strengthening the access to public social services (health and education). The project was consistent with such development needs of Ecuador at the time of ex-ante evaluation.

<Consistency with Japan's ODA Policy at the time of Ex-ante Evaluation>

Based on the policy consultation held in 2005, one of the priority areas was set as poverty reduction. Related to this, one of the programs was the poverty reduction program in the rural areas<sup>1</sup>.

<Evaluation Result>

In light of the above, the relevance of the project is high.

<sup>&</sup>lt;sup>1</sup> Ministry of Foreign Affairs "ODA Databook 2011."

#### 2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. The average monthly agricultural and livestock incomes of the target farmers in 17 communities in the areas of verification increased from 2012 to 2016 by 139% and 447%, more than targeted (Indicator 1). The harvest of potatoes, chocho beans, barley, wheat, and quinoa increased much. The production of chicken, eggs, and cuy increased much. These increases were brought by value-adding (selection, washing, packaging, etc.). More than 70% of the target families in 26 communities in the areas of verification answered that they were satisfied with their results of livelihood improvement such as family welfare, hygiene habits, education, nutrition, and the natural environment. (Indicator 2). These numbers also exceeded the target. The guidelines for establishing the system and methodologies of the integrated sustainable rural development were approved by the related institutions, and the administrative structure was developed based on the guidelines (Indicator 3).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued. The guidelines for the integrated sustainable rural development developed by the project have been still part of the training contents of rural development activities, although the printed material has not necessarily been distributed often since the change of authorities.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

It is judged that the Overall Goal has been achieved. Since the time of project completion, the techniques and knowledge developed by the project have been extended to the areas of extension through training for community promoters and family promoters. According to the observation of technicians of the Integrated Rural Development Units (UDRI) of GADPCH, in the areas of extension, families obtained better sale prices of animals of minor species and agricultural products grown in the chakras, and they have been satisfied with the living environment, by applying techniques and knowledge introduced by the project together with the ancestral knowledge that they had maintained.

<Other Impacts at the time of Ex-post Evaluation>

Some positive impacts of the project have been confirmed. First, the leadership and active participation of women have occurred in all the communities of verification. In some communities, women have come to participate in the community's councils as a leader. They have played a leading role in not only agricultural activities but those for improving the nutrition and health of family members. These changes have been brought through participation in training. Another factor that encouraged women's participation has been men's absence going to the capital and other cities for work. Second, mainly the project promoted teamwork among community members, which led has them to shift their practices from paternalism-centered and build up each own initiatives.

The target site was selected excluding "palamo" (alpine ecosystems with harmonious biodiversity and water sources for millions of people in grasslands in tree-line areas), and there has been no negative impact on the natural environment. In addition, no negative impact has occurred on the social environment, with no loss of indigenous people's culture, lifestyle or rights. <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

	Achievement of the P	roject Purpose and Overall Goal
Aim	Indicators	Results
environment of the population living in the areas of verification have been improved, and the projects implementation structure to improve the quality of life in	<ol> <li>More than 50% of the target farmers in more than 15 communities in the areas of verification increase their income by 30%, through activities with acquired and implemented basic knowledge and techniques on income improvement.</li> <li>More than 50% of the target families in more than 15 communities in the areas of verification increase their satisfaction with the living</li> </ol>	<ul> <li>(Project Completion)</li> <li>The average monthly agricultural income of the target farmers in 17 communities in the areas of verification increased from 30.33 USD in 2012 to 72.53 USD in 2016 (139% increase).</li> <li>The average monthly livestock income of the target farmers in 17 communities in the areas of verification increased from 7.95 USD in 2012 to 43.48 USD in 2016 (447% increase).</li> <li><u>Status of achievement: Achieved.</u></li> <li>(Project Completion)</li> <li>More than 70% of the target families in 26 communities in the areas of</li> </ul>
	environment. 3. The guidelines for establishing the system and methodologies of the integrated sustainable rural development in the areas of extension are agreed by the related institutions, and the administrative structure is developed based on the guidelines.	<ul> <li>improvement.</li> <li><u>Status of achievement: Achieved (Continued).</u></li> <li>(Project Completion) <ul> <li>The guidelines for establishing the system and methodologies of the integrated sustainable rural development was approved by the provincial prefect.</li> <li>The extension network was developed by establishing the Integrated Rural Development Units in the provincial, cantonal, and parochial governments.</li> <li>(Ex-post Evaluation)</li> <li>The guidelines for the integrated sustainable rural development developed by the project have been still part of the training contents of rural development activities.</li> </ul> </li> </ul>
(Overall goal) Quality of life in rural areas of the Province of Chimborazo is improved.	1. In the areas of extension, families will improve their income and living environment, by applying techniques and knowledge introduced by the Project, through the inter-institutional collaboration between the provincial government, the cantonal and parochial governments, as well as	<ul> <li>(Ex-post Evaluation)</li> <li>The data related to the income and living environment was not available. However, according to the observation of technicians of UDRI of GADPCH, in the areas of extension, families obtained better sale prices of animals of minor species (guinea pigs, chickens, trout, among others) and agricultural</li> </ul>

	with the ministries involved.	techniques and knowledge introduced by the project together with the ancestral knowledge that they had maintained.
Source: Project Completion R	eport and information provided by UDR	RI of GADPCH.

### 3 Efficiency

Although the project period was as planned, the project cost exceeded the plan (ratio against the plan: 100% and 128%, respectively). Outputs were produced as planned. Therefore, the project efficiency is fair.

# 4 Sustainability

<Policy Aspect>

The promotion of the integrated rural development has been prioritized in the "Development Plan and Territorial Organization of the Provincial Government of Chimborazo" (2019 -2023).

<Institutional/Organizational Aspect>

UDRI has been functioning as part of the Direction of Productive Development of GADPCH. Some of its UDRI's personnel who had worked at the project have remained at UDRI, but they have also needed to attend other government projects in the sector of environment, irrigation, and road management. Their increased responsibilities have hindered them from visiting the communities. However, GADPCH's new administration has reinforced the personnel by recruiting new staff, considering that the project experience would be the help of other related projects. On the other hand, the cantonal governments have not continuously assigned sufficient staff for promoting integrated rural development. With limited budgets, infrastructure and road management projects have been prioritized. Changes in authorities have made it difficult to pursue the plan in the long-term plan, according to UDRI of GADPCH. Regarding the coordination with other organizations such as MAGAP, MAE, MINEDUC, and MSP for integrated rural development, they have sustained an intention for joint interventions, but due to the budget shortages in all government institutions, they have not sustained the sufficient personnel for promoting integrated rural development. Particularly, the number of personnel of MAGAP (45), which has had a direct relationship with GADPCH, has been drastically reduced.

Farmers' schools (ESDRUCs) have been operated for extension and training purposes by village-level UDRI. At the ex-post evaluation survey, they were confirmed in 13 communities and four cantons.

### <Technical Aspect>

The technicians of UDRI of GADPCH and cantonal governments have sustained the necessary skills and knowledge to promote integrated rural development projects, by using methodologies of learning by doing in ESDRUCs. The manuals developed by the project including the guidebooks on production, minor species, promoters' training, livelihood improvement, and nutrition have been utilized by UDRI's technicians for their work and training at GADPCH. The information about the technical level of other government organizations could not be confirmed at the time of ex-post evaluation, as those who had worked closely with the project could not be reachable. <Financial Aspect>

GADPCH has continuously secured an annual budget of approximately 600,000 to 800,000US dollars on average for its UDRI under the Annual Operating Plan. Since integrated rural development has been promoted in various sectors such as the environment, irrigation, and road management, the total budget has been sufficient, according to its UDRI. GADPCH through its UDRI has provided farmers with materials for their productive activities including seeds, fertilizers, and minor species (chickens and guinea pigs), technical support, and places for selling products at the fair.

<Evaluation Result>

In the light above, there have been issues in the institutional/organizational and financial aspects. Therefore, the sustainability of the effects is fair.

#### 5 Summary of the Evaluation

The Project Purpose was achieved, and the project effects have continued. The system and methodologies of the integrated sustainable rural development were established through activities in the areas of verification. It has been diffused to the areas of extension, increasing farmers' income and living environment. Regarding sustainability, personnel shortage has been pointed out due to budget shortages, but the organizational structure and the technical skills of UDRI of GADPCH have been sustained. As for efficiency, the project cost exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

Recommendations for Implementing agency:

- It is recommended to the Direction of Productive Development of GADPCH of GADPCH to immediately discuss with the Mobilization Direction to provide its UDRI's technicians with transportation so that they could attend more communities until more personnel is recruited.
- It is recommended to GADPCH to assign more personnel related to the Family Farming Agriculture Program to reinforce the integrated sustainable rural development projects.
- It is recommended to GADPCH to lead the interinstitutional coordination of government institutions related to integrated rural development, by making a periodic review (every 3-4 years) of their intervention plan and approach and making them aligned with each other.
- Lessons Learned:

- In the areas of extension, farmers have improved their income and living environment. Leadership within the community is essential to sustain long-term effects of the farmers' associations. In a project which tries to establish a certain system and diffuse it to farmers, JICA and the Implementing Agency should work for not only providing community members with leadership training but also institutionalizing capacity building of the implementing agency's personnel who are in charge of rural development in terms of organizational strengthening, so that they could continue to support community leaders and members. If they understand how leaders can organize community members for a specific purpose, they could support leaders even after the project completion. Also, it is effective to show community leaders the benefits of rural development in a clear way so that they can be motivated as leaders. For example, by including the technique for utilizing the subsidy from the government and donor's support, their viewpoint would change from those

who receive support to those who utilize support. There should be the government subsidy. But if it is not available, there should be some other benefits which are not necessarily economic but considered as valued species for the empowerment and sustainability of the processes and results achieved by community leaders and members.



Agricultural production with use of the recommended technology in Community Chakra, Chimborazo Province



Training of the technologies recommended by the project at the community

Country Jorda		Sustainable Community Tourism Development Project in As Salt City					
I. Project Outline							
Background	one of the major industry in As Historic Old Sal there were still s promotion plan * Ecomuseum is initiatives, preserv	policy agendas for stability and Salt City through activities such t Museum (HOSM), and deve everal challenges such as vuln required for materializing the I the concept to compare a certain	nd development of uch as promotion lopment of the tou nerability of imple Ecomuseum conco n area to "open-sky	foreign exchange, and promotion of the industry was f the economy. JICA provided assistance to the tourism of the concept of the Ecomuseum*, opening of the urism promotion plan and tourism trails, etc. However, ementing agencies as well as the absence of the tourism ept. y museum", where the community members, on their own ngible and intangible heritages such as nature, culture and			
Objectives of the Project	establishment of core museum, s resources and bo which utilizes lo implementation improve their liv 1. Overall Go townscape a 2. Project Purp promoted in *The Ecomuseum	a mechanism to conserve hist atellites and trails*, and deve enefit local community in a su ocal cultural resources and be of tourism development in A relihood. al: The implementation of the swell as to improve their live pose: Tourism development As Salt City. in the project consists of core mu haeological sites, etc. that compri	torical urban town clopment of touris ustainable way, th nefits local comm As Salt City con tourism developm clihood. which utilizes loc useum (the core of E	sm development based on the Ecomuseum concept, ascape, establishment of a tourism system consisting of sm products which utilize and conserve local cultural the project aimed at promotion of tourism development nunity in As Salt City, Jordan, and thereby having the tribute to conserve historic townscape as well as to nent in As Salt City contributes to conserve historic cal cultural resources and benefits local community is Ecomuseum that functions as an information center), satellites Ecomuseum), and trails (trails that display and explain stories			
Activities of the Project	<ol> <li>Project Site</li> <li>Main Activitie</li> <li>Review campai action p</li> <li>Review Municie</li> <li>Review Municie</li> <li>Decision of HOS tourism</li> <li>Formul promot</li> <li>Inputs (to ca Japanese Side</li> <li>Experts: 9 j</li> <li>Trainees Re</li> <li>Equipment cameras/vie</li> </ol>	Old Salt City (in As Salt City ties: of existing tourism developing in for local community, For- blan, Summarizing experiences and update of the implement pality (GSM), Formulation of n of composition of trail stories SM, Training of museum staff system (core museum, satelli- ation of Tourism marketing ional activities. mary out above activities) persons eccived: 15 persons computers and pri- deo cameras, DVD players, I easurement device, etc.	ment plans, regul mulation, piloting s and lessons learn ation area and the guidelines for Tov es and design sate f members and o tes and trails). and promotion	<ul> <li>lations and procedures, Implementation of awareness g and monitoring of a new Ecomuseum plan and an ned from aforementioned activities, etc.</li> <li>e list of townscape resource developed by Greater Salt wnscape management and pilot projects, etc.</li> <li>llites, Preparation of exhibition interpretation functions of thers, Implementation of pilot project(s) utilizing the plans, Implementation of marketing activities and</li> <li>Jordanian Side <ol> <li>Staff Allocated: 9 persons</li> <li>Office space</li> <li>Expenses for Salt Festival and other project activities</li> </ol> </li> </ul>			
Project Period	September 2012		Project Cost	(ex-ante) 275 million yen, (actual) 389 million yen			
Implementing Agency	Ministry of Tour	ism and Antiquities (MOTA)					
Cooperation Agency in Japan	-	ement Consulting, Inc., Hokka	aido University				

<Special Perspectives Considered in the Ex-Post Evaluation >

• The evaluation study was somewhat affected by the epidemic of COVID-19. In this Ex-Post Evaluation, the evaluation judgment was made by analyzing information acquired by sending and collecting questionnaires and through telephone and e-mail interviews with persons concerned. No field visit was conducted.

• The Indicator 2 of the Project Purpose is not appropriate to evaluate what was originally intended to assess, i.e., the level of understanding of local people about Ecomuseum. At the terminal evaluation, it was reported that the Indicator was not properly assessed and that the Indicator itself was not

appropriately defined. Also it seems difficult to collect sufficient data of local people through questionnaire in the ex-post evaluation, where survey resources are limited. Moreover, the status of promotion of tourism that benefits local people aimed by the Project Purpose can be assessed by other indicators. Therefore, the continuation status of the Indicator 2 was not assessed in the ex-post evaluation.

#### 1 Relevance

<Consistency with the Development Policy of Jordan at the Time of Ex-Ante Evaluation>

In the Executive Development Plan (2011-2013), based on the National Agenda (2006-2015), tourism development was one of priority areas of development of investment environment, among seven important pillars.

<Consistency with the Development Needs of Jordan at the Time of Ex-Ante Evaluation>

Jordan embraces cultural heritage as well as natural heritage. However, with the economic center moved to Amman, local people also moved to Amman and the large part of the historic buildings were abandoned or occupied by people who did not understand the historic value, leading to the devastation of the historical buildings and negligence of indigenous culture.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

In the "Country Assistance Policy towards Jordan (2012)", one of the three priority areas was to support for self-reliant, sustainable economic growth, including the tourism sector, where foreign currency acquisition was expected. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the project completion. The number of residents who wanted to have more tourists increased from 71.3% to 96.1% (Indicator 1), and at least 30 models of historical buildings utilized for tourism were realized as satellites of trails, including mosques, churches and schools (Indicator 3). In addition, the number of visitors to HOSM increased by 266% from 3,277 in 2012 to 12,000 in 2015 (Indicator 4), which was regarded as notable given that the number of visitors to Jordan as a whole was on a downward trajectory during the same period. Moreover, the survey conducted by the project verified that the level of satisfaction of tourists was high (Indicator 5). Three families applied to MOTA for "home visit" and received permission (Indicator 6). <Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued to the time of ex-post evaluation. As many tourism projects started to take place in As Salt City, local people have become engaged in tourism business, therefore it is of interest for them to continuously receive tourists in the City (Indicator 1). According to the survey conducted by a member of Japan Overseas Cooperation Volunteers (JOCV)<sup>1</sup>, the percentage of Jordanian people who recommend visiting As Salt City to friends was 87.6% (total number of respondents: 165). The model of historical buildings utilized for tourism is continuously realized. MOTA and Salt Development Corporation (SDC) rehabilitated historical buildings and newly opened them as satellites such as restaurants and cafes. The number of satellites included in trails in As Salt City increased from 30 in 2016 to 39 in 2019 (Indicator 3). The number of visitors to HOSM has also been continuously increasing (Indicator 4). According to the feedback data received from the tourists in the information center after the tours, more than 75% of tourists have been satisfied (Indicator 5). The number of families to receive "home visit" has been maintained as three, at the same level as the project completion (Indicator 6).

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved. The registered townscape resources including historical buildings have been well conserved in the same condition as the time when registered, and the rehabilitation works are in a way to restore historical landscapes (Indicator 1). It is reported by the implementing agencies that the income from tourism industry has been increased as there are more employment opportunities and new businesses were established. The income through home visit is not very large but contributes to the increase of income of local people (Indicator 2).

<Other Impacts at the time of Ex-post Evaluation>

There have been positive impacts on female participation in tourism activities as 10 women have been newly trained and permitted as local interpreters and employment opportunities for women have been enhanced, including restaurants and handicrafts. No negative impact has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

	Aim		Acmevement of Project Purpose and Overall Goal				
	AIIII	Indicators	Results				
(Proje	ect Purpose)	(Indicator 1) No. of people	Status of the Achievement: achieved (continued)				
		who want to have more	(Project Completion)				
Touri	ism	tourists is increased in the	• The number of residents who wanted to have more tourists was as follows.				
devel	lopment which	project area to 75%.	Baseline survey: 71.3%. Endline survey:96.1%.				
utilize	es local cultural		Ex-post Evaluation)				
resou	irces and		• The majority of people are more interested in having more tourists, according to GSM and SDC.				
benef	fits local		Percentage of Jordanian people who recommend visiting As Salt City to friends was 87.6% (total				
comm	nunity is		number of respondents: 165, Survey conducted by JOCV).				

Achievement of Project Purp	pose and Overall Goal
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<sup>&</sup>lt;sup>1</sup> "A study of visitors' satisfaction in HOSM 2019", conducted by one of JOCVs

					10 00				-	
-	(Indicator 2) No. of people			nent: unabl	e to verify (N	A) (Refer to "Spo	ecial Perspectiv	ves Considered'	')	
City.	who want to tell stories	<ul><li>(Project Completion)</li><li>Could not be properly assessed</li></ul>								
	about Salt is increased by			rly assessed	1					
	10%.	(Ex-post Evaluation) • N/A								
	(Indicator 3) The model of Status of the Achievement: achieved (continued)									
	historical buildings utilized	(Project Completion)								
	for tourism is realized at		•	of historica	l buildings uti	lized for tourism	were realized a	s satellites of tr	ails.	
		<ul> <li>least one case.</li> <li>(Ex-post Evaluation)</li> <li>MOTA has rehabilitated buildings and opened the new areas for local activities. Some of the historical buildings have been used for new tourism projects, such as restaurants and cafes.</li> </ul>								
			-		As Salt City ar		in us restaurant	s and cares.		
		Year	Total	Detail	is suit city u					
		2016	30		Chunch 4	House:4, Gathe		Officer 1 Show		
			30	School:3	3			_		
		2019	39	-		House:3, Gathe and cafe :4, Visito	01	, 1	o:18,	
	(Indiantan d) No. of crisitana. Status of the Anticomment and issued (continued)									
	(Indicator 4) No. of visitors									
	to HOSM is increased by 15%.(Project Completion)• The number of visitors to HOSM increased by 266% from 3,277 in 2012 to 12,000 in 20							2 000 : 201-		
	15%.			ors to HOS	SM increased	by 266% from 3,2	277  in  2012  to  1	2,000 in 2015.		
		(Ex-post Evaluation)								
			Number of Visitors of HOSM							
		2015		2016	2017	2018	2019	2020		
		12,000		3,500	14,300	19,000	19,753	5,322*		
	*as of June 2020. The annual number of visitors is likely to be less than previous year due to									
`		impact of the epidemic of COVID-19.								
	(Indicator 5) Satisfaction	Status of the A	Achieven	ved (continue	d)					
	level of tourists to As Salt	(Project Completion)								
	City is improved to 75%.									
	5 1								1	
		Japanese monitor tour in April 2015						8		
		Paid tours surveyed after the terminal Very satisfied :53 (77%)								
		evaluation	suiveye	u anci i	ne terminar	Satisfied:15 (22				
		evaluation				•	· ·	( 1)		
		OK:1 (1%) (69 tourists surveyed)						l		
		(Ex-post Eval								
		• More than 75% (124 tourists) of 165 tourists have been satisfied (feedback data received from the tourists in the information center after the tours)								
		tourists in the information center after the tours). Status of the Achievement: partially achieved (continued)								
	(Indicator 6) No. of families			nent: partia	lly achieved (	continued)				
	to receive continuously	(Project Comp								
	"home visit" is increased.			ied to MOT	A and receive	ed permission.				
		(Ex-post Eval								
		• Number of	families	to receive	"home visit":	3				
(Overall Goal)	(Indicator 1) Registered	(Ex-post Eval	uation) a	achieved						
	townscape resources	• The registe	red town	iscape reso	urces includin	g historical buildi	ngs have been	well conserved	(85	
The implementation	including historical building	of stairs were	e rehabili	itated, land	lscaping work	s were implemer	nted in multiple	e locations incl	ludi	
of tourism	are well conserved in the	parks and grav				-	1			
01 100118111	same condition as the time	Î	. ,							
development in As	when registered									
development in As Salt City contributes		(Ex-post Evol	(Ex-post Evaluation) achieved							
development in As Salt City contributes to conserve historic	(Indicator 2) People's				increase are a	s follows				
development in As Salt City contributes to conserve historic townscape as well as	(Indicator 2) People's income from tourism	• Examples to	o show t	he income	increase are a		an 10 m41 .	nd their	at	
development in As Salt City contributes to conserve historic townscape as well as to improve their	(Indicator 2) People's	• Examples to - Five local in	o show t nterpreter	he income		s follows. were employed fo	or 10 months a	nd their contra	ct w	
development in As Salt City contributes to conserve historic townscape as well as	(Indicator 2) People's income from tourism	• Examples to	o show t nterpreter led.	he income rs and 24 s	taff members		or 10 months a	nd their contra	ct w	

3 Efficiency

Both the project cost and the project period exceeded the plan (ratio against the plan: 141% and 133%, respectively). It took time to complete activities as requested by MOTA, including the consolidation of exhibit functions of HOSM and training of heritage guides. The outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability <Policy Aspect>

The National Strategy of the Ministry of Tourism and Antiquities (2018-2020) focuses on sustainable development and revenue increase through tourism, by increasing the number of tourists. The Salt Heritage Trail is indicated within the Strategy as one of the tourism products providing opportunities for developing various comprehensive tourism. <Institutional/Organizational Aspect> Tourism promotion has been conducted under the collaboration among MOTA Balqa, SDC and GSM and there is shared understanding among the local actors on their roles and responsibilities. MOTA Balqa has sufficient number of staff while SDC needs at least two more staff members to meet the digital marketing needs and GSM is in short of service delivery staff. The Salt Ecomuseum (SEM) Management Committee established by the project is still functional, as the Committee meets occasionally, though not regularly, when needed and they work together, although the major challenge is funding.

### <Technical Aspect>

The majority of staff involved in the project are still engaged in tourism promotion. The SDC staff have skills necessary to implement their duties but they need to further improve the skills. As the staff members are occupied with the daily work load, it is challenging to acquire new knowledge or polish their skills during official working hours. At GSM, the staff have only limited knowledge and skills related to tourism management and would like to enhance it. Regarding local guides/interpreters, the number of the guides increased to 12 (female guides also increased) after the project completion. According to MOTA Balqa, the local people have the key skills necessary to be engaged in tourism, such as interpretation skills, culinary skills, and hygiene/food safety, as they are taking necessary training programs. <Financial Aspect>

Both MOTA and SDC have problems of budget insufficiency. The economy has been severely affected due to global crisis of COVID-19 and the tourism sector was heavily affected due to strict measures of lockdown and curfews. However, expected tourism activities are being implemented without major problem and SDC is trying to secure necessary budget through Jordan Tourism Board and donor agencies.

<Evaluation Result>

In light of the above, some problems have been observed in terms of the institutional/organizational, technical and financial aspects of the implementing agency. Therefore, the sustainability of the project effects is fair.

#### 5 Summary of the Evaluation

The project achieved the Project Purpose, i.e., tourism development that utilizes local cultural resources and benefits local community, as satellites of trails for tourism were developed and the interest of local people toward tourism was enhanced. At the time of the ex-post evaluation, new tourism areas have been developed and the number of visitors to HOSM is increased. Therefore, the project effects have been continued. The Overall Goal of contributions to conservation of historic townscape and to improve people's livelihood through tourism has been achieved as the registered townscape resources have been well conserved and the institutional/organizational, technical and financial aspects, because of insufficiency of manpower and financial resources. In the efficiency, the project cost and the project period exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

#### III. Recommendations & Lessons Learned

### Recommendations for Implementing Agency:

It is recommended that MOTA Balqa, GSM and SDC further strengthen the functioning of SEM Management Committee. This can be
done by creating more steady momentum of regular joint meetings among the Committee members to exchange ideas and challenges. If
the Committee refunctions in more effective manner, it will be an effective tool especially during and post COVID-19 pandemic. It will
help identifying the financial gaps as well as challenges encountering local community working in the tourism sector in As Salt City.

#### Lessons learned for JICA:

- The project made a good foundation of tourism development in As Salt City, involving local communities and introducing the concept of "Ecomuseum". The project established an organizational structure (SEM Management Committee obtained official approval by Decision No.5-26, in March 2014), and provided capacity building for the committee members. These experiences of the project may serve as good practice in promoting sustainable community tourism.
- One of the Indicator of the Project Purpose (Indicator 2) was not appropriately assessed at the terminal evaluation and was not assessed at this ex-post evaluation. To assess the project effects appropriately during and after the project and derive useful recommendations/lessons learned, it is necessary to define indicators that precisely assess the intended effects. Also the feasibility to collect data during and after the project should be taken into consideration.



MOTA Balqa Tourism Directorate and Historic Old Salt Museum Facade



Tourists (Guest House)

Country Name		The Project for Capacity Development for Solid Waste Management in Tiznit Commune and					
The Kingdom of Mo	rocco	cco Neighboring Communes					
I. Project Outline							
Background	million manage odors, g become populat urgently urban a largely sanitary	tons in 2012 along with its fore ed and was merely dumped in o gas from the dumping sites had be worse at any rate due to the ion growth as well. The Govern y reinforced. By the effort, SWN reas of large cities. Nevertheles sluggish due to insufficient op y landfills was critical, thus, the r	seen economic groupen spaces with been hazardous to increased amour ment of Morocco M had been partl s, undertakings a erational capacit eduction of total	d waste would increase from 5 million tons in 2008 to 6.2 growth. However, most of the solid waste was not properly nout any treatment. As a result, waste scattering, leachate, to the surrounding residents and the environment. It would nt of municipal solid waste in urban areas coupled with co had considered solid waste management (SWM) to be ly improved with the participation of the private sector in at the level of medium and small towns and villages were ty in SWM as well as lack of funding. Also, scarcity of waste amount became an urgent issue in those towns.			
Objectives of the Project	<ul> <li>Through the establishment of a SWM system to the extent to concretize 3R (reduce, reuse and recycle) in commune and neighboring communes, the project aimed at improving SWM in Tiznit Province, and t contributing to the improvement of SWM in Tiznit Province and sharing the SWM model in Tiznit Province other provinces in Morocco.</li> <li>1. Overall Goal: <ol> <li>Solid Waste Management (SWM) in Tiznit Province is improved</li> <li>The model of SWM in Tiznit Province is shared with other provinces in Morocco</li> </ol> </li> </ul>						
Activities of the Project	<ol> <li>Procession</li> <li>Ma</li> <li>Ma</li> <li>I)</li> <li>and</li> <li>exitive</li> <li>exitive</li> <li>cap</li> <li>peod</li> <li>Inp</li> <li>Japanes</li> <li>1) Ea</li> <li>2) Tr</li> <li>3) Ea</li> <li>wa</li> </ol>	bject Site: Tiznit Commune and 3 in activities: Compiling issues of SWM in T d 3R in Tiznit Commune, 3) imp sting dumping sites and new d ste collection and transport as bacity for implementation of in ople about SWM at the pilot activ- buts (to carry out the above activi-	B other communes Fiznit Province, 2 proving the capacisposal facilities, well as existing tercommunal wa vity sites in Tiznit (ties)	<ul> <li>(Aglou, Reggada, Arba Sahel)</li> <li>(Aglou, Reggada, Arba Sahel)</li> <li>modernization of waste collection and transport system acity of Tiznit Commune for planning and management of s, 4)improving capacity for planning and management of g dumping sites in the 3 target communes, 5) improving aste management, 6) awareness-raising activities for the it Commune.</li> <li>Moroccan Side <ol> <li>Staff allocated: 16 persons</li> <li>Land and facilities: Office for the experts in Tiznit Commune</li> </ol> </li> </ul>			
Project Period		013 – March 2016	Project Cost	(ex-ante) 300 million yen, (actual) 275 million yen			
Implementing Agency		Commune					
Cooperation Agency in Japan	EX Res	earch Institute Ltd.					

< Special Perspectives Considered in the Ex-Post Evaluation >

The issues of the project design

- According to the project design, the achievement of Project Purpose was entirely based on the premise that new disposal facilities were to be constructed in a timely manner in order to form the intercommunal system of SWM. However, the construction itself was under the responsibility of the Moroccan side and was beyond the scope of the project. As the concerned facilities were not yet constructed at the time of the ex-post evaluation, it was evidently proven to be a precarious assumption to account for any of the achievement of the Project Purpose as well as the Overall Goal in the evaluation framework.
- No directly applicable indicator was assigned to confirm the Overall Goal 2, namely "the model of Solid Waste Management in Tiznit Province is shared with other Provinces in Morocco." Despite conceivable regional differences and socioeconomic obstacles and resistance to change more or less entrenched practices of SWM, it had been assumed that SWM in Tiznit Province was to become a showcase example, thereby to hold model adequacy to other provinces in Morocco to automatically replicate it. However, it was no premeditated indicators to identify or measure such a cascade effect on the other provinces.

1 Relevance

<Consistency with the Development Policy of Morocco at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Morocco's development policies as it has considered proper management of solid waste as a critical issue, and thus, enacted the "Law 28-00 on Solid Waste Management and Disposal" in 2006 and launched the "National Program for Solid Waste Management" (PNDM) in 2008. PNDM consisted of ensuring the waste collection rate from 70% to 90% within the 15 years to implement appropriate final disposal with the rehabilitation of disposal facilities, through the improvement of the operation and

maintenance system for the facilities as well as the establishment of segregation and recycling system.

<Consistency with the Development Needs of Morocco at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Morocco's development needs as it was expected that the amount of solid waste would increase from 4.7 million tons in 2008 to 7.0 million tons in 2015 of which 5.56 million tons estimated in the urban area accompanied by its foreseen economic growth. However, most of the solid waste was not properly managed and was merely dumped in open spaces without any treatment. As a result, waste scattering, leachate, odors, gas from the dumping sites had been hazardous to the surrounding residents and the environment. It would become worse at any given rate due to the increased amount of municipal solid waste in urban areas coupled with population growth as well. There was no change in the needs by the time of project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the" Country Assistance Program to Morocco" (2012) that was to assist "reinforcement of economic competitiveness and sustainable economic development." In particular, to support sustainable growth, it was to utilize Japan's technology to promote environmental measures and resource management.

<Appropriateness of Project Design/Approach>

From the perspectives of both the effectiveness and sustainability of the project effects, the project suffered from the underlying issues of land acquisition although it had been preconditioned for the construction of the new facilities. As a result, a major discrepancy accrued to the project against what it initially aimed for. In addition, the delay in the construction of the new disposal facilities has resulted in reduced opportunities for utilizing technology transferred to the Moroccan side, particularly concerning sanitary landfill and the safety closure of open dumping sites. Thus, after project completion, there were only a few substantial bases to measure the achievement of the project in terms of the Project Purpose and the Overall Goal. It was thus concluded that there was a flaw in the original plan and assumption of the project.

<Evaluation Result>

In light of the above, the relevance of the project is fair

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was not achieved by the project completion. According to the project completion report, since the planned new disposal facilities were not constructed, the detailed contents of the intercommunal system were not established, and the feasibility of the system proposed by the project was not verifiable. Thus, it could not be achieved (indicator 1). The authorities of Tiznit Province had regularly advised Tiznit Commune and three neighboring communes in the implementation of the intercommunal SWM system through training and seminars. However, it was only partial in nature as the new facilities were not constructed and could not upgrade to the extent of the intercommunal SWM system by the project completion (indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially continued since the project completion. As above, new disposal facilities have not yet been constructed and advice on the system has not yet been able to be substantiated for the conceived intercommunal system. However, according to the survey results, Tiznit commune has notably utilized the methods and tools developed by the project in order to further improve the SWM system and extend the cleaner environment in the commune.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has not been achieved at the time of ex-post evaluation. According to the survey results, the rate of solid waste collection has been slightly improved in a limited number of communes in Tiznit Province (Indicator 1). Only 1 open dumping site was rehabilitated out of 25 communes in the Province (Indicator 2). The rate of solid waste disposal in a sanitary landfill was not improved as the sanitary landfill was not yet put in place despite the original plan (Indicator 3). No official approval on guidelines to implement SWM M/P by the Governor of Tiznit Province (Indicator 4).

<Other Impacts at the time of Ex-post Evaluation>

Due to the lack of a consensus-building mechanism with local communities and landowners, land acquisition for the new disposal facilities utilizing a sanitary landfill turned out to be a long-standing contentious issue that negatively affected the project. <Evaluation Result>

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results			
(Project Purpose)	(Indicator 1)	Status of the Achievement: Not achieved (partially continued)			
The capacity for Solid	The intercommunal system for the new	(Project Completion)			
Waste Management in	disposal facilities is established among	The framework of the intercommunal SWM was still under discussion, and the rule for			
Tiznit Province is	Tiznit Commune and three neighboring	sharing the costs among the related communes had not been established. Since the			
improved.	communes.	planned new disposal facilities were not constructed, the detailed contents of the			
		intercommunal system were not established. As long as the new facilities were not in			
		assess the status of the achievement.			
		(Ex-post Evaluation)			
		assess the status of the achievement. (Ex-post Evaluation) New disposal facilities have not yet been constructed because of the time-consumi			
		(Ex-post Evaluation) New disposal facilities have not yet been constructed because of the time-consumin bidding process, site selection, and modification of technical specifications; therefore			
		the intercommunal system has not been established among Tiznit commune and the			
		neighboring communes. In Tiznit commune, however, a series of methods adopted for			
		the collection and transportation of SWM have been continuously used and improved.			
		In terms of waste collection, it has upgraded its collection vehicles to have better			
		access to the "old city" area by utilizing the Action Plans and the developed tools and			
		materials during the project period. The activities for awareness-raising have continued			
		to be implemented, and a new division in charge of the collection areas has been			

In light of the above, the effectiveness/impact of the project is low.

		estab	lished. In effec	t. black spots	have been o	eradicated.	mainly in "o	old city." A
			neighborhoods	-				na enty. Th
	(Indicator 2)		s of the Achieve		-		tinued)	
	Authorities of Tiznit Province advise		ect Completion)		uenne veu (p	ur tiun y con	(iniaea)	
	Tiznit and the three neighboring		authorities of Tiz		ad regularly	advised Tiz	nit Commun	e and three
	communes in the implementation of the		boring commun					
	intercommunal SWM system.	_	gh training and	-				
	intercommunar 5 wivi system.		zed because the					
			advice on the s					
			bost Evaluation)		naory minc			<b>C</b> 1.
			situation remain		os now disn	ocal facilitie	as were not a	at construct
			advice has not y					
		-	e system. Howe	-			-	-
			er plan, as well		-		-	
		partic	-	as in the hat	ional suate	gies to proi		
(Overall Goal)	(Indicator 1)		oost Evaluation)	Partially achie	ved			
() Solid Waste	The rate of Solid Waste collection is		Jost Evaluation)	i artiany active	veu			
Management (SWM) in Tiznit Province is	improved in Tiznit Province.	th	Table 1: ne rate of solid	the average a waste collect				it Province
improved			Commune	2014	2015	2016	2017	Unit: ton/o 2018
			Commune	Baseline	2015	2010	2017	2010
2) The model of Solid			Tiznit	59.4	62	65	67	70
Waste Management in				88%	88%	89%	90%	90%
Fiznit Province is			Arbaa Sahel	0.6	0.6	0.7	0.5	0.7
hared with other				86%	86%	78%	71%	78%
Provinces in Morocco		_	Reggada	2.1	2.3	2.1	1.9	2.5
			Reggaua	95%	92%	91%	95%	96%
		_	Aglou	3.3	32.70	3.5	3.5	4
			Agiou					-
		-	Total	94% 65.4	88% 67.9	95% 71.3	90% 72.9	89% 77.2
			Total	88%	89%			
i t		< <u></u>	rce > data provi			89%	90%	90%
	(Indicator 2) The number of open dumping sites that are rehabilitated is increased in Tiznit Province.	site of Tiznit commune was rehabilitated in Tiznit Province. (Ho rehabilitation of the dumping site of Tiznit Commune is considered to have proportionately large portion of the population of Tiznit Province, give population of this commune alone accounts for 36.1% of the populat province as a whole, and 92% of the urban population of the same pro						(However, lave benefite given that pulation of
	(Indicator 3)	2014	.) oost Evaluation)	Not achieved				
	The rate of solid waste disposed of in	· •	e is no sanitary l		lace.			
	a sanitary landfill is improved in			r r				
	Tiznit Province.							
		(Ev. 4	oost Evaluation)	Not ashiavad				
	(Indicator 4) Guidelines to implement SWM M/P are approved by the Governor of Tiznit Province		e is no official a		l by the Gov	ernor of Tiz	nit Province	in this rega
Source: Answered ques	stionnaire provided by Tiznit Province and T	Tiznit	Commune.					
Population data 2014 fi	rom the website of the Haute Commission of	de Plai	nning (HCP) in	the country bel	ow.			
nttps://www.hcp.ma/reg	gion-agadir/Caracteristiques-de-la-population	on-RG	<u> PH-2014-Pro</u> vi	nce-Tiznit_a52	.html			
Efficiency								
Both the project of	cost and project period were within th	e plar	n (ratio agains	t the plan: 92	% and 100	)%, respect	tively). The	outputs w
• •	planned; however, it was partly affected ciency of the project is high.	ed by	new disposat	ble facilities v	which were	e not const	ructed duri	ng the proj
Sustainability								
Policy Aspect>								
• 1	SWM has retained its importance in th	he nat	tional policy o	f the Govern	ment of M	orocco as 1	notably ma	nifested in
National Program fo o date since 2006.	or Solid Waste Management" (2008-202 Further, "Stratégie Nationale du Do gence of the sectoral policies. In other	23). T éveloj	he "Law 28-00 ppement Dura	0 on Solid Wa Ible" (2017-2	aste Manag 2030) has	ement and reinforced	Disposal" and operation	has been va ationalized
ross-cutting issues h	have been grouped into a social project ment is one of the policies under this st	et that	needed to be	addressed in	a coherent	context. T		
Institutional Aspect	-				-		omotion of	SWM TH

The major role of the Ministry of Interior (MOI) has continued to ensure and supervise the nation-wide promotion of SWM. Tiznit

<sup>&</sup>lt;sup>1</sup> It is equivalent of the percentage of the amount of daily waste collected in the amount of daily waste generated.

province has remained engaged in monitoring of SWM within the province. In addition to the follow-ups of the project, Tiznit commune has continuously held itself responsible for the actual execution of SWM. According to the survey results, 2 staff have been assigned in each of three organizations and they are all ex-counterpart staff trained through the project, they all perceive that manpower has been insufficient for the ever-increasing required workload and lack of human resources. In Tiznit Commune, the organization will be reformed and plan to recruit several technicians in 2020.

## <Technical Aspect>

According to the survey results, although training was conducted for Tiznit commune and the other target communes during the project period, due to the absence of communication among communes and lack of financial resources, no training was conducted to sustain or promote the acquired technical level in Tiznit Province after the project completion. However, training of trainers on SWM has been occasionally organized by the MOI at the central and/or the regional level. In Tiznit Commune also, they have conducted training of trainers on it since the project ended, but they perceive that it needs to be done on a regular basis to further promote the SWM. <Financial Aspect>

Although financial support and budget allocation from the central government have not been sufficiently disbursed in a timely manner, Communes have independently requested financial support to partners and donors at their discretion. For example, the National Initiative for Human Development (Initiative Nationale pour le Développement Humain: INDH), a programme launched in 2005 with the purpose of supporting the socio-economic development of the country, provided in-kind support of one waste collecting vehicle to Tiznit Commune. Then in 2019, Tiznit Commune submitted a request of 5 million Dhs to the Fonds d'Equipement Communal (FEC), a financial institution dedicated to public infrastructure development at the local level, to fund the renewal of new engines to replace the old ones. As for prospects for the public funding, the Government of Morocco announced SWM as one of the priorities in the environmental sector in the national budget 2019, but the disbursement was not confirmed yet.

<Evaluation Result>

Therefore, as there has been a major problem in the financial aspect, the sustainability of the effects through the project is low. 5 Summary of the Evaluation

The project has not achieved the Project Purpose and the Overall Goal. As for sustainability, it has institutionally understaffed to the improvement of SWM. It has also been technically challenged to sustain the technical level. Although prospects are better in the financial aspect, the necessary budget has not yet been sufficiently secured for achieving the intended effect. Considering all of the above points, this project is evaluated to be unsatisfactory.

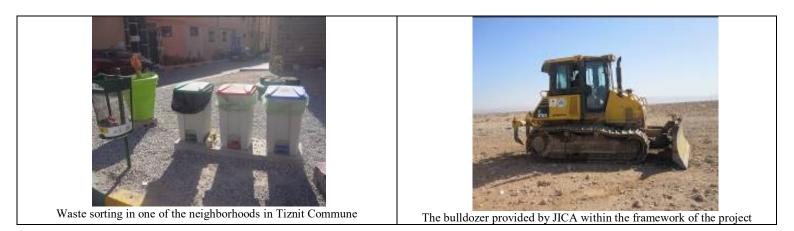
III. Recommendations & Lessons Learned

### Recommendations for Implementing Agency:

Although SWM had been developed in Tiznit Commune by the project, as the targeted intercommunal system was not established without planned new facilities, it failed to optimize the scale merit of SWM. Once the new facilities are put in place, the Moroccan side (MOI, Tiznit Province, and Tiznit Commune) should expedite the establishment of the intercommunal SWM in order to disseminate good practices and lessons learned of the intercommunal system with the new facilities. In terms of the dissemination to other provinces, it requires concerted efforts to institutionalize a working mechanism among MOI and provincial governments for the purpose to make coordination between communes and private enterprises concerned in SWM through effective information sharing.

### Lessons Learned for JICA:

Although the introduced technical approach for SWM was much needed and pertinent in the project, the project design and scope were not appropriate particularly new disposal facilities were the basic premise for the outcome and impact. This may even have superficially devalued the actual contribution of the project in the field, specifically in Tiznit Commune. Thus, with the given scope, the project design should have been as unaffectedly valid as possible even under the envisaged adverse conditions in the partner country. If needed to ensure the externality to be included as a consequence of the main project effect, at least it should have fully taken into consideration various socioeconomic and administrative factors involved in the decision-making, such as in the case of required land acquisition in the country. It should be also noted that all the stakeholders should have been clear and fully committed about what is their role and responsibility in the project at the time of planning.



conducted by Kenya Office: October 2020

Country Name		Project for Development of Rapid Diagnostics and the Establishment of an Alert System				
Republic of Kenya		for Outbreaks of Yellow Fever and Rift Valley Fever				
I. Project Outline						
Background	Fever ( the nor fatality (1,062 infection vector of Howev African	Outbreaks of arthropod-borne viral (in short, "arbovirus") infections such as Yellow Fever (YF) and Rift Valley Fever (RVF) have been periodically reported in Kenya and the neighboring countries. YF outbreaks occurred in the northwestern region of Kenya and the southern region of Sudan in 2005 (555 clinical cases, 142 death cases, fatality rate of 25.6%). RVF outbreaks occurred in Kenya, Somalia, and Tanzania in the period from 2006 to2007 (1,062 clinical cases, 315 death cases, fatality rate of 29.7% among the three counties). To control the disease infection, it was considered that early detection of infectious cases to implement emergency vaccinations and vector control after cases (so-called "early containment" measures) were more effective than periodic vaccination. However, simple diagnostic test kits for YF and RVF were not commercially available in Kenya and other East African countries; thus, most countries with high risks of outbreaks of those diseases, required to acquire simple diagnostic test kits.				
Objectives of the Project	YF and strength diagnos 1. Exp 2. Proj deve	<ul> <li>Through development of rapid diagnostic kits, enhancement of reference capacity for rapid confirmation of YF and RVF, development of Mobile SMS-based Disease Outbreak Alert system, the project aimed at strengthening the outbreak containment system of YF and RVF in Kenya through the development of rapid diagnostics and establishment of a sustainable outbreak vigilance and response mechanism.</li> <li>1. Expected Overall Goal: N.A.</li> <li>2. Project Purpose: The outbreak containment system of YF and RVF is strengthened in Kenya through the development of rapid diagnostics and establishment of a sustainable outbreak vigilance and response mechanism.</li> </ul>				
Activities of the Project	<ol> <li>Proj</li> <li>Proj</li> <li>Mai</li> <li>of E</li> <li>KEI</li> <li>the</li> <li>Inpu</li> <li>Japanes</li> <li>Exp</li> <li>Trai</li> <li>Equ</li> <li>anal</li> <li>sequ</li> </ol>	ect site: Nairobi and regions at risk of arbovirus infection (study sites). n activities: Production of rapid diagnostic kits for point-of-care (POC) testing of YF and RVF, preparation LISA tests for YF and RVF, strengthening of reference capacity for rapid confirmation of YF and RVF at MRI HQs and Center for Infectious and Parasitic Diseases Control Research (CIPDCR), development of Mobile SMS-based Disease Outbreak Alert System (mSOS), pilot operation of mSOS, etc. tts (to carry out above activities)				
Project Period	January	2012 to January 2017 Project Cost (ex-ante) 365 million yen, (actual) 361 million yen				
Implementing Agency	Kenya	Medical Research Institute (KEMRI)				
Cooperation Agency in Japan	Nagasaki University Institute of Tropical Medicine (NUITM)					

### **II. Result of the Evaluation**

<Special Perspectives Considered in the Ex-post evaluation>

- For this SATREPS project, no expected Overall Goal was set forth. At the terminal evaluation, the following efforts for utilization of the research outcomes by this SATREPS project were confirmed. At the ex-post evaluation, these efforts were interpreted as "Expected Overall Goals" but verified as part of expected positive impacts.

1) Upgrading of mSOS pilot version to mSOS (nationwide scale-up) and integration into the national health information system.

2) Commercialization of the test kits.

1 Relevance

<Consistency with the Development Policy of Kenya at the time of ex-ante evaluation >

In the "Second National Health Sector Strategic Plan (NHSSP)" (2005-2010) and the "Strategic Plan of the Ministry of Public health and Sanitation" (2008-2012), capacity development in disease surveillance and research for infectious diseases covering not only HIV/AIDS, Malaria and Tuberculosis but YF and RVF were indicated as priority areas

<Consistency with the Development Needs of Kenya at the time of ex-ante evaluation >

The outbreaks of YF and RVF were periodically reported in Kenya and its neighboring countries, and there were needs for improvement of the diagnostic technique and development of the alert system model well designed for the social and economic infrastructure of not only Kenya but all the East African countries. Thus, the project was relevant with development needs of Kenya.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

In the Country Assistance Program for Kenya (2000), one of the priority areas was health and medical care. In the "Yokohama Action Plan" adopted at the 4<sup>th</sup> Tokyo International Conference on African Development in 2008, infectious disease control was listed on the priorities of the health sector. At G8 Toyako Summit of the same year, global effort for infectious disease control was agreed on in the

<sup>&</sup>lt;sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development.

concept of the "Health System Strengthening." Thus, the project was consistent with Japan's ODA policy at the time of ex-ante evaluation. <Evaluation Result>

In light of the above, the relevance of the project is high.

# 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved. Rapid diagnostic test kit for detection of Immunoglobulin M<sup>2</sup> (IgM) against YF and Enzyme-linked Immunosorbent Assay (ELISA) test kits for RVF and YF (both IgM-capture) were developed. However, the external evaluation was not conducted due to the lack of funds, and therefore the test kits for YF and RVF were not produced and marketed (Indicator 1). The Operational Manual of mSOS was officially authorized, and it was decided to be integrated into the District Health Information System 2 (DHIS2) (Indicator 2). The time taken from the first clinical suspicious cases to confirmation of diagnosis attained the target value (Indicator 3). It was less than one week in the cases identified at the airport in 2016, although they might be different from cases at the community level.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have partially continued. By deploying the scientific knowledge, skills and techniques gained through the project, the rapid diagnostic test kits for RVF available from other partners such as US Army Medical Research Institute for Infectious Diseases and World Health Organization have been utilized by KEMRI, although the external evaluation of the kits developed through the project has not yet been conducted as of May 2020. On the other hand, key research outputs produced by the project have been utilized. For example, KEMRI has utilized functions of the Biosafety Level-3 (BSL-3) Laboratory for (i) outbreak response and research on arboviruses and Viral Hemorrhagic Fever and (ii) VHF amplification for in-depth virus characterization. Furthermore, KEMRI has started new research projects based on the research outputs, such as the RVF genomics study (molecular epidemiology), surveillance for Chikungunya Virus, and HIV drug resistance using genetic sequencing. Major research facilities and equipment installed by the SATREPS project have been continuously utilized, including the Infectious Diseases Research Laboratory at Alupe, thermocyclers, sequencers, incubators, lyophilizers, genetic analyzers, etc. The Operational Manual of mSOS has been integrated into the Kenyan Health Information System (KHIS) which was renamed from DHIS2.

<Status of Achievement for ExpectedOverall Goal at the time of Ex-post Evaluation>

Since the Expected Overall Goal was not set forth for this SATREPS project, the ex-post evaluation verified "utilization of the research outcomes by the project." The utilization of the research outcomes by the SATREPS project has been progressed through utilization by the implementing agencies. Since the project completion, mSOS has been integrated into KHIS as a public health event reporting model, but it has not been scaled up nationwide as part of the national surveillance system. The reasons cited by MOH include limited internet connectivity infrastructure in the counties, limited financial sources for internet connection and data transmission through bulk SMS, unavailability of mobile phones for the county staff for reporting data, unavailability of a gateway for SMS, and others. As reported by KEMRI, the rapid diagnostic test kits for YF and RVF have not been commercialized yet, because they have not received external evaluation and third-party accreditation as mentioned above. KEMRI has not secured the necessary funds for these processes yet. <Other Impacts at the time of Ex-post Evaluation>

Several positive impacts have been confirmed within and outside KEMRI. At KEMRI, first, diagnostics of other arboviruses (Dengue fever and Chikungunya) and infectious diseases have been strengthened. These have been brought by improved diagnostic and surveillance techniques with the installed real-time thermocycler at the Center for Virus Research (CVR) and the ELISA reader at the Coast Provincial General Hospital in Mombasa. Second, the outbreak alert system mSOS was customized to mSOS-Ebola with the addition of notification of laboratory diagnostic results. The system has been used by the National Rapid Response Team of MOH to enhance preparedness in the country. Third, a machine installed by the project (Real-time PCR machine) has been utilized for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) sample tests since March 2020. Four of the researchers who strengthened techniques through the project have actively been working for sample tests. Fourth, in line with KEMRI's affirmative action policy for creating equal opportunities across gender, there was targeted recruitment of two female scientists at Nairobi and Busia sites as research associates and were mentored as immunologists and laboratory analysts through the Project. Since the project completion, both completed their master's degree.

Outside KEMRI, first, MOH has improved its scientific literacy. According to KEMRI, through training on mSOS during the project, MOH has improved disease surveillance knowledge and techniques. Second, KEMRI in collaboration with the National Police Service has utilized analyzers and thermocyclers for training 60 forensic analysts from Kenya's Directorate of Criminal Investigation on DNA detection.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of the Project Purpose and Overall Goal						
Aim	Indicators	Results				
(Project Purpose)	1. Rapid diagnostic test kits	Status of achievement: Partially achieved (Not achieved).				
Outbreak containment	for YF and RVF are stably	(Project Completion)				
system of YF and RVF is	available in the target area.	- KEMRI acquired all the necessary ISO certificates for the production and sale of the test				
strengthened in Kenya		kits, but the external test was not completed.				
through the development of		(Ex-post evaluation)				
rapid diagnostics and		- The external evaluation on the test kits has not been conducted and the test kits have not				
establishment of a		been available yet, but MOH has utilized kits available from other partners for routine				
sustainable outbreak		surveillance while KEMRI has offered reference laboratory support.				
vigilance and response	2. The Operational Manual	Status of achievement: Partially achieved (Achieved).				
mechanism.	is integrated into the national	(Project Completion)				
	surveillance and response	- The Project supported development of mSOS pilot version and verified its effectiveness				
	system for priority diseases	scientifically, which led to an official authorization of the operation manual of mSOS by				
	by the MOH by the end of	MOH. In addition, mSOS pilot was included in the Principal Secretary's performance				
	project period.	contract with the Cabinet Secretary (CS) 2014-15.				

<sup>2</sup> Immunoglobulins are antibodies that play a major role in immunity, and the Immunoglobulin M is the first antibody that is produced when a bacterial or viral infection occurs.

	first clinical suspicious cases	<ul> <li>(Ex-post evaluation)</li> <li>MOH decided to scale mSOS up nationwide as part of the national surveillance system, upgraded mSOS pilot version to mSOS national version and integrated it into the national health information system, DHIS2 (renamed as KHIS).</li> <li><u>Status of achievement: Achieved (Continued).</u></li> <li>(Project Completion)</li> <li>When the three clinically suspicious cases of YF, who were coming back from outside of Kenya, were identified at Jomo Kenyatta International Airport in 2016, the time taken from the first suspicious case to confirmation of diagnosis was less than one week.</li> <li>(Ex-post evaluation)</li> <li>In 2019, samples from the suspected outbreak of RVF in Nyandarua County took two days to reach KEMRI. Upon receipt of the samples, KEMRI was able to test and release</li> </ul>
		the results in under three days.
(Expected Overall Goal)		Status of achievement: Achieved.
Utilization of the research		(Ex-post Evaluation)
outcomes		- mSOS was integrated into KHIS as an event reporting module although the system is yet
		to be made fully operational in the 47 counties.
	health information system.	
	2. Commercialization of the	Status of achievement: Not achieved.
	test kits.	(Ex-post Evaluation)
		- Test kits for YF and RVF have not been commercialized yet, because they have not gone
		through external verification.
Source: Terminal Evaluation	Report, JST Completion Repo	ort, information provided by MOH and KEMRI.
2 E.C.	• • • •	

#### 3 Efficiency

Both the project cost and period were within the plan (ratio against the plan: 99% and 100%, respectively). Outputs were produced as planned. Therefore, the project efficiency is high.

4 Sustainability

<Policy Aspect>

Promotion of infectious disease control including YF and RVF has been prioritized in the "Kenya Health Policy" (2014-2030), "eHelath Policy" (2018-2030), "Health information Policy" (2014-2030), "Health Act" (2017), and so on.

### <Institutional Aspect>

The institutional arrangement of KEMRI for utilizing the research outputs has not changed, with the Headquarters (HQs) and seven regional clusters to cover all 47 counties. Most of the key researchers trained by the project have continuously worked at both HQs and the Alupe Center. However, some have been transferred to other centers to provide technical expertise, while some senior researchers would be retiring in a year (as of May 2020). At the time of ex-post evaluation, KEMRI was undertaking the recruitment of research scientists to strengthen its technical expertise. KEMRI has collaborated with JICA for the third country training program that started in 2019, aiming for strengthening laboratory preparedness and building resilience against public health emergencies in East Africa. KEMRI has sustained its research network with the National Public Health Institutes, National Health Research Institutes, and Regional Health Authorities, besides MOH. Regarding the research facility and equipment, KEMRI HQs has made them open to its satellite centers and universities or graduate schools for research and training purposes. CIPDCR has been fully operated and maintained by KEMRI. However, there has been a challenge due to limited resources for repair and replacement of some broken devices such as the power back up system. <Technical Aspect>

KEMRI researchers trained by the project have been retained at KEMRI as follows. A researcher has worked at CVR using BSL-3 laboratory to analyze samples for his Ph.D. work on RVF. Other scientists have continuously stationed at the production department and KEMRI CIPDCR to research on arboviruses and publishing papers. In addition, researchers from other KEMRI centers such as Kisumu (Global Health Research) and Kilifi (Geographic Medicine Research-Coast) have used the facilities and equipment at the production department for their studies. KEMRI researchers have sustained skills and knowledge to properly operate and maintain the research facility and equipment installed by the project, as they have fully operated CIPDCR and maintained the equipment. They have planned to gain more experience by conducting a variety of research activities and publishing research papers. As well, KEMRI has supported to improve the scientific literacy of the government authorities such as MOH and DCI, as mentioned in <Other Impacts at the time of Ex-post Evaluation>.

### <Financial Aspect>

KEMRI has gained no revenue accruing from the commercialization of the test kits for YF and RVF. However, external research funds (4,649 million KES in 2016) have been secured from the National Research Fund, the Wellcome Trust, the Government of Kenya, and other international partners and funding organizations. Besides, KEMRI has internally generated income (361 million KES in 2016). The funding from the Government of Kenya to KEMRI (2,030 million KES in 2016) has been mainly for recurrent expenditure, and research activities have heavily relied on funding from external grants dependent upon successful proposals. Also, the cost for operation and maintenance has been secured from KEMRI's annual budget, although the details of allocations and expenditures could not be confirmed in the ex-post evaluation. Regarding county governments, although they have been expected to budget for disease surveillance activities, it has been challenging to secure funding to pay costs for bulk SMS for mSOS. For securing health financing, MOH has been developing the "Public-Private Partnership (PPP) Strategy" and an innovative health financing mechanism towards UHC.

There have been some issues in the financial aspect. Therefore, the sustainability of the effects is fair.

### 5 Summary of the Evaluation

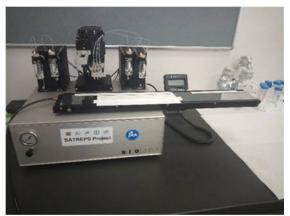
The Project Purpose was partially achieved. Rapid diagnostic test kits for YF and RVF were developed. However, since the external evaluation was not conducted due to the lack of funds, they were not ready for mass production and sales. The mSOS was developed and integrated into the national health information system. The project effects have continued, as research outputs produced by the project have been utilized. Regarding sustainability, securing sufficient funding for research activities has been an issue, but KEMRI has sustained a

necessary organizational setting and technical expertise to continue research related to infectious disease control. Considering all of the above points, this project is evaluated to be satisfactory.

# III. Recommendations & Lessons Learned

Recommendations for Implementing agency:

- It is recommended to principal researchers of KEMRI to reconfirm the specificity and sensitivity of the test kits for YF and RVF at the laboratory, conduct field trials for the external validation, and make an application to the National Public Health Laboratory Services for mass production, sales, and distribution, in line with its "Strategic Plan" (2018-2023). KEMRI should prioritize these activities in its Annual Work Plan and discuss with partners including JICA Kenya about the possibility of support.
- It is recommended to MOH to fully operationalize KHIS including mSOS in all counties. To do this, MOH should seek partnerships with other enabling sectors such as ICT and Energy to support county infrastructure development. It will serve as a surveillance and alert system for not only RVF and YF but also suspected SARS-CoV-2.
- Lessons learned for JICA:
- As a result of utilization of the research outcomes, the project had a goal of commercializing and distributing rapid diagnostic test kits for YF and RVF to points of care. However, the project could not complete the external validation of the test kits by the time of project completion, because the project design did not include an output of developing and testing a model for commercialization. In SAREPS projects where research outcomes are expected to be commercialized after the time of project completion, it is necessary to include activities for modeling and testing of the commercialization strategies that would eventually be up-scaled by the implementing agencies. And, potential stakeholders for sales, such as authorization organization, should be engaged in the project activities.



Rapid test kit (stripping machine) installed at the Production Department of KEMRI HQs



Scientist working at the Production Department of KEMRI HQs

Country Name United Republic of Ta		Rural Road Mainte	nanc	e System Dev	elop	oment Project
I. Project Outline	<u>inzuinu</u>					
Background	The total road length in Tanzania as of 2009/10 was 91,049 km of which 58,037 km were rural roads including district roads under the Prime Minister's Office Regional Administration and Local Government (PMO-RALG), and the operation and maintenance of rural roads was undertaken by the Local Government Authorities (LGAs) supervised by PMO-RALG with the budget from the Road Fund. Although the national development policies emphasized the importance of rural roads as a tool for rural development, 44% of them was in poor condition requiring rehabilitation works. Furthermore, the total length of paved rural road was 756 km which accounted for 1% of the total length of rural road. With this background, the government of Tanzania applied Labor Based Technology (LBT) <sup>1</sup> to rural road development and maintenance and implemented a technical cooperation project "Project for Capacity Strengthening on LBT Training at Appropriate Technology Training Institute (ATTI)" (2006 - 2011) supported by JICA. While the training capacity of ATTI was strengthened by the project, the development and maintenance of rural roads was still inadequate due to insufficient skills and experiences of contractees and contractors, lack of equipment, financial constraints, delay of execution of budget, and others. Under those circumstances, capacity development of PMO-RALG, the Regional Administrative Secretary (RAS), local governments and contractors along with the improvement of work process for maintenance of rural roads became urgent issues.					
Objectives of the Project	<ul> <li>trigent issues.</li> <li>Through the capacity strengthening of PMO-RALG, strengthening of rural road maintenance procedures of LGAs, improvement of skills and knowledge of the responsible organizations, and establishment of the dissemination mechanism for rural road maintenance approach, the project aimed at the improvement of administrative services of rural road maintenance and the development of its nationwide expansion approach, thereby contributing to the improvement of rural road maintenance procedures and services in the target regions.</li> <li>1. Overall Goal: The rural road maintenance procedures and services of LGAs in Dodoma and Iringa regions are improved.</li> <li>2. Project Purpose: Administrative services of rural road maintenance provided by LGAs are improved in the target areas, and its nationwide expansion approach is developed.</li> </ul>					
Activities of the Project	reg 2. Ma 1) 2) 3) 4) 3. Inp Japanes 1) E2 2) Tr 3) Tr an 4) Ec	ion (model districts: Cham ain Activities: strengthening of the capace the former Ministry of V Communications (MoWTO strengthening of the rural n improvement of the practi the LGAs, contractors, etc establishment of the disse regions. buts (to carry out above act	iwino city of Vorks C) in 2 road n cal sk .) on r eminat ivities 5 perso : 11 pe g roller	and Iringa / disse PMO-RALG for (MOW) (MOW 2015) on rural roa naintenance proce ills and knowled rural road maintention mechanism ( ) ons ersons (Uganda	emina r coo was ad ma edure ge of nance of ru	na region and Iringa and Mufindi districts in Iringa atted districts: Kondoa and Mufindi) redinating and supporting LGAs in collaboration with reformed to the Ministry of Works, Transport and aintenance, es of LGAs in the model districts, responsible organizations (concerned departments of e through LBT application in the model districts, and ral road maintenance approach within the respective examinan Side Staff Allocated: 29 persons Land and Facilities: project office Local cost: cost for utility of offices (electricity, water and telephone)
Project Period	April 2	012 - April 2016		Project Cost		-ante) 489 million yen, (actual) 470 million yen
Implementing Agency						cal Government (PMO-RALG) (PMO-RALG was nd Local Government (PO-RALG) in 2016)
Agency       Cooperation     Agency       in Japan	Eight-J	apan Engineering Consulta				

<Special Perspectives Considered in the Ex-Post Evaluation>

• The evaluation of the continuation status of Indicator 2 of the Project Purpose or satisfaction ratings of contractors/community people was excluded from this evaluation because the data were not available.

• The achievement of Indicator 3 of the Project Purpose or the rate of rollover funds for rural road maintenance was evaluated with the data before the year of 2014 because the data in 2014/15 were significantly affected by the disbursement rate of budget. According to the project's "Completion Report" (2016), only about 30% of the budget was actually disbursed in 2014/15 and almost all disbursed budget was spent in the year. The report stated that it was more realistic to evaluate the indicator with the data before the year of 2014.

<sup>&</sup>lt;sup>1</sup> A technology in which labour, supported by light equipment, is used as a cost-effective method of constructing and maintaining infrastructure of a required standard. LBT is now well established as a viable option for building infrastructure in countries with low wages and high unemployment. (Source: International Labour Organization)

- Indicator 2 for the Overall Goal aimed at the increase of the percentage of road maintenance works completed by contractors within the financial year. However, the benchmark year for comparison for increase was not specified. Therefore, in this ex-post evaluation, it was assessed by whether the ratios have increased compared with the ones at the time of project completion (2014/15) and whether they have been over 85% targeted by the project. Besides, although the indicator was stated as "the percentage of the road maintenance works completed is increased within the financial year," this was supposed to be a misdescription of "the percentage of the road maintenance works completed within the financial year is increased" judging from the Japanese translation and the related statements in the project documents. Therefore, the achievement of the indicator was evaluated based on "the percentage of the road maintenance works completed."
- The achievements of Indicator 2 and 3 of the Overall Goal were evaluated with the data of four districts the project intervened but not with the regionwide data because the regionwide data were not available.

# 1 Relevance

<Consistency with the Development Policy of Tanzania at the Time of Ex-Ante Evaluation>

In line with the "Tanzanian Development Vision 2025" (1999), the "National Strategy for Growth and Reduction of Poverty II (MKUKUTA-II) 2010/11-2014/15" emphasized the importance of infrastructure development of all the prioritized sectors, and placed urban and rural road development as one of the most important tools for the national economic development. In this context, the rural road development and maintenance which directly affected agricultural activities and livelihood of rural population was highlighted as one of the major issues of national development. Therefore, the project was consistent with the development policies of Tanzania at the time of ex-ante evaluation.

<Consistency with the Development Needs of Tanzania at the Time of Ex-Ante Evaluation>

According to the "Corporate Information of the Roads Fund Board" (August 2010), 44% of all the rural roads were in poor condition that needed restoration and maintenance. Therefore, rural road improvements were needed in quantity and quality. However, the capacity of contractors to construct and maintain roads by LBT approach has been insufficient, and LGAs were required the ability to plan, supervise and control construction and maintenance works.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

In the "Country Assistance Program for the United Republic of Tanzania" (June 2008), for infrastructure development aiming at growth and reduction of income poverty, it was declared that the government of Japan would contribute to the development of a road network that could be maintained and managed continuously by prioritizing assistance for boosting maintenance and management capacity through financial advice, human resources development, and institutional development. Therefore, the project was consistent with the Japan's ODA policy for Tanzania at the time of ex-ante evaluation.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved at the time of project completion. The total ratio of good and fair maintenance status of rural roads was 73.70% in Chamwino, 92.49% in Iringa, 77.35% in Kondoa, and 57.08% in Mufindi at the time of project completion in 2015, which achieved the targets set by the project except in Mufindi district (Indicator 1). The satisfaction ratings of contractors and community members for rural road maintenance works or status in the model districts of Chamwino and Iringa mostly achieved the target of 75% in 2014 and 2015. The data of disseminated districts of Konda and Mufindi were not available because the satisfaction rating survey was not conducted in these districts (Indicator 2). While the rate of rollover funds for rural road maintenance in the model districts decreased to below the target of 15%, the ones in disseminated districts were over 15% (Indicator 3).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially continued at the time of ex-post evaluation. As for the rural road maintenance status, while the target level has been mostly sustained in Dodoma region, it has been continually below the target level after the completion of the project in Iringa region due to unusual inclement weather and rapidly expanded road network. The rate of rollover funds for rural road maintenance has largely fluctuated year by year but mostly sustained the target level in both regions.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal was partially achieved at the time of ex-post evaluation. LGAs of Dodoma and Iringa regions prepared annual rural road maintenance plans containing necessary items including annual, mid-term and long-term objectives, strategies and specific activities for annual objectives, preliminary schedule, procurement procedures, cross-cutting issues including environment, gender and HIV/AIDS, and others required by the checklist prepared by the project (Indicator 1). The ratio of the road maintenance works completed by contractors in a financial year in the two regions has increased to the level of 90% to 100% through the training for contractors and improvement of the capacity of LGAs to plan, supervise and control road maintenance works (Indicator 2). The targets of rural road maintenance status in the regions have been achieved in Dodoma region but not in Iringa region due to unusual inclement weather and rapidly expanded road network (Indicator 3).

<Other Impacts at the time of Ex-post Evaluation>

There have been some positive impacts observed at the time of ex-post evaluation. According to interviews with the officials of PO-RALG and TARURA<sup>2</sup>, due to the maintenance work of the Wenda-Mgama road in Iringa district supervised and managed by the staff trained by the project, local accessibility to towns, markets and social services has been improved, agricultural production and marketing and local employment have increased, thus, the local economy has been activated. After the sensitization activities conducted by the project, women's involvement in road maintenance has increased as maintenance workers, employees of contractors, and others in both of Dodoma and Iringa regions. No resettlement and land acquisition were caused by the maintenance works of existing roads, and no other negative impact on natural, social and economic environment has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

<sup>&</sup>lt;sup>2</sup> Management of rural roads was transferred from PO-RALG to the Tanzania Rural and Urban Roads Agency (TARURA) in 2017. See "Institutional/ Organizational Aspect" of "Sustainability" below.

	Achievement of Pro	ject Purpose an	d Overa	all Goal						
Aim	Indicators				Res	sults				
	Indicator 1: The maintenance status (good, fair, and									
rural road maintenance	poor) of rural roads is improved in the									
provided by LGAs are	model districts and disseminated districts of	District	Targe		11/12	2012/		2013/14	201	4/15
improved in the target	the respective regions.	Chamwino	80%	6 74	.71%	79.04	%	81.50%	73.	70%
areas, and its nationwide		Iringa	70%	60	0.16%	66.36	%	71.29%	92.4	49%
expansion approach is		Kondoa	70%	6	-	-		63.34%	77.	35%
developed.		Mufindi	70%	6	-	-		63.09%	57.0	08%
	Indicator 2: The satisfaction ratings of the contractors/community people in the model	Source: Completion Report (March 2016 (Ex-post Evaluation) Refer to the Indicator 3 for Overall Goal. Status of the Achievement: Partially achieved (not verified) (Project Completion) Satisfaction ratings of the contractors/community people in the model districts								
	districts and disseminated districts of the				y (Februar	·		2nd Surv	-	/
	respective regions exceed 75/75%	Districts		Chamwin		ringa	C	hamwin		Iringa
	(Chamwino and Iringa) on average with	Contractors		76.0%		37.3%		72.9%		72.4%
	reference to rural road maintenance works	Communitie		50.1%		7.7%		69.3%		83.3%
	or status.	According to t	-		-		-			-
		achieved in th				-				
		planned to be conducted immediately after the project completion but has not been conducted. (Ex-post Evaluation) No data are available because the satisfaction rating survey was not conducted.								
	Indicator 3:	Status of the A	chieven	nent: Par	tially achi	eved (p	partially	v continu	ied)	
	The percentage of the rollover funds for	(Project Comp	etion)							
	<ul> <li>rural road maintenance* is decreased in the model districts and disseminated districts of the respective regions.</li> <li>* The target set by the project was below 15%.</li> </ul>									
				2011/12	2012		2013		2014/	'15
		Chamwino		60.59%	1.23		10.0	3%	1.23	%
		Iringa		12.03%	15.1		4.60		0.00	
		Kondoa		-	-		21.4		3.64	
		Mufindi		_	-		32.1		0.51	
			es in	model d		ecrease	-	-		
		While the rates in model districts decreased to below 15%, the ones in disseminated districts were over 15%.								
		(Ex-post Evaluation)								
		(Ex-post Evaluation) The rate of rollover funds after the project								
					2016/17	1	17/18	2018/	10 20	019/20
			2013	0%			0%		3%	
		Dodoma		0%	1%					47%
		Iringa	11	-	-	6	8%		4%	7%
		The rate of rollover funds has varied from year to year because of the low disbursement rate of budget, delayed payments to contractors, termination of contracts due to poor performance of contractors, suspension of maintenance								
						ers.				
		works due to ir								
Overall Goal: The rural road maintenance procedures and services of LGAs in Dodoma and Iringa regions are improved.	Indicator 1: Annual Rural Road Maintenance Plans prepared by LGAs of the respective regions contain necessary items based on the checklist.	(Ex-post Evalu According to t the annual rur- items includin specific activi procedures, cro and others requ	ation) A he ques al road g annu ties for oss-cutt uired by	Achieved stionnaire l mainten ual, mid r annual ting issue y the chec	e to and in ance plan -term and objectives includin kklist.	is prepa d long- es, pre	ared by -term eliminat	y LGAs objective ry schee	contain es, strat lule, pr	necessa egies a ocureme
The rural road maintenance procedures and services of LGAs in Dodoma and Iringa	Annual Rural Road Maintenance Plans prepared by LGAs of the respective regions contain necessary items based on the checklist. Indicator 2:	(Ex-post Evalu According to t the annual rur- items includin specific activi procedures, cro and others requ (Ex-post Evalu	ation) A he ques al road g annuties for oss-cutt hired by ation) I	Achieved stionnaire l mainten ual, mid r annual ting issue y the chec Partially a	e to and in ance plan -term and objective es includin eklist. achieved	ns prepa d long- es, pre ng envi	ared by -term elimination ironmen	y LGAs objective ry schee nt, gende	contain es, strat lule, pr er and H	necessa egies a ocureme IIV/AID
The rural road maintenance procedures and services of LGAs in Dodoma and Iringa	Annual Rural Road Maintenance Plans prepared by LGAs of the respective regions contain necessary items based on the checklist. Indicator 2: The percentage of the road maintenance	(Ex-post Evalu According to t the annual rur- items includin specific activi procedures, cro and others requ (Ex-post Evalu Road maintena	ation) A he ques al road g annuties for oss-cutt hired by ation) I	Achieved stionnaire l mainten ual, mid r annual ting issue y the chec Partially a	e to and in ance plan -term and objective es includin eklist. achieved	ns prepa d long- es, pre ng envi	ared by -term elimination ironmen	y LGAs objective ry schee nt, gende	contain es, strat lule, pr er and H	necessa egies a ocureme IIV/AID
The rural road maintenance procedures and services of LGAs in Dodoma and Iringa	Annual Rural Road Maintenance Plans prepared by LGAs of the respective regions contain necessary items based on the checklist. Indicator 2: The percentage of the road maintenance works completed by contractors (including	(Ex-post Evalu According to t the annual run items includin specific activi procedures, cre and others requ (Ex-post Evalu Road maintena completed)	ation) A he ques al road g annuties for oss-cutt ired by ation) I nce wo	Achieved stionnaire l mainten ual, mid r annual ting issue y the chec Partially a orks comp	e to and in ance plan -term and objectiv es includin eklist. achieved pleted in a	ns prepa d long es, pre ng envi a year (	ared by -term elimination ironmer (2014/1	y LGAs objective ry schee nt, gend 5 was th	contain es, strat dule, pr er and F	necessa egies a ocureme HIV/AID
The rural road maintenance procedures and services of LGAs in Dodoma and Iringa	Annual Rural Road Maintenance Plans prepared by LGAs of the respective regions contain necessary items based on the checklist. Indicator 2: The percentage of the road maintenance works completed by contractors (including defect liability period) for all the	(Ex-post Evalu According to t the annual rur items includin specific activi procedures, cro and others requ (Ex-post Evalu Road maintena completed) District	ation) A he ques al road g annuties for poss-cutt pired by ation) I nce wo	Achieved stionnaire l mainten ual, mid or annual ting issue y the chec Partially a orks comp	e to and in ance plan -term and objectiv es includin klist. achieved pleted in a 2015/16	as prepa d long es, pre ng envi a year ( 2016/	ared by -term of elimination ironmer (2014/1 17 20	y LGAs objective ry scheen nt, gende 5 was the 17/18 2	contain es, strat dule, pr er and F ne year t	necessa egies a ocureme IIV/AID the proje 2019/2
The rural road maintenance procedures and services of LGAs in Dodoma and Iringa	Annual Rural Road Maintenance Plans prepared by LGAs of the respective regions contain necessary items based on the checklist. Indicator 2: The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan is increased	(Ex-post Evalu According to t the annual rur- items includin specific activi procedures, cro and others requ (Ex-post Evalu Road maintena completed) District Chamwino	ation) A he ques al road g annu ties for oss-cutt <u>sired by</u> ation) I nce wo 201 9.	Achieved stionnaire l mainten ual, mid r annual ting issue y the chec Partially a orks comp 14/15 3%	e to and in ance plan -term and objectives includin eklist. achieved pleted in a 2015/16 17%	as prepa d long es, pre a year ( 2016/ 62%	ared by -term (2014/1 (2014/1 17 20 6 9	y LGAs objective ry scheen nt, gende 5 was the 17/18 2 95%	contain es, strat dule, pr er and F ne year f 2018/19 95%	necessa egies a ocuremo IIV/AID the projo 2019/2 51%
The rural road maintenance procedures and services of LGAs in Dodoma and Iringa	Annual Rural Road Maintenance Plans prepared by LGAs of the respective regions contain necessary items based on the checklist. Indicator 2: The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan is increased within the financial year in the respective	(Ex-post Evalu According to t the annual rur items includin specific activi procedures, cro and others requ (Ex-post Evalu Road maintena completed) District	ation) A he quest he	Achieved stionnaire mainten ual, mid r annual ting issue y the chec Partially a orks comp 14/15 3% 8%	e to and in ance plan- term and objectives includin klist. achieved pleted in a 2015/16 17% 100%	a year ( 2016/ 0%	ared by -term (2014/1 (2014/1 17 20 6 9	7         LGAs           objective         ry           ry         sched           5         was th           17/18         2           95%         00%	contain es, strat dule, pr er and F ne year t 2018/19 95% 90%	necessa egies a ocuremo IIV/AID the proje 2019/2 51% 0%
The rural road maintenance procedures and services of LGAs in Dodoma and Iringa	Annual Rural Road Maintenance Plans prepared by LGAs of the respective regions contain necessary items based on the checklist. Indicator 2: The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan is increased	(Ex-post Evalu According to t the annual rur- items includin specific activi procedures, cro and others requ (Ex-post Evalu Road maintena completed) District Chamwino Kondoa Iringa	ation) A he quest he	Achieved stionnaire l mainten ual, mid r annual ting issue y the chec Partially a orks comp 14/15 3% 8% 1%	e to and in hance plan -term and objectiv es includin eklist. achieved pleted in a 2015/16 17% 100%	as prepa d long es, pre- ng envi a year ( 2016/ 62% 0% 100%	ared by -term (2014/1 (2014/1 17 20 6 9 10 6 9	7 LGAs objective ry scheen, gende 5 was th 17/18 2 05% 00% 08%	contain es, strat dule, pr er and F ne year f 2018/19 95% 90% 100%	necessa egies a ocureme IIV/AID the proje 2019/2 51% 0% 80%
The rural road maintenance procedures and services of LGAs in	Annual Rural Road Maintenance Plans prepared by LGAs of the respective regions contain necessary items based on the checklist. Indicator 2: The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan is increased within the financial year in the respective	(Ex-post Evalu According to t the annual rur- items includin specific activi procedures, cro and others requ (Ex-post Evalu Road maintena completed) District Chamwino Kondoa	ation) A he quest he	Achieved stionnaire mainten ual, mid r annual ting issue y the chec Partially a orks comp 14/15 3% 8%	e to and in ance plan -term and objectives includin klist. achieved pleted in a 2015/16 17% 100%	a year ( 2016/ 0%	ared by -term (2014/1 (2014/1 17 20 6 9 10 6 9	7         LGAs           objective         ry           ry         sched           5         was th           17/18         2           95%         00%	contain es, strat dule, pr er and F ne year t 2018/19 95% 90%	necessa egies a: ocureme IIV/AID the proje 2019/2 51%
The rural road maintenance procedures and services of LGAs in Dodoma and Iringa	Annual Rural Road Maintenance Plans prepared by LGAs of the respective regions contain necessary items based on the checklist. Indicator 2: The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan is increased within the financial year in the respective	(Ex-post Evalu According to t the annual rur- items includin specific activi procedures, cro and others requ (Ex-post Evalu Road maintena completed) District Chamwino Kondoa Iringa	ation) A he quest he	Achieved stionnaire I mainten ual, mid r annual ting issue y the checc Partially a orks comp 14/15 3% 8% 1% 0%	e to and in hance plan -term and objectives includin eklist. achieved pleted in a 2015/16 17% 100% 100%	as prepa d long es, pre ng envi a year ( 2016/ 62% 0% 100% 100%	ared by -term (2014/1 (2014/1 17 20 6 9 11 6 9 6 9	7         LGAs           objective         ry           ry         schen           5         was th           17/18         2           95%         00%           08%         00%	contain es, strat dule, pr er and F ne year f 2018/19 95% 90% 100% 94%	necessa egies a ocurement IIV/AIE the projection 51% 0% 80% 90%
The rural road maintenance procedures and services of LGAs in Dodoma and Iringa	Annual Rural Road Maintenance Plans prepared by LGAs of the respective regions contain necessary items based on the checklist. Indicator 2: The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan is increased within the financial year in the respective	(Ex-post Evalu According to t the annual run items includin specific activi procedures, cre and others requ (Ex-post Evalu Road maintena completed) District Chamwino Kondoa Iringa Mufindi	ation) A he quest he quest al road g annuties for some second sec	Achieved stionnaire I mainten ual, mid r annual ting issue y the checc Partially a orks comp 14/15 3% 8% 1% 0% ce needs 1	e to and in ance plan -term and objectiv. es includin klist. achieved pleted in a 2015/16 17% 100% 100% 100%	as prepa d long es, pre a year ( 2016/ 62% 0% 100% 100% cased al	ared by -term (2014/1 (2014/1 17 20 6 9 10 6 9 6 9 10 6 9 10 6 9 10 6 9	7         LGAs           objective         ry scheen           ry scheen         state           5         was the           17/18         2           05%         0           00%         0           00%         0           ith the ir         ith the ir	contain es, strat dule, pr er and F ne year 1 2018/19 95% 90% 100% 94% nerease c	necessa egies a ocurement IIV/AID the projection 2019/2 51% 0% 80% 90% of the to
The rural road maintenance procedures and services of LGAs in Dodoma and Iringa	Annual Rural Road Maintenance Plans prepared by LGAs of the respective regions contain necessary items based on the checklist. Indicator 2: The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan is increased within the financial year in the respective	(Ex-post Evalu According to t the annual run items includin specific activi procedures, cro and others requ (Ex-post Evalu Road maintena completed) District Chamwino Kondoa Iringa Mufindi While the main	ation) A he quest he quest al road g annuties for cost of the second state of the seco	Achieved stionnaire I mainten ual, mid r annual ting issue y the checc Partially a orks comp 14/15 3% 8% 1% 0% ce needs l , the ratio	e to and in ance plan- term and objectives including klist. achieved pleted in a 2015/16 17% 100% 100% 100% have increase o of main	as prepa d long es, prepa a year ( 2016/ 62% 0% 100% 100% cased al tenance	ared by term (2014/1 (2014/1 17 20 6 9 10 6 9 10 10 10 10 10 10 10 10 10 10 10 10 10	7         LGAs           objective         ry           ry         schen           5         was the           5         was the           17/18         2           05%         00%           08%         00%           with the ir         s complexity	contain es, strat dule, pr er and F ne year f 2018/19 95% 90% 100% 94% crease c eted in a	necessa egies a ocurema IIV/AIE the projection 2019/2 51% 0% 80% 90% of the to a year h
The rural road maintenance procedures and services of LGAs in Dodoma and Iringa	Annual Rural Road Maintenance Plans prepared by LGAs of the respective regions contain necessary items based on the checklist. Indicator 2: The percentage of the road maintenance works completed by contractors (including defect liability period) for all the maintenance works in the Plan is increased within the financial year in the respective	(Ex-post Evalu According to t the annual run items includin specific activi procedures, cro and others requ (Ex-post Evalu Road maintena completed) District Chamwino Kondoa Iringa Mufindi While the main length of rural	ation) A he quest he quest al road g annuties for cost of the second state of the seco	Achieved stionnaire l mainten ual, mid r annual ting issue y the chec Partially a orks comp 14/15 3% 8% 1% 0% ce needs l , the ratio	e to and in lance plan- -term and objectives so includin klist. achieved pleted in a 2015/16 17% 100% 100% 100% have increase o of main ratio has	as prepa d long es, pre- ng envi a year ( 2016/ 62% 0% 100% 100% 2038ed al tenance been f	ared by term (2014/1 (2014/1 17 20 6 9 10 6 9 10 10 10 10 10 10 10 10 10 10 10 10 10	7 LGAs         objective         ry sched         5 was th         17/18         25%         00%         08%         00%         ith the ir         s compl-         ing in C	contain es, strat dule, pr er and F ne year f 2018/19 95% 90% 100% 94% nerease c eted in a Chamwir	necessa egies a ocuremo IIV/AIE the projection 2019/2 51% 0% 80% 90% of the to a year h to and

	those years.						
Indicator 3:	(Ex-post Evaluation) Partially achieved						
The maintenance status (Good, Fair, and	Total ratio of good and fair maintenance status (average in two districts)						
Poor) of rural roads is improved in the	District	Target	2015/16	2016/17	2017/18	2018/19	2019/20
respective regions.	Chamwino	00/700/	0.00/	020/	710/		100/
1 0	& Kondoa	80/70%	80/70% 80%	82%	71%	66%	19%
	Iringa &	700/	35%	40%	44%	39%	42%
	Mufindi	70%					
				Source:	President's	Office and	PO-RALG
	The low rate in	n Dodoma i	region in 20	019/20 was	due to the	damages of	n roads due
	to unusual heavy rainfall. The low rate in Iringa region was ma						
	inclement weat	ther such as	s heavy rair	nfall and ra	oidly expan	ded road ne	etwork.
Source: PO-RALG and TARURA							

#### 3 Efficiency

Both of the project cost and period were within the plan (ratio against the plan was 96% and 100% respectively). The outputs were produced as originally planned by the end of the project period. Therefore, the efficiency of the project is high.

### 4 Sustainability <Policy Aspect>

The yearly updated "Annual Performance Agreement" between TARURA and PO-RALG has stipulated since the year of 2017/18 that 20% of roadworks contracts should be LBT contracts in the regions and districts where LBT contractors operate. <Institutional/Organizational Aspect>

The Tanzania Rural and Urban Roads Agency (TARURA) was officially inaugurated in July 2017, and management of assets and finance of rural and urban roads was transferred from LGAs under PO-RALG to TARURA. One of the purposes of this restructuring was to kick out corruption prevailed in tender processes and to improve transparency in all contracts for road projects. Thus, according to interviews with the officials of PO-RALG and TARURA, management of assets and finance of rural roads has been significantly improved. On the other hand, most of TARURA district offices are facing shortage of technical staff. There are, for example, four engineers and no technician in the Kondoa district office, three engineers and one technician in the Iringa district office, and these engineering staffs are on contract basis but not fulltime employees of TARURA.

#### <Technical Aspect>

Managerial and technical knowledge and knowhow learned in the project have been transferred to TARURA by the staff of RAS involved in the project and moved to TARURA. The checklists, inventory strip maps, quality assurance forms, and other tools developed by the project have been continuously used by the staff of TARURA. The "Rural Road Maintenance Operational Guidelines" and "Instruction Manual for the Monitoring System" developed by the project are currently under review to adapt to the new systems of TARURA. According to interviews with the officials of PO-RALG and TARURA, capacities of TARURA's staff are sufficiently high in the areas of planning, procurement, supervising, monitoring of road construction and maintenance.

TARURA has been financially stable keeping revenue and expenditure in surplus since its establishment in 2017. Funds for TARURA come from the Road Fund, government's consolidated fund, and development partners including the World Bank, European Union (EU), United States Agency for International Development (USAID), Department for International Development (DFID) of the United Kingdom, and others.

Financial Statu	s of TARURA	Unit: 100 million TSH*				
	2017/18	2018/19	2019/20			
Revenue	412,933.47	382,008.48	409,387.25			
Eexpenditure	285,318.81	296,441.76	250,733.40			
Balance	127,614.66	85,566.72	158,653.85			
		* TSH: Tanz	anian Shilling			

<Evaluation Result>

In light of the above, slight problems have been observed in terms of the institutional/organizational aspect of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

The Project Purpose was partially achieved by improving the maintenance status of rural roads in the model districts but not fully in disseminated districts. The Overall Goal was partially achieved by improving the management capacity of the central and local agencies concerned and the roadwork implementation capacities of contractors although the rural road maintenance status in Iringa region has not achieved the target. As for sustainability, technical and financial sustainability has been high while limited human resources of TARURA has remained as an issue. Considering all of the above points, this project is evaluated to be satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- It is recommended that TARURA to disseminate the management and technical tools developed by the project to other districts other than the model and disseminated districts of the project, and assist them to make the tools in practical use in order to improve the maintenance status of rural roads regionwide in Dodoma and Iringa regions. Introducing the tools in the projects assisted by the development partners could be one possible and feasible approach.
- It is recommended that TARURA keeps requesting the employment permit to the government for engineers and technicians working on contract basis and takes whatever possible actions to increase the number of technical staff.

Lessons Learned for JICA:

In the project, the rate of rollover funds for rural road maintenance was defined as an indicator for the performance of road maintenance works. However, the rate of rollover funds has largely fluctuated between 0% and 60% due to the fluctuation of actual disbursement of the budget against the approved amount of budget. The rate in a year, for example, decreased to 0% because only about 30% of the budget was actually disbursed in that year and almost all disbursed budget was spent in the year. Therefore, it is not recommendable to use the rate of rollover funds or the rate of budget consumption as an indicator of performance of operation in countries where actual



Nkwenda - Nhinhi road in Dodoma Region one of the pilot projects of the project



Wenda -Mgama road in Iringa Region one of the pilot projects of the project

Country Name		Project for Capacity Development on Coastal Protection and Rehabilitation					
Republic of Mauri	tius						
I. Project Outline							
Background	Mauritius is an island country vulnerable to climate change. Coastal erosions became serious problems across the country, which had been caused by various reasons such as accelerating sea level rise, increasing frequency and intensity of tropical cyclones, coral reef damages, tourism development and urban development. Although the Ministry of Environment, Solid Waste Management and Climate Change (MoESWMCC) (former Ministry of Environment and Sustainable Development (MoESD)), local communities, private sectors such as hotel owners and others have implemented physical countermeasures, e.g. constructions of coastal structures, and non-physical countermeasures, e.g. consensus making on removals of coastal structures and reviews of land-use plans, a significant number of locations in the country were still in need of urgent and/or medium- and long-term coastal protection measures. Besides, systematic monitoring and medium- and long-term plans based on a scientific basis were highly required as a coastal protection approach with lesser environmental burden. However, since no engineering expert has been assigned in the Integrated Coastal Zone Management (ICZM) Division in charge of coastal protection, strengthening of expertise and human resource development along with the development of technical guidelines in MoESWMCC was an urgent issue.						
Objectives of the Project	<ul> <li>Through preparing a coastal conservation plan, the project aimed at implementation of the coastal conservation plan by the responsible organizations of Mauritius, thereby contributing to coastal protection and rehabilitation.</li> <li>1. Expected goals through the proposed plan<sup>1</sup>: The coastal zone of Mauritius is maintained through mitigation of coastal erosion, appropriate coastal spatial management and conservation of reef environment.</li> <li>2. Expected utilization of the proposed plan: The coastal conservation plan is approved by the government of Mauritius and implemented by the responsible organizations.</li> </ul>						
Activities of the Project	<ol> <li>Ma der</li> <li>Inp Japanes</li> <li>M</li> <li>Tr</li> <li>Economic</li> </ol>	monstration projects, 4) technica buts (to carry out above activities	y, 2) formulation al transfer for coas s)	<ul> <li>n of coastal conservation plans, 3) implementation of stal zone management.</li> <li>Mauritian Side <ol> <li>Staff allocated: 10 persons</li> <li>Facilities and equipment: office</li> </ol> </li> </ul>			
Project Period		012 - June 2015	Project Cost	(ex-ante) 440 million yen, (actual) 533 million yen			
Implementing				Climate Change (MoESWMCC) (since November 2019)			
Agency	(former	Ministry of Environment and S	Sustainable Develo	opment (MoESD))			
Cooperation Agency in Japan	Kokusa	i Kogyo Co., Ltd., Nippon Koei	Co., Ltd., Central	al Consultant Inc., Futaba Inc.			

#### 1 Relevance

<Consistency with the Development Policy of Mauritius at the Time of Ex-Ante Evaluation and Project Completion>

The "National Development Strategy" (2005) and the "National Environment Policy" (2007) have placed high priority on the ICZM issues including the preservation of ecological integrity of coastal zones, establishment of lagoon zones, increase in the number of Marine Protected Areas, and others. Under these strategies and policies, the Ministry of Environment and National Development Unit (current MoESWMCC) has issued the "Mauritius Strategy for Implementation National Assessment Report" (2010) and declared to accelerate the formulation of inter-sectoral strategies, policies and guidelines for ICZM. Therefore, the project was consistent with the development policy of Mauritius at the time of ex-ante evaluation and project completion.

<Consistency with the Development Needs of Mauritius at the Time of Ex-Ante Evaluation and Project Completion>

Climate change caused sea level rise and sea surface temperature rise which led to coral bleaching, and the situation has been worsened for years. Besides, the coast has been eroded by the development of coastal areas and expected to be accelerated along with the national economic development. Therefore, the project was consistent with the development needs of Mauritius at the time of ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

Mauritius is a small island state and vulnerable to climate change and affected by the natural environment. Therefore, the government of Japan continued economic cooperation focusing on environmental countermeasures and climate changes and disaster prevention.<sup>2</sup> Therefore, the project was consistent with the Japan's ODA policy for Mauritius at the time of ex-ante evaluation. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<sup>&</sup>lt;sup>1</sup> The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

<sup>&</sup>lt;sup>2</sup> Ministry of Foreign Affairs, "ODA Country Data Book 2012"

<Status of Achievement for the Objectives at the time of Project Completion>

The objectives of the project were achieved by the time of project completion. The affected sites were identified through the baseline survey (Output 1). Based on the data identified, the Coastal Conservation Plans have been formulated (Output 2). The effectiveness of the plans was validated through the demonstration projects implementing physical measures, non-physical measures, and continuous monitoring (Output 3). The technical capacity of the staff of MoESWMCC and other agencies involved has been enhanced through the field survey, monitoring, data analysis, problem analysis, formulation of plans and conducting the demonstration projects (Output 4). <Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

The Coastal Conservation Plans prepared by the project have been utilized. The plans were approved by the government of Mauritius in October 2015 (Indicator 1), and various committees including the National Environment Commission<sup>3</sup> chaired by the Prime Minister have been following up the implementation of the plans. The plans have been updated not periodically but as needed by the relevant authorities following the progress of the projects recommended by the plans, and the updates have been monitored by the ICZM Committee (Indicator 2). Approximately 80% of the short- and long-term measures recommended by the plans (11 out of 14 projects) are ongoing (Indicator 3). The ICZM Committee has kept coordinating the ICZM activities by various actors including ministries, governmental institutions, local authorities, NGOs, and private sectors (Indicator 4). While the ICZM activities have been properly implemented as a whole, insufficient cleaning of drains and beaches have been issues to be addressed in some areas including Grand Sable and Blue Bay public beach where some drains are partly blocked and beaches get dirty by vegetation and waste.

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

The expected goal has been achieved by the time of ex-post evaluation. Beach profiles have been improved by the implementation of the ICZM activities recommended by the Coastal Conservation Plans. The flexible revetment constructed by the project at Grand Sable has been monitored by MoESWMCC after the project, and its effects as a coastal protection and rehabilitation means and environment friendliness was confirmed. Taking these results, the revetment has been extended twice the length and the beach profile there has become further stable. Besides coastal protection measures such as dredging, flexible revetment, sand nourishment, and beach cleaning, facilities for the public and fishers have been rehabilitated including sidewalks, parking lots, mooring spaces and others. <br/>
<Other Impacts at the time of Ex-post Evaluation>

Due to the implementation of the demonstration project and the projects recommended by the plans, spaces for recreation for local residents and landing and mooring for fishers' boats have been extended, and infrastructures including roads and houses have been protected. The projects have also promoted the participation of local people in the project meetings and activities such as beach cleaning. No environmental negative impact and complaints from local residents have been reported until the time of ex-post evaluation. Land acquisition and resettlement has never taken place because all lands for the projects were under the jurisdiction of the government.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is high.

Aim	Indicators	Results
Utilization Status of the Proposed Plan: The coastal conservation plan is approved by the Government of Mauritius and implemented by the	Indicator 1: Progress of promulgation and institutionalization of the Coastal Conservation Plans as project plans by MoESD (current MoESWMCC).	(Ex-post Evaluation) Achieved The Coastal Conservation Plans were approved by the government of Mauritius in October 2015. For implementing the plans, various committees have been organized including the National Environment Commission chaired by the Prime Minister at ministry's level, the National Environment Fund (NEF) board meeting chaired by the Ministry of Finance, Economic Planning and Development for funding, NEF roundtable meetings inviting development partners, and the ICZM Committee meetings for specific implementation of the plans. The members of the ICZM Committee are ministries, governmental institutions, NGOs and private sectors.
responsible organizations.	Indicator 2: Situation of periodical updating and distribution of the Coastal Conservation Plans.	(Ex-post Evaluation) Achieved The Coastal Conservation Plans have been updated but not periodically. The necessary updates have been made by the relevant authorities following the progress of the projects recommended by the plans. The updates have been monitored by the ICZM Committee. Hardcopies and electronic version of the plans have been distributed widely to the relevant authorities.
	Indicator 3: Progress of implementation of measures presented in the Coastal Conservation Plans.	(Ex-post Evaluation) Achieved Out of 14 short-term measures recommended by the Coastal Conservation Plans, 11 measures have been commenced and none of them has been completed. Out of 14 long-term measures recommended, 12 of them have been commenced and none of them has been completed. Time frames for the short-term and long-term measures were not specifically defined by the Coastal Conservation Plans.
	Indicator 4: Progress of the system formulation for environment conservation at coastal areas (implementation of activities by the cross-sectoral framework, formulation of monitoring system, application of the Technical Guidelines, etc.)	(Ex-post Evaluation) Achieved The ICZM committee has been coordinating the ICZM activities by various actors including ministries, governmental institutions, local authorities, NGOs and private sectors. The technical guidelines prepared by the project have been applied to those activities at various levels from management to construction works.
Expected Goals through the Proposed Plan:	Beach profile after implementation of the measures presented in the Coastal	(Ex-post Evaluation) Achieved Beach profile has been improved by the implementation of ICZM activities

Status of Achievement of Utilization Status of the Proposed Plan and Expected Goals through the Proposed Plan

<sup>&</sup>lt;sup>3</sup> The National Environment Commission (NEC) was established under the Section 5 of Environment Protection Act 2002. The commission members are all public departments, local authorities and other governmental organizations for reviewing the progress of environmental management projects and programmes.

Mauritius is maintained through mitigation of coastal erosion, appropriate coastal spatial management and	sand beach, changes of coastlines, situation of estuary closures, values of public asset conserved (including conserved households, residential areas, public facilities,	recommended by the Coastal Conservation Plans. The flexible revetment construction done by the project has been extended twice the length by MoESWMCC at Grand Sable after the project, and the beach profile there has become further stable. Besides coastal protection measures such as dredging, flexible revetment, sand nourishment, and beach cleaning, facilities for the public and fishers have been rehabilitated including sidewalks, parking lots, mooring spaces and others.
Source: MoESWMCC		

#### 3 Efficiency

Although the project period was as planned (the ratio against the plan: 100%), the project cost exceeded the plan (the ratio against the plan: 121%). The outputs were produced as planned. Therefore, efficiency of the project was fair.

### 4 Sustainability <Policy Aspect>

In 2019, the "Beach Management Plan" and the "National Coastal Zone Adaptation Strategy" were drafted by the Beach Authority and by the initiative of the "Mainstreaming Climate Change Adaptation in the Coastal Zone of the Republic of Mauritius" supported by the Adaptation Fund<sup>4</sup> respectively and are waiting for the validation by the government of Mauritius. Coastal protection adopting to climate change is highly prioritized in both of these policies.

<Institutional Aspect>

The number of staff of the ICZM Division of MoESWMCC has been decreasing from 7 in 2015 to 5 in 2019 due to the government's human resource control policy and turnover. The total number of 5 has not been sufficient for the volume of work of ICZM. Responsibilities and mandates of related organizations have been clearly defined and assigned by the ICZM Committee according to the recommendation of the Coastal Conservation Plans prepared by the project.

<Technical Aspect>

Out of the 10 staff members involved in the project as counterparts, 6 of them have left their positions but are still in the Department of Environment of MoESWMCC. Therefore, the knowledge and skills learned in the project have been sustained in the Department of Environment. However, expertise of the ICZM Division has not been adequate particularly on physical oceanography, biological oceanography, hydrodynamic modeling and design of coastal structures. Land/ hydrographic surveyors and divers have been also in short. <Financial Aspect>

The total amount of budget for the coastal protection activities of MoESWMCC has been stable at around 1,400 million Mauritian Rupee (MUR) though it has been insufficient for the works. Negotiations for external fund from development partners including the Green Climate Fund<sup>5</sup>, the European Union (EU), the United Nations Development Programme (UNDP) and the Agence Française de Développement (AFD) have been moved forward and waiting for the decisions of the partners. Funds from private sectors have also been explored through public private partnership programmes.

<Evaluation Result>

In light of the above, some problems have been observed in terms of the institutional, technical and financial aspects. Therefore, the sustainability of the effectiveness through the project is fair.

## 5 Summary of the Evaluation

The objective of the project was achieved by the time of project completion by preparing the Coastal Conservation Plans. The plans were approved by the government of Mauritius and have been utilized for the ICZM activities including monitoring, construction and cleaning. As for sustainability, there are some problems in the institutional, technical and financial aspects. As for efficiency, the project cost exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

Cleaning is a small but significant work but not necessarily adequately and regularly conducted and caused drains to be blocked and
accelerate erosion problems in some areas including Grand Sable and Blue Bay public beach. Since it can also be expected to raise the
awareness of local communities on the protection of coasts and natural environment through the participatory approach, it is
recommended MoESWMCC and the ICZM Committee to strengthen the coastal cleaning system involving local residents and private
sectors.

Lessons Learned for JICA:

The coastal protection method of flexible revetment has been proven to be an environment friendly appropriate method for coastal protection and rehabilitation through 5 years monitoring of the pilot project after the completion of the project. The flexible revetment enables the ecosystem to regenerate and allows the grasses to grow between the gravels and sand back to the beach. Therefore, it is worthy of consideration to apply the flexible revetment at sites with similar conditions with the pilot site at Grand Sable in Mauritius and in other countries.

<sup>&</sup>lt;sup>4</sup> A fund established in 2001 under the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC) to finance projects and programmes in developing countries for adapting to climate change.

<sup>&</sup>lt;sup>5</sup> A financial mechanism under UNFCCC which helps fund climate finance investment in low-emission and climate-resilient development in developing countries.



Beach space for local people's recreation, vegetation, parking, and a fence for security created as a part of coastal protection constructions in Grand Sable



Flexible revetment along the coast of Grand Sable keeping a space for fishing activities for fishers

Country Name		Strengthening Mathematics, Science, and Technology Education Project (PREMST) Phase			
Republic of Senegal		2			
I. Project Outline					
Background	examine the car situation (PREM the impregion trainine was st issues	nation passing rate for the courses for the low passing rate on, JICA implemented the "MAST 1)" (2007-2010) aiming provement of teachers' teach s in the country. PREMST og framework <sup>2</sup> , school-based ructured with regional trainin in the quality improvement	ompletion of elementate was attributed to low Strengthening Mathem g at the increase in teaching skills, and the incr 1 has established a teac training <sup>3</sup> and training ng, local training and c attraining and training	ducation reached 93% in 2009. Meanwhile, the ry education (CFEE) remained at 61%. One of v quality of teachers. In order to cope with this atics, Science, and Technology Project Phase 1 chers' participation rate in the cluster training <sup>1</sup> , rease in the CFEE examination passing rate in 3 achers' training system composed of a cascade for principals. The cascade training framework cluster training. However, there were remaining 4 regions in the country through the quality of clusters) and school-based training.	
Objectives of the Project	<ul> <li>Through strengthening the capacity of trainers by means of regional and local training and application of class study<sup>4</sup> to cluster and school-based training in all 14 regions in the country, the project aimed at enhancement of teachers' knowledge on subject contents and teaching methods, thereby contributing to improving academic performance at elementary level in the subject of mathematics, science, and technology.</li> <li>1. Overall Goal: To improve the academic performance at elementary level in the subject of mathematics, science, and technology.</li> <li>2. Project Purpose: To improve the quality of teaching to support learning mathematics, science, and technology.</li> </ul>				
Activities of the Project	1. Pr 2. M 1) 2) 3) 4) 3. In Japane 1) E 2) T 3) T 4) E 0	oject Site: all 14 regions in S lain Activities: integration of the continuing strengthening of the capacit	g training model in the y of trainers, hers' knowledge on su ethod, and udies at cluster and sch vities) 5 persons Kenya): 15 persons by machines, and	<ul> <li>existing training framework,</li> <li>ubject contents of mathematics, science, and</li> <li>uool levels.</li> <li>Senegalese Side <ol> <li>Staff Allocated: 2,132 persons</li> <li>Land and Facilities: project office and training facilities</li> <li>Local Cost: cost for utility of offices (electricity, water and telephone), training, monitoring and evaluation, and operational cost</li> </ol> </li> </ul>	
Project Period	Septer	nber 2011 - August 2015	Project Cost	(ex-ante) 270 million yen, (actual) 341 million yen	
Implementing Agency	Minist	ry of National Education (M	EN)	• • • •	
Cooperation Agency in Japan	None.				

## II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

• Status of the achievement of Overall Goal, other Impacts and Sustainability of the project were influenced by other projects in the field of basic education including the "Quality Improvement and Equity of Basic Education Project (PAQEEB)" (2014-2019) assisted by the World Bank, the Global Partnership for Education, and Canada and the "Project for Improving the Learning of Mathematics in Primary Education (PAAME)" (2014-2019) assisted by JICA, and it's difficult to extract the sheer effects of this particular project. Therefore, the evaluation results below included the influence of other projects.

### 1 Relevance

<Consistency with the Development Policy of Senegal at the Time of Ex-Ante Evaluation and Project Completion>

The "Economic and Social Policy Document (DPES)" (2011-2015) placed the improvement of quality of primary education as one of the priority issues and emphasized the importance of in-service training (INSET) as a strategy for it. And the "Program for Improvement of Quality, Equity and Transparency (PAQUET)" (2013-2025) placed high priority on the quality improvement of education/learning through the introduction of new curriculum focusing on mathematics and science and technology. Therefore, the project was consistent with the

<sup>&</sup>lt;sup>1</sup> Teachers' training conducted several times a year in a cluster. One cluster is organized by 5 to 10 schools in one school district.

<sup>&</sup>lt;sup>2</sup> Hierarchical training framework composed of regional training for reginal trainers, local training for local trainers (cluster representatives), and cluster training for all teachers in a cluster. Regional trainers are trainers for local training, local trainers are trainers for cluster training.

<sup>&</sup>lt;sup>3</sup> School-based training conducted for the teachers in a school.

<sup>&</sup>lt;sup>4</sup> A teacher conducts a class observed by several observers including teachers, the principal, school inspectors and others. After the class, the teacher and observers discuss to find ways for better teaching methods and class management.

development policies of Senegal at the time of ex-ante evaluation and project completion.

<Consistency with the Development Needs of Senegal at the Time of Ex-Ante Evaluation and Project Completion>

At the time of ex-ante evaluation, according to PAQUET, the completion rate of primary education was low as 67% in 2011, and the rate of the 4th grade students who achieved the qualifying marks on mathematics worsened from 56% in 2002 to 39% in 2010. At the time of project completion, the survival rate for the final grade was 58% in 2014 (UNESCO) and the examination passing rate for CFEE was 62% in 2016 (MEN). Therefore, the project was consistent with the needs of Senegal at the time of ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The "Country Assistance Program for the Republic of Senegal" (April 2009) set the two major goals: 1) improvement in the quality of life of the poor population in rural areas and 2) establishment of the foundation for sustainable economic growth. Education was one of the priority areas for enhancement of basic social services as one of the minor goals under the major goal 1). Therefore, the project was consistent with the Japan's ODA policy for Senegal at the time of ex-ante evaluation.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. The average score of the lesson observation on teachers improved from 1.30 in 2012 to 1.43 in 2015 (Indicator 1). The percentage of teachers who attained over 1.5 by the lesson observation was increased to 47% (Indicator 2: target was 50%).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially continued since the project completion. Practice of the lesson observation introduced by the project has been limited to some schools on an unprompted basis because it is not mandatory. Therefore, observation data collection and feedback system to upper level administrations has not been established, and the observation data were not recorded and fed back to the Inspectorates of Regional Education Authority (IAs) and MEN as in the way the project assumed. Through the questionnaire and interview survey on IAs and other related organizations, it was confirmed that some schools have kept practicing the lesson observation, though no specific data about the number and locations of the schools were available.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved at the time of ex-post evaluation. The national average of elementary level test performance on mathematics has been improved from 40.3 in 2012 to 45.8 in 2018, thus the Overall Goal for mathematics has been achieved. Meanwhile, the one on science and technology has been declined from 37.5 in 2012 to 36.3 in 2015. After the completion of the project, no tracking survey has been conducted on the test performance of science and technology.

<Other Impacts at the time of Ex-post Evaluation>

According to the former project coordinator, the learning environment has been improved with the substitute materials like abacuses, digital paper (paper cards for calculation training) and others provided by this project since schools have been suffering from the shortage of teaching materials.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Aim	Indicators	Results
Project Purpose:	Indicator 1	Status of the Achievement: Achieved (Partially continued)
To improve the quality of	In the lesson observation, the average	(Project Completion)
teaching to support	obtained by a sample of teachers is	Out of 113 teachers targeted by the project, 51 teachers were surveyed in
learning mathematics,	increased to 1.5 out of 3.0.	both base-line and end-line lesson observation in 2012 and 2015 respectively.
science and technology.		The average score of the lesson observation on the 51 teachers has risen from
		1.30 in 2012 to 1.43 in 2015.
		(Ex-post Evaluation)
		After the completion of the project, practice of the lesson observation
		introduced by the project has been limited to some schools on an unprompted
		basis because it was not mandatory. Therefore, observation data collection
		and feedback system to upper level administrations has not been established,
		and the observation data were not recorded and fed back to IAs and MEN as
		in the way the project assumed.
	Indicator 2	Status of the Achievement: Achieved (Partially continued)
	In the lesson observation, the percentage of	(Project Completion)
	teachers who attain at least 1.5 (out of 3.0)	Out of the 51 teachers surveyed in 2015, 24 teachers (47%) have improved
	is increased to 50%.	their scores to over 1.5.
		(Ex-post Evaluation)
		Same as above.
Overall Goal:	Indicator	(Ex-post Evaluation) Partially achieved
To improve the academic	Result of performance test developed by the	The national average of the performance test result of mathematics has been improved from 40.3 in 2012, 42.3 in 2015, and 45.8 in 2018. The test results'
performance at	project improves.	improved from 40.5 in 2012, 42.5 in 2013, and 45.8 in 2016. The test results improvement was influenced by the effects of other projects including
elementary level in the		PAQEEB and PAAME. Comparatively, the average test result of science and
subject of mathematics,		technology has been declined from 37.5 in 2012 to 36.3 in 2015. No data
science, and technology.		were available after 2016 since no tracking survey has been conducted after
		the completion of the project.

Achievement of Project Purpose and Overall Goal

Source: questionnaires to and interviews with MEN, the Elementary Education Direction and the former project coordinator

#### 3 Efficiency

Although the project period was within the plan (the ratio against the plan: 100%), the project cost exceeded the plan (the ratio against the plan: 126%). The outputs were produced as planned. Therefore, efficiency of the project was fair.

### 4 Sustainability <Policy Aspect>

The "PREMST Training Model" developed by the project was approved as a model for in-service training by MEN in August 2013. However, the ministerial directive to institutionalize the model nationwide has not been issued yet though it was recommended by the terminal evaluation. Therefore, the PREMST Training Model has not been institutionalized yet. Substituting for the directive, the Direction in charge of Elementary Education (DEE) issued a guidance in 2016 to disseminate the PPEMSR Training Model in schools. <Institutional Aspect>

The number of national trainers and regional trainers has been fixed by the project and maintained by MEN after the project. While the number of local trainers has been fluctuating after the project, it was fixed by MEN in 2017 and has been mostly maintained since then. According to the officials of MEN and the officer in charge of continuous training, the number of trainers has been sufficient for the current operation of training at any of three levels of national, reginal and local. Concerning the lesson observation, data collection and feedback system to upper level administrations has not been established.

<Technical Aspect>

The teaching capacities of trainers improved by the project have been sustained through the training programs conducted by MEN on a regular basis. Besides, the training for trainers and teachers also has been provided by the projects assisted by the development partners including PAQEEB and the "Strengthening Support to Child Protection Through Education (RAP)" project financed by Canada and UNICEF. Although data processing skill for monitoring and evaluation of the trainees' performance was defined as one of the necessary skills of the trainers at all levels, it has not been sufficiently improved and still be constraints for some trainers due to insufficient training on IT skills. The manuals and guidelines developed by the project have been continuously used in the training provided by MEN and in the projects including PAQEEB and PAAME. The lesson observation

introduced by the project has been continued at school level. <Financial Aspect>

Projects assisted by the development partners have been providing financial supports for the training for trainers and teachers. The budget for teachers training including the national and external funds from development partners, thus, has been constantly increasing at all levels of regional, local and cluster levels (Table 1).

<Evaluation Result>

In light of the above, some problems have been observed in terms of policy, institutional and technical aspects of the implementing agency. Therefore, the sustainability of the project effect is fair.

	T 1	· • .	.11.	ECI

		Unit: mill	ion FCFA
Year	2016	2017	2018
Regional Training	28	62	99
Local Training	37	82	129
Cluster Training	24	35	49
Principals Training	75	164	315

Source: MEN

FCFA: Franc de la Communauté Financière Africaine

5 Summary of the Evaluation

The Project Purpose was achieved by improving the quality of teaching to support learning mathematics, science, and technology through the enhancement of the capacity of trainers and the teachers' knowledge on subject contents and teaching method. However, the project effects have not sufficiently continued due to unsystematic implementation of the PREMST Training Model including the lesson observation because the institutionalization by the ministerial directive has been delayed. As for sustainability, some problem has been observed in terms of policy, institutional and technical aspects of the implementing agency. As for efficiency, the project cost exceeded the plan. Considering all of the above points, this project is evaluated to be partially satisfactory.

### III. Recommendations & Lessons Learned

## Recommendations for Implementing Agency:

- It is recommended that MEN to negotiate with the on-going projects including PAQEEB and PAAME to share their endeavors to strengthen the teaching capacity in the subject of science and technology along with mathematics.
- It is recommended that MEN to further facilitate to utilize the materials and guidelines developed by the project in the projects including PAQEEB and PAAME, and keep updating them to cope with the changes of the needs of teachers and students.
- The lesson observation has not been very well rooted and not been carried out by all inspectors even though MOE has made efforts to
  internalize the project model. Therefore, it is recommended that MEN to issue a memorandum requiring IAs to take an initiative to
  implement the lesson observation systematically and to establish a feedback system of the observation results from schools to IAs and
  MEN.

Lessons Learned for JICA:

- While the students' performance on the subject of mathematics has been improved by the intervention of the project, the one on science and technology has not. Achievement of the overall goal of the project thus has been limited to a partial attainment. Although the interventions by the development partners have been continued after the project, since the partners' projects have focused on mathematics, even a tracking survey on the performance of science and technology has not been conducted after the project. When the achievement of the overall goal is expected to be challenging, it is suggested to establish collaborative structures with other development partners' projects during the project period, and share the outputs of the project and promote its utilization. Thus, through the utilization of the outputs by other projects, the achievement of the overall goal and enhancement of the sustainability of the project's effects could be anticipated. This can be suggested especially in the education sector in African countries where a significant number of development partners deploying various activities.
- In case of this project, due to the delay of the institutionalization of the training model developed by the project, the system formulation for dissemination and internalization of the training model has been delayed. This has eventually hampered the consolidation of

sustainability of the project. Construction of a system structure led by the leadership of the central ministry is indispensable for a project targeting the nationwide dissemination of its effects. And the construction of a system structure takes time for authorization procedures, dissemination activities, and others. Therefore, it is expected that a project targeting the nationwide dissemination of its effects starts a system design, system structuring and other necessary tasks involving the central ministry in charge at an early stage of the project period and complete those preparatory works before the completion of the project.



A teacher using the Teaching Module developed by the project



Group learning introduced by the project

# Internal Ex-Post Evaluation for Technical Cooperation Project

conducted	by	Uganda	Office:	February	2021
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Country Name	Project for Capacity Development in Planning and implementation of Community
Republic of Uganda	Development in Acholi Sub-Region

I. Project Outline
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Background	The northern region of Uganda suffered from the in social infrastructures in the area had been halted southern part of the country. The conflict brought ab local governments' malfunction. After the commendecreased in the county, and the security of the area return to their original villages or to make them rese promotion of resettlement of IDPs, revitalization of governments, were remaining. JICA implemented the Resettlement of IDP in Northern Uganda'' (2009-20) Sub-region. As the pace of IDPs' return showed rap improving the function of local governments in anti- the promotion of the IDPs' resettlement.	d, which left to out two million neement of pe cas was improventie in other and of the commun- te "Project for ( 12) to promote id progress dur	n Internally Displaced Persons (IDPs) and made the ace talks in 2006, the number of armed conflicts ved. Those situations accelerated the pace of IDPs' eas. On the other hand, persistent issues, such as the ities, restoring the administrative function of local Community Development for Promoting Return and returning and resettlement of the IDPs in the Acholi ring the project, needs were raised for restoring and	
Objectives of the Project	Through capacity development of district and sub-county officers, implementation of pilot community developmentprojects, and the experience sharing within the Acholi Sub-Region, the project aimed at strengthening the mechanismfor planning and implementation of community development in the sub-region, thereby contributing to benefits ofcommunity people through planned and implemented community development projects.1. Overall Goal: Planning and implementation of community development projects benefit people in communities.2. Project Purpose: The mechanism for planning and implementation of community development in Acholi Sub-Regionis strengthened.			
Activities of the project	<ol> <li>Project site: Districts of Pader, Kitgum, Amuru, J</li> <li>Main activities: Development of the handbook training of district and sub-county officers on pro-</li> </ol>	and training project planning ement), sharing Uga 1) 2)		
Project Period	November 2011 to November 2015 (Extended period: One month (November 2015))	Project Cost	(ex-ante) 757 million yen, (actual) 704 million yen	
Implementing Agency	Ministry of Local Government (MOLG), District G Lamwo.	overnments of	Pader, Kitgum, Amuru, Nwoya, Gulu, Agago, and	
Cooperation Agency in Japan	None.			

## **II. Result of the Evaluation**

< Special Perspectives Considered in the Ex-Post Evaluation >

- Continuation of the project effects was verified by confirming the utilization status of the planning tools developed by the project to prepare the Fiveyear Development Plan. The original two indicators were set to verify community leaders' perception of the improvement of the local government performance and counterpart personnel's acknowledgment on the improvement of the districts' function during the project period. Therefore, these indicators were analyzed as factors for achieving the Overall Goal.

- Because of the outbreak of COVID-19, information was collected through a questionnaire survey and phone interviews to make evaluation judgement in the ex-post evaluation. Site visits were not conducted.

1 Relevance

<Consistency with the Development Policy of Uganda at the time of Ex-ante Evaluation>

The "Peace, Recovery and Development Plan for Northern Uganda (PRDP)" (2007-2010, extended to 2015) aimed at the post-conflict reconstruction in the north and redress of the North-South inequality. Thus, the project was consistent with the development policy of Uganda at the time of both ex-ante evaluation.

<Consistency with the Development Needs of Uganda at the time of Ex-ante Evaluation >

After the commencement of peace talks in 2006, the number of armed conflicts was decreased in the county, and the security of the areas was improved. These situations accelerated the pace of the IDPs returns to their original villages or other areas for resettlement around 2008. Following needs were restoring and improving the function of local governments in anticipation of the shift to the development phase and with a focus on the promotion of the IDPs resettlement. Thus, the project was consistent with the development needs of Uganda at the time of ex-ante evaluation.

<Consistency with Japan's ODA Policy at the time of Ex-ante Evaluation >

Based on the policy consultation held in 2006, improvement of the basic livelihood was confirmed as one of the priority areas<sup>1</sup>. The project was consistent with the Japan's ODA policy for Uganda at the time of ex-ante evaluation.

<sup>1</sup> Ministry of Foreign Affairs "ODA Databook 2011."

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. In the project, activities for capacity development of the local governments for development planning and implementation were carried out only in the four districts (Pader, Kitgum, Amuru, and Nwoya), and their experience and lessons learned were shared among the seven districts. In the four main target districts, 57% of community leaders considered that the performance of the local governments was improved, while 30% of community leaders responded in the same way in the other three districts (Indicator 1). Regarding the function of the districts to conduct development planning and implementation of the development plans, all interviewed counterpart personnel of all the seven districts answered that it was enhanced through the project (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued since the project completion. Since the time of project completion, all of the Sub-Counties (S/C) and Town Councils (T/C) have utilized the planning tools developed by the project to prepare the Five-year Development Plan in the target districts except two S/Cs in Pader District. The reason why they have not utilized the tools could not be confirmed. Even T/Cs that were formed after the project completion have used the tools, supported by the succeeding "Project for Capacity Development of Local Government for Strengthening Community Resilience in Acholi and West Nile Sub-Regions" (WACAP) (2016-2020). <Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved by the time of ex-post evaluation. In all of the interviewed districts (Pader, Kitgum, Amuru, and Nwoya), communities have got benefits from the local government's development planning and implementation. For example, women have got involved in development planning, who had had minimal participation before. In projects of setting up water points, community members have been benefited and women have been main members of the water management committees in Pader District. There have not been hindering factors for the planning and implementation of development projects. There was a conflict of land boundaries and ownership, but it has been mostly solved through local mechanisms including T/C for conflict resolution.

Firstly, as mentioned above, there have been impacts related to gender. It was reported that more women have got engaged in productive activities than men in Nwoya District and contributed to improve the household income. As well, in Pader District, more women have come to participate in the planning process and take responsibility for borehole management. Secondly, synergy effects have been brought in collaboration with other JICA projects in Acholi Region. For example, in the "Project for Provision of Improved Water Source for Returned IDPs in Acholi Sub-region" (2013-2015) which supported the construction of boreholes as well as trained the water users committees. This project promoted community participation in pilot projects highlighting women's roles, as a result, they have taken roles in the management of the water points. Thus, the capacity development of the local governments and communities for project planning and implementation has facilitated increasing effects on other projects as explained.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

	Achievement of the Project	ct Purpose and Overall Goal			
Aim	Indicators	Results			
(Project Purpose)	1. More than 60 percent of the LC1	Status of achievement: Partially achieved			
The mechanism for planning	(village level) chairpersons interviewed	(Project Completion)			
	realize that performance of local governments is improved where the				
Acholi Sub-Region is	project works.	in the last three years.			
strengthened.		- In the other three districts, 30% of interviewed leaders consider the performance of the local governments has been improved.			
		(Ex-post Evaluation)			
		- Verified as a factor affecting the achievement level of the Overall Goal.			
	2. Core project counterpart personnel of	Status of achievement: Achieved			
	the district governments (CAOs, District	(Project Completion)			
	Planners, DCDOs, and Water Officers/	- In all the seven districts, all the core C/Ps interviewed acknowledged that			
	engineers) realize that function of the district to conduct development planning				
	and implementation of the development				
	plans are enhanced compared to before				
	the Project started.	- Verified as a factor affecting the achievement level of the Overall Goal.			
(Overall goal)	1. People in communities where the				
	project works realize that development				
of community development		- In all of the four interviewed districts, communities have got benefits from			
		the local government's development planning and implementation.			
communities.	benefit communities.				
	Report, information provided by the target d	istricts.			
3 Efficiency					
Although the project cost was within the plan, the project period slightly exceeded the plan (ratio against the plan: 93% and 102%,					
respectively). Outputs were produced as planned. Therefore, the project efficiency is fair.					
4 Sustainability					

# <Policy Aspect>

PRDP 3 (2015-2021) has shown a strategic framework that sets out the specific context, priority needs, and key processes for the development of Northern Uganda. In the "Third National Development Plan" (2020/21-2024/25), local governments have been described

as one of the lead agencies for project idea identification and evaluation, being the target of capacity building. <Institutional/Organizational Aspect>

The institutional setting has been sustained for planning and implementation of community development. The planning and implementation mechanism at the district and lower levels have been strengthened. Under S/Cs, Parish Chiefs have been recruited to support the planning process, although not all the positions have not been filled. The planners' forum has been established to support District Planners. The position of the Community Development Officers (CDOs) has been upgraded. In two (Kitgum and Amuru) of the four interviewed districts, the number of personnel for project planning and implementation has been sufficient. The planning tools produced by the project have been integrated into the planning tools of the National Planning Authority. MOLG has monitored and supervised project planning and implementation in Acholi Sub-Region, and provided technical support upon the necessity of the local government. However, the monitoring has not been frequent enough, although it was certainly better than before the project. MOLG answered that they have realized that their monitoring function would help to improve the local governments' performance. <Technical Aspect>

All of the interviewed districts answered that S/Cs and T/Cs' personnel have sustained the necessary skills and knowledge for project planning and implementation. They have utilized the handbooks and tools developed by the project for planning purposes, and this had been confirmed also in the survey conducted by the "Project for Capacity Development of Local Government for Strengthening Community Resilience in Acholi and West Nile Sub-Regions" (2016-2020). For the new personnel, especially Parish Chiefs and CDOs, training has been conducted at each district.

### <Financial Aspect>

Although budget data was not available, according to all of the interviewed districts, they have continuously secured necessary budgets for project planning as well as reproducing planning tools for S/Cs and T/Cs, through the Discretional Development Equalization Grant, besides their own local revenue. However, more funds have been needed to cover increasing development needs.

<Evaluation Result>

In the light above, there have been issues in the institutional/organizational and financial aspects. Therefore, the sustainability of the effects is fair.

## 5 Summary of the Evaluation

The Project Purpose was achieved, and the project effects have continued. In other words, the mechanism for planning and implementation of community development through pilot project implementation was established in the main target districts, and the experiences were shared with other districts. The tools developed by the project have been utilized. Communities have been benefited. Regarding sustainability, more personnel have been needed in some districts, but all the districts have sustained the necessary skills and funds for project planning. As for efficiency, the project period exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing agency:

- It is recommended to MOLG to assign more budgets for district governments to address increasing development needs and further strengthen the monitoring function of the district governments, besides MOLG's monitoring. Also, it is effective to share innovative cases of some district government who have succeeded in creating new revenue sources and assigning them for development planning. Lessons Learned:
- In the project, the mechanism for planning and implementation of community development projects was strengthened, through capacity building of the local governments and communities for project planning and implementation, and this has facilitated increasing effects in other projects and ensuring sustainability. In projects of capacity development of the local governments, it is effective to not only provide training to local government personnel for planning and implementation, but also establish the mechanism which involves communities, and training contents should include how to support communities to operate and maintain projects through the implementation of pilot projects. It is also desirable to implement other projects at the same time or right after the time of project completion so that they could exercise their learning in actual project planning and implementation.



Borehole constructed in the pilot project.



Community worker demonstrating how to effectively use the borehole to the community residents.

Internal Ex-Post Evaluatio	n for Technical Cooperation Project (SATREPS <sup>1</sup> )
	conducted by Viet Nam Office: January, 2021
Country Name	Determine the Outbreak Mechanisms and Development of a surveillance Model for
Socialist Republic of Viet Nam	Multi-Drug Resistant Bacteria

## I. Project Outline

I. I Toject Outime					
Background	The emergence of multi-drug resistant bacteria, under the backdrop of antibiotic misuse in the fields of healthcare as well as livestock and fishery industries, became a global concern over the outbreak of refractory communicable diseases. Since the bacteria spread beyond national boundaries by globalized transfer of humans and products, global-scale countermeasures should be taken for preventing the emergence and spread of antimicrobial-resistant (AMR) bacteria. According to the previous studies on Expanded-Spectrum Beta-Lactamase (ESBL)-producing <i>Escherichia coli</i> ( <i>E. coli</i> ) in rural areas of the Red River Delta region, it was considered that Viet Nam had higher prevalence and spread of ESBL-producing bacteria than in other countries, and it was concerned that the situation would further become serious. Though ESBL-producing <i>E. coli</i> was not pathogenic under normal conditions, the chemotherapy for infectious diseases would get severe damages, given that genetic characteristics were transferred to pathogenic bacteria; thus, this was regarded as an emerging global threat. For these reasons, it was urgently needed to grasp the actual situation of the spread of AMR bacteria in Viet Nam and				
Objectives of the Project	In Viet Nam, through clarifying the comprehensive monitoring system for a chain, and training researchers and to enhancement of the research capacity of of related researches among related org 1. Expected Overall Goal: N.A. 2. Project Purpose: Research capacity				
Activities of the Project	<ol> <li>Project Site: Viet Nam (Whole land)</li> <li>Main Activities: (i) To clarify the wide spread mechanisms of multi-drug resistant bacteria in Viet Nam microbiologically, pharmacologically, and anthropologically, (ii) to develop a comprehensive monitoring system for antibiotics residue and antibiotic-resistant bacteria over the process from food production to intake, (iii) to train researchers and technical staff related to food safety monitoring at the targeted research institutes.</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side         <ul> <li>Inputs (to carry out above activities)</li> </ul> </li> <li>Japanese Side         <ul> <li>Experts: 1 person (long-term)</li> <li>288 persons (short-term)</li> <li>Staff Allocated: 27 persons</li> <li>Land and facilities: project office, laboratories, and research facilities in implementing agencies</li> <li>Operation cost</li> <li>Operation cost</li> </ul> </li> </ol>				
Project Period	4) Operation costMarch 2012 – March 2017Project Cost		(ex-ante) 302 million yen, (actual) 360 million yen		
Implementing Agency	National Institution of Nutrition (NIN), Institute of Pasteur in Nha Trang (IPNT), Institute of Hygiene and Public Health (IHPH), Thai Binh Medical University (TBMU), Can Tho University (CTU), Binh Dien Wholesale Market Company (CBD)				
Cooperation Agency in Japan	Osaka University				

## II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

[Assessment of achievement level of the Expected Overall Goals]

For this SATREPS project, no Overall Goal was set forth in the Record of Discussions, but the Super Goal, "The spread of multi-drug resistant bacteria is prevented in Viet Nam", was set. Considering the discussions made at the Terminal Evaluation Study, in order to assess the achievement level of the expected Overall Goal as one of the expected positive impacts, "Related researches are expanded among related organizations, ministries to contribute to strengthening of AMR control" should be verified as actions for social application of the research outputs/outcomes of this project. Thus, in this ex-post evaluation, the achievement of this Goal can be examined by (i) whether the administrative system for AMR control, such as a practice of new laws and decisions, has been placed; and (ii) whether the monitoring system of AMR bacteria and residual antimicrobials is officially institutionalized by utilizing the monitoring manuals developed by the project, as Supplementary Information 1 and 2 respectively.

1 Relevance

<Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, this project was consistent with the development policy of the health sector in Viet Nam, namely "The Health Sector Five-Year Plan (2011-2015)" which prioritized food safety and hygiene by strengthening the quarantine system and capacity development of human resources engaged in the system. Furthermore, "The Health System Development Master Plan (2010-2020)" also

<sup>&</sup>lt;sup>1</sup> SATREPS: Science and Technology Research Partnership for Sustainable Development

stated an importance of combatting the infectious diseases.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, this project was consistent with Viet Nam's development needs to improve the research capacity of related institutions in order to cope with infectious diseases as described in "Background" above.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, the Country Assistance Program for Viet Nam (2009) aimed at "Rural Development and Improvements in Livelihood" (under "Improvements in Living and Social Conditions and Corrections of Disparities") and committed to assistance toward the infectious disease control and strengthening the quarantine system to secure the food safety and hygiene.

<Evaluation Result>

In light of the above, the relevance of the project is high.

#### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

By the project completion, the project partially achieved its purpose, "Research capacity to continuously monitor the multi-drug resistant bacteria is strengthened". Out of 18 publications accepted by peer-reviewed international journals, 8 publications were authored by Vietnamese researchers (Indicator 1). The monitoring manuals developed by the project were approved by an official review committee and monitoring activities have continued accordingly. Discussions regarding practical application of research outcomes on the basis of the comprehensive report of the project were started by the Ministry of Health (MOH) as well as among organizations concerned (Indicator 2). However, in terms of the institutionalization of the monitoring activities for AMR and antibiotics residues, the practical discussions were not commenced by the time of project completion (Indicator 3).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects on research outputs have continued since the project completion. Key research outputs, such as "data from research for reference" and "Standard Operation Procedure (SOP)", developed by the Project, have been utilized not only by implementing agencies but also by other international organizations or hospitals. By utilizing the research facilities and equipment provided by the project, NIN, IHPH, IPNT and TBMU have further continued researches. One example is that NIN started assessing the usage of antibiotics in livestock and fishery industries for the period from 2019 to 2023 in order to propose intervention methodology. At the same time, most of those agencies, NIN, IHPH, IPNT, TBMU and CTU started new research projects based on the research outputs by the project. One of the examples is the study by CTU on food pathogens and antibiotic resistant bacteria from 2019 to 2021. It should be well noted that, the establishment of the core group which includes NIN, IHPH, IPNT and other organizations, named as "the working group to develop a plan to prevent antibiotic resistance in the community in the period 2021-2025", has contributed not only to further strengthening of the research capacity but also to expanding the research outcome.

<Status of Achievement for Expected Overall Goal at the time of Ex-post Evaluation>

The expected Overall Goal, "Related researches are expanded among related organizations, ministries to contribute to strengthening of AMR control" has been partially achieved by the time of ex-post evaluation. Several decisions related to AMR control in healthcare and livestock were issued by the government (Supplementary Information 1). Furthermore, there are some new regulation and guidelines which were drafted based on the information reported from implementing agencies. Much efforts have been made by the Ministry of Agriculture and Rural Development (MARD) to establish a national monitoring program of AMR bacteria and residual antimicrobials in animal and food. However, in order to make the monitoring system officially institutionalized, it is required further to set up personnel system, to select monitoring criteria, to determine the sampling method, sample size, monitoring location as well as to seek for financial resources to establish national monitoring program of AMR bacteria and food. In addition, it is expected that the involvement of those implementing agencies under MOH should be encouraged in the institutionalization process, so that the research results by those agencies are well incorporated into the subject monitoring system. (Supplementary Information 2).

<Other Impacts at the time of Ex-post Evaluation>

As ripple effects, the project has contributed to the capacity development of researchers in those organizations not directly included in the project. Through the seminars and workshops, the knowledge of drug resistant bacteria and laboratory technology have been expanded to those researchers in government agencies, officers of food safety management organizations as well as lecturers of universities. <Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Aim	Indicators	Results	
(Project Purpose) Research capacity to continuously monitor the multi-drug resistant bacteria is strengthened.	At least 1 research article, of which first author is a Vietnamese researcher, is accepted by peer-reviewed international journals in each research theme*	Status of the Achievement: Achieved (Continued)         (Project Completion)         • By the project completion, 18 publications were accepted by the peer-reviewed internati journals under the research themes on microbiology and pharmaceutical sciences with analysis from an anthropological perspective. Out of those, 8 publications were authored by Vietnamese researchers.         (Ex-post Evaluation)         • It was confirmed that after project completion, several publications of which authors Vietnamese researchers (from NIN) were accepted by peer-reviewed international journals.	
	Discussions are commenced with MOH for the practical application of research outcomes on the basis of the comprehensive report of the project.	<ul> <li>Status of the Achievement: Achieved (Continued)</li> <li>(Project Completion)</li> <li>A draft of "Multi-drug Resistant Bacteria in Viet Nam – A Comprehensive Report of the SATREPS Project" was authorized at the Joint Coordinating Committee (JCC) meeting on May 31, 2016. Discussions were commenced with MOH and several informal comments were made by MOH and MARD for the practical application of research outcomes, such as the necessity of a concrete implementation scenario with the role-sharing arrangement of MOH and the MARD, cost, time, etc.</li> </ul>	

Achievement of Project Purpose and Expected Overall Goal

<ul> <li>*In order to synthesize and analyze reports regarding antibiotic usage on AAR, the the petiod from 2015 to 2019 as well as to develop the recommendition policy on AAR, the one group, named as "the working group to develop a plan to prevent atheorem Medicine under MOII in September 2019. The core group includes NNI. IEFH, IPNT and other organizations.</li> <li>Indicator 3: Discussions are commendie of the Ahriversent Not Achieved (Continued).</li> <li>Discussions are commendie of the organizations commendation policy (Continued).</li> <li>Mith organization of AAR monitoring archives for ESBL-producing <i>L-coli</i> and Ampicullin (an antibiotic sresidue) continued since <i>Luez</i> 2014 by NN, IPNT and IHPI I. In February 2015, an official preview committee constitution of antibiotics for ASR and antibiotics for ASR and antibiotics for ASR and antibiotics for ASR and antibiotics and the monitoring antibiotic for ASR and antibiotics and the antibiotic and antibiotics and the activation of the United Will and AARD particle for ASR and antibiotics and and the set beam organization. However, protectial discussions for the antiverse momended on vibra and antibiotics residuel memore discussions for the United MILL MARD and IARD particles for ASR and antibiotics for ASR and antibiotics for ASR and antibiotics for ASR and antibiotics and and protein terms of anal HARD base planead to establish national monitoring program of AMR bacteria and residual antimicrobial antibiotic and antibiotic and antiparticles for ASR and antibiotics and and approximation of the United Nations (FAG) and the Floring Hund. The Kick-off meeting annong MOIL MARD and IAO was organized at the and vibration and monitoring program of AMR bacteria and residual antimicrobials, and has being applied in term of isofarion process, second for laboration and antibiotics and antiparticon and antindepeed to a start to thealth (DAM) of MARD, the cor</li></ul>			(Ex-post Evaluation	)				
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		l was as planned, while th	ne project cost exc	eeded the p	lan (ratio a	gainst plan: 100% and 119%, respectively). The		

outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

"The Health Sector Five-Year Plan (2016-2020)" prioritizes food safety and hygiene. Furthermore, the Aide Memoire of "Multi-Stakeholder Engagement to Combat Antimicrobial Resistance in Vietnam", signed in 2015 among several ministries and some development partners in Viet Nam, has been still valid. It prescribes the roles and activities, which are supposed to be borne by each stakeholder.

<Institutional/Organizational Aspect>

All of implementing agencies involved in the project have allocated the sufficient number of staff for relevant departments, so that they

can continue research activities using the research outputs by the project as well as to operate and maintain facilities/equipment procured under the project. There is a mechanism in a form of seminars, workshops, and meetings for implementing agencies to share and report research results to other government authorities who can incorporate them into their undertakings as scientific evidences or into the policy formulation. New researches developed by using the research output of the project have often been reported to government authorities as well.

<Technical Aspect>

Through continued research activities by using the equipment and facilities, researchers of the implementing agencies have maintained and improved their technical capacities necessary for on-going researches as well as for equipment maintenance. Workshops, seminars have also contributed for researchers and officers of government authorities to sustain and further improve their scientific knowledge. <Financial Aspect>

All of implementing agencies involved in the project have continued to allocate necessary budget for AMR control related researches. The source of funds varies. Some institutions have obtained the financial resources from international organizations, such as Danish International Development Agency, World Health Organization and JICA. MOH has allocated some budgets for AMR control related activities as well as for AMR monitoring in food under the food safety management project. As for the operation and maintenance of the research facilities and equipment installed by the project, the sufficient budget has been allocated either by the government or by themselves.

## Budget for operation and maintenance of the research facilities and equipment (Unit of currency: Viet Nam Dong in million)

Name of institutes	Financial resources	2017	2018	2019	2020
NIN	MOH	40.0	48.0	63.0	n.a.
IHPH <sup>(1)</sup>	own	2.0	2.0	1.0	15.0
TBMU	own	3.0	3.0	3.0	3.0
CTU <sup>(2)</sup>	own	n.a.	n.a.	n.a.	n.a.

## Source: NIN, IHPH, TBMU and CTU

Note: (1) IHPH maintains a refrigerator and a freezer. The refrigerator was broken in 2019 and its repair cost was included in 2020.

(2) CTU secures financial resources whenever the equipment becomes out of order. The equipment has been maintained in good condition. <Evaluation Result>

Therefore, the sustainability of the effects through the project is high.

## 5 Summary of the Evaluation

The project partially achieved the Project Purpose, "Research capacity to continuously monitor the multi-drug resistant bacteria is strengthened". Although the research outcomes were utilized, the practical discussions were not commenced in terms of the institutionalization of the monitoring activities for AMR and antibiotics residues. After the project completion, through the working group to develop a plan to prevent antibiotic resistance in the community, the project effects on research outputs continued and contributed further to the expected positive impact, in expanding the related researches among related organizations and ministries, and in strengthening the AMR control. As for sustainability, there was no problem in policy, institutional/organizational, technical, and financial aspects. As for efficiency, the project cost exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

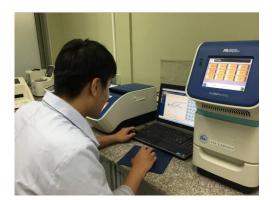
## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• As main regional research institutes in Viet Nam, NIN, IHPH and IPNT, continue developing related researches and maintaining the reporting mechanism to incorporate scientific evidences into the policymaking. In view of the need to monitor the AMR control and the importance of food safety, MOH and MARD should take prompt action to support lower level institutes as well as to continue strengthening collaboration with the related ministries to have more practical and national-level dialogue.

## Lessons Learned for JICA:

• At the project formulation process, full consideration should be given to the organizational structure of project's implementing agencies as well as their relations to the respective government agencies, especially in case that the project effect is expected to contribute to the policymaking or the institutionalization of national system. Specifically, the project should consider carefully to include the agency/ institutes into the project framework, which may play important role for realization of project outcome It was pointed out by the study that the implementing agencies under MOH have had a limited involvement in the process of institutionalization monitoring system of AMR bacteria and residual antimicrobials in food and animal for which another government organization known as MARD is directly responsible.





Country Name The Arab Republic of Egypt		Project for Drainage Water Quality Contr	ol for	Irrigation in Middle D	Delta	
I. Project Outline	-671					
Background	Especia severe, was ex industri	The main issue of the water resources sector in Egypt was how to effectively utilize the limited water resources. Especially, shortage of irrigation water in the Nile Delta area, located downstream of the Nile River, was very severe, and securing irrigation water was one of the national urgent issues in Egypt. Under such circumstances, it was expected that reuse of drainage water by resolving contamination due to untreated drainage water from industrial factories and households, animal feces and urine, dumping of waste materials, could serve as one of the effective strategies.				
Objectives of the Project	drainag (around in the C 1. Ex	<ul> <li>Through verification of the pilot projects, this project aimed to formulate a Master Plan (M/P) of reusing drainage water including the measures for water quality conservation in mid-term (3-5 years) and long-term (around 10 years) in Kafr El Sheikh Governorate, thereby contributing to increase in the available irrigation water in the Central Nile Delta.</li> <li>1. Expected Goals through the proposed plan<sup>1</sup>: Beneficial area of drainage water reuse for irrigation is increased in Kafr El Sheikh Governorate.</li> </ul>				
Activities of the Project	1.Pro2.Ma <pl< td=""><pl< td="">3.InpJapanes1)Mi2)Tra3)Eq</pl<></pl<>	<ul> <li>bject Site: Central Nile Delta Pilot project</li> <li>ain Activities:</li> <li>base 1&gt; Draft the master plan for drainage v</li> <li>base 2&gt; Implement the proposed pilot proj</li> <li>plan based on the lessons learned th</li> <li>bouts (to carry out above activities)</li> </ul>	vater r ects b rough	ased on the draft master the pilot projects. yptian Side Staff allocated from I Irrigation (MWRI) Land and facilities: O	tts of the pilot projects. er plan; Finalize the draft master Ministry of Water Resources and office space nt of machinery, equipment, etc.	
Project Period	(Extend	ry 2012 - March 2016 led period: January 2015 - March 2016)	Pro	oject Cost	(ex-ante) 430 million yen (actual) 536 million yen	
Implementing Agency	<ul> <li><u>Central level:</u></li> <li>The Egyptian Public Authority for Drainage Projects (EPADP) under the Ministry of Water Resources and Irrigation (MWRI)</li> <li><u>Regional level:</u></li> <li>Kafr El Sheikh Governorate</li> </ul>					
Cooperation Agency in Japan	Sanyu (	Consultants Inc.				

## II. Result of the Evaluation

## 1 Relevance

<Consistency with the Development Policy of Egypt at the Time of Ex-Ante Evaluation and Project Completion>

At the time of ex-ante evaluation, the project was consistent with the development plan, the "National Water Resources Plan (NWRP) (2007-2017)". It suggested "intermediate drainage water reuse", i.e. shifting the reuse of drainage water from larger drains to smaller and less polluted drains in the upper part of streams. At the time of project completion, the NWRP (2007-2017) was still effective.

<Consistency with the Development Needs of Egypt at the Time of Ex-Ante Evaluation and Project Completion>

This project was consistent with Egypt's development needs for sustainable water resources at the time of ex-ante evaluation as described in "Background" above. No information or report indicated the change of such needs up to the time of project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

According to the "Country Assistance Program for the Arab Republic of Egypt (2008)", Japanese government committed to the support to three priority areas, including "Poverty Reduction and Improvement of the Living Standard", which emphasized improvement of public services and social welfare as well as development of agricultural and rural communities on which this project was focused. The Program specifically added that "as Egyptian agriculture depends upon irrigation, it is vital to promote the effective use of water resources in consideration of overall water demand, and to diffuse agricultural technology for effective utilization of the limited cultivated lands". <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Objectives at the time of Project Completion>

Through verification of the pilot projects, the project achieved its purpose to prepare the M/P of drainage water reuse for irrigation including water quality conservation at the time of project completion. Through preparing the master plan and implementing the pilot

<sup>&</sup>lt;sup>1</sup>The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

projects, the capacity of concerned government organizations such as EPADP/MWRI and Kafr El Sheikh Governorate was strengthened. It was confirmed through the interviews with officials of EPADP/MWRI that the M/P satisfied the needs of the implementing agencies. <Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

According to EPADP/MWRI officials, the measures for drainage water reuse for irrigation described in M/P were considered and were reflected on the inter-ministerial water resource policy, namely the "National Water Resource Plan (NWRP) (2017-2037)" (Indicator 1). NWRP Phase 3 (2017-2037) is under discussion in the parliament and not authorized yet, however MWRI and some donors who support MWRI have already started to implement some of important activities under the NWRP (2017-2037). This momentum affects implementation of the M/P. Firstly, based on the M/P, the Irrigation Sector (IS) under MWRI, realized the installation of 93 drainage water reuse pumps in Delta region under the "Project of Drainage Water Reuse". Secondly, EPADP/MWRI implemented the feasibility study on "the Integrated Depollution of Kitchner Drain<sup>2</sup>(2016-2017)" with European Union (EU). Based on result of the study, the "Project for the Depollution of Kitchner Drain (2018-2021)" in euro 435-million worth, funded by three donors namely, EU, European Investment Bank (EIB) and European Bank for Reconstruction and Development (EBRD) has been started. The study also examined the content of M/P and have led the rearrangement of the activity No.2 and No. 3 under the M/P to be included in the above project. Thirdly, EPADP/MWRI has started "National Drainage Program, Phase 3 (2015-2020) (NDP3)" in collaboration with three donors, namely, EU, Kreditanstalt für Wiederaufbau (KFW) and African Development Bank (AFDB). This program is in euro 170- million worth. Since one of the main activities of NDP3 is the establishment of drainage system in middle delta region, there is strong compatibility between the program and the M/P.

<Other Impacts at the time of Ex-post Evaluation>

Some activities related to the project have been identified through the survey of ex-post evaluation even without official approval of the M/P. Based on the idea of the M/P, the MWRI Sharquiya Governorate implemented the projects for drainage water reuse and has planned to transfer the water resources from Delta to Matrouh and North Sinai Governorate for irrigation purposes. As one of activities to promote the effective use of drainage water for crop production, the involvement of women in environmental awareness creation such that the female school teachers served as mediators for environmental campaigns for women and children, had let the people to recognize the importance of conserving water and environment, and thus, the people have started to consider the dumping garbage in the canals as a negative behavior that would harm the environment.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is fair.

Status of Achievement of Utilizat	on Status of the Proposed Plan and	Expected Goals through the Proposed Plan

Aim	Indicators	*	Results
(Utilization Status of	(Indicator 1)	(Ex-post Evaluation) partia	lly achieved
the Proposed Plan)	The program of actions on	e	WRI officials, the issue of drainage water reuse was adopted to the
Master Plan for	drainage water reuse	-	(2017-2037) and some components of the M/P were incorporated
drainage water reuse	for irrigation in the Master		7) which is yet to be approved by the parliament because of the huge
for irrigation will be	Plan is adopted as one of effective measures for the	gap between the estimated	cost for its implementation and the amount possibly be covered by
utilized by Egypt as	integrated water resource	6	With no budget allocated so far, the coordination and cooperation
the water resource	planning in Egypt.	U U	s have been limited. However, MWRI has started some activities
policy, and the			37) within the scope of the budget of the ministry.
short-term or	(Indicator 2)	(Ex-post Evaluation) partia	
mid-term measures	The program of actions for the	-	to materialize the M/P was once established by the related
proposed by the	short-term or mid-term	C C	n functioning due to no allocation of funds by the Government of
Master Plan are	measures in the Master Plan is		during the ex-post evaluation study that EPADP/MWRI had
implemented by Egypt	implemented by Egypt or		nents of the M/P by utilizing their own budget or donor fund.
or donors.	donors.	Main activities planned under the M/P	Activities carried out by EPADP, which are related to each component of the M/P (at the time of ex-post evaluation 2019)
		1.Irrigation Complex Establishment	Construction of Irrigation Complexes in Menah village and Belshasha village, instream treatment and solid waste management inside of Tellin Drain. In addition, the installation of 93 reuse pumps in the middle delta region have already been realized by Irrigation Department and Irrigation Sector under MWRI. These pumps support the idea of Irrigation Complex.
		2.Improving Drainage Water Quality for Irrigation in Garbia Drain	Study on the Integrated Depollution of Kitchner Drain by EU (2016-2017) Based on the above study, EU, EIB and EBRD has jointly launched the Project for the Depollution of Kitchener Drain (2018-2021)
		3.Large-scale Reuse Pump Installation	Together with the above activity No. 2, this activity will be covered under the "Project for the Depollution of Kitchener Drain (2018-2021)" as well.
		4.Renewal of Drain by Box Culvert	In Kafr El Sheikh, 330 meters of drains has been covered, and 620 meters of drains are under bidding by EPADP.

<sup>&</sup>lt;sup>2</sup> "Kitchner Drain" is the former name of "Garbia Drain" with same coverage area.

	5.Strengthening Effective No major activities have been done other than general
	Use of Water Quality monitoring.
	Monitoring System
	6.Promoting Effective On-going, such as, promoting the reduction of using chemical
	Use of Drainage Water fertilizers for the farmers who practice drainage water reuse.
	for Crop Production
Source · Final Report Questionnaire and Interview w	with the implementing agencies

### 3 Efficiency

Both the project cost and the project period exceeded the plan (ratio against plan: 125% and 139%, respectively). The project was suspended for several months because of Japanese experts' evacuation from Egypt due to the security reasons. The suspension partially affected the progress of other activities, such as progress monitoring. The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

### 4 Sustainability

<Policy Aspect>

NWRP (2017-2037) clearly states the importance of water treatment. The third and the fourth pillars of the NWRP (2017–2037) related to "Improving Water Quality" and "Enhancing Management of Water Use" respectively, state the objectives and the measures for drainage water treatment. In addition, its first pillar, "Improving the enabling environment for MWRI in Planning and Implementation", describes the method and procedure for revising the regulation for drainage water reuse under the item of "Revision and update of Regulatory framework". This is to cope with the drainage water reuse in different treatment levels.

NWRP (2017-2037) is waiting for an approval by the Parliament, and the budget allocation from the government is not yet realized. However, responsible Ministries have already started some part of activities under NWRP (2017-2037) by securing the funds from donors to whom they have appealed the necessity to carry out the specific activities. Coordination among ministries and public institutions of water sector has partially been progressed with the donor's funds. It is expected that the coordination would be enhanced further with the official approval of NWRP (2017-2037).

## <Institutional Aspect>

The organizational structure to implement the M/P was once established by involving the Ministry of Agriculture and Land Reclamation, the Egyptian Environmental Affairs Agency, the Ministry of Housing Utilities and Urban Development and the Ministry of Investment and International Cooperation<sup>3</sup>, but it is inactive at the time of ex-post evaluation as NWRP (2017-2037) is not yet authorized with budget. On the other hand, MWRI has tried their best to maintain the coordination among the relevant ministries with their own funds or within the scope of other donor-funded irrigation projects. In the NWRP (2017-237), drainage water reuse is recognized as to contribute to not only increasing the efficiency in irrigation but also mitigating the water shortage. The M/P has been shared among departments under the ministry, and has been utilized even by the department not involved in the project. One example is the installation of 93 drainage water reuse pump in Delta region.

## <Technical Aspect>

According to the interview with officials of EPADP/MWRI, they have maintained the sufficient technical level. Training materials developed by the project have been used after the project completion, and the staff who participated in the project have shared their knowledge to others through on-the-job training (OJT). One of ex-counterparts issued scientific paper based on the knowledge cultivated through the Project.

## <Financial Aspect>

Although the NWRP (2017-2037) is not officially passed by the Egyptian Parliament at the time of the ex-post evaluation, MWRI has taken steps to realize some of the components of the M/P by securing the fund separately for each component. One example is the "Project for the Depollution of Kitchener Drain". This was formulated on the bases of the government-funded "Project of Drainage Water Reuse" and "Study on the Integrated Depollution of Kitchener Drain" funded by EU, EIB and EBRD.

MWRI/EPADP is also implementing the "National Drainage Program, Phase 3 (NDP3)", signed in Nov. 2015 by three donors, namely, EU, KFW and AFDB, with a total budget of euro 170-million. One of the main components of the NDP3 is the establishment of drainage system in middle delta region, which would contribute to the achievement of the activity No.1 and No.4 of the M/P. <Evaluation Result>

In light of the above, the M/P has not been approved yet, however continuous efforts to secure the sustainability on institutional, technical and financial aspects were observed. Therefore, the sustainability of the effectiveness through the project is fair.

## 5 Summary of the Evaluation

The Master Plan of reusing drainage water including the measures for water quality conservation in mid-term and long-term in Kafr El Sheikh Governorate was developed under the project as the proposed plan, and it has been identified part of the M/P has been utilized by the time of ex-post evaluation. As for sustainability, some problems have been observed in terms of institutional, technical and financial aspects. As for efficiency, both the project cost and the project period exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

# III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• It is recommended that MWRI continue securing an adequate budget from the state and donors, to implement the M/P developed under the project in order to cope with the upcoming problem of irrigation water scarcity. In this relation, it is also strongly suggested that MWRI raise citizens' awareness on the importance of water reuse.

Lessons Learned for JICA:

• It was observed that not only national budget but also donor funds are utilized well for realization of the M/P. Continuous cooperation

<sup>&</sup>lt;sup>3</sup>The Ministry of International Cooperation was merged with the Ministry of Investment in September 2017 and renamed as the Ministry of Investment and International Cooperation.

with donors will facilitate inter-ministerial coordination. Since the Project team did not disclose the idea of the draft M/P during the project period, it took long time until other donors recognized the existence of the M/P after the project completion. In order to propose the affordable and sustainable M/P for the government, it is expected that the project should consider the way to utilize the donor funds in parallel with national budget. The M/P could have been more effective if the intentions of other donors were confirmed to make the M/P more acceptable to them.

# Internal Ex-Post Evaluation for Technical Cooperation Project

Country Name India		Master Plan Study on the Introduction of Intellig	ent Transport Sy	stem (ITS) in Bengaluru and Mysore
I. Project Outline				
Background	of th and serio issue touri	In accordance with the rapid urbanization and ever increasing number of vehicles, Bengaluru, the capital of the state of Karnataka with a metropolitan population of about 8.7 million (the 5th largest in the country) and known as the country's largest concentration of information and communication industries, had faced serious traffic congestion. Traffic management for future transportation demand was deemed an important issue for Mysore, the second largest city in the state of Karnataka and one of the most popular cities for tourists in India, although Mysore did not face the serious traffic congestion for the time-being. Under this circumstance, the Government of India have decided to prepare Intelligent Transport Systems (ITS) Master Plan, a tool to improve efficiency of transportation through cooperation with JICA.		
Objectives of the Project	Expo (1) (2)	<ul> <li>Expected Goals to be achieved by utilization of the proposed plan<sup>1</sup>:</li> <li>(1) Traffic congestion will be improved by optimum traffic flow on the road network including the Peripheral Ring Road (PRR) realized by ITS.</li> <li>(2) Usage of public transport will be enhanced and improved by assistance of ITS.</li> </ul>		
Activities of the Project	<ol> <li>Project site: Bengaluru and Mysore</li> <li>Main activities: (1) development of ITS Master Plan, (2) preparation of required organization an operation for ITS, (3) basic design concept of prioritized ITS projects (menus) for Bengaluru, (4) capacit building</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Indian Side</li> <li>Experts from Japan: 19 persons</li> <li>Staff allocated: The number was not confirmed</li> <li>Land and facilities: office</li> </ol>		ects (menus) for Bengaluru, (4) capacity located: The number was not d	
Project Period	January 2014-June 2015		Project Cost	(ex-ante) 192 million yen (actual) 241 million yen
Implementing Agency	Dire	ctorate of Urban Land Transport of Karnataka Stat	e Government (1	DULT)
Cooperation Agency in Japan	NIPPON KOEI CO., LTD., EAST NIPPON EXPRESSWAY CO., LTD., CTI ENGINEERING Co., LTD.			

## **II. Result of the Evaluation**

### 1 Relevance

<Consistency with the Development Policy of India at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policy of India both at the time of ex-ante evaluation and project completion. The urban population in India was projected to grow to almost 473 million by 2021 and 820 million by 2051 from 285 million in 2001. The Government of India launched the "National Urban Renewal Mission (NURM)" to provide suitable mobility to growing urban population. NURM was an initiative for balanced urban development. It aimed to bring about comprehensive improvements of urban infrastructure, suitable funds and structural reforms.

<Consistency with the Development Needs of India at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the development needs of India for transport development. At the time of ex-ante evaluation, Bengaluru had faced serious traffic congestion and traffic management for the future transportation demand in Mysore was deemed an important issue. At the time of project completion, in Bengaluru and Mysore, there were many problems in the sphere of road traffic, road infrastructure, public transport, traffic manner, facilities and management and coordination.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy for India. Promotion of Economic Growth was one of the priority areas under the "Country Assistance Program to India" (2006). Assistance for the Transport Sector is included under the category. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Objectives at the time of Project Completion>

At project completion, all the outputs were achieved, as (i) ITS Master Plan was developed, (ii) Required organization and operation was proposed, (iii) Basic concept of prioritized ITS projects (menus) for Bengaluru was designed, and (iv) capacity building was implemented.

As to the capacity building, the technical tour was carried out for capacity building of the stakeholders including DULT, Bengaluru Development Authority (BDA), Mysore City Police, etc. as part of ITS Master Plan preparation. ITS Master Plan for Bengaluru Metropolitan Area and Mysore was formulated based on observations provided by participants of the technical tour.

<sup>&</sup>lt;sup>1</sup> The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

< Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

After the project completion, the proposed plan was partially under implementation as expected.

The Master Plan was approved by the state government of Karnataka. DULT has been implementing a project, "The Project for Implementation of Advanced Traffic Information and Management System (ATIMS) in Core Bengaluru" funded by JICA (Grant Aid Project). Some components of ITS Master Plan proposed under the project have been taken-up for implementation on a pilot basis. The capital cost is funded by JICA and operation and maintenance cost shall be funded by the state government of Karnataka.

The evaluation team inquired about the reason for the delay in implementing the rest of the proposed components, however, the response was not obtained within the deadline of this evaluation survey. The basic concept design of prioritized ITS projects for Bengaluru has been partly adopted in the project implementation. The ATIMS Project mentioned above is based on the basic concept of ITS master plan, which includes the establishment of Bengaluru Traffic Information Centre and roadside-sensors to analyze the traffic condition on roads and junctions.

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

The ATIMS project has still been under implementation, therefore, it is difficult to evaluate the impact at the time of ex-post evaluation. <Other Impacts at the time of Ex-post Evaluation>

According to DULT, the grant aid project (ATIMS), which is being implemented under the master plan formulated by the project, has been categorized as "C" under the JICA Guidelines for Environmental and Social Considerations (promulgated in April 2010), as the impact is considered to be minimal. ATIMS project has less negative impact on the natural environment and no land acquisition or resettlement has occurred.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

3 Efficiency

Although the project period was within the plan (the ratio against the plan: 100%), the project cost exceeded the plan (the ratio against the plan: 126%). The outputs were produced as planned. Therefore, the efficiency of the project is fair.

## 4 Sustainability

#### <Policy Aspect>

There has been a policy which supports the ITS. The "Comprehensive Mobility Plan" (2020-2035) by the Karnataka state government has been prepared for the Bengaluru which support the ITS implementation.

<Institutional Aspect>

DULT has technical staff for the ITS implementation and other technical verticals. The DULT team has been coordinating with JICA and a consultant team for the implementation of ATIMS project. A section called "ITS" under DULT has been responsible for coordination and monitoring of implementation. The number of staff was two at the time of ex-post evaluation, having more than 10 years of experience and capable of handing large projects. The number has been sufficient.

The project proposed to form an "ITS Society" by government to oversee all activities of ITS, and suggested that the ITS Society should be organized by senior officials of stakeholder organizations, headed by DULT, and function as a body for monitoring, coordinating and proposing decisions to take care of matters. However, it was not established at the time of ex-post evaluation. <Technical Aspect>

According to DULT, DULT has the team who has sufficient skills for coordination and may hire additional staff if it is required. <Financial Aspect>

As mentioned above, ITS components have been taken-up for implementation and financial arrangement for major infrastructure projects including PRR, City ITS and Bengaluru Metro has been confirmed, therefore, sustainability in terms of financial aspect is firmly confirmed.

<Evaluation Result>

Therefore, the sustainability of the effects through the project is high.

5 Summary of the Evaluation

At project completion, the all outputs were achieved, as (i) ITS Master Plan was developed, (ii) Required organization and operation was proposed, (iii) Basic concept of prioritized ITS projects (menus) for Bengaluru was designed, and (iv) capacity building was implemented. After the project was completed, the proposed plan was utilized as expected, as (i) The Master Plan was approved by the Karnataka government, (ii) Some of ITS components under ITS Master Plan have been taken up for the implementation, and (iii) Basic concept design was adopted in prioritized ITS projects. As for the efficiency, although the project cost slightly exceeded the plan, the project period was as planned.

Considering all of the above points, this project is evaluated to be satisfactory.

#### III. Recommendations & Lessons Learned

### **Recommendations for Implementing Agency:**

It is required to expedite the implementation of the projects in order to realize the expected impacts of the Master Plan. DULT is requested to make further efforts for securing the budget for implementing planned projects in Master Plan. (e.g., it is expected to expand the pilot project which is currently being implemented as JICA's grant aid project. DULT was expected to ensure strong coordination with the Bengaluru Development Authority (BDA) to implement the City ITS component, Highway Traffic Management and Toll Management System under the Bengaluru Peripheral Ring Road Project. Also, it is required for DULT to expedite process of implementation of the grant project. As proposed by the Project, Forming ITS society headed by DULT might be one of the effective measures to further improvement of sustainability of the implementing Projects. Thus, JICA recommended DULT to consider this aspect in accordance with the progress of the project implementation.



Project site under ATIMS in Bengaluru



Heavy traffic jam in Bengaluru/Project site under ATIMS

Country Name	Technical Cooperation in Strengthening the Backstopping Capacities for the DADP Planning and
United Republic of	Implementation
Tanzania	Project for Strengthening the Backstopping Capacities for the DADP Planning and Implementation
Talizallia	under the ASDP Phase 2

## I. Project Outline

Background	In Tanzania, the Agricultural Sector Development Program (ASDP), which adopted a Sector Wide Approach (SWAp) for the agricultural sector, was fully operated in July 2006. In line with the decentralization policy, 75% of the ASDP basket fund was allocated to the development budget to the district government in accordance with the District Agricultural Development Plan (DADP) formulated by each district every year. However, the plans made by districts needed to improve quality in order to meet the requirements of the central government. From 2009 to 2012, JICA implemented a technical cooperation project of "Technical Cooperation in Strengthening the Backstopping Capacities for the DADP Planning and Implementation" (Phase 1 project). The project supported areas such as formulation and update of formats and guidelines, monitoring of budget execution and project progress, and improvement of DADP operations and quality, as well as strengthening the capacity of central and local government officials who engaged in DADP planning and implementation. However, challenges for making DADP more comprehensive plan were recognized from the second half of the Phase 1 project: Necessity to enhance strategic nature of DADP, such as mid to long-term planning and identifying suitable inputs for priority crops considering their value chain; Enhancement of resource mobilization not relying solely on the ASDP budget but also other government funds and private investment including				
Objectives of the Project	<ul> <li>non-governmental organizations (NGOs).</li> <li>Through (i) strengthening of capacity for backstopping activities for the planning, implementation and monitoring of DADP, (ii) supporting pilot Local Government Authorities (LGAs) to prepare strategic and comprehensive DADP, the project aimed that LGAs effectively plan and implement (strategic) DADPs, thereby contributing to achieving the higher productivity, profitability, and farm incomes</li> <li><phase 1=""></phase></li> <li>1. Overall Goal: LGAs effectively plan and implement their DADPs</li> <li>2. Project Purpose: DADP planning and monitoring are improved with strengthened operation of the DADP Planning and Implementation Thematic Working Group (DADP P&amp;I TWG), the Agricultural Sector Unit of Prime Minister's Office - Regional Administration and Local Government (PMO-RALG) currently President's Office - Regional Administration and Local Government (PO-RALG) and Regional Secretariats (RSs) for backstopping LGAs.</li> <li><phase 2=""></phase></li> <li>1. Overall Goal: Higher productivity, profitability, and farm incomes are achieved.</li> <li>2. Project Purpose: LGAs effectively plan and implement strategic DADPs.</li> </ul>				
Activities of the Project	<ol> <li>Project site:</li> <li>Phase 1&gt; Tanzania Mainland</li> <li>Phase 2&gt; Tanzania Mainland, Pilot Districts (Kilombero, Lushoto, Mbozi)</li> <li>Main activities:</li> <li>Phase 1&gt; (i) strengthening of capacity for backstopping activities for the planning of DADP and strengthening of capacity for monitoring activities</li> <li>Phase 1&gt; (i) improving the backstopping activities for the planning, implementation and monitoring of str DADP, and (ii) supporting pilot LGA to prepare strategic and comprehensive DADP</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Phase 1&gt;</li> <li>Expert: 4 persons</li> <li>Staff allocated: 24 persons</li> <li>Equipment: Computer, backup UPS, fax, printer, photocopier, projector and others</li> <li>Local Cost: general operating expenses</li> <li>Phase 2&gt;</li> <li>Experts: 12 persons</li> <li>Training in Japan: 25 persons</li> <li>Equipment: Vehicle, motorcycles, computers, project office</li> <li>Equipment: Vehicle, motorcycles, computers, project office</li> <li>Operation cost: general operating expenses</li> </ol>		es for the planning of DADP and (ii) nplementation and monitoring of strategic nsive DADP d: 24 persons dities: Project office training and workshop expenses, for field trip and others d: 68 persons dities: Project offices st: pilot activities, transportation for field		
Project Period	(4) Operation cost: general operating expenses (4) Operation cost: general operation cost: g	Project Cost (6 < (6	Phase 1> ex-ante) 232 million yen actual) 223 million yen Phase 2> ex-ante) 523 million yen actual) 581million yen		

	- Ministry of Agriculture, Food Security and Cooperatives (MAFC, Currently Ministry of Agriculture, MoA)		
	Agriculture Sector Lead Ministries (ASLMs): MoA, Ministry of Livestock Fisheries Development (MLFD),		
Implementing	Ministry of Industry and Trade (MIT), and Prime Minister's Office - Regional Administration and Local		
Agency	Government (PMO-RALG) (Currently President's Office-Regional Administration and Local Government :		
	PO-RALG)		
	- DADP Planning & Implementation Thematic Working Group (DADP P&I TWG)		
Cooperation Agency in Japan	International Development Center of Japan Inc.		

## II. Result of the Evaluation

<Constraints on Evaluation>

- Due to the COVID-19 pandemic, site visit could not be conducted to collect information. Therefore, the information was collected through questionnaires, telephone interviews.
- < Special Perspectives Considered in the Ex-Post Evaluation >
- As the Phase 1 and Phase 2 projects share the common goal, the indicators for the Phase 2 project are verified to check the level of achievement of the Project Purpose and the Overall Goal.
- The status of continuation of the project effects at the time of ex-post evaluation were taken as the part of the verifiable indicators of the Overall Goal and the factors affecting the achievement levels of the verifiable indicators of the Overall Goal.

## 1 Relevance

<Consistency with the Development Policy of Tanzania at the Time of Ex-Ante Evaluation >

The project was consistent with the development policy of Tanzania. "National Strategy for Growth and Reduction of Poverty" (NSGRP) (2005) prioritized agriculture sector development as a driver for economic growth. ASDP was set as an implementation framework. Development budget in the agricultural field were allocated to the" district agricultural development plan (DADP) "through the ASDP basket fund.

<Consistency with the Development Needs of Tanzania at the Time of Ex-Ante Evaluation >

The project was consistent with the development needs of Tanzania for strengthening DADP planning and implementing capacity. Although DADP formulated by each district was a basis for the development budget allocation under ASDP, the quality lacked strategic and comprehensive aspects.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA policy to Tanzania. Agriculture including small-scale irrigation was one of the priority areas under the "Country Assistance Program for the United Republic of Tanzania" (2008). Also, the "Country Assistance Policy for the United Republic of Tanzania" (2012) emphasized the importance of agriculture for economic growth towards poverty reduction. <Evaluation Result>

In light of the above, the relevance of the project is high.

## 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The project purpose was partially achieved at the time of project completion. In 2016/17, 64% of DADPs scored 60 points or higher in quality check by RSs (Indicator 1). On the other hand, in 2015/16, only 23% of DADP interventions applying the good practice(s) was implemented (Indicator 2). The partial achievement can be attributed to the following two factors. Both factors were due to the transition from ASDP 1 to ASDP 2. The ASDP basket fund, which used to be the major source for implementing DADPs, was not fully disbursed from the central government since 2013/2014. The backstopping/information dissemination were not fully undertaken for LGAs. <Status of Continuation of the Project Effects>

The continuity of the project effects at the time of the ex-post evaluation cannot be verified. This is because the central government does not have all the information on the implementation of the DADP, which makes it impossible to verify the indicators of the Overall Goal, and it was confirmed that the continuity of the project is not verifiable.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal was not verified. This is because to what extent the indicator is achieved is not clear, as the central government does not maintain entire information on the implementation of DADP nationally. It seems that the Policy and Planning Division of Ministry of Agriculture (DPP) and PO-RALG have worked on the DADP backstopping whenever budget is available, thought the budget is very much limited.

On the other hand, positive impacts have been observed in the pilot districts. During the project implementation period, the project supported value chain development on rice (in Kilombero), horticulture (in Lushoto) and coffee (in Mbozi). After the project was completed, coffee production increased in Mbozi District. For example, the production was 11,555 tons in 2019/20 while it was 7,681 tons in 2016/2017. In addition to the increase in the production, the availability of seedlings improved due to the district initiative including mobilizing funds from private coffee production companies after the project. Also, farmers were capacitated by financial knowledge and business plan and linked to financial institution and private companies to access loans resulted in the production. In Kilombero, farm gate price of rice increased to Tsh135,000~172,000/kg from Tsh50,000/kg. Also, the utilization of the storage in the warehouse increased five times (2bags to 10bags per farmer), which shows that the productivity of the farmers increased. In Lushoto, after the project was completed, the District took following initiatives under the collaboration with African Development Bank funded project, Marketing Infrastructure, Value Addition and Rural Finance (MIVARF), for which the project encouraged the collaboration during the project period : (i) it facilitated the formulation of farmers groups (Agricultural and Marketing Cooperative Society; AMCOS) of producers of vegetables mostly Irish potatoes; (ii) facilitated financial and market linkage and, (iii) infrastructure development. The infrastructure development reduced transport cost as well as increased the storage ability of farmers. Furthermore, district office facilitated to connect private input suppliers to those farmers groups so that the producers could improve their production skills and technologies.

Some positive impacts have been observed. From the gender perspective, in Lushoto, women have been involved in the market survey or

have taken leadership in farmers groups after the project, which had not been the cases before the project. This is because the projects promoted gender-sensitized training by encouraging women's participation in field management, farmer group management and market survey with men jointly. There have been some synergistic effects between the project and other JICA's ASDP related projects. For example, by using the Agricultural Routine Data System (ARDS) which was strengthened under a JICA project, the districts could identify crops produced in several villages and this makes easier for them to make decision on what village they can go for further dissemination of project knowledge. Also, in Lushoto, the project facilitated some farmers to obtain Certificate of Customary Right of Occupancy (CCRO) which was equivalent to certificate of land occupancy enabling to increase their loan accessibility.

According to the implementing agencies, no negative impact on the natural environment by this project has been observed, and no land acquisition and resettlement occurred.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project	Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose)	Indicator 1: 50% of DADPs scores 60	Status of the Achievement: achieved (not verified)
Project Purpose: LGAs	points or higher in terms of strategy,	(Project Completion)
effectively plan and	comprehensiveness and private sector	(1) For 2016/17, 64% DADPs scored 60 points or higher in quality check by
implement strategic	involvement	RSs.
DADPs.		(2) There was significant improvement in the quality status of DADPs for
		2015/16, 37% of which gained 60 points or higher.
		(Ex-post evaluation)
		Verified as factors affecting the achievement levels of the verifiable
		indicators of the Overall Goal
	Indicator 2: 50% of DADP interventions	Status of the Achievement: not achieved (not verified)
	which apply at least 1 of the following good	(Project Completion)
	practices are implemented:	(1) In DADPs for 2015/16, only 23% of DADP interventions applying the
	□ Activities using the existing resources	good practice(s) was implemented.
	(e.g. farmers' groups and physical	(2) For details, it was identified that 216 interventions applied the good
	infrastructures);	practice(s) among DADPs for FY2015/16. Out of them, 50 have been
	□ Activities for understanding market needs	implemented with LGAs own budget or off-budget funds, which means 21
	including buyers, price, and quality (e.g.	of the implementation ratio (50/216).
	market survey and study tours);	(Ex-post evaluation)
	□ Facilitation by LGAs for linking farmers	Verified as factors affecting the achievement levels of the verifiable
	with service providers (public and private	indicators of the Overall Goal
	institutions)	
	(e.g. for cost-sharing or contract-farming);	
	□ Strengthening farmers' organizations	
	(e.g. in terms of financial management, title	
	deeds, audit report, group management	
	skills, record-keeping,	
	establishing by-law and business plan.)	
(Overall Goal)	Indicator: Within three years after the	(Ex-post Evaluation) not achieved (not verified)
Overall Goal: Higher	termination of the Project, 50% of DADP	The control concerns does not have an auch information on (1) the
productivity, profitability,	projects has achieved their project purpose	- The central government does not have enough information on (i) the number of projects planned (cumulative), (ii) the number of projects
and farm incomes are	in terms of productivity, profitability, and	implemented (cumulative) and (iii) the number of projects that achieve
achieved.	farm incomes	the targets, nationally.
Source : Responses to que	stionnaires by the pilot districts and DPP.	<u> </u>

### 3 Efficiency

Although the project cost slightly exceeded the plan (the ratio against the plan: 106%), the project period was as planned (the ratio against the plan: 100%). Outputs were produced as plan. Therefore, the efficiency of the project is fair. 4 Sustainability

<Policy Aspect>

There has been policy support for the sustainability of the project effects. ASDP 2 (June 2018 - 2028) continues to be implemented through fund from the central government and districts' own funds. However, lack of fund for the implementation has been an obstacle. < Institutional/Organizational Aspect>

The organizational structures both at the central level (ASLMs structure) and district level (at the pilot districts) have been unchanged and functioning after the project was completed. DADP Projects & Implementation TWG, which was expected to play a lead role for promoting backstopping activities are still existing and operating, however, they are less active than the project period. This follows that the Ministry of Agriculture does not supervise the LGAs directly following requirement of the Government Policy of Decentration. The decentralization reqires all activities to be implemented at Local Government Level while the Ministry of Agriculture remain with the responsibilities of monitoring implementation and provide technical advice. Instead, the PO-RALG is in the position of supervising and to directing all LGA's to obtain budget to disseminate the model. The budgeted fund for the DADP implementation was not fully disbursed. Low disbursement of fund in the implementing Ministries (Ministry of Agriculture and PO-RALG) and insufficient number of staff from district, ward and village level limited implementation of some activities. Furthermore, some of the project staffs were retired and took time for new staff who replacement them to gain momentum in the implementation.

<Technical Aspect>

Technical staff of the project team are in the ASLMs and LGA's, therefore, they have trained new staff members on the DADP planning and implementation. Also, at the district level, they have disseminated the knowledge to other villages whenever they obtain budget from own source. The Project team have utilized the manuals (Business Plan, Strengthening Farmers Organization, Public and Private Partnership, Project Management, Warehouse management, Market-Oriented Horticulture, and Coffee Quality Improvement) to train farmers groups in several villages.

<Financial Aspect>

ASDP 2 was launched in 2018, however the Government of Tanzania and Development Partners (DPs) was yet agreed on pooled fund instead both finance the interventions of the project basing on their priorities. However, LGA's have utilized own source of fund and sometimes collaborate with private sector like coffee producers who distribute coffee seedlings to the producers, or provide loans to the farmers to implement the activities. Therefore, the funds have not been enough to finance the planned activities. < <Evaluation Result>

In light of the above, some challenges have been observed in terms of the policy, institutional/organizational, and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

### 5 Summary of the Evaluation

The Project Purpose was partially achieved as it achieved the target for the scores for DADPs while the application of good practices was limited. The Overall Goal was not verified, as the implementation of DADPs has been minimum level in nation-wide, while good practices have continued in the pilot districts. As for the sustainability, some challenges have been observed in terms of policy, institutional/organizational, and financial aspects. As for the efficiency, both project cost and project period slightly exceeded the plan. Considering all of the above points, this project is evaluated to be partially satisfactory.

## III. Recommendations & Lessons Learned

### Recommendations for Implementing Agency:

• Government of Tanzania (Ministry of Agriculture, Po-RALG through Sector Coordination Division and Regional Secretariat and districts through LGA) should the following:

- i. To continue allocating fund (budget) and more experienced technical staff in the pilot projects to attract more investment for the effective DADP implementation and monitoring in order to achieve the set objectives and targets
- ii. should continue utilizing the available resources (budget, staff, technical skills and knowledge) to undertake backstopping to DADPs;
- iii. To continue planning for DADP backstopping components and allocate budget when formulating future projects and joint implementation by DPs and private companies could be an option; and
- iv. To contunue guiding the investment in particular area using already observed model from Lushoto project that was coordinated by MIVARF project.

## Lessons Learned for JICA:

In case of projects with pilot project sites and in cases where it is difficult to secure a governmental budget for the sustainability of the project, mobilizing resources outside the government budget is important. The project motivated the pilot districts to mobilize other DPs' fund to enhance the project sustainability, such as the case of mobilizing MIVARF funds to construct roads and warehouses which benefited the project targeted farmers in reducing transport cost as well as increasing the storage capacity of their produces. In case of selecting pilot projects, the existence of other DPs in the same area of the pilots may also increase the probability of the project sustainability. If there are other projects or DPs targeting the same location, their intervention may have a complementary impact on the project target people (farmers), such as the MIVARF case.



Cropping calendar which visualizing the peak demand seasons and cropping timing of the target varieties. (By field visit to Lushoto as a part of kick-off session under a succeeding project in February 2019)



erviewing the farmers group which formulated an organization (AMCOS) for accessing loan for horticulture production. (By field visit to Lushoto as a part of kick-off session under the same project)

Country Name	
Federative Republic of	f Brazil     Sewerage Systems in Parana State
I. Project Outline	
Background	In the Curitiba Metropolitan Area (CMA) along the Atlantic Coast in southern Brazil, rapid urbanization resulted in a shortage of water supply and sewerage services, and it had serious adverse effects on the sanitary environment of the inhabitants in the area. In order to improve water supply and sewerage services in the area, JICA implemented "Parana State Environmental Improvement Project" (1998), an ODA Loan project, targeting Parana State Sanitation Company (SANEPAR). However, SANEPAR did not have a sufficient capacity to operate and maintain (O&M) its water supply and sewerage facilities, and the maintenance works were not carried out properly. As a result, many obsolete water supply and sewerage facilities were left without necessary timely replacement. For the reasons, several problems, such as leakage of water and sewage caused by corrosion, damages and blocking of water supply and sewerage pipes as well as sewage overflow from utility holes and drainages on occasions when the water flows increased.
Objectives of the Project	<ul> <li>Through delivery of trainings on O&amp;M of sewerage pipe network, sewerage treatment plants, and water treatment plants to the SANEPAR staff, preparations of rehabilitation/replacement plans and improvement plans on sewerage pipe network, development of O&amp;M manuals and replacement plans on sewerage treatment plants and water treatment plants, and organizing workshops/seminars to disseminate the manual and the plans prepared by the project, the project aimed at improving the O&amp;M of water supply and sewerage systems by SANEPAR in the target area of the project, thereby contributing to improvement of water supply and sewerage services of SANEPAR in the target area.</li> <li>1. Overall Goal: Water supply and sewerage service of SANEPAR is improved in the target area of the project.</li> <li>2. Project Purpose: Operation and maintenance of water supply and sewerage systems in SANEPAR is improved in the target area of the project.</li> </ul>
Activities of the Project	<ol> <li>Project Site: the Curitiba Metropolitan Area and coastal areas in Parana State</li> <li>Main Activities: 1) Delivery of trainings on O&amp;M of sewerage pipe network, sewerage treatment plants, and water treatment plants to the SANEPA staff, 2) Preparation of rehabilitation/replacement plans and improvement plans on sewerage pipe network, 3) Preparation of O&amp;M manuals and replacement plans on sewerage treatment plants and water treatment plants, 4) Organizing workshops/seminars to disseminate the manual and plans prepared by the project, and so on.</li> <li>Inputs (to carry out above activities) Japanese Side</li> <li>Experts: 7 persons</li> <li>Staff Allocated: 67 persons</li> <li>Trainees Received: 17 persons</li> <li>Local expense: utility cost, cost for installation of diagnosis, ultra-sonic flow meter, diffusion type hydrogen sulfide meter, etc.</li> </ol>
Project Period	September 2012 – September 2015 Project Cost (ex-ante) 340 million yen, (actual) 416 million yen
Implementing	Parana State Sanitation Company (SANEPAR: Companhia de Saneamento do Paraná)
Agency Cooperation Agency in Japan	Nihon Suido Consultants Co., Ltd.

## II. Result of the Evaluation

## 1 Relevance

<Consistency with the Development Policy of Brazil at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Brazil's development policies of the "the Federal Law No. 11,445 on Basic Sanitation" (revised in 2007) stipulating directions of organizational system and infrastructure development in order to equally provide the people of Brazil services in the three areas, including water supply and sanitation, solid waste management, and rainwater drainage management in urban areas, and the "National Plan of Basic Sanitation" (2011) focusing on acceleration/improvement of water supply and sewerage system as well as the services in integrated manner at the time of ex-ante evaluation and at the time of project completion.

<Consistency with the Development Needs of Brazil at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Brazil's development needs of improvement of an O&M capacity on water supply and sewerage facilities under SANEPAR in order to cope with causes of leakages and overflows from water supply and sewerage systems in CMA and coastal areas in Parana State.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy<sup>1</sup> for Brazil, focusing on the five priority areas including environment, based on the top-level agreement between the President of Brazil and the Prime Minister of Japan when the President Lula visited Japan in May, 2005.

<Evaluation Result>

<sup>&</sup>lt;sup>1</sup> Ministry of Foreign Affairs "ODA Databook 2011"

In light of the above, the relevance of the project is high.

### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. Through the project, the O&M capacity of SANEPAR for water supply and sewerage systems was enhanced. As a result, the performance indicator on O&M of sewerage treatment plant (i.e. of the total treated sewerage volume against the total inflow volume) (Indicator 1) had continuously improved since the project started and exceeded the target value in 2015. As for the compliance ratio of the treated water quality standard (Indicator 2), the indicator in CMA worsened in 2014 from the level at the beginning of the project, but ended up exceeding the target value in 2015. In the coastal areas, the ones slightly dropped in 2014 but reached 100% in 2015, which was over the target. Also, the indicator had sustained at 100% at the exits of water treatment plants in of Irai, Praia de Leste, Morretes, Saiguaçu and Guaraqueçaba targeted by the project.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued since the project completion. The performance indicator on O&M of sewerage treatment plant improved through the O&M capacity of SANEPAR for water supply and sewerage system enhanced by the project achieved 100% in 2017 across CMA, and then, has sustained at 100% by the time of ex-post evaluation. In the coastal areas, although not improving in one of the five target areas, the indicator improved in the two target sites to more than 90%, and remained about 80% in the remaining one site. For the sewerage treatment plants without improvement of the indicator, improvement plans have been planned to implement. Also, in terms of the compliance ratio of water quality standard, three out of the six target sewerage treatment plants in CMA achieved 100%, the two target plants reached almost 95%, and the remaining one plant improved up to 82%. In the coastal areas, out of the five target plants, the two plants attained approximately 90%, the one plant reached 92%, another plant had around 70%, and the remaining one plants reached around 60%. Furthermore, at the exit of water treatment plants in Irai, Praia de Leste, Morretes, Saiguaçu, and Guaraqueçaba targeted by the project, the performance indicator on O&M of water treatment plant have sustained at 100%.

Furthermore, as a result that SANEPAR has been able to properly operate and maintain the sewerage pipe networks, the number of complaints on the network in pilot areas has decreased year by year. Also, it was confirmed that the dissolved oxygen level of river waters (at the 500 m upper points from the most downstream) in the target areas have been improved.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved at the time of ex-post evaluation. As of 2018, the coverage of sewerage system became 80.65% in CMA and 72.12% in the coastal areas, achieving the target value (Indicator 1). Also, the rehabilitation/replacement plans prepared by the project (sewerage pipe network, sewerage treatment plants and pumping stations, water treatment plants) are being implemented (Indicator 2).

<Other Impacts at the time of Ex-post Evaluation>

No other positive or negative impact was observed at the time of ex-post evaluation.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Aim	Indicators			Results		
(Project Purpose)	(Indicator 1)	Status of the Achie	Status of the Achievement: achieved (continued)			
Operation and	Performance indicators on O&M of	(Project Completion)				
maintenance of water	sewerage treatment plant (i.e. volume of	<ul> <li>Performance in</li> </ul>	dicator on O&	M of sewer	age treatment	t plant: it became
supply and sewerage	treated sewage divided by total inflow	99.79% in 2015	, exceeding the	target value.		
systems in SANEPAR is	volume) is improved to 99.18% in CMA. In	[Performance indi	cator on O&M	of sewerage 1	reatment plar	nt (Unit: %)]
improved in the target	addition, % of water quality conformity to	2012	2013		2014	2015
area of the project.	the treated water quality standard is	98.61	9	8.23	98.73	99.79
	improved to 37.3% in CMA and 97.6% in		-			
	the Coastal Area respectively.	• The compliance	e ratio of the	treated wate	r quality star	ndard: in 2015, it
		_				reas, respectively,
		achieving the ta		a 100/0 III .		,,,
		[The compliance r	C	ted water qua	litv standard (	(Unit: %)]
		Area / Year	2012	2013	2014	2015
		СМА	41.65	32.19		
		Coastal areas	99.39	98.15		
		e oustar areas	· · · · · · · · · · · · · · · · · · ·	20.12	90.0	100.00
		(Ex-post Evaluation	(nc			
		<ul> <li>Performance ind</li> </ul>		A of sewerage	treatment nl	ant
		[Performance indi		•	•	
		-		Ĭ	•	2019
		Name of Plants	/Year	2015	2018	(as of May)
		СМА		99.52	100	100
		Morretes		59.33	58.87	58.48
		Guaranqueçaba		91.52	90.22	90.10
		Pontal do Paraná Matinhos	1	26.07	56.27	72.56
		Guaratuba		51.57 76.38	78.92 81.99	90.32 81.96
		Guaratuoa		70.50	01.99	01.90
		• The compliance	ratio of the tre	ated water ou	ality standard	l.
		[The compliance r			•	
			and of the flea	ica waici qua	ity standard (	(Jint. 70)]

Achievement of Project Purpose and Overall Goal

		Name of Plants / Year	2015	2018	(a	2019 s of May)	
		СМА					
		São Jorge	92	8	89.3	96.7	
		Santa Quiteria	43.1		69.1	100	
		CIC Xisto	29.8	4	40.4	100	
		Fazenda Rio Grande	88.9	(	94.6	100	
		Atuba Sul	26.2		41.9	82	
		Padilha Sul	47.5	(	69.4	93.3	
		Coastal areas					
		Morretes	59.33	-	8.87	58.48	
		Guaranqueçaba	91.52		0.22	90.10	
		Pontal do Parana	26.07		6.27	72.56	
		Matinhos	51.57		8.92	90.32	
		Guaratuba	76.38	8	1.99	81.96	
	(Indicator 2)	Status of the Achievement	achieved (conti	nued)			
	Performance indicator on O&M of water	(Project Completion)					
	treatment plant (i.e. % of conformity to the	• % of conformity to the	drinking water	r quality star	ndard of	treated wa	
	drinking water quality standard of treated remained at 100% at the exit of water treatment plants (Irai, Praia de Leste						
	C 1 1			eatment plan	lis (11 <i>a</i> 1, 11	lala ue Les	
	water (ISP-Produção: Indice de	Morretes, Saiguaçu, Gu		cathlent plan	its (IIai, II	laia de Les	
	water (ISP-Produção: Indice de Conformidade ao Padrão de potabilidade na	Morretes, Saiguaçu, Gu (Ex-post Evaluation)	araqueçaba).	1	× /		
	water (ISP-Produção: Indice de	Morretes, Saiguaçu, Gu (Ex-post Evaluation) • to the compliance ratio	araqueçaba). of the drinking	g water qual	ity standa	rd of treat	
	water (ISP-Produção: Indice de Conformidade ao Padrão de potabilidade na	Morretes, Saiguaçu, Gu (Ex-post Evaluation) • to the compliance ratio water remained at 100%	araqueçaba). of the drinking at the exit of w	g water qual vater treatme	ity standa	rd of treat	
	water (ISP-Produção: Indice de Conformidade ao Padrão de potabilidade na Produção)) is improved to 100%.	<ul> <li>Morretes, Saiguaçu, Gu</li> <li>(Ex-post Evaluation)</li> <li>to the compliance ratio water remained at 100% Leste, Morretes, Saigua</li> </ul>	araqueçaba). of the drinkinş o at the exit of w ı, Guaraqueçaba	g water qual vater treatme	ity standa	rd of treat	
(Overall Goal)	water (ISP-Produção: Indice de Conformidade ao Padrão de potabilidade na Produção)) is improved to 100%. (Indicator 1)	Morretes, Saiguaçu, Gu (Ex-post Evaluation) • to the compliance ratio water remained at 100% Leste, Morretes, Saigua (Ex-post Evaluation) achie	araqueçaba). of the drinking at the exit of w 1, Guaraqueçaba wed	g water qual vater treatme	ity standa nt plants (	rd of treat Irai, Praia	
Water supply and	water (ISP-Produção: Indice de Conformidade ao Padrão de potabilidade na Produção)) is improved to 100%. (Indicator 1) The coverage of sewerage system becomes	Morretes, Saiguaçu, Gu (Ex-post Evaluation) • to the compliance ratio water remained at 100% Leste, Morretes, Saigua (Ex-post Evaluation) achie • The target value was ach	araqueçaba). of the drinking at the exit of w 1, Guaraqueçaba wed nieved in CMA a	g water qual vater treatment).	ity standa nt plants ( al areas by	rd of treat Irai, Praia	
	water (ISP-Produção: Indice de Conformidade ao Padrão de potabilidade na Produção)) is improved to 100%. (Indicator 1)	Morretes, Saiguaçu, Gu (Ex-post Evaluation) • to the compliance ratio water remained at 100% Leste, Morretes, Saigua (Ex-post Evaluation) achie • The target value was ach	araqueçaba). of the drinking at the exit of w 1, Guaraqueçaba wed nieved in CMA a	g water qual vater treatment).	ity standa nt plants ( al areas by	rd of treat Irai, Praia	
Water supply and sewerage service of	water (ISP-Produção: Indice de Conformidade ao Padrão de potabilidade na Produção)) is improved to 100%. (Indicator 1) The coverage of sewerage system becomes	Morretes, Saiguaçu, Gu (Ex-post Evaluation) • to the compliance ratio water remained at 100% Leste, Morretes, Saigua (Ex-post Evaluation) achie • The target value was ach	araqueçaba). of the drinking at the exit of w 1, Guaraqueçaba wed nieved in CMA a	g water qual vater treatment).	ity standa nt plants ( al areas by	rd of treat Irai, Praia	
Water supply and sewerage service of	<ul> <li>water (ISP-Produção: Indice de Conformidade ao Padrão de potabilidade na Produção)) is improved to 100%.</li> <li>(Indicator 1)</li> <li>The coverage of sewerage system becomes 79% in CMA and 60% in coastal area by</li> </ul>	Morretes, Saiguaçu, Gu (Ex-post Evaluation) • to the compliance ratio water remained at 100% Leste, Morretes, Saigua (Ex-post Evaluation) achie • The target value was act [Coverage of sewerage system]	araqueçaba). of the drinking at the exit of w u, <u>Guaraqueçaba</u> ved nieved in CMA a tem in the target 2016	g water qual vater treatme a). and the coastant t area of the p	ity standa nt plants ( al areas by project (U	rd of treat Irai, Praia 2018. nit: %)]	
Water supply and sewerage service of SANEPAR is improved in	<ul> <li>water (ISP-Produção: Indice de Conformidade ao Padrão de potabilidade na Produção)) is improved to 100%.</li> <li>(Indicator 1)</li> <li>The coverage of sewerage system becomes 79% in CMA and 60% in coastal area by the end of 2018 (baseline: 72% in CMA,</li> </ul>	Morretes, Saiguaçu, Gu (Ex-post Evaluation) • to the compliance ratio water remained at 100% Leste, Morretes, Saigua (Ex-post Evaluation) achie • The target value was act [Coverage of sewerage system] Area / Year 2015	araqueçaba). of the drinking the exit of w 1, Guaraqueçaba eved nieved in CMA a tem in the target 2016 25 78.85	g water qual vater treatme $\frac{1}{2}$ and the coastant t area of the p 2017	ity standa nt plants ( al areas by project (U 2018	rd of treat Irai, Praia v 2018. nit: %)] 2019 81.80	
Water supply and sewerage service of SANEPAR is improved in the target area of the	<ul> <li>water (ISP-Produção: Indice de Conformidade ao Padrão de potabilidade na Produção)) is improved to 100%.</li> <li>(Indicator 1)</li> <li>The coverage of sewerage system becomes 79% in CMA and 60% in coastal area by the end of 2018 (baseline: 72% in CMA, 49.4% in coastal area, 2011).</li> </ul>	Morretes, Saiguaçu, Gu (Ex-post Evaluation) • to the compliance ratio water remained at 100% Leste, Morretes, Saigua (Ex-post Evaluation) achie • The target value was acl [Coverage of sewerage system of sewerage system] Area / Year 2015 CMA 77.	araqueçaba). of the drinking o at the exit of w 1, Guaraqueçaba eved nieved in CMA a tem in the target 2016 25 78.85 73 52.73	g water qual vater treatme $x_{1}$ ). and the coasta t area of the p 2017 79.77	ity standa nt plants ( al areas by project (U: 2018 80.65	rd of treat Irai, Praia v 2018. nit: %)] 2019 81.80	
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3 Efficiency

Although the project period was within the plan (ratio against the plan: 100%), the project cost exceeded the plan (ratio against the plan: 122%). The outputs were produced as planned. Therefore, the efficiency of the project is fair.

### 4 Sustainability <Policy Aspect>

The "National Plan of Public Sanitation" (2014-2033) promotes the dissemination of water supply and sewerage service across the country. Under the plan, SANEPAR has aimed at the coverage of sewerage system of 100% and actively promoted their mid-term plan (2018-2023) in cooperation with the Ministry of Environment in Paraná State. Therefore, the project has been backed up by the policy and efforts.

## <Institutional Aspect>

[O&M of water supply and sewerage systems]

There have not been any major changes in the organizational setting for O&M of water supply and sewerage systems targeted by the project. The Operation Department of SANEPAR has been responsible for O&M of water supply and sewerage systems. According to SANEPAR, 1,041 staff members have been assigned to the department (sewerage pipes network: 627, sewerage system: 149, water supply system: 265), and on occasions for a lack of staff, some tasks have been entrusted to external companies; as a result, the department has performed their responsibilities without any major problems, and it is considered that the implementation system does not have any problems.

## [Database of sewerage pipes]

The database of sewerage pipes developed by the project is utilized by SANEPAR every day. In this background, SANEPAR has stipulated the database to standardize remote diagnosis of the sewerage pipe network carried out by SANEPAR.

[measurement system for monitoring sewage quantity]

The measurement system for monitoring sewage volume established by the project has continuously been utilized for sewage management in the rivers in CMA.

<Technical Aspect>

[O&M of water supply and sewerage systems]

The staff of the Operation Department of SANEPAR has sustained the necessary knowledge and skills for the O&M of water supply and sewerage system targeted by the project. That has been because SANEPAR has an internal training system by using manuals prepared by the project.

The manuals prepared by the project (sewerage treatment plant, water treatment plant) have continuously been utilized by operators in each plant. In the background, these manuals were incorporated into the operational regulations of SANEPAR and have been utilized for

<sup>2</sup> 3S, Seiri (sort), Seiton (Set) and Seisou (Shine), is a methodology developed in Japanese manufacturing industries to improve work environment and quality control.

the trainings as training materials. Also, the manuals have been converted into electronic formats and have been regularly updated. <Financial Aspect>
Budget of SANEPAR

The budget for O&M of water supply and sewerage systems has been allocated to SANEPAR since the project completion. Also, according to SANEPAR, the budget has been sufficient as they have performed their responsibilities without any major problems. SANEPAR has adopted a multiple

year budgeting and secured and reviewed its budget every five years. The budgets for the period from 2019 to 2023 has already been reviewed, and the allocation of the sufficient budget has been decided. Also, the budget for rehabilitation/replacement plans on water supply and sewerage systems prepared by the project has also included into the just above-mentioned budget and thus it is considered that SANEPAR will be able to secure sufficient budgets in the future.

<Evaluation Result>

Therefore, the sustainability of the effects through the project is high.

5 Summary of the Evaluation

The project achieved the Project Purpose aiming at the improvement of O&M of water supply and sewerage systems in SANEPAR in the target area of the project and the Overall Goal aiming at the improvement of water supply and sewerage service of SANEPAR in the target area of the project. As for the efficiency, the project cost exceeded the plan.

Considering all of the above points, this project is evaluated to be highly satisfactory.

## III. Recommendations & Lessons Learned

Lessons Learned for JICA:

- By not only undertaking technical transfer against problems in each area but also providing visiting lectures (seminars and workshops), which were implemented as activities of the project, to staff members in CMA as well as the coastal areas, the institution for existing internal trainings in SANEPAR was strengthened, and furthermore, the importance of recording of each process, preventive maintenance, and improvement have been increasingly recognized. Thus, even at the time of ex-post evaluation, the staff has paid attention to how to improve the efficiency of daily tasks as well as 3S (Seiri, Seiton, and Seiso)<sup>2</sup>. Therefore, it is important to enhance the internal training system during the project period for sustainable capacity improvement.
- Even after the project completion, each of the activities has been sustained or improved, and as an organization, SANEPAR have made short-, mid-, and long-term plans considering maintenance and put efforts on securing the necessary budget. This was due to the involvement in the project by the upper part of the organization whose interest was of the high-level management from the onset of the project. This commitment is considered to be an important factor. Thus, it is essential to make the high-level management involve in the project from the planning stage in order to ensure sustainability.

Sewerage Treatment Plant in Atuba Sul

Diagnosis of Sewerage Pipe Network



		5	(Unit: M	fillion Real)
2015	2016	2017	2018	2019
48	39	62	101	48

Country Name	The Project for Capacity Development of Solid Waste Management of Nairobi City
Republic of Kenya	The Project for Capacity Development of Sond waste Management of Nanobi City
I. Project Outline	
Background	Nairobi's population was expected to increase from 3.04 million in 2009 to 5.94 million in 2030, with a corresponding increase in waste generation per day from 1,848 tons (2009) to 3,990 tons (2030). About half of the waste was collected and transported to the Dandora final solid waste disposal site; however, the rest was illegally dumped at various places in the city, adversely affecting the surrounding sanitary environment and landscape due to soil pollution and odors. In Nairobi, the solid waste had been collected by the following three types of service system including; 1) service by the Nairobi City County (NCC) directly, 2) service by private companies commissioned by NCC, and 3) service under contracts between licensed private companies and consumers without intervention by NCC. However, this system was not properly managed by NCC, and collection and transportation of solid waste were particularly difficult in low-income areas. Also, fees for waste collection were not necessarily collected in an appropriate manner.
Objectives of the Project	<ul> <li>Though (i) conducting improvement activities of waste collection and transportation, (ii) conducting a pilot project for introducing franchise system and awareness raising, (iii) implementing a pilot project for involvement of Community Based Organization (CBO) in informal settlements, (iv) implementing a plan for operationalizing Solid Waste Management (SWM) special account of Department of Environment (DoE), and (v) redesigning a roadmap of NCC, the project aimed at strengthening capacity of NCC on solid waste management, thereby contributing to expansion of waste collection and transportation services in Nairobi City are expanded by NCC.</li> <li>Overall Goal: Waste collection and transportation services in Nairobi City are expanded by NCC.</li> </ul>
Activities of the project	<ol> <li>Project site: Nairobi city county</li> <li>Main activities: (i) conducting improvement activities of waste collection and transportation, (ii) conducting a pilot project for introducing franchise system and awareness raising, (iii) implementing a pilot project of CBO's involvement, (iv) implementing a plan for operationalizing SWM special account of DoE, and (v) redesigning a roadmap of NCC</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Experts: 9persons</li> <li>Training in Japan: 13 persons</li> <li>Equipment: Two vehicles, ten motorcycles, etc.</li> <li>Operation cost: A part of necessary expenses for local activities including office renovation for the Preparatory Unit for Solid Waste Management Corporation</li> </ol>
Project Period	February 2012-March 2016Project Cost(ex-ante) 330 million yen, (actual) 447 million yen
Implementing Agency	Department of Environment (DoE), Nairobi City County (NCC)
Cooperation Agency in Japan	CTI ENGINEERING INTERNATIONAL CO., LTD. EX RESEARCH INSTITUTE LTD. KITAKYUSHU INTERNATIONAL TECHNO-COOPERATIVE ASSOCIATION

## **II. Result of the Evaluation**

< Special Perspectives Considered in the Ex-Post Evaluation >

Continuation of the Project Purpose is analyzed as a factor for achieving the Overall Goal.

## 1 Relevance

<Consistency with the Development Policy of Kenya at the Time of Ex-Ante Evaluation >

The project was consistent with the development policy of Kenya. The "Vision 2030" prioritized environmental protection for the sustainable economic growth. Improvement in pollution control and waste management were included.

<Consistency with the Development Needs of Kenya at the Time of Ex-Ante Evaluation >

The project was consistent with the development needs of Kenya for solid waste management. At the time of ex-ante evaluation, NCC was not able to properly manage the collection of solid waste, and fees for waste collection were not necessarily collected appropriately, as mentioned above.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA Policy to Kenya. Environmental protection was one of the priority areas of ODA to Kenya, which included enhancement of environmental management capacity in accordance with the deteriorating urban environment<sup>1</sup>.

<Evaluation Result>

In light of the above, the relevance of the project is high.

### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved at the time of project completion. Although it can be said that counterparts' (C/Ps) partially acquired the ability to expand pilot project activity to other area (indicator 1), NCC became able to grasp the data about the amount of collected waste (indicator 2). As for indicator 1, C/Ps gained the knowledge and skills, and expanding the activities with CBO also showed progress. However, implementation of the franchise system was limited, because Private Sector Providers (PSP) in the pilot zone 7 filed a lawsuit, as the franchise system tried to allow certain collectors to provide services exclusively and Nairobi City County ordered PSP to leave from the zone.

<Status of Continuation of the Project Effects>

The effects of the project have partially continued. As mentioned above, the status of continuation of the project effects at the time of ex-post evaluation was verified as the part of the verifiable indicators of the Overall Goal and the factors affecting the achievement levels of the verifiable indicators of the Overall Goal. Many of the activities proposed under this project have continued and implemented after the completion of the project to expand waste management in Nairobi City as NCC's capacity was increased. These are considered to have contributed to the partial achievement of the Overall Goal.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal was partially achieved. After project completion, NCC embarked on determination of appropriate collection spots and identified 127 waste collection spots in 2018 (indicator 1) although they reduced to 108 in 2019 due to reduction of illegal dumpsites. At the same time, while the ruling of the litigation against NCC by PSPs resulted in termination of the franchise system (indicator 2), NCC and PSPs mutually co-existed peacefully and agreed on allocation of waste collection zones amongst the latter. NCC also continued to support CBOs whose collection points increased after closure of illegal dumpsites and effective administration to 76 in 2019 (indicator 3), and NCC also introduced effective mechanism to co-work with CBOs. NCC also closely and regularly collaborate with other stakeholders in all 85 wards of the 17 sub-counties (indicator 4).

After the project was completed, a lot of activities in the revised roadmap, proposed by the project, have been implemented by NCC towards expanding waste management in Nairobi City County including increasing the rate of waste collection of 60% to 71%, devolution of activities to the sub-county level and improvement of road infrastructure in informal settlements and access to the designated dumpsite at Dandora. Approval of establishment of the Nairobi City County Waste Management Authority by the County Assembly is also a major positive step towards strengthening solid waste management.

<Other Impacts at the time of Ex-post Evaluation>

According to NCC, no negative impact on the natural environment by this project has been observed, and no land acquisition and resettlement occurred.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high

Aim	Indicators	Results			
(Project Purpose)	Indicator 1: C/Ps get the ability to expand	Status of the Achievement: achieved			
Capacity of NCC on solid	pilot project activity to other area.	(Project Completion)			
waste management is	proceptojeet activity to other areas	The indicator was partly fulfilled as at the time of the terminal evaluation			
strengthened.		- The C/Ps gained plenty of knowledge			
6		The tendering procedures were one of		-	
		acquired knowledge.		••	
		- On the other hand, the experiences on			
		the course of implementation of the fra	anchise system v	vere still limited	
		due to its slow progress.		l' CDO	
		- Meanwhile, the ability to expand pilot	project activitie	s regarding CBO	
		has been showing steady progress.			
	Indicator 2: NCC can grasp the data about	Status of the Achievement: achieved			
	the amount of collected waste in Pilot	(Project Completion)			
		The indicator was fulfilled at the time of the terminal evaluation.			
		Since NCC required the franchise contractor		•	
		of collected amount but also the number of			
		collected service charges by district basis, I		• •	
		detailed picture on the franchise zone. In ac			
		checking the both data on transported waste			
		franchise contractor and the one recorded a	t the Dandora du	imp site.	
(Overall Goal)	Indicator 1: Increase in waste collection	(Ex-post Evaluation) achieved	2010	2010	
Waste collection and	coverage area		2018	2019	
transportation services in		Number of waste collection spots	127	108	
Nairobi City are expanded by NCC. Note: Joint terminal evaluation report interprets "increase in waste collection coverage area" as the "increase in the intensity of waste collection spots" (because the coverage area itself has not been changed and would not change).		Between 2012 and 2016 the number of kno at 91. In 2017 NCC embarked on determina spots while closing down illegal dumpsites. 2019 the number of waste collection covera increased as a result of: 1) Increased fleet capacity of hired contract 2) Increased fleet capacity and number of P 3) Increased number and capacity of CBOs	ation of appropri Therefore betw age/ area/ collect	ate collection een 2017 and	

Achievement of Project Purpose and Overall Goal

Indicator	2: Expansion of franchised	(Ex-post Evaluation) not	achieved				
collection	_		2012	2016	2017	2018	2019
		Number of franchised	1	2	0	0	0
		collection zones					
		The litigation came to an					
		the NCC has been working		out franc	hise syste	m in zone	9.
Indicator :	3: Expansion of CBOs collection	(Ex-post Evaluation) Ach	ieved		-		
zones				201		2018	2019
		Number of CBOs colle	ction zones	Data		96	76
				avail			
		Number of CBOs		18	-	201	205
		- The CBO collection					
		engaging the County collection zones hav				ing. A nun	iber of
		(Note: The figure in 2018				hich were	cleared
		and closed.)		mpproprie			
		- The NCC has continued to support CBOs by:					
		1) Provision of waste coll					
		<ol> <li>2) Inclusion in local wast</li> <li>3) Linkages with other sta</li> </ol>				and matan	al anna art
Indicator	4: Increase in public participation	(Ex-post Evaluation) achi		who other	technical	and mater	lai support
indicator -	4. increase in public participation		levea	2016	2017	2018	2019
		Number of locations	for monthl		201	1,020	1.020
		cleanup activities	ior monting	y 510	201	1,020	1,020
		- Clean ups are condu	cted with st	akeholder	s. The ac	ivities incl	ude waste
		collection, litter picking, grass slashing, hedge trimming, drainage clearing and awareness creation.					
							_
		- They were conducte					
		2012-2016: In selected ar dates	eas across t	the city wi	th stakeh	olders on s	elected
		2017: Monthly in each of	the 17 sub	-counties	with stake	holders	
		2018-2019: Monthly in each of					
Source : Questionnaire and interview	vs with NCC						

### 3 Efficiency

Although the project cost exceeded the plan (ratio against the plan: 135%), the project period was as planned (the ratio against the plan: 100%). The outputs were produced as planned. Therefore, the efficiency of the project is fair. 4 Sustainability

<Policy Aspect>

Policy and legislation have been progressively formulated as foundations for sustainability of solid waste management activities. The Nairobi City County Solid Waste Management Act, 2015 came into effect during the project period and provides the legal framework for implementation of the system and activities established by the project. This will be anchored in the National Sustainable Waste Management Policy Draft and bolstered by the National Sustainable Waste Management Bill once they are approved and passed. <Institutional/Organizational Aspect>

Although there were no changes in terms of organization structure to promote project activities, NCC has made some efforts towards strengthening its organization structure by creating positions of Assistant Directors at the county level and at the sub-county level and recruiting respective staff to fill the positions. An information office to promote and disseminate the system, model and activities introduced by the project has also been established. However, there are budgetary constraints to support recruitment of adequate staff. <Technical Aspect>

The project effects have continued to be driven by project counterparts by utilizing the knowledge that they gained during the project. However, in order to maintain capacity and ensure retention of institutional memory that might be lost in the event of staff retirement and change of jobs, NCC need to strengthen and institutionalize on-the-job training of inexperienced/new staff. <Financial Aspect>

NCC has continued to fully fund solid waste management activities. Considering its inadequate budget against the increasing need to expand solid waste management activities in view of a growing population and matching upsurge in waste generation, it is incumbent upon NCC to seek partnerships with other stakeholders including the private sector in order to ensure continuation of the project's effects. <Evaluation Result>

In light of the above, some problems have been observed in terms of the institutional, technical and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

The project achieved the Project Purpose at the project completion, as the C/Ps partially acquired the ability to expand the pilot project activity to other area, and NCC became able to grasp the data about the amount of collected waste. The Overall Goal was partially achieved, as NCC increased the waste collection spots, started working on franchising system and continued to support CBOs. As for sustainability, some problems have been observed in terms of the institutional, technical and financial aspects of the implementing agency; however, there is no problem on the policy aspect. As for efficiency, both project cost and project period exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

DoE is recommended to establish a stable and concrete legal process for optimizing collection and transportation services, based on lessons learned in the operation of franchise system.

## Lessons Learned for JICA:

It was found that NCC has made some efforts towards strengthening its capacity for solid waste management through recruitment and training of staff including instructor training. Meanwhile, to ensure retention of institutional memory that might be lost in the event of staff retirement and change of jobs, more emphasis should have been placed on liaising with NCC's human resources department to institutionalize orientation of solid waste management to new staff, on-the-job training and subsequent refresher courses during the project planning stage. Further, the systematic usage and updates of educational materials and guidelines related to these training courses are needed for continuous human resource development.



Country Name	
Socialist Republic of Viet	Project on Improvement of Urban Transportation of Danang City
Nam	

## I. Project Outline

1. 1 roject Outilite	
Background	JICA implemented the Study of Integrated Development Strategy for Danang City and Its Neighboring Area in the Socialist Republic of Viet Nam (DaCRISS) from 2008 to 2010, in order to formulate regional development strategies for the Central Economic Zone and the Master Plan for Danang City up to 2025, including plans for urban transportation and environment. It was pointed out in DaCRISS that one of the development scenarios assumed that the population of Danang City would reach 2.1 million by 2025. Therefore, it was required for Danang City to take measures such as shifting transportation demand from private mode to public mode by introducing mass rapid transit systems and traffic management measures. At the same time, it was also required to strengthen project planning and implementing capacity of the Danang City People's Committee (DPC) in order to carry out the urban transportation plan up to 2020.
Objectives of the Project	<ul> <li>Through conducting pilot projects and trainings for improvement of urban transport system, the project aimed at strengthening planning, implementation, evaluation and management capacities of Danang Department of Transport (DOT) in urban transport system, thereby promoting sustainable development of Danang City through improvement of urban transport system.</li> <li>Overall Goal: Promotion of sustainable development of Danang City by improving urban transport system.</li> <li>Project Purpose: Danang Department of Transport's planning, implementation, evaluation and management capacities in urban transport system are strengthened in line with urban development orientation.</li> </ul>
Activities of the Project	<ol> <li>Project Site: Danang City</li> <li>Main Activities: (1) Implement pilot projects, provide recommendations for future projects and cooperate with DPC and relevant organizations to formulate the draft budget plan for future projects; and (2) Conduct training courses in theory and practice and formulate training manuals/guidelines etc.</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Vietnamese Side</li> <li>Experts: 6 persons</li> <li>Staff Allocated: 24 persons</li> <li>Trainees Received: 28 persons</li> <li>Equipment: CAD Software, VISSIM Software, 3. Local operation cost</li> <li>GIS Software, multifunction printer and projector etc.</li> <li>Local operation cost</li> </ol>
Project Period	April 2013 – December 2015Project Cost(ex-ante) 194 million yen, (actual) 216 million yen
Implementing Agency	Danang Department of Transport (DOT)
Cooperation Agency in Japan	ALMEC Corporation

## II. Result of the Evaluation

<Constraints on Evaluation>

• Indicators of Project Purpose and Overall Goal are not concretely defined to verify the degree of achievement, and numerical targets are not set at all for Project Purpose and Overall Goal. Thus, in the ex-post evaluation, the continuation status of project effects (Project Purpose indicator) and the achievement level of Overall Goal needed to be evaluated qualitatively.

<Special Perspectives Considered in the Ex-Post Evaluation>

- [Evaluation of the Continuation Status of Project Effects] The Project Purpose indicator (DOT's task is properly implemented in line with urban transport master plan.) is vague and not specific enough, as the coverage of "urban transport" is very wide. In the Terminal Evaluation, the indicator was interpreted as to what extent DOT staff was able to plan, implement, evaluate and manage their tasks based on the data and real situation of the traffic sites properly, as seen in improvement of intersections and motorbike parking system on sidewalk. In line with this interpretation, in the ex-post evaluation, the continuation of project effects (Project Purpose indicator) was evaluated based on (1) whether DOT has continued/expanded improvements in urban transport system such as improvement of intersections and motorbike parking system on sidewalk etc. in Danang City since project completion; and (2) whether DOT has operated, maintained and/or expanded the coverage of the management software for traffic signalized system, Transport Facility Management System and DaCRISS GIS Database since project completion.
- [Evaluation of the Achievement Level of Overall Goal] The logical steps for achieving the Overall Goal would be: (Project Purpose) DOT's capacity for planning, implementing, evaluating and managing improvement of urban transport system is strengthened. > (Overall Goal) Urban transport system in Danang City is improved. > (Overall Goal Indicator) Public satisfaction in urban transport system is increased. On the other hand, the coverage of "urban transport" is very wide. Thus, in the ex-post evaluation, the achievement level of Overall Goal was evaluated based on (1) whether and to what extent urban transport system in Danang City has been improved since project completion, centering on to what extent the proposed future projects (six future projects proposed by the project) have been implemented (to a possible extent to be implemented by three years after project completion); and (2) whether and to what extent public satisfaction on urban transport system in Danang City has been increased after project completion (through interviews with 33 road users on Le Duan Corridor and Nguyen Van Linh Corridor).

1 Relevance

<Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Viet Nam's development policy such as "development of the public transport system in Danang City" and "alleviation of traffic congestions and accidents in the city" as set forth in the "Masterplan of Danang City to Year 2030, Vision to Year 2050" (prepared in 2012 and approved by the Prime Minister in 2013) and the "Danang Transport Masterplan Up to 2020 and Vision to 2030" (approved by DPC in 2014<sup>1</sup>) at the times of both ex-ante evaluation and project completion.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Viet Nam's development needs for improving the urban transport system in Danang City as the strategically important point in Viet Nam as well as in the Greater Mekong Sub-region, at the times of both ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy as stated in the "Country Assistance Program for Viet Nam" (2009), which included "development of public transportation" under "promotion of economic growth and strengthening of international competitiveness". <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. The project conducted two pilot projects, in which it improved five congested intersections on Le Duan Corridor and motorbike parking management on Nguyen Van Linh Sidewalk in Danang City<sup>2</sup>. During the process, project counterparts (C/Ps) and other staff belonging to Danang DOT and relevant organizations cooperated to formulate the implementation plan and managed the implementation by monitoring and improving the operation method. Moreover, Danang DOT improved two other intersections in the city such as the change of geometric design by its own initiative. The motorbike parking system on a sidewalk introduced under the project was also expanded from the target area to other commercial areas in Hai Chau District. In addition, C/Ps acquired practical skills of operating the management software as well as conducting field surveys for the traffic signalized system and transportation facility management in order to collect necessary data and information to implement their tasks properly.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued to the time of ex-post evaluation. At intersections on Le Duan Corridor where a pilot project was conducted under the project, Danang DOT has continued improvements and maintenance such as further geometric design improvements, traffic lane assignment and infrastructure improvements (on road surface/pavement) since project completion. Vehicle detectors installed under the project have also been operated. Motorbike parking management on a sidewalk, which was another pilot project conducted under the project, has also been maintained. In addition, a tunnel (40 meters long and 7.5 meters wide) has been constructed under Le Duan Corridor in response to the increasing traffic demand. The Transport Facility Management System developed under the project has been integrated into Danang city's GIS database, as Danang DOT has started developing its own GIS database on technical infrastructure including transport and information system with support from the private sector such as IBM.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved by the time of ex-post evaluation. Among six future projects proposed by the project, the following four projects have been implemented since project completion: (1) Improvement of Traffic Situations on Le Duan Corridor, (2) Installation of the Traffic Information System in Danang City, (3) Improvement of Traffic Situation in Danang City, and (4) Application of GIS for Transport Facility Management. Regarding (1), as stated above, further geometric design improvements, traffic lane assignment and so on have been implemented. Regarding (2), traffic information boards together with fiber transmission cables were installed at 12 locations in the city. Regarding (3), while geometric design improvements in 60 intersections in the city in total as well as traffic lane assignment and traffic signal operation using traffic detectors were proposed by the project, improvements such as geometric design improvements, traffic lane assignment and road surface/pavement improvements have been conducted in approximately 30 intersections so far. Regarding (4), as stated above, Danang DOT has started developing its own GIS database on technical infrastructure including transport and information system. As for public satisfaction on the urban transport system, interviews with 13 persons on Le Duan Corridor and 20 persons on Nguyen Van Linh Corridor (including car drivers, motorbike drivers, pedestrians and traffic policemen) were conducted. Among them, 79% answered that traffic safety including pedestrians' safety and convenience in intersections in the city has been improved significantly or moderately since project completion. 88% answered that traffic smoothness (reduced traffic congestions and traffic conflicts) in intersections in the city has been improved significantly or moderately since project completion.

<Other Impacts at the time of Ex-post Evaluation>

No negative impact on natural environment has been observed and no land acquisition or resettlement has been occurred under the project.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of	of Project	Purpose and	Overall Goa	1

Aim	Indicators	Results
(Project Purpose)	DOT's task is properly	Status of the Achievement: achieved (continued)
Danang Department of	implemented in line with urban	(Project Completion) Danang DOT implemented two pilot projects properly and
Transport's planning,	transport master plan.	acquired necessary skills to operate the management software and conduct field
implementation, evaluation and		surveys for the traffic signalized system and transportation facility management.
management capacities in urban		(Ex-post Evaluation) Danang DOT has continued maintenance and further

There was no notable change in the masterplan at the time of project completion (2015).

<sup>&</sup>lt;sup>2</sup> Two pilot projects implemented under the project were: (1) Le Duan Traffic Corridor Management (congested intersections improvement: (a) improvement of geometric design and traffic markings at five intersections and (b) improvement of the traffic signal control system including introduction of vehicle detectors) and (2) Nguyen Van Linh Sidewalk Parking Management (parking management system to prepare for introduction of mass rapid transit system in future).

transport system are strengthened in line with urban development orientation.		improvements in pilot project sites. The Transport Facility Management System developed under the project has been integrated into Danang city's GIS database.
	Public satisfaction in urban transport system is increased.	(Ex-post Evaluation) achieved Among six future projects proposed by the project, four projects have been implemented, and approximately 80% of interviewed beneficiaries answered that traffic safety and traffic smoothness in intersections in the city have been improved significantly or moderately since project completion.

#### 3 Efficiency

The project cost exceeded the plan, while the project period was within the plan (ratio against plan: 111%, 92%, respectively). The outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

# 4 Sustainability

<Policy Aspect>

The needs for improvement of urban transport system in Danang City are stated in the "Danang Transport Masterplan Up to 2020 and Vision to 2030", the "General Planning Master Plan for Danang City till 2025" and the "Danang Socio-Economic Development Strategy, Vision 2030".

### <Institutional Aspect>

Danang DOT has expanded its structure by supplementing a number of divisions in accordance with the increasing traffic demands in the city since project completion. Within Danang DOT, Danang Traffic Signal Control and Public Transport Management Center (DATRAMAC) is the main section in charge of urban transport management including six future projects proposed by the project stated above, and the Center has approximately 100 full-time staff and approximately 30 contract staff at the time of ex-post evaluation. According to DOT, the number of staff is sufficient to improve urban transport system in the city, as DOT has managed to maintain and expand project activities as stated above.

### <Technical Aspect>

Most staff for whom necessary technical skills were transferred under the project still work at Danang DOT. According to DOT, the skill level of staff in DOT including DATRAMAC is sufficient to improve urban transport system in the city, as all the full-time staff has the educational background of the university or higher levels and they have also been provided opportunities to participate in trainings within and outside of the country. Danang DOT has provided trainings on GIS database in cooperation with DPC in 2017 and 2018, in which approximately 30 staff per year from governmental organizations in the city such as the Department of Science and Technology (DOST) and the Department of Construction (DOC) as well as DOT participated. The guidelines produced under the project have continuously been utilized in DOT. All the equipment procured under the project has also been properly used.

Data on the amount of budget allocation in Danang DOT was not available. However, DOT has continuously allocated the certain amount of budget for improving urban transport system in the city since project completion, in terms of both hardware (infrastructure) improvement and software strengthening (staff trainings), as stated above. Thus, it is considered that DOT has the sufficient amount of budget to sustain project effects.

### <Evaluation Result>

In light of the above, a slight problem has been observed in terms of the financial aspect of the implementing agency (non-availability of financial data). Therefore, the sustainability of the effectiveness through the project is fair.

## 5 Summary of the Evaluation

The project had achieved the Project Purpose at project completion, and it achieved the Overall Goal at ex-post evaluation: Danang DOT implemented two pilot projects properly and acquired necessary skills for transportation facility management at project completion, and it has implemented six future projects proposed by the project to a possible extent to be implemented by the time of ex-post evaluation. Regarding the sustainability, a slight problem was observed such as non-availability of financial data, while no particular problem was observed on the policy, institutional and technical aspects. Regarding the efficiency, the project cost exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

Lessons Learned for JICA:

As stated above, the project achieved both the Project Purpose and the Overall Goal. One of the most important attributing factors is the selection of a right counterpart, i.e. Danang DOT, particularly DATRAMAC, which is involved in formulation of urban transport policies and directly handles daily transport management in the city. Selection of appropriate consultants as JICA experts is also important for project success. Thus, in future projects, these aspects should be carefully taken into consideration.



Le Duan- Tran Phu intersection: one of improved intersections on Le Duan Corridor



Le Duan- Nguyen Chi Thanh intersection: one of improved intersections on Le Duan Corridor

Country Name	
Socialist Republic of Viet	Project for Promoting E-customs in Vietnam
Nam	
I Project Outline	

# rroject Outline

3								
Background	In order to establish an attractive investment and business environment, Viet Nam had promoted modernization of customs administration through establishment of the national single window as well as streamlining of customs procedures and their harmonization with international standards. General Department of Vietnam Customs (GDVC) had been streamlining laws and regulations and developing necessary human resources, while positioning establishment of an Information Technology (IT) system as an important strategy to achieve modernization of customs administration. Under these circumstances, GDVC requested the Japanese government to implement a grant aid project to establish the Customs IT system in Viet Nam modelled after the Japanese Customs IT system, namely the Nippon Automated Cargo and Port Consolidated System (NACCS) and the Customs Intelligent Database System (CIS). In parallel with the implementation of the grant aid project, GDVC also requested to implement a technical cooperation project to develop legal and operation and maintenance (O&M) systems and human resources required for introducing the Customs IT system, i.e. Viet Nam Automated Cargo Clearance System (VNACCS)/ Viet Nam Customs Intelligence System (VCIS).							
Objectives of the Project	Through establishing necessary laws and regulations, structure to operate and maintain VNACCS/VCIS, proper information security policy/mechanism and structure to issue advance rulings timely and uniformly, and developing knowledge and skills of GDVC officials and the private sector necessary for using VNACCS/VCIS, the project aimed at establishing necessary environment for operating and maintaining VNACCS/VCIS, thereby promoting trade facilitation in Viet Nam. 1. Overall Goal: Trade facilitation in Viet Nam is further promoted. 2. Project Purpose: Necessary environment for operating and maintaining VNACCS/VCIS is established.							
Activities of the Project	<ol> <li>Project Site: Hanoi</li> <li>Main Activities: (1) Revise relevant laws and regulations related to VNACCS/VCIS; (2) Train instructors in charge of explanation to customs users, organize explanatory meetings for customs users and management level, and develop business processing guidelines for customs users; (3) Develop the draft roadmap for introducing the national single window, establish necessary O&amp;M structure including user's help desk and assigning technicians for administration of the system, and develop a Customs ICT master plan to 2020; (4) Conduct an explanatory meeting for users in the private sector and banks and develop business processing manuals for these users; (5) Develop necessary information security policy/mechanism and information security manual; (6) Organize seminars/workshops for Post-Clearance Audit (PCA) officers and update implementing guidelines for PCA; and (7) Update implementing guidelines for advance rulings etc.</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Vietnamese Side</li> <li>Experts: 31 persons</li> <li>Staff Allocated: 89 persons</li> <li>Local operation cost</li> <li>Local operation cost</li> </ol>							
Project Period	April 2012 – July 2015 (Extension Period: April-July 2015)Project Cost(ex-ante) 481 million yen, (actual) 342 million yen							
Implementing Agency	General Department of Vietnam Customs (GDVC)							
Cooperation Agency in Japan	Ministry of Finance, NTT DATA Corporation, IC Net Limited, NACCS Center, Tokyo Co., Ltd.							

# **II. Result of the Evaluation**

<Special Perspectives Considered in the Ex-Post Evaluation>

[Evaluation of Project Purpose Indicator 2] Regarding the Indicator 2 (The number of claims against customs procedure handled by the customs authority decreases.), the number of claims increased from 2012 to 2014. However, according to the Terminal Evaluation Report, the number of claims included general claims made to GDVC, not only about VNACCS, and the introduction phase of any new system tends to result in an increase in claims as users are not used to the new system. On the other hand, according to the chairperson of the Japan Business Association in Vietnam (JBAV), while there was a confusion when VNACCS was first introduced, most VNACCS-related issues encountered by companies were dissolved over time and VNACCS was evaluated highly by private companies by the time of project completion. The Indicator 2 was evaluated based on the above fact at project completion, and the continuation status of the indicator was evaluated based on whether the number of claims against customs procedure, particularly related to VNACCS/VCIS, has decreased after project completion.

1 Relevance

<Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Viet Nam's development policy such as "improvement of business environment and national competitiveness" and "modernization of customs administration" as set forth in the "Socio-Economic Development Strategy (2011-2020)", the "Five-year Socio-Economic Development Plan (2011-2015)" and the "Customs Development Strategy until 2020" (issued in 2011) at the times of both ex-ante evaluation and project completion.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Viet Nam's development needs for capacity development of Viet Nam Customs officers and companies to effectively use VNACCS/VCIS, at the times of both ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy as stated in the "Country Assistance Program for Viet Nam" (2009), which included "promotion of economic growth and strengthening of international competitiveness".

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. The total number of import and export declarations made during April 2014 and March 2015 was 6.3 million, of which approximately 99% was made through VNACCS (Indicator 1). The number of claims against customs procedures increased from 2012 to 2014 (296 claims in 2012, 352 claims in 2013, and 354 claims in 2014). However, as stated above, the number of claims included general claims made to GDVC, not only about VNACCS, and according to officials of customs branches and some companies, VNACCS was overall evaluated highly, as it significantly increased work efficiency of their operations. The chairperson of JBAV also stated that while there was a confusion when VNACCS was first introduced, most VNACCS-related issues encountered by companies were dissolved over time and VNACCS was evaluated highly by private companies by the time of project completion (Indicator 2). The capacity utilization rates<sup>1</sup> of VNACCS and VCIS were both 99.9% at project completion (Indicator 3).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have mostly continued to the time of ex-post evaluation. The rate of declared number through VNACCS among the total declared number of imports and exports has been over 96% since project completion, as shown in the table below (Indicator 1). However, the number of claims against customs procedure, particularly related to VNACCS/VCIS, handled by the customs authority has increased since project completion, as shown in the table below. The main reason is, while policies and regulations on customs have been changed and updated regularly (such as the Decree No.59/2018/ND-CP and the Circular No.39/2018/TT-BTC on changes in the procedures for submission of electronic documents), such changes have not been reflected timely on VNACCS/VCIS, which has resulted in difficulties in operating and using the system and hence, claims against the system have also increased (Indicator 2). The capacity utilization rates of VNACCS and VCIS has been over 97% including hours of periodical maintenance since project completion<sup>2</sup>, as shown in the table below (Indicator 3).

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved by the time of ex-post evaluation. For Simplified Examination (i.e. goods with low risk and green channeling), time from when an enterprise registers the customs clearance until the clearance decision is made automatically is 0 second, as enterprises do not have to present documents for customs officers to check, and the inspection and customs clearance is performed automatically on VNACCS. For Document Examination, time required has also largely been reduced compared with before project implementation, which was one hour to two hours at maximum. However, as shown in the table below, time for checking documents and physical inspection at yard slightly increased in 2017 and 2018. The main reason is, some imported goods have changed compared to previous years according to enterprises' import and export demands which result in the increasing complexity of customs records. More efforts of GDVC to keep up with the change of the economy is needed. (Indicator 1)The target for the efficiency score of the clearance process indicator (one of Logistics Performance Index of the World Bank statistics) has mostly been achieved, as shown in the table below (Indicator 2). All the related Ministries have been connected to the national single window portal by the time of ex-post evaluation (Indicator 3).

<Other Impacts at the time of Ex-post Evaluation>

No negative impact on natural environment has been observed and no land acquisition or resettlement has been occurred under the

project. <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Aim	Indicators	Results								
(Project Purpose)	1. The rate of declared number	Status of the Achievement: achieved (continued)								
Necessary environment	through VNACCS reaches 80%	Project Completion) Approximately 99% of the total import and export declarations was								
for operating and	of the total declared number of	made through V	nade through VNACCS.							
maintaining	imports and exports.	Ex-post Evaluation) Over 96% of the total import and export declarations has been made								
VNACCS/VCIS is		through VNACCS.								
established.		(Unit: 1,000)								
		Year	Number of Import Declarations in Total	Of which, Number of Import Declarations through VNACCS	Number of Export Declarations in Total	Of which, Number of Export Declarations through VNACCS				
		2015	4,350	4,279 (98.4%)	4,160	4,128 (99.2%)				
		2016	5,043	4,872 (96.6%)	4,757	4,690 (98.6%)				
		2017	5,893	5,725 (97.1%)	5,417	5,354 (98.8%)				
		2018	6,244	6,114 (97.9%)	6,001	5,968 (99.5%)				
		Till July 2019	3,689	3,656 (99.1%)	3,764	3,750 (99.6%)				

Achievement of Project Purpose and Overall Goal

<sup>&</sup>lt;sup>1</sup> The capacity utilization rates of VNACCS and VCIS are calculated as follows. The capacity utilization rate =  $[(\text{total hours}) - (\text{total hours of system suspension})]/((\text{total hours}) \times 100$ 

<sup>&</sup>lt;sup>2</sup> There has been no system suspension due to system errors or other issues since project completion.

r									
	2. The number of claims against			hievement: a			,		
	customs procedure handled by	(Project C	Comple	etion) While	the nur	nber of clair	ns against cus	stoms pro	cedures increase
	the customs authority decreases.	from 2012	2 to 20	14, they incl	uded g	eneral claim	s made to GE	VC, not	only about
				-	-				-
		VNACCS. According to officials of customs branches, some companies and the chairperson of JBAV, VNACCS was overall evaluated highly.							
		-							1
		· •		-				× •	completion in
		absolute a	amount				umber in term	s of perc	entage.
		Year	r			ns against handled by	Number of		Percentage
		2015	5		stoms au 3,637		declara 8,510,		0.04%
		2010		-	6,880		9,800,		0.07%
		2017			7,032		11,310	,000	0.06%
		2018	8		4,474		12,245	,000	0.04%
		Till Aug	gust		3,920		7,453,	000	0.05%
		2019						000	0.0370
	3. VNACCS/VCIS is maintained	Status of	the Acl	hievement: a	chieved	d (continue	d)		
	and managed properly and	(Project C	Comple	tion) The ca	pacity 1	utilization ra	tes of VNAC	CS and V	/CIS were both
		99.9%.	1						
	99.9% is attained.		Evalua	tion) The con	nacity	utilization ro	tes of VNAC	CS and V	CIS has been ov
	55.570 is attained.						since project		
		9/70 inclu	uung h	1				Í	.011.
		Year	r	Capacity u		•	ity utilization r	ate	
		1 ca	-	rate of V	NACCS		of VCIS		
		201:	5	98.8	3%		99.9%		
		201	6	97.6	5%		99.9%		
		201		98.0			99.9%		
		201	-	98.7			99.9%		
		Till July		99.4			99.9%		
(Overall Goal)	1. Reduce the amount of time			tion) achieve		1.4 • •	c 1 1 ·		
Trade facilitation in Viet	required for customs clearance to							ng docum	ents and physica
Nam is further promoted.	3 minutes for Simplified	inspection		d slightly in		1 in 2017 an	1 2018.		
1	Examination (from declaration to						ount of time required Amo		of time required for
	permission), to 15 minutes for	Year		lified Examin					oms clearance for
	-	reur		br both import and					ment Examination
	Document Examination (from	Í I		(average		(for impor	t) (average)	(for	export) (average)
	start screening to completion of	Target		3 minutes			15	minutes	
	examination).	2015		0 second		14 minutes	21 seconds	4 mi	nutes 12 seconds
	, i i i i i i i i i i i i i i i i i i i	2016		N/A			/A		N/A
		2017		0 second			34 seconds		nutes 35 seconds
		2018		0 second		19 minutes	48 seconds	8 mi	nutes 41 seconds
	2. Indicators of efficient trade processing are improved.	(Ex-post Evaluation) achieved The target of the efficiency score of the clearance process indicator (one of Logistics							
	processing are improved.	Performation	nce Inc	lex of the W	orld Ba	nk statistics	) has been mo	ostly achi	eved.
		Year	Ta	rget Score	Actu	al Score	Actual Rank o	of Viet Nar	n
		2010	-	0	2.68		53 out of 155		
		2012	-		2.65		63 out of 155		
		2014	-		2.81		61 out of 160		
		2016	3.00		2.75		64 out of 160		
		2018	-		2.95		39 out of 160		
	3. Several ministries concerned			tion) achieve					
	participates national single								
	window.								
	window.	Transport; Ministry of Industry and Trade; Ministry of Agriculture and Rural Development; Ministry of Natural Resources and Environment; Ministry of Health;							
									orts and Tourisn
							ic Security; V	ietnam C	hamber of
Courses T 1 F 1 4	ion Donont constitute '			Industry; and					for E Crat
	tion Report, questionnaire survey as for Customs Modernization (the g								
Performance Index, the W		sum proje	,	Post evalua		conducte		siooui IX	and the second s
Efficiency									
	at was within the alar the	ioot nomi	d ar -	and at the	nlon (	ntio acci-	at plan: 710	6 1110/	respectively
	st was within the plan, the pro								
• 1	ded, since it was judged necessa	•					or at least or	ne year a	itter the installa
ne outputs of the projec	et were produced as planned. The	erefore, t	he effi	ciency of th	ne proj	ect is fair.			
Sustainability									
Policy Aspect>									
• 1	nization of quotoms administered	ion are -	totad	in the "Cru	toma	Develor	ant Strataa	unt:1 00	)20" the "D
	nization of customs administrat								
	plan for reform, development						period of 2	2016-202	$20^{\prime\prime}$ , the "Dec
o.448/QD-TTg on appr	roval of the strategy for customs	developr	nent t	hrough 202	0" and	l so on.			
Institutional Aspect>									
-	formation Technology and Custo	oms Stati	stics i	n GDVC v	vhich i	s comprise	d of 116 sta	ff in tots	al, is responsibl
-	S. Within the department, there					-			-
	e designed to assure 24 hours pe	-				•	-		

whose working shifts are designed to assure 24 hours per day and seven days a week on duty to keep constant operation of the system. In

sufficient to properly operate and maintain the system, as seen in the high capacity utilization rates of the system shown above. <Technical Aspect>

Most staff for whom the skills were transferred under the project have continued working at GDVC. According to GDVC, the skill level of staff of GDVC is generally sufficient, as VNACCS/VCIS has been operated stably without major system suspension. However, it takes time for customs officers who are newly assigned to get used to dealing with VNACCS/VCIS, and thus more trainings for them would be needed. As for trainings, from 2016 to 2019, the Post Clearance Audit Department in GDVC conducted 10 training courses on PCA, in which more than 615 customs officers at the headquarter and local branches participated. In addition, the consultant of this project, i.e. NTT DATA Corportation, conducted the training on O&M of VNACCS/VCIS in October to December 2017 and January 2018, in which 24 GDVC staff participated. Manuals for using VNACCS/VCIS produced under the project have been continuously utilized, and VNACCS/VCIS has been properly maintained by a vendor based on the two-year contract. However, it has been observed that discussions on hardware renewal, which should be undertaken as soon as possible, between GDVC and the O&M vendor have faced certain difficulites due to, mainly, the different perceptions on resonable financial requirements between two sides. If it is not resolved, smooth and proper system operation may be in danger.

# <Financial Aspect>

The Ministry of Finance has allocated certain amount of budget for O&M of VNACCS/VCIS, which was 126 billion VND from 2015 to 2017 and 111 billion VND from 2017 to 2019. The budget amount is considered to be sufficient to properly operate and maintain the system, as seen in the high capacity utilization rates of the system shown above. <Evaluation Result>

In light of the above, some problems have been observed in terms of the technical aspect of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

## 5 Summary of the Evaluation

The project had achieved the Project Purpose at project completion, and it achieved the Overall Goal at ex-post evaluation: the rate of declared number through VNACCS and the capacity utilization rates of VNACCS/VCIS were as high as 99% at project completion. Moreover, the amount of time required for customs clearance was largely reduced and the efficiency score of the clearance process indicator was improved at ex-post evaluation. Regarding the sustainability, some problems were observed such as the lack of skills of newly assigned customs officers and difficulties to conclude a contract on hardware renewal between GDVC and the O&M vendor, while no particular problem was observed on the policy, institutional and financial aspects. Regarding the efficiency, the project period exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- As stated above, the number of claims against customs procedure has increased since project completion, due to changes of policies and regulations on customs having not been reflected timely on VNACCS/VCIS. Thus, it is advised for GDVC to timely reflect changes of policies and regulations in the system.
- Lessons Learned for JICA:
  - As stated above, the project was implemented to prepare for the introduction of VNACCS/VCIS and supplement and assure smooth O&M of VNACCS/VCIS developed in the grant aid project. The grant aid project involved several non-governmental entities (consultants and vendors). These non-governmental entities hold the system knowhow and may follow market rules which include profit maximization, and an issue of "information asymmetry" (information gaps between GDVC and non-governmental entities) has ocurred. Consequently, discussions on hardware renewal of VNACCS/VCIS are facing difficulties for contract conclusion and risks on system sustainability. Thus, when involving non-governmental entities in similar future projects, risks on system sustainability caused by "information asymmetry" should be analyzed carefully, and a mitigation plan would need to be prepared in advance.



Operation screen of the VCIS



Customs counter (Saigon Hi-Tech Park Customs Branch)

Country Name		The Large Scale Topographic Mapping Project for Sustainable Development in Conakry City and				
Republic of Guin	ea	its Surrounding Area				
I. Project Outline						
BackgroundInfrastructure development had not kept pace with the rapid population growth in Conakry City, and the problems such as traffic congestion and deterioration of the living environment had occurred frequently population was also increasing in the surrounding areas outside Conakry City, and it was necessary to carred planned urban development that integrated Conakry City and its surrounding areas. In order to address the above-mentioned urban problems, first, geographic information that was the basis infrastructure development plan was needed, however, the base map covering Conakry City was only 1/50 scale developed in 1951 and had not been updated for about 60 years.						
Objectives of the	technic	ues on map production, the	ereby contribut	aps of Conakry City and its surrounding area and to transfer tinge to development of the urban infrastructure.		
				ing the Proposed Plan <sup>1</sup> : Development of the urban infrastructure noted through utilization of topographic maps.		
Activities of the project	<ol> <li>Maan</li> <li>an</li> <li>Inj</li> <li>Japane</li> <li>Maan</li> <li>Maan</li> <li>Transport</li> <li>Transport</li></ol>	d the orthoimage, technolo puts (to carry out above act se Side ission members: 11 persons ainees received: n.a. juipment: Portable h ceivers, GPS-enabled dig d others	xisting condition gy transfer and ivities) s andy GPS	ng area on, map production, publication of the digital topographic maps I dissemination of the final products Guinean 1) Staff allocated: 28 persons		
Project Period	(Exten	mber 2012-August 2016 nded period: October August 2016) Project Cost		(Ex-ante) 350 millions yen, (actual) 303 millions yen		
Implementing Agency	Nation	al Institute of Geography (	Institut Géogra	phique National; IGN)		
Cooperation Agency in Japan	PASCO CORPORATION, KOKUSAI KOGYO CO., LTD.					

# 1 Relevance

<Consistency with the Development Policy of Guinea at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policy of Guinea. At the time of ex-ante evaluation, Guinea listed "infrastructure development" as one of five pillars in its priority action plan for the extended Poverty Reduction Strategy Paper 2 (Document Stratégique de Réduction de la Pauvreté) (2011-2012). At the time of project completion, the National Plan of Socio-Economic Development (Plan National Dévelopment Économique et Social: PNDES) (2016-2020) referred to the improvement of infrastructures to in the second pillar among the four pillars.

<Consistency with the Development Needs of (Guinea) at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the development needs of Guinea for the development of topographic mapping. At the time of ex-ante evaluation, Conakry City faced many urban problems mentioned above, however, the geographic information, which was the basis of an infrastructure development plan, had not been updated. At the time of project completion, the Guinean side expressed their needs in creating new topographic maps for the entire land of Guinea for the sake of national land development as well as geospatial information for the areas out of mapping range in the project, in accordance with the expansion of Conakry City.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA policy to Guinea. The priority was placed on areas which improved basic living and directly benefited the people's lives<sup>2</sup>.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Objectives at the time of Project Completion>

At the project completion, the outputs were partially achieved. (i) The digital topographic maps of Conakry city and its surrounding area were produced, and (ii) capacity development of counterpart personnel was conducted, however, to what extent the capacity was developed was controversial. As for the latter, the Japanese expert team transferred the technologies for basic surveying and creation/revision of the digital topographic maps in order to allow the counterpart itself to maintain and update the digital topographic maps created in this project. Since the objectives specified for each of the technologies to be transferred were achieved, the Japanese expert team

<sup>2</sup> Source: Ministry of Foreign Affairs, ODA Data book 2011

<sup>&</sup>lt;sup>1</sup> The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the

medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

considered that the counterparts mostly acquired the target capacities. However, to the management of IGN, the training seems not to have been conducted effectively enough for the IGN staff to completely understand how to edit the Geographic Information System (GIS) data as it was planned in the project. Since the outbreak of the Ebola hemorrhagic fever, the training schedule had been interrupted although its contents were not much affected. This resulted in deterioration of cumulative effect of continued training program. In addition, the translation/interpretation of the interpreter employed in the project was not clear enough because he did not have enough knowledge of the domain of GIS. It made participants difficult to have the total comprehension of the content of training.

<Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

After the project was completed, the outputs of the project have been partially utilized. Namely, the result of the project has been used for diverse and important purposes. In addition to the usage shown in the table below, various ministries and the development projects have used the maps including the Urban Development Project (PDU) with the Vision 2040 developed by the European Union (EU), according to IGN. Also, the maps were supplied to a library of the United Kingdom, which gets the country known abroad. However, the authorities of Guinea have not been making good use of the maps in a way of promoting them to its potential users like ministries and donors in the country. In the final report, it was clearly mentioned that users should approach IGN in order to make an agreement for the usage of the soft copies of the maps. As for the hard copies, IGN is the only authorized institution to sell them. At the time of ex-post evaluation, though it was confirmed that the data of this project has been utilized for diverse purposes, it did not give much benefice to IGN because most of the users are Guinean government agencies to whom IGN cannot ask for payment.

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

As mentioned above, several projects have requested having the data (soft and or paper) of the maps. The development has been underway at the time of ex-post evaluation and yet to be verified.

<Other Impacts at the time of Ex-post Evaluation>

Recently, IGN has suggested to Mayors of the five (5) municipalities of Conakry a project of making maps of each municipality which makes it clear the physical boundaries of each of therm. This is a spontaneous action of IGN staff and could be considered as a positive impact.

According to IGN, no negative impacts on the natural environment have been observed, and no land acquisition and resettlement occurred.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is fair.

Status of Achievement of Utilization Status of the Proposed Plan and Expected Goals through the Prop-	osed Plan
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Aim	Indicators	Results			
(Utilization Status of the Proposed	Related organizations (Conakry	(Ex-post Evaluation) partially achieved			
Plan)	City, Ministry of Public Works	Name of the organization	Name of the policies/projects/plans that the		
Topographic maps that reflect the	et.) utilize the maps	who utilized the maps	maps were utilized		
latest information on the national land		MEABOOK Library	Exposition in the library		
are used for policy formulation in		Guinea Water Company	Conakry (Coyah and Dubréka towns in the		
development plans and well-planned			suburbs of Conakry.)		
infrastructure development.			(For the new project request to the Japanese		
-			government)		
			Master Plan of Guinea Water Company		
		Amtec Resources	Integration to Amtec Cartography of		
		Management	Guinea 1:100 000		
(Expected Goals through the Proposed	Development projects realized	(Ex-post Evaluation) not veri			
Plan)	using topographic maps (road,		projects have requested having the data (soft		
Development of the urban	water and sewage infrastructure		wever, at the time of ex-post evaluation, it is		
infrastructure in Conakry City and its	development, etc.)	still underway and has not be	en sumciently commed.		
surrounding area is promoted through	,				
utilization of the topographic maps.					
Source: A questionnaire and interviews	s with IGN				
Efficiency					

3 Efficiency

Although the project cost was within the plan (the ratio against the plan: 87%), the project period significantly exceeded the plan (the ratio against the plan: 200%). The project period exceeded the plan because of the outbreak of the Ebola hemorrhagic fever. The project could have been completed within the planned period, as WHO announced the restriction of entry into the country from August 2014 to March 2016. Considering the nature of the situation, the efficiency of the project is high.

### 4 Sustainability

<Policy Aspect>

The Government of Guinea has had PNDES 2016-2020 put in place so that all development projects and programs are put together in a harmonious way that can enhance the efforts to pull the country up to development. The second pillar of PNDES, "Sustainable and inclusive Economic Transformation" refers to infrastructures construction (road network, transport, communication etc.) for the coming years where the result of this project will be used for development of road network. <Institutional Aspect>

IGN, under the Ministry of Public Works (Ministère des Travaux Publics: MTP), has been responsible for managing and updating measurement outputs for the entire national land of Guinea. Before the project (between 1980's and 2012), there was certain period during which IGN was obliged to minimize its activities of geospatial information development due to the political instability and economic and

financial situation of Guinea. During the implementation of this project, institutional aspect was reinforced, with an increase of the staff from 23 at the beginning of this project in 2012 to 36 at the end of this project in 2016. At the time of ex-post evaluation, the number of staff remains 36, with which IGN can conduct its activities according to the management of IGN, thus the institutional aspect is sustained.

At the time of ex-post evaluation, the effort of IGN to improve the institutional aspect was observed; IGN assigned two of its staff members for the promotion of the sales of maps in hotels in Conakry City. Even though this action did not yet result in a big increase of the sales, the intention of IGN to sustain the result of this project could be appreciated.

<Technical Aspect>

As mentioned above, the interruption of the training due to the Ebola outbreak made it difficult to ensure that, transferred skills for producing and revising the digital map is fully put into practice according to IGN. It is true that acquired skill can be maintained through daily practice like revising the digital topographic maps, especially for those who have obtained it relatively recently; however, IGN could not have that kind of opportunity sufficiently. To take it into consideration and reassure its practical skill, a request for a complementary technical assistance entitled as "Strengthening human resources capacity in the field of Geographic Information Systems (GIS)" was submitted to the Government of Japan. With this technical assistance, which is already approved, reinforcement of technical aspect is expected.

## <Financial Aspect>

According to IGN, IGN has received ordinary budget that can even cover the increase of its staffs mentioned above. In terms of activities, after this project, IGN has basically used the external fund such as the financial support of the government of Morocco with which IGN has implemented the project to settle the geodesic points. Currently, IGN is preparing the "Strategy paper horizon 2030" with Morocco's support. After the completion of this strategy paper, IGN will ask its government to allocate the activity budget to IGN. In the short term, IGN is requesting the budget for 2021 in the national provisions, taking advantage of JICA's technical assistance. IGN is thus actively working on the acquisition of activity budget.

# <Evaluation Result>

In light of the above, there have been some difficulties in the technical and financial aspects however, IGN is trying to cope with it. Therefore, the sustainability of the effectiveness through the project is fair.

# 5 Summary of the Evaluation

At the project completion, the objectives of the project were partially achieved. The digital topographic maps of Conakry city and its surrounding area were produced, and (ii) capacity development of counterpart personnel was conducted, however, the interruption of the training due to the Ebola outbreak, which was a 'force majeure' for them, made it difficult to ensure the transferred skills to be fully put into practice. After the project was completed, the result of the project has been used for diverse and important purposes. As for the sustainability, difficulties have been observed in the technical and financial aspects; however, at the same time, the efforts of IGN to overcome these difficulties has been also observed. The fact that IGN has succeeded to obtain the financial/technical support from government of Morocco and Japan is one of the results of their efforts.

Considering all of the above elements, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

## **Recommendations for Implementing Agency:**

The authorities of Guinea are not making use of the map in the way of promoting it to the potential user of the maps like ministries and donors in the country. It is as if the usage is not following what was recommended by the final report. Also, IGN does not make its staff members update the knowledge of the project by implementing them or making updates and researches to enrich it. MTP must allocate appropriate financial means that can allow the institute to keep its activities as that is reckoned to it. MTP must also empower IGN by explaining its importance in the Ministers Council and recommend that every need in relation to the maps goes through the IGN.

# Lessons Learned for JICA:

The follow-up of the training of the project could have been more emphasized. The detail of roadmap of activities should have been established to facilitate the counterpart personnel to make use of the transferred skills. We suggest also that in future the establishment of a new system of monitoring to check if the transferred skills are well developed by counterpart. This kind of system should be applied within short span of time after the end of the projects.

Country Name	The Project for Development of Local Industry through One Village One Product Movement						
Republic of Mozambi							
I. Project Outline							
Background	The main composition of companies in Mozambique was a small number of large companies and a large number of registered small and medium-sized enterprises (SMEs)and micro-enterprises as well as informal micro-enterprises. Registered SMEs accounted for 98.6% of all registered companies. Many of the registered SMEs and micro-enterprises were micro enterprises that were rooted in local markets, and strengthening business management skills, quality control technology, and productivity to enhance competitiveness in domestic and global markets were important issues. Based on a request of the Government of Mozambique, JICA provided technical assistance in the implementation of a One Village One Product (OVOP) project.						
	Through(i) establishing a CaDUP* framework, (ii) conducting on-the-job training (OJT), (iii) providing support to SMEs, and (iv) sharing the experience of the project, the project aimed at establishing CaDUP implementation procedures, thereby contributing to business development of the targeted SMEs.						
Objectives of the	*CaDUP stands for Cada Distrito Un Produto and means One Village One Product (OVOP) in Portuguese.						
Project	1. Overall Goal: By deepening and disseminating CaDUP program, business of targeted SMEs are						
	maintained or developed in the target areas.						
	2. Project Purpose: CaDUP implementation procedures and structures for Mozambique are well established						
	in the target areas.						
Activities of the project	<ol> <li>Project site: (i) Ninedistricts in Maputo Province (Boane, Namaacha and Manhica Districts), Gaza Province (Bilene, Manjacaze and XaiXai Districts), Inhambane Provinces (Inharrime, Maxixe and Zavala Districts) and (ii) Nampula and Manica Provinces*</li> <li>*Activities in Maputo, Gaza and Inhambane Provinces were implemented by joint initiative of Institute for Promotion of Small and Medium Enterprises (IPEME) and JICA, and in Nampula and Manica Provinces by initiative of IPEME utilizing experience and lessons of the three (3) provinces.</li> <li>Main activities: (i) establishing an CaDUP framework, (ii) conducting OJT, (iii) providing support to SMEs, and (iv) sharing the experience of the project</li> <li>Inputs (to carry out above activities) Japanese Side</li> <li>Mozambican Side</li> <li>Experts: 8persons</li> <li>Staff allocated: 26persons</li> <li>Facilities: Project office and training/seminar rooms</li> <li>Equipment: Vehicles, photocopying machine, computers, and others</li> <li>Local cost: Equipment, Car, C/P travel allowance, pilot project costs, sub-contract &amp; local consultant</li> </ol>						
Project Period	January 2013-February 2017 (Extension: January 2017 to February 2017)Project Cost (ex-ante) 380million yen, (actual) 429million yen						
Implementing Agency	Institute for Promotion of Small and Medium Enterprises (IPEME) <sup>1</sup>						
Cooperation Agency in Japan II. Result of the Evaluat	KRI International Corporation, UNICO International Corporation						

< Special Perspectives Considered in the Ex-Post Evaluation >

Continuation of the Project Purpose is analyzed as a factor for achieving the Overall Goal.

1 Relevance

<Consistency with the Development Policy of Mozambique at the Time of Ex-Ante Evaluation >

The project was consistent with the development policy of Mozambique. Under the "Small and Medium Size Enterprises Development Strategy" in Mozambique formulated by the Ministry of Industry and Trade (2008), objectives include (i) improvement of technology and management capabilities and (ii) strategic medium and small business development which were relevant with the project. <Consistency with the Development Needs of Mozambique at the Time of Ex-Ante Evaluation >

The project was consistent with the development needs of Mozambique for strengthening SMEs. Registered SMEs accounted for 98.6% of all registered companies in Mozambique.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA Policy to Mozambique. One of the priority areas of ODA to Mozambique was revitalization of regional economy<sup>2</sup>. OVOP was included in this area. Also, promotion of OVOP was referred in the fourth Tokyo International Conference on African Development (TICAD IV) Yokohama Action Plan (2008). <Evaluation Result>

<sup>2</sup> Source: ODA Databook 2012

<sup>&</sup>lt;sup>1</sup> In local level, a focal point of IPEME was appointed at Provincial Directorate of Industry and Trade (DPIC) at provincial level, and District Economic

Activities Service (Service Distrital de Actividades Economicas SDAE) directly communicated with SMEs.

In light of the above, the relevance of the project is high.

#### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved at the time of project completion, as the CaDUP framework was established in Maputo, Gaza and Inhambane Provinces (indicator 1) and the framework was applied to Nampula and Manica Provinces (indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

Even after the project completion, the project effects have been maintained. The CaDUP framework established by the project has been continuously implemented along with IPEME, and this resulted to improve the performance of SMEs in target five provinces. This contributed to achieving the Overall Goal.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal was achieved. According to IPEME, DPICs and SDAEs, sales of SMEs supported during the project period (both partner SMEs and those who participated in training) and follow up activities, mainly in Maputo, Gaza and Inhambane provinces where the project were implemented by IPEME and JICAs project team under the CaDUP, increased .About effects of each activity, it is possible to witness differences between areas where the project was implemented by IPEME and JICA project team (Maputo, Gaza, Inhambane provinces) and where the project were implemented only by IPEME(Manica, Nampula provinces and districts covered by the follow up activities.) From the first scenario of the SMEs assistance package included support on packaging and labeling system, while on the second scenario were just training for DPICs, SDAEs and SMEs technician staff, no example of intervention on the product itself as well. In fact, the performance of the first group is higher than the second. The CaDUP model has been disseminated and monitored by using support kit and conducting field visit or OJT to support more SMEs. ALL SMEs have been keeping record of accountant activities from all visited districts namely Vandúzi, Manica and Barué districts from Manica province, Mogovolas and Mecubúri districts from Nampula province that are main target areas of the CaDUP project in each province, except for one SME in Nampula province. Around 80% of SDAEs technicians and SMEs have been still keeping and using CaDUP kit and guides for business management (among five target provinces, Nampula Province and one district in Manica Province have not kept them).

Some noticeable efforts have been observed. In Gaza Province, DPIC has continued assisting SMEs to design layout and business card. In Maputo and Inhambane, DPIC and SDAE have been promoting the use of local content to minimize cost of production. In Manica, DPIC and SDAE have been conducting technical assistance to increase production for better incomes of SMEs. IPEME has continued training DPICs, SDAEs, and SMEs and having seminars on product development and marketing, trade fairs and product promotion etc. in Manica, Nampula and Niassa provinces.

IPEME developed two revisions of SME support kit and published them for DPICs and SDAEs after the completion of the project. <Other Impacts at the time of Ex-post Evaluation>

Although the project aimed to apply CaDUP framework in all 10 provinces as the Super Goal, it has been applied in six provinces at the time of ex-post evaluation. Other than the provinces covered by the project, IPEME has started to disseminate the model in Niassa Province. There is no plan for dissemination to other provinces for the time-being.

According to IPEME, DPICs and SDAEs, no negative impact on the natural environment by this project has been observed, and no land acquisition and resettlement occurred.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

	Achievement of Proje	ct Purpose and Overall Goal
Aim	Indicators	Results
(Project Purpose)	Indicator 1: The CaDUP framework (*) is	Status of the Achievement: achieved
CaDUP implementation	established in Maputo, Gaza and	(Project Completion)
procedures and structures	Inhambane Provinces.	Through the implementation of all the outputs of the project, the
for Mozambique are well		implementation flow was adjusted and the implementation structure
established in the target	(*the CaDUP framework" means the	including tool was constructed and specified in the CaDUP Guideline. In the
areas.	CaDUP implementation system which is	three provinces, the CaDUP Program is being implemented and disseminated
	indicated in the CaDUP guideline.)	according to the Guideline.
Indicator 2: The established CaDUP Status of the Achievement: achieved		Status of the Achievement: achieved
	framework is applied to Nampula and (Project Completion)	
	Manica provinces with initiative of IPEME.	-By making use of the SME Support Kit, Nampula and Manica Provinces
		were providing support to SMEs under the CaDUP framework under the
		strong leadership of DPICs.
		- In Nampula Province, five target districts were selected and the sharing of
		knowledge and experience was underway to all 23 districts using the
		opportunities of meetings. Also, capacity of building session was held
		targeting the directors and technicians of SDAEs and SMEs.
		- In Manica Province, four target districts were selected and technicians at the
		SDAEs started support to SME using the SME Support Kit. So far, 20 SMEs
		were supported under the CaDUP framework

Achievement of Project Purpose and Overall Goal

	(Ex-post Evan	uation) achieved	
CaDUP program are improved in Maputo, Gaza, Inhambane, Nampula and Manica	Province	(a) Performance of the companies supported by the CaDUP program	(b) Activities to support SMEs by the CaDUP program
Provinces	Maputo (8 districts)* Gaza (14 districts)	14 SMEs in two districts(Namaacha and Manhica)perform well. 8 SMEs in one district (XaiXai) perform well.	CaDUP model was extended to six districts including the pilot sites under the project Dissemination and monitoring of CaDUP model have been carried out in five districts to cover 75 SMEs.
	Inhambane (14 districts)	9 SMEs in two districts (Inhambane and Inharrime) perform well.	Dissemination and monitoring of the model have been conducted in seven districts to cover 38 SMEs through explanation to use support kit.
	Nampula (23 districts)	5 confirmed SMEs from Mogovolas, Muecate and Mucuburi district are performing well	IPEMEdisseminated the model i three districts using support kit t cover 18 SMEs.
	Manica (12 districts)	8 SMEs in two districts (Barue and Manica) are performing very well out of 10 SMEs which was introduced CaDUP model by the support of IPEME and DPIC (10 were selected from	IPEME conducted monitoring activities to emphasize the understanding and engagement on the project model in three districts.
	as bookkeeping and sales supported by CaDUP program are improved in Maputo,	as bookkeeping and sales supported by CaDUP program are improved in Maputo, Gaza, Inhambane, Nampula and Manica Provinces Maputo (8 districts)* Gaza (14 districts) Inhambane (14 districts) Nampula (23 districts) Manica (12	as bookkeeping and sales supported by CaDUP program are improved in Maputo, Gaza, Inhambane, Nampula and Manica Provinces Maputo (8 districts)* Mahica)perform well. Gaza (14 (XaiXai) perform well. districts) Inhambane (14 (Inhambane and Inharrime) perform well. Nampula (23 from Mogovolas, districts) Nampula (23 from Mogovolas, district are performing well Manica (12 (Barue and Manica) are districts) performing very well out of 10 SMEs which was introduced CaDUP model by the support of IPEME and DPIC

Source : Questionnaire and direct interview with IPEME, SDAEs (in Manica, Nampula, Niassa), DPICs (in Manica, Nampula, Niassa), Questionnaire and telephone interview with SDAEs (in Maputo, Gaza, Inhambane),DPIC (in Maputo, Gaza, Inhambane) 3 Efficiency

Both the project cost and project period exceeded the plan (ratio against the plan: 111%, 104%). The outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

In the draft of Strategy for The Development of Small and Medium-Sized Enterprises in Mozambique (2007–2022), promotion of industrialization and rural economic specialization (development of the value chains of products considering the specialization needs of each province.) for SMEs through CaDUP methodology is mentioned.

<Institutional Aspect>

IPEME is an institute under the Ministry of Industry and Trade (MIC), the management of which is independent financially and in decision making. MIC has Provincial Directorate of Industry and Trade (DPIC) at provincial level, and a focal point of IPEME is appointed at each DPIC, which has the role of connecting central level and district level. At district levels, SDAE plays an important role in CaDUP activities, directly communicating with SMEs. SDAE is under Ministry of State Administration and Public Service, and has various tasks other than CaDUP.

The organizational structure of IPEME has been functioning; however, IPEME has been facing difficulties in coordinating with local government (DPICs and SDAEs) for dissemination. IPEME is considering involving more stakeholders on the program particularly agricultural sector and administrator of local government to support SDAEs in promotion of the model. DPICs and SDAEs have been thinking that the project only belongs IPEME. It is found that technicians of some DPICs move to another districts without handover of the CaDUP related tasks to successors, which can be threat to the sustainability of the effects of the project.

The number of technical staff in DPICs and SDAEs has not been sufficient for implementation of the model. Those institutions have had regular activities, and it seems that the technicians have been always working for their institutional task and not for CaDUP. The number of staff at IPEME has been sufficient.

<Technical Aspect>

IPEME has had sufficient skilled technicians with enough tools to continue disseminating the CaDUP program. IPEME has integrated CaDUP methodology in all new projects that aim to support SMEs. Manual used is CaDUP support kit and this is used during assistance of SMEs on how to control and record total production (product or monetary production) and expenditures on business management. Also it is used to explain technicians about what they have to teach SMEs.

The skill level of staff from central to local levels is judged sufficient to promote and mainstream CaDUP approach as evidenced by continued training and seminars on product development and marketing, trade fairs and product promotion etc. in Manica, Nampula and

Niassa provinces, as mentioned above. However, the results of interviews revealed that more training (for updating the skills) are needed by SDAEs to respond to staff replacement made by local government. There are some concerns. In Nampula Province, during survey, the ex-post evaluation mission found out that in Mogovolas District there were no support kit and trained technician, with those who were trained moved to other district by position rotation, and the same situation are found in Vanduzi District in Manica Province. According to the interviews with DPICs in Maputo, Gaza and Inhambane, the situation there were fewer cases of replacement.

As Mozambique has faced economic crisis since 2016, IPEME as well as DPIC and SDAE have faced limitations for allocating budget for CaDUP activities.

<Evaluation Result>

In light of the above, some problems have been observed in terms of the institutional, technical and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

The project achieved the Project Purpose at the project completion, as the CaDUP framework was established in Maputo, Gaza and Inhambane Provinces and the framework was applied to Nampula and Manica Provinces. The Overall Goal has been achieved because there are cases that performance of SMEs that participated in the CaDUP program have improved. As for sustainability, some problems have been observed in terms of the institutional, technical and financial aspects of the implementing agency. However, there has been no problem in terms of the policy aspects. As for efficiency, both project cost and project period exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

The ownership of CaDUP model by district level authorities is low. For further expansion and sustainability of the CaDUP model, it is necessary to integrate CaDUP for other sectors such as agriculture and financing. Also, it is recommended to strengthen collaboration with SDAEs and DPICs by holding regular liaison meetings, etc. so that local level is able to have initiatives to continue CaDUP activities. Trainings to respond local government staff replacement and mechanism to ensure the handover of CaDUP task are recommended.

It is recommended to develop a long-term plan that describes the nationwide expansion of CaDUP activities and the subsequent policy. Lessons Learned for JICA:

When developing tools, heavy inputs from users resulted in the development of simple, practical and easy-to-use tools. Making SMEs support kit that can be easily understood and used by extension workers in the field helped spreading the model.



Fig-1. Improved labeling and packaging systems for marketing effects after CaDUP assistance to an SME in Inhambane. province



Fig.2 IPEME delivering lectures on CaDUP model to SDAE technicians in Niassa province.

Country Name		- The Project for Improvement of Road Maintenance				
Republic of Tajikis	stan	The Project for Improvement of	of Road Maine			
I. Project Outline						
Background	Background In Tajikistan, Ministry of Transport (MOT) was responsible for operation and maintenance of international republican, and local roads of about 14,000 km. Most of the road network in Tajikistan was constructed during the Soviet era. After independence in 1991, not enough budget was allocated for the maintenance of the road network Moreover, insufficient technical skills in road maintenance, and additionally an internal conflict after the independence, led to a loss in the road assets. The worsening road conditions were hindering smooth trade with neighboring countries and passenger and freight transportation. (Figures at the time of ex-ante evaluation.)					
Objectives of the Project	The p of road (SEHM 1. Ov	project aimed to improve implement	ntation capacity f ring skills <sup>1</sup> of nt condition of th he roads in Tajil	for road maintenance in Tajikistan through improvement the target State Enterprises of Highway Management ne roads in Tajikistan. cistan is improved.		
Activities of the Project	<ol> <li>Product and and and and and and and and and and</li></ol>	ject Site: International and republic I Kulyab (additional target area) <sup>3</sup> in Activities: (i) Revision of the ex- ginal target State Enterprises of T G)) and further revision of the guid get SETMs/SEHMs (or the additi- vision of the existing road repairing the first pilot road repairing works guidelines, planning and implement HMs reflecting the results of the ro ginal target SETM on day to day of duct training for the additional TO tification of trainers for specific tec- uts (to carry out above activities)	can roads in Giss cisting road insp Fransport Manag delines, certifica onal TG) by th g guidelines, trai (RRW#1) in the nation of the sec ad inspection, tr quality control to G on basic elem hniques for road s survey to the fs and quality plants to the	aar and Kurgan-Tyube (original target area) and in Sughd ection guidelines, training to and road inspection by the gement (SETMs)/SEHMs (or the original target group tion of master trainers (MTs), training to the additional e MTs on basic elements of road inspection; and (ii) ning to the original TG, technical advice and instruction e selected original target SEHMs and further revision of cond pilot RRW (RRW#2) by the selected original target aining to the appointed laboratory technicians from each est at the asphalt plant, assistance to the original TG to ents of road repairing using the pilot RRW#2 in 2016, repairing from the original TG. Tajikistan Side 1) Staff allocated: 8 persons.		
Project Period	(Extens	2013 to November 2016 ion: June-November 2016)	Project Cost	(ex-ante) 246 million yen, (actual) 319 million yen		
Implementing Agency	Main Department for Road Construction and Maintenance (RCM) of Ministry of Transport (MOT), Gissar State Enterprise of Transport Management (SETM) and Kurgan-Tyube SETM (original TG), Sughd SETM and Kulyab SETM (additional TG)					
Cooperation Agency in Japan	CTI En	gineering International Co., Ltd.				

<Constraints on Evaluation>

<Special Perspective Considered in the Ex-Post Evaluation>

• Achievement status of the Project Purpose Indicators 1, 2, and 3 was verified based on the JICA experts' assessment of the results of road inspection

<sup>2</sup> While MOT was responsible for overall road maintenance with key roles in formulation of the road maintenance plan, budget control and procurement management, State Enterprises of Transport Management (SETMs) and SEHMs under their umbrella were the implementation bodies of road maintenance. SETM managed road maintenance plan and budget control for all SEHMs under their umbrella.

<sup>•</sup> Due to Covid-19, in-person interviews and site visit to Sughd SETM out of 4 target SETMs (Kurgan-Tyube, Gissar, Sughd and Kulyab SETMs) could not be conducted. Therefore, information was collected through questionnaire survey and interview by telephone to them as well as supplementary interview (in person, through email and telephone) to MOT.

<sup>&</sup>lt;sup>1</sup> In the project, road maintenance, inspection and repairing respectively meant pavement maintenance, inspection and repairing.

<sup>&</sup>lt;sup>3</sup> The original target area consisted of the international and republican roads managed by the original target group (TG) (Gissar and Kurgan-Tyube SETMs, to which road maintenance equipment was provided through the JICA's grant aid (G/A) project "Project for Improvement of Equipment for Road Maintenance in Khatlon Region and Districts of Republican Subordination in the Republic of Tajikistan" (2013-2014), and all 22 SEHMs under their umbrella). The target area was expanded in 2016 based on the recommendation of the terminal evaluation, considering the request of the Government of Tajikistan (GOT) to include the additional TG (i.e. Sughd and Kulyab SETMs, to which provision of road maintenance equipment was being considered by the Government of Japan based on the request of the GOT, and six SEHMs under their umbrella) to train them on basic elements of road inspection and repairing. The expansion was expected to contribute to technical sustainability in terms of dissemination of the transferred techniques.

and repair conducted by the original TG. Since it was impossible to verify continuation status of those indicators in the same manner in the ex-post evaluation, qualitative information was collected. As for Indicator 4, utilization status of the approved guidelines by the TGs was confirmed.

- The Overall Goal Indicator 1 consists of two Sub-Indicators: (1-1) length of road repairing with hot-mix asphalt by the original TG and (1-2) length of road repairing with hot-mix asphalt by the additional TG In the ex-post evaluation, achievement status of Sub-Indicators 1-1 and 1-2 was assessed separately because degree of improvement of road condition of the repaired roads under Sub-Indicators 1-1 and 1-2 is assessed separately under Indicators 2. In other words, the same weight was given to achievement status of Sub-Indicator 1-1, Sub-Indicator 1-2, Indicator 2 in making evaluation judgement.
- The indicator 3 was determined as "not applicable" for the evaluation judgement because additional SETMs did not conduct repairing of roads by hot mix asphalt due to unnecessity (necessary roads were repaired by donors). Hence, the measurement of the change of IRI is not applicable.
- The TGs for the Overall Goal are not specifically mentioned in the logical framework: however, they were assumed to be the same as the Project Purpose (i.e. the original and the additional TGs), which are the TGs for the Overall Goal indicators and the Proposed Goal in 2021 for pavement repair mentioned in the Post-Project Strategy approved by the final Joint Coordinating Committee of the project.

# 1 Relevance

<Consistency with the Development Policy of Tajikistan at the time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, the project was consistent with the National Development Strategy (hereinafter referred to as NDS) for the period to 2015, which highlighted the importance of development of infrastructure to support economic growth.

< Consistency with the Development Needs of Tajikistan at the time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, the project was consistent with the needs of Tajikistan for improvement of road maintenance as described in "Background".

<Consistency with Japan's ODA Policy at the time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, the project was consistent with the Country Assistance Policy for the Republic of Tajikistan (2012), in which development of economic infrastructure is listed as one of the priority areas for supporting sustainable socio-economic development. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose had been achieved by the time of project completion. In 2015 and 2016, 95% of the results of roughness survey (or International Roughness Index (IRI) measurement) at the original target SEHMs, using the road inspection guidelines revised through the project, was assessed accurate by the JICA experts, which exceeded the target ratio of at least 90% (Indicator 1). In 2015 and 2016, 88% and 94% of the results of visual inspection by the original target SEHMs, using the revised road inspection guidelines, was assessed accurate by the JICA experts respectively, which exceeded the target ratio of at least 80% (Indicator 2). Using the road repairing guidelines revised through the project, the pilot RRW#2 were conducted in 2016 by 21 out of 22 original target SEHMs, which exceeded the target ratio of 75% and, according to the assessment by the JICA experts, 100% of the results of the pilot RRW#2 was satisfactory and met the requirements specified in the road repairing plans, which also exceeded the target ratio of at least 80% (Indicator 3). The revised road inspection and repairing guidelines were approved by MOT in October 2016 (Indicator 4).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have partially continued. The revised guidelines have been distributed to all target SETMs/SEHMs. Using the revised guidelines, visual inspection has been conducted in all four target SETMs as part of their annual maintenance plans. Roughness survey, however, has not been incorporated in their annual maintenance plans mainly because it is not mandated by an MOT's Order: it has been partially continued in one of the additional target SETMs<sup>4</sup>, but not continued in the other three target SETMs due to shortage of budget for fuel cost for a survey vehicle (in two original target SETMs) and an external factor (in the other additional target SETM)<sup>5</sup>. Road repairing with hot-mix asphalt has been conducted by the original TG, using the revised guidelines. It has not been implemented by the additional TG yet due to an external factor, but it is practically no problem (for details, please see <Status of Achievement for Overall Goal>). Laboratories of the asphalt plants in the original target SETMs have continued day-to-day quality control tests, applying the skills and knowledge acquired through the project. Accuracy level of the results of the roughness survey at the original target SEHMs is not available as the survey has not been continued. Regarding the visual inspection, the original target SETMs confirmed that accuracy level has been maintained through regular explanatory sessions by the MTs certified by the project. They also confirmed that the road repairing has been planned based on the results of the inspection and implemented according to the revised guidelines, and the results of the repair works have been satisfactory and met the requirements specified in the plans as the Chief Engineers certified as trainers by the project have conducted explanatory sessions on requirements of time, cost, quality and safety before the repair works. Considering the above, the revised guidelines have been continuously utilized by the target SETMs/SEHMs at least partially. According to MOT, it will issue an Order to all SETMs to implement the roughness survey and road repairing with the hot-mix asphalt according to the revised guidelines so that they would be included in the SETMs' annual maintenance plans from Fiscal Year (FY) 2021 (January-December). In addition, RCM of MOT would enhance supervision and monitoring by asking the SETMs to include implementation status of the revised guidelines in the existing semi-annual reports submitted to MOT. Therefore, the project effects are expected to fully continue from FY2021.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal was achieved in the target year (2019) because Indicator 1 was achieved by the original TG but not achieved by the

<sup>&</sup>lt;sup>4</sup> Kulyab SETM conducted the roughness survey in 2017 and 2018, but not in 2019 because they were busy. The SETM plans to conduct it in 2020 (or early 2021 depending on the COVID-19 situation.

<sup>&</sup>lt;sup>5</sup> Originally, Sughd SETM planned to start the roughness survey in 2018, using a pick-up to be provided under a Japanese G/A project ("Project for Improvement of Equipment for Road Maintenance in Sughd Region and the Eastern Part of Khatlon Region" (2016-2019)"); however, delivery of the equipment under the G/A project was delayed till late 2018 and the pick-up has not been allocated to SETM, but to an SEHM under its umbrella. It is noted that Sughd SETM plans to start the roughness survey from 2020 with a vehicle provided by an Asian Development Bank (ADB)'s project.

additional TG (practically no problem) while the other two indicators were partially achieved and not applicable respectively. By the end of 2019, the original TG implemented 39.7 km of length of road repairing with the hot mix asphalt according to the revised guidelines, which exceeded the target length of 30km (Indicator 1-1). The additional TG did not start road repairing with hot mix asphalt by 2019 but it was practically no problem for the following reasons: (i) There was no need for the additional SETMs to conduct repair with the hot-mix asphalt in the period subject to the evaluation (i.e. 2018 and 2019)<sup>6</sup> as the roads in need (about 256km in total) were rehabilitated with hot-mix asphalt by other donors, provincial governments, etc., which largely exceeded the target length of 15km: (ii) It can be reasonably inferred that the additional TG has sustained the basic capacity to implement it on its own, if necessary, based on the information obtained in the technical sustainability: and (iii) The additional SETMs confirmed they will start road repairing with hot-mix asphalt in 2020 (or early 2021 depending on the situation of COVID-19) according to the revised guidelines (Indicator 1-2). The average Road Repairing Index (RRI)<sup>7</sup> of the repaired roads in the original target area could not be calculated due to discontinuation of the roughness survey; however, both original target SETMs stated that pavement condition was much improved based on the results of visual inspection and the measurement of roughness using a conventional manual method. (Indicator 2). As the additional TG did not implement road repairing with hot-mix asphalt due to unnecessity, Indicator 3 (i.e. degree of reduction of the average IRI of the road repaired by the additional TG) is not applicable. (For reference, according to MOT, the pavement conditions of the roads rehabilitated by others has improved a lot based on the results of visual inspection and measurement of the roughness using the conventional manual method.) <Other Impacts at the time of Ex-post Evaluation>

Various other positive impacts have been observed. In the target SETMs, road repairing with cold asphalt has been also planned and implemented based on the results of the visual inspection using the revised guidelines. The results of the roughness survey conducted by Kulyab SETM have been reflected in 35km of the road repairing with hot-mix asphalt by the provincial government. Sughd SETM supervised construction of 183.3 km of international and republican roads with hot mix asphalt, referring to the revised guidelines. There have been synergetic effects with a JICA G/A project<sup>8</sup>. For example, the provided equipment has been utilized by the original TG, applying the skills and knowledge transferred and the guidelines revised through this project. The asphalt plants constructed in the original target SETMs can produce quality hot-mix asphalt because day-to-day quality control tests are conducted by the laboratory staff trained by the project. Further, the revised guidelines have been also disseminated to the SETMs/SEHMs outside the TGs and, during the dissemination stage, training was given by the MTs and the trainers trained and certified by the project. These SETMs/SEHMs have conducted the visual inspection as well as the roughness survey and have implemented 1.85 km of road repairing with hot-mix asphalt according to the revised guidelines. Meanwhile, negative impacts were not observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

	Achievement of Project Purpose and Overall Goal									
Aim	Indicators		Results							
(Project Purpose)	1. At least 90% of the results	Status of the Achievement: achieved (not	verifiable)							
Implementation	of roughness survey at	(Project Completion)								
capacity for road	original target 22 SEHMs,			2014	2015	2016				
maintenance is	using the revised guidelines	No of SEHMs participated in the roughn	ess survey	22	22	21*				
improved.	is assessed accurate by the	% of results of the survey which were as	of results of the survey which were assessed accurate 72% 95% 95%							
	JICA experts.		one SEHM in Kurgan-Tyube SETM, no measurement was done due to road closure by the military order.							
		(Ex-post evaluation)								
		e e	Data is not available because the roughness survey has been discontinued due to shortage of budge							
	for fuel cost for the vehicle for the survey.									
	2. At least 80% of visual Status of the Achievement: achieved (continued)									
	inspection results by original	(Project Completion)								
	target 22 SEHMs, using the			2014	2015	2016				
	revised guidelines is	No of SEHMs participated in the visual	-	22	22	21*				
	assessed accurate by the	% of results of the inspection which wer			88%	94%				
	JICA experts.	*In one SEHM in Kurgan-Tyube SETM, no me	easurement was do	one due to road c	losure by t	he military c	order.			
		(Ex-post Evaluation)								
		- Accuracy level of the visual inspectio		been maintaine	d through	ı regular e	explanatory			
		sessions by the MTs certified by the project								
	3. At least 80% of results of	Status of the Achievement: achieved (cont	tinued)							
	-	(Project Completion)	2011	2015		0011				
	of original target SEHMs,		2014	2015		2016				
	planned based on the results	No of SEHMs participated in RRW	3 (3 hosts*)	3 (3 hosts) +9 observers		hosts and				
	of the road inspection and	Average % of results of RRW#2	+9 observers 89%	18 gu	100%					
	implemented according to	Average % of results of RRW#2N/A89%100%which were assessed satisfactory and </td								
	the revised guidelines, meet	met the requirements in the plans								
	requirements of time, cost,	*Host SEHMs are the designated SEHMs under	r which jurisdiction	on RRW are cond	lucted and	guest SHEN	Is are to			
	quality, and safety specified	-	-			-				

<sup>&</sup>lt;sup>6</sup> According to the post-project strategy, road repairing with hot-mix asphalt by the additional TG was not planned in 2017 because the equipment to use hot-mix asphalt, provision of which was being considered by the GOJ as mentioned in footnote 3, was assumed to be available for them in the first quarter of 2018.

<sup>&</sup>lt;sup>7</sup> RRI is the combined index of the IRI data collected through the roughness survey and the results of visual inspection, which is calculated using the "Form 1" of the revised road repairing guidelines.

<sup>&</sup>lt;sup>8</sup> "Project for Improvement of Equipment for Road Maintenance in Khatlon Region and Districts of Republican Subordination in the Republic of Tajikistan" (2013-2014) mentioned in footnote 3.

. <u></u>	in the plans.	whom a part of	the supervision delegat	ion is handed ov	er for RRW								
	in the plans.	whom a part of the supervision delegation is handed over for RRW. (Ex-post Evaluation)											
		-Results of the road repair works, planned based on the results of the road inspection and implemented											
							ments in the plans as the						
		Ũ	Ũ		•	•	•						
			ied by the project ha		· ·	ssions before the	e repair works.						
	4. Road inspection and		Achievement: achiev	ed (partially co	ntinued)								
	repairing guidelines for												
	SETM/SEHM revised												
	through the project are												
	approved by MOT.				-	-							
		-	t were used by only o	-									
		-The revised	road repairing guidel		continuously	used by the orig	ginal target SETMs.						
(Overall Goal)	1. By the end of 2019, at	1-1	(Ex-post Evaluation)	) achieved.									
Pavement	least 30 km and 15 km of	Original	SETM	2017	2019	2010	Unit: km						
condition of the	lengths of road repairing is	TG	Gissar	2017 6.5	<u>2018</u> 8.9	2019	Total 37.8						
roads in Tajikistan	implemented by hot-mix asphalt by the original TG		Kurgan-Tyube	0.6	0.8	0.5	1.9						
s improved.			Total	7.1	9.7	22,6	39.7						
_	and additional TG	1-2		,	1.1	/	cluded in the evaluation						
	republican and local roads according to the road repairing guidelines.	TG	-Road repairing with hot-mix asphalt was not started by the additional TG yet as the roads in need were rehabilitated by other donors, etc. (The additional target SETMs plan to start it in 2020 or early 2021 depending on the COVID-19 situation.) Unit: km										
			SETM	2018	;	2019	Total						
			Sughd	0 (112.		0 (99.3*)	0 (211.4*)						
			Kulyab	0		0 (44.5*)	0 (44.5*)						
			Total	0 (112.	,	0 (143.8*)	0 (255.9*)						
			*Length of road repair		asphalt by othe	er donors, provinci	al governments, etc.						
	2. The average RRI of the	、 I	luation) partially ach			1	· · · ·						
	roads repaired under 1 above	-				-	vey in the original target						
	in the original target area has		0 0		•		the repaired road under						
		Indicator 1 was much improved based on the results of visual inspection and the measurement of											
	a reduction of at least 60%		-			roughness using a conventional manual method.							
	compared to the same before		-										
		roughness us	ing a conventional m	anual method.									
	compared to the same before	roughness us (Ex-post Eva	ing a conventional m luation) not applicable	anual method. le (not included	l in the evalua	ation judgement)							
	compared to the same before repairing.	roughness us (Ex-post Eva -As the road	ing a conventional m luation) not applicabl	anual method. le (not included x asphalt was i	l in the evaluation of implement	ted in the addition	onal target area due to						
	compared to the same before repairing. 3. The average IRI of the	roughness us (Ex-post Eva -As the road r unnecessity, J	ing a conventional m luation) not applicabl	anual method. le (not included x asphalt was i	l in the evaluation of implement	ted in the addition							
	compared to the same before repairing. 3. The average IRI of the roads repaired under 1 above	roughness us (Ex-post Eva -As the road	ing a conventional m luation) not applicabl	anual method. le (not included x asphalt was i	l in the evaluation of implement	ted in the addition	onal target area due to						
	<ul><li>compared to the same before repairing.</li><li>3. The average IRI of the roads repaired under 1 above in the additional target area has a reduction of at least</li></ul>	roughness us (Ex-post Eva -As the road r unnecessity, J	ing a conventional m luation) not applicabl	anual method. le (not included x asphalt was i	l in the evaluation of implement	ted in the addition	onal target area due to						
	<ul><li>compared to the same before repairing.</li><li>3. The average IRI of the roads repaired under 1 above in the additional target area has a reduction of at least 50% compared to the same</li></ul>	roughness us (Ex-post Eva -As the road r unnecessity, J	ing a conventional m luation) not applicabl	anual method. le (not included x asphalt was i	l in the evaluation of implement	ted in the addition	onal target area due to						
	<ul><li>compared to the same before repairing.</li><li>3. The average IRI of the roads repaired under 1 above in the additional target area has a reduction of at least</li></ul>	roughness us (Ex-post Eva -As the road unnecessity, l applicable.	ing a conventional m luation) not applicab repairing with hot-mi Indicator 3 (i.e. deg	anual method. le (not includec x asphalt was i gree of reduct	l in the evalua not implemen ion of the av	ted in the addition	onal target area due to						

The project cost and the project period exceeded the respective plans (ratio against the plan: 130% and 119% respectively). The project period exceeded the plan to complete technical transfer related road repairing, which was delayed partly due to suspension of the RRW#2 caused by a natural disaster. The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair. 4 Sustainability

<Policy Aspect>

The NDS for the period to 2030 includes "All regions of the country are connected with paved roads and are accessible all the year-round" as one of the expected results. In addition, the guidelines revised through the project were officially approved by MOT in 2016. Furthermore, MOT is planning to issue an Order to all SETMs in 2020 to ensure utilization of the revised guidelines as stated in "Effectiveness/Impacts".

<Institutional/Organizational Aspect>

Organizational structure to promote road inspection and repairing, using the guidelines revised and approved through the project, has remained unchanged. As of May 2020, there were five vacancies for 15 posts at RCM/MOT: however, RCM mentioned that the minimum number of staff was secured because the existing staff could manage to assume their responsibilities despite the heavy workload. Besides, MOT is considering increasing the number of staff of RCM by adding two people. MOT has started negotiations with the Ministry of Finance to allocate additional budget for new staff. Meanwhile, necessary number of staff was secured at the target SETMs/SEHMs because all or most of the posts were filled.

<Technical Aspect>

All target SETMs/SEHMs sustained technical capacity to conduct visual inspection and the original TG to conduct road repairing according to the revised guidelines through continuous practice as well as on-the-job training (OJT) and/or the regular explanatory sessions by the trainers certified by the project. Although the roughness survey and road repairing with hot-mix asphalt have not been practiced in some of the target SETMs, these SETMs stated that the necessary capacity has been sustained because the staff trained by the project, including the certified MTs and trainers, continued discussing and explaining the theoretical aspects to new staff. In addition, as mentioned in "Effectiveness/Impacts, the revised guidelines have been disseminated and utilized by the other SETMs/SEHMs as well", utilizing the certified MTs and trainers. MOT is considering organizing some refresher training for and cross visits among SETMs on the practical aspects of the roughness survey, especially on IT and software part, and road repairing with the hot-mix asphalt once the above-mentioned

Order is issued. All the equipment provided under the project has been maintained in good condition Although the roughness survey equipment was utilized by only one target SETM in 2017 and 2018, it is expected to be utilized by all target SETMs from latter part of 2020 or early 2021 with issuance of the above mentioned Order. <Financial Aspect>

Although the road inspection and repairing guidelines have not been fully implemented by the target SETMs, only the roughness survey by the original target SETMs has not been continued due to shortage of budget. Total budget for maintenance of the international and republican roads, secured by MOT, was increasing year by year in the last three years (60 million Tajikistan Somoni (TSJ) in 2017, 61 million TSJ in 2018, and 69 million TSJ in 2019). The target SETMs feel that the allocated budget is not sufficient to cover all the maintenance needs, but, within their limited budget, they have managed to implement the revised guidelines as necessity requires other than the above case. The additional target SETMs, which plan to start/resume the roughness survey and road repairing with the hot-mix asphalt from 2020, mentioned that they will allocate the necessary budget from their annual maintenance budget. MOT confirmed that, with issuance of the above mentioned Order in 2020, all the SETMs will be required to include utilization of the revised guidelines in their annual maintenance plans so that the necessary budget to apply the revised guidelines will be secured by them from FY 2021. <Evaluation Result>

In light of the above, slight problems have been observed in terms of the financial aspect of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair

## 5 Summary of the Evaluation

The project achieved the Project Purpose of improving implementation capacity for road maintenance in Tajikistan and the effects of the project have partially continued mainly because the roughness survey has not been continued in three out of four target SETMs due to shortage of budget or unavailability of a survey vehicle until 2019. The Overall Goal of improving pavement condition of the roads in Tajikistan was achieved in the target year (2019). Regarding the sustainability, slight problem has been observed in terms of the financial aspect (i.e. the budget for the roughness survey has not been secured by the original target SETMs) but no problems have been observed in terms of the policy, institutional/organizational, and technical aspects. As for the efficiency, the project cost and period exceeded the respective plans. Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

## Recommendations for Implementing Agency:

- It is recommended that MOT ensures implementation of instructions specified in the Order it will issue to utilize the revised guidelines by strengthening monitoring of the actions taken by SETMs, and share progress with JICA, if necessary, involving JICA in conducting joint monitoring.

-It is recommended that, after the issuance of the above mentioned Order, MOT makes sure to organize refresher training to and cross visits among the SETMs on the practical aspects of the roughness survey, especially on IT and software part, and road repairing with the hot-mix asphalt.

### Lessons Learned for JICA:

- At the stage of project planning, MOT and JICA should have agreed that new practices and skills would be sustainably used through issuance and enforcement of Orders/Instructions to use the guidelines to be revised through the project so that continuation of road maintenance based on the revised guidelines by SETMs could be ensured after the project completion.

- Though the project, MTs for road inspection and trainers for specific techniques for road repairing were trained and certified by the Expert Team, who were then given opportunities to train others with assistance from the Expert Team. This has been very effective to ensure maintenance and sustainably use of the necessary knowledge and skills of other staff as well as their transfer to other staff. At the project planning and implementation stages, it is important to keep a good practice of training and certification of trainers and MTs by JICA and the Expert Team to sustainably use transferred knowledge and skills after the project completion.



Roughness survey equipment provided to Kulyab SETM kept in a good condition



Repair by hot-mix asphalt using revised guidelines by SEHM Rudaki (SETM Gissar), Dushanbe-Ayni Road (Republican Road) 2017

Co	ountry Name	Project for Improvement of Local Finance System in Palestine					
Palestine		rejection improvement of Locar Finance System in Facsure					
I. Project Outline							
Background	Since its establishment in 1994, the Palestinian Authority (PA) was trying to build local governance framework at to promote decentralization with a view to establish a self-reliant administrative and financial management system for their future nation. A study conducted by the World Bank in 2008 found that the proportion of property tax revenue was as high as 30-49% of the total municipal revenue in municipalities which levy property tax. In order to materialize the important revenue potential of property tax, it was necessary to establish the property valuation standards ar methods for tax levies and collections as well as developing the capacity of the General Department of Property Ta (GDPT), Ministry of Finance (MoF).						
Objectives of the Project	to formulate operation plan capacity of the Valuation S and identification and impr pilot GDPT branch office, collection, particularly at t property tax in Palestine. *TDMU (Training, Devel- 1. Overall Goal: The revenue from prop 2. Project Purpose: Operations on propert	opment of Training, Development, Media and Management Unit (TDMMU)* at the GDPT as based on the results of problem analysis and other relevant data, strengthening of the Standards Working Group to develop and operationalize the property valuation standards, ovement of the operational issues on property valuation and property tax collection at the the project aimed at improvement of operations on property valuation and property tax he pilot GDPT branch office, thereby contributing to improvement of the revenue from opment and Media Unit) at the start of the project. Reorganized into TDMMU in 2014. erty tax is improved in Palestine. y valuation and property tax collection have been improved, particularly at the GDPT					
Activities of the Project	<ol> <li>Project Site: Ramallah office*.</li> <li>*The project first targete However, after the mid-to down to Ramallah office permanent employees.</li> <li>Main Activities:         <ol> <li>Review of the exi Master Plan Matrix</li> <li>Formulation of Va programs on VS as area, Formulation</li> <li>Identification of op framework to the Geographic Inform</li> <li>Inputs (to carry out about Japanese Side</li> <li>Experts: 11 persons</li> </ol> </li> </ol>	luation Standards (VS), Preparation of VS manuals, Conducting of workshops and training s well as trial applications of the VS, Conducting the valuation for collection in the selected of methods to adjust and fine-tune the VS for revaluation, etc. perational issues of the pilot GDPT branch offices, Introduction of comprehensive training e GDPT, Conducting of Public Awareness Campaign (PAC), Pilot development of nation System (GIS) system for future adoption, etc. ove activities) Palestine Side 1) Staff allocated: 16 persons Persons (in Japan), 3 persons (in 2) Office space					
Project Period	October 2012 – September	2016 Project Cost (ex-ante) 304 million yen, (actual) 761 million yen					
Implementing Agency	General Directory of Proper	rty Tax (GDPT), Ministry of Finance (MoF)* ning from November 2015 to June 2019					
Cooperation Agency in Japan <b>II. Result of the E</b>	KRI International Corp.; Ko	okusai Kogyo Co., Ltd.					

<Special Perspectives Considered in the Ex-Post Evaluation >

• The Overall Goal is "The revenue from property tax is improved in Palestine", while the indicators for the Overall Goal are to assess the situation of property tax collection at the pilot branch office (Ramallah). As it was expected that the new valuation standards (New VSs) be introduced in the whole Palestine once it was adopted, the status of property tax collection at other branch offices (Supplementary Information 1) will be examined as well as the status of the improvement of property tax collection (Supplementary Information 2).

-The evaluation study was somewhat affected by the epidemic of COVID-19, that is, the actual field visit and interview with the branch offices were not conducted but information was verified based on the questionnaires collected from the implementing agency (GDPT main office and the pilot branch office), and the interviews with the main office as well as the project documents.

1 Relevance

<Consistency with the Development Policy of Palestine at the Time of Ex-Ante Evaluation >

At the time of the ex-ante evaluation, the Palestine National Development Plan (2011-2013) stated that the national revenue should be increased to achieve the fiscal target to reduce the dependence on the fund by foreign donor agencies and one of the important elements was the improvement of tax revenue.

<Consistency with the Development Needs of Palestine at the Time of Ex-Ante Evaluation >

At the time of ex-ante evaluation, there was no standard for valuation of properties, and it took a great deal of time and labor to conduct valuation of properties. While valuation was not conducted based on a certain set of standards, property tax was levied based on the result of such valuation.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

According to the Country Assistance Policy towards Palestine (2012), assistance in strengthening administrative and financial capacity was listed in one of the three priority areas.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the project completion. The project developed the New VSs as a means to improve property tax system and compiled the manual. In July 2016, the GDPT seminar was held in Jericho to disseminate the New VSs at the GDPT and the consensus reached in the seminar provided the basis for clarifying organizational arrangements for operationalizing the New VSs as well as briefly outlining main tasks to be performed by the GDPT to facilitate the public announcement on the actual application of the New VSs on January 1st, 2017. There were some challenges in implementing project activities, partly because it was difficult for the Japanese side to recruit experts in the field of property valuation or experts of licensed real estate appraisers who can take an oversea assignment. Nonetheless, through the project, the members of the Valuation Standards Working Group, including the valuation members of the GDPT headquarters and the pilot GDPT branch office, began to understand the basic formula to calculate property estimated value and the skills to apply it, although not all valuators at all branch offices fully understood the formula at the time of the project terminal evaluation (April-May 2016). Therefore, between May and August 2016, various training took place including a three-day intensive workshop on the New VS. As the result from the field trial application, the difference between the value before the introduction of the New VSs and the appraised value by the New VSs was calculated.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued to the time of ex-post evaluation. The New VSs have been officially applied. The New VSs classified buildings in four: residential, commercial, industrial, and tourism. The GDPT started to apply the New VSs only for commercial and industrial properties in 2018. This is because business owners have better ability to pay the tax, and focusing on business owners brings a good return for the effort made. As applying New VSs for residential properties requires a significant level of effort because of the large number of residential properties and the complicated procedures necessary to protect the poor, the application for residential properties is being postponed. The preparation for the application to tourism properties was planned in 2020, however, due to the negative impact of COVID-19 on tourism, this plan might be postponed. Considering the fact that there weren't agreed official valuation standards prior to the project, by applying the new standards, even on a limited scale, the room for arbitrary valuation can be minimized. It is assumed that the valuators have gained practical skills to apply the New VSs based on the experiences during the project. The fact that the New VSs are already applied in 25 municipalities shows that the valuators appropriately apply the New VSs based on the manual and the Value Adjustment Matrix (the matrix) developed by the project. According to the GDPT, the quality of work of valuators has been standardized by the use of the matrix.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved. The pilot GDPT branch office (Ramallah) began applying the New VSs to valuate properties in its jurisdiction and collecting property tax that is valuated based on the New VSs, focusing on commercial and industrial buildings. A total of 25 municipalities in Palestine began collecting property tax that is valuated based on the New VSs. According to the GDPT, the property tax levied for commercial and industrial properties increased by US\$30 million in two years after the introduction of the New VSs in 2018. At all the four branch offices surveyed during the ex-post evaluation, the values of the property tax levied and collected have been increasing from 2017 (before applying the New VSs) to 2019.

<Other Impacts at the time of Ex-post Evaluation>

No negative impact has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Project Pur	rpose and Overall Goal
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Aim	Indicators	Results
(Project Purpose)	(Indicator 1) The pilot GDPT	Status of the Achievement: achieved (continued)
	branch office is ready to apply the	(Project Completion)
Operations on	new valuation standards (new VS)	• In July 2016, GDPT seminar was held in Jericho to facilitate the public announcement on the
property valuation	with the manual compiled for it.	planned application of the New VSs based on the manual compiled.
and property tax		(Ex-post Evaluation)
collection have		• The GDPT started to apply the New VSs for commercial and industrial properties in 2018.
been improved,	(Indicator 2) The experience of trial	Status of the Achievement: partially achieved (continued)
particularly at the	application of the new valuation	(Project Completion)
GDPT branch	standards at a pilot GDPT branch	• The members of the Valuation Standards Working Group began to understand the basic
office where pilot	office will be fully understood by	formula to calculate property estimated value and the skills to apply it.
activities have been	all valuators in all GDPT branch	(Ex-post Evaluation)
implemented under	offices through trainings and	• The New VSs are already applied in 25 municipalities, which shows that the valuators have
the Project ('pilot	workshops.	gained practical skills to apply the New VSs. According to the GDPT, the quality of work of

GDPT branch office').		valuators has been standardized based on the tools compiled during the project.							
(Overall Goal)	(Indicator 1) A pilot GDPT branch	(Ex-post Evaluati	on) achieved						
	office (Ramallah) begins applying	• The pilot GDPT	branch office (Ram	nallah) began applyi	ng the New VSs to	valuate propertie			
The revenue from	the new valuation standards to	in its jurisdiction,	focusing on comme	ercial and industrial	buildings.				
property tax is	valuate properties in its jurisdiction.								
improved in	(Indicator 2) A pilot GDPT branch	anch (Ex-post Evaluation) achieved							
Palestine.	office (Ramallah) begins collecting • The pilot GDPT branch office (Ramallah) began collecting property tax that is valuated								
	property tax that is valuated based based on the New VSs, focusing on commercial and industrial buildings.								
	on the new valuation standards.								
	(Supplementary Information 1)	(Supplementary Information 1) (Ex-post Evaluation) achieved							
	Status of property tax collection at 25 municipalities where the New VSs are applied for commercial and industrial buildings:								
	branch offices other than the pilot	the pilot Ramallah, Al Bireh, Beituniya, Birzeit, Abu Dis, Al 'Eizariya, Bethlehem, Beit Jala, Beit							
	office.	Sahur, Hebron, Dura, Yatta, Tarqumiya, Taffuh, Bani Na'im, Beit Ummar, Jericho, Nablus,							
(		Salfit, Tulkarm, A'ttil, Deir al Ghusun, Qalqiliya, Jenin, Tubas							
	(Supplementary Information 2) (Ex-post Evaluation) achieved								
	Status of the improvement of	Values of the prop	perty tax levied and	collected at the surv	eyed four offices				
	property tax collection.	(Value in Jordanian Dinar)							
		Branch	office/year	2017	2018	2019			
		D 11.1	Levied	5,489,270	5,871,127	6,055,573			
		Ramallah	Collected	4,397,652	4,448,529	4,549,852			
		<b>.</b> .	Levied	1,221,065	1,518,912	1,576,80			
		Jenin	Collected	1,237,839*	1,129,561	1,269,74			
			Levied	4,320,274	4,691,228	4,908,08			
		Nablus	Collected	3,690,786	3,810,364	3,865,93			
			Levied	3,889,328	3,970,054	4,590,709			
		Hebron	Collected	2,695,514	2,710,908	2,723,240			
		* The value colle for the following	e	levied because som					
Source: IICA doour	ents, Project Completion Report, Que	Ŷ		(Handquarter office					

### 3 Efficiency

Although the project cost exceeded the plan, the project period was within the plan (ratio against the plan: 250% and 100%, respectively). The project cost increased because both the number of the Japanese experts and their work days increased due to additional technical support caused by (i) a change in the approach to value land, (ii) the modification of "P-Tax system" (computer system at GDPT) developed by the German GIZ to reflect New VSs, and (iii) introduction of GIS function in the P-Tax system. The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The National Policy Agenda (2017-2022) sets effective, efficient public financial management as one of its policies and states that this should be achieved by mobilizing revenue by expanding the tax base and by enhancing tax collection (Policy 10).

< Institutional/Organizational Aspect>

The GDPT has the overall responsibilities of implementing property tax valuation and collection and has a total of 169 staff members, 21 at the headquarter office and 148 (including 24 valuators) at 16 branch offices (as of June 2020). The capacity of the GDPT seems sufficient as they continue to operate tax valuation and collection. GDPT is planning to further increase the number of municipalities that apply the New VSs for commercial and industrial properties by the end of 2020 and has been requesting the recruitment of new staff, including valuators and other support staff. However, there are some uncertainties in the plan due to COVID-19 and the extended state of emergency.

<Technical Aspect>

In 25 municipalities, the New VSs are applied and the valuators use the manual and the matrix developed by the project, therefore it seems that the valuators have practical skills required to implement their duties. However, according to the GDPT, the GIS capacity is weak. In addition, there is no formal structure to train the staff and there has been no training provided on the valuation standards since the project completion. Nevertheless, experienced staff provide guidance and instructions for inexperienced staff through on-the-job training. <Financial Aspect>

The number of municipalities where the property tax is applied is increasing from 52 in 2012 to 72 in May 2020 (total number of municipalities is 154, as of 2020). The New VSs are applied in 25 municipalities and the GDPT at the time of the ex-post evaluation is looking to increase the coverage. For this purpose, additional staff (valuators and administrators), additional/better performing equipment and vehicles would enable the GDPT to speed up the process of valuation, but the GDPT, including branch offices, faces the general lack of resources. At the time of ex-post evaluation, the GDPT does not receive any support from donors.

In light of the above, some problems have been observed in terms of the institutional, technical and financial aspects of the implementing agency. Therefore, the sustainability of the project effects is fair.

5 Summary of the Evaluation

The project partially achieved the Project Purpose of improvement of operations on property valuation and property tax collection, as the New VSs manual was compiled and the members of the Valuation Standards Working Group began to understand the basic formula of valuation, although not all the valuators did not fully understand the formula. At the time of the ex-post evaluation, the GDPT has been applying the New VSs for commercial and industrial properties since 2018, which shows that the valuators have practical skills to apply the New VSs. Therefore, the project effects have been continued. The Overall Goal of improvement of the revenue from property tax has been achieved, as 25 municipalities, including those under the jurisdiction of the pilot GDPT (Ramallah), began collecting property tax based on New VSs and the values of property tax levied and collected have been increasing. Sustainability is high in the policy aspect but some problems have been observed in the institutional/organizational, technical and financial aspects, because the training system is not established and there is insufficiency in manpower and financial resources. In the efficiency, the project cost exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

## Recommendations for Implementing Agency:

It is recommended that GDPT create an opportunity for staff members to retain and develop knowledge and skills. For example, it would be advisable to hold annual in-house training or workshop in which peers can learn from each other and can seek guidance from the leadership. It can be a lecture style or can be participatory 'staff retreat' style, which will also help team building, and does not cost much.
If it is difficult to secure necessary funds from the PA budget, it is desirable to try to mobilize external support by, to start with, putting

together the current situation of the GDPT including detailed analysis of SWOT<sup>1</sup> in a quality report, and share with potential donors.

• It is recommended that the GDPT further promote the use of the computerized valuation and tax management systems and expand the areas of their application, building on the P-Tax and GIS systems experimented in the project. This would enhance the efficiency of GDPT's work in valuation and tax collection, and would help municipalities increase much needed revenues.

# Lessons learned for JICA:

• The project had difficulties in finding eligible experts who can work in Palestine. In formulating a new technical cooperation project, it is necessary to collect information on the availability of qualified experts on the subject. If the probability of finding experts who can be dispatched overseas in the requested field is low, JICA should adjust the approaches/project design so that Japanese eligible experts can fit, or JICA should consider other cooperation schemes to meet the needs of expertise, such as training in the third country or dispatch of experts through collaboration with an international organization, in consultation with the Embassy of Japan (the Representative Office of Japan in case of Palestine).



Valuation staff using valuation function of the P-TAX system which incorporated GIS data



Valuation staff during field work using a mobile device, which is linked with the P-TAX and GIS systems.

<sup>&</sup>lt;sup>1</sup> Analytical method taking four elements into consideration, i.e., strengths, weaknesses, opportunities, and threats.

				conducted by Palestine Office: March, 2021					
Country				velopment through Public Private					
Pales	tine	Partnership (Phase 2	)						
I. Project Outline									
Background	Palestine is rich in tourism resources such as Bethlehem, Jericho, and Jerusalem. Jericho is considered as on the world's oldest cities. The number of tourists to Jericho had been sometimes affected by security matters but were issues, other than public safety, facing the promotion of tourism in Jericho region, for example, the way of u cultural heritage, the lack of development of local souvenirs and tourism products and the lack of tourism inform availability. JICA implemented technical cooperation "Project for Sustainable Tourism Development in Jer through Public-Private Partnership" (hereinafter referred to as Phase 1) from 2009 to 2012 in Jericho as the target It was required to further develop the activities of Phase 1 to bring benefits to overall regional economy as well extend the acquired knowledge and experience of Phase 1 to other areas in Palestine.								
Objectives of the Project	<ul> <li>Through clarification of the issues in tourism development benefitting local community, implementation of the tourism promotion of Palestine, carrying out of sustainable Community Based Tourism (CBT) activities in Jericho through Public-Private Partnerships, utilization of tourism development based on lessons learned for Jericho in other target areas, and promotion of mutual cooperation with neighboring countries (such as Jordan, Israel and Egypt), the project aimed at the establishment of the methodology of tourism development in Palestine, considering CBT, thereby contributing to active implementation of the established methodology for tourism development as well as to increase of the number of tourists visiting the developed tourist sites to benefit the local community.</li> <li>1. Overall Goal: The methodology of tourism development established by the project is actively implemented in Palestine and the number of tourists visiting the developed tourist sites by the project is increased to benefit the local community.</li> <li>2. Project Purpose: The methodology of tourism development in Palestine, considering CBT, is established.</li> </ul>								
Activities of the Project	<ol> <li>Main Activi (1) Implem Palestin (2) Implem sustaina (3) Compil particip activitie (4) Verific other ta into tou (5) Conduc countri</li> <li>Inputs (to ca Japanese Side</li> <li>Experts: 9</li> <li>Trainees R countries)</li> <li>Equipment digital equi</li> </ol>	ities: nentation of baseline survey, ne, Implementation of endlin nentation of activities for able tourism development, et lation of strategy and actio pation of local residents and es to embody CBT, Revision ation of the condition of the urget areas through a pilot pr urism development for entire esting of a study to analyz- es, Compilation of a proposa arry out above activities) persons Received: 31 persons (in Ja : Vehicles, DVD player/sc ipment, equipment for CBT achines, signs, display show	, Identification of e survey, etc. national tourism fc. n plan to implem the private sector of Jericho's touris tourism sector in o oject, Compiling r Palestine, etc. e the conditions l on the future dire	areas 2) Office space at MOTA offices in Jericho and					
Project Period	June 2013 – Jun		Project Cost	(ex-ante) 463 million yen, (actual) 467 million yen					
Implementing Agency		rism and Antiquities (MOTA							
Cooperation Agency in Japan	JTB Corporate S	Sales Inc.							

<Constraints on Evaluation>

• The evaluation study was somewhat affected by the epidemic of COVID-19, therefore face-to-face interview to municipalities was not conducted and information on municipalities was collected through questionnaire and telephone interview.

<Special Perspectives Considered in the Ex-Post Evaluation>

• It is considered that the Indicator 1 of the Project Purpose, i.e., incorporation of CBT into MOTA's strategy and action plan, is included in a part of the Indicator 1 of the Overall Goal (continuation of activities based on the methodology for tourism development established by the project). Therefore, the continuation status of the Indicator 1 of the Project Purpose is examined as a part of assessment of the achievement of the Indicator 1 of the Overall Goal.

• Regarding the Indicator 2 of the Project Purpose, CBT activities in Jericho were implemented as "pilot" during the project period and it is considered that this Indicator is included in the Indicator 1 of the Overall Goal after the project completion. Therefore, the continuation status of this Indicator is assessed as a part of the Indicator 1 of the Overall Goal.

1 Relevance

<Consistency with the Development Policy of Palestine at the Time of Ex-Ante Evaluation>

In the Tourism Development Strategy (2011-2013), the strategic objectives were: high-quality tourism products, marketing of Palestine as independent and characteristic sightseeing destination, and effective conservation of historical ruins and heritage.

<Consistency with the Development Needs of Palestine at the Time of Ex-Ante Evaluation>

In Jericho, tourism was expected to be important industry as well as agriculture. It was required to promote effective utilization of cultural heritage, to strengthen tourism products and services, to diversify tourist sites, and to promote purchase of tourism products and services for tourists.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

According to the Country Assistance Policy towards Palestine (2012), assistance to promotion of sustainable economic growth was listed in one of the three priority areas. Tourism was expected to have high potential to contribute to economic growth.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the project completion. "The tourism development methodology that considers CBT" established through project activities was not documented in the MOTA's tourism strategies and action plans (Indicator 1). However, the methodology was shared within MOTA as internal circular notice and CBT was functioning. Six items of CBT activities out of seven were being implemented by the end of the project period (Indicator 2). At project completion, the City of Jericho entrusted the remaining one item ("Tree of Zacchaeus Market") to a private developer, and the development was underway. MOTA's 2016 promotion action plan specified continuous implementation of the four types of promotion activities introduced by the project (creation of promotion tools as well as participation in tourism expos, media FAM, and agent FAM). Preparation of these promotion activities was actually started by the end of the project for some of them, for example, tourist trade fairs in Italy and Romania as well as media FAM in Indonesia and South Korea. As these activities constituted the major components in the action plan, it was considered that the planned activities would be continuously implemented, although the percentage of the promotion activities actually sustained could not be precisely calculated, so this indicator was not verifiable (Indicator 3).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have partially continued to the time of ex-post evaluation. A majority of the activities, although not all of them, introduced by the project are implemented. Activities such as participation in fairs and promotion through brochures and website are described in the action plan in 2020 and are actually implemented, although the percentage of implementation is not clear and the Indicator 3 is not verifiable.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved. Regarding the Indicator 1, the concept of CBT was not incorporated in the New Tourism Law or the MOTA Strategy (2017-2022). In the six target areas during the project, some projects introduced by the project are described in action plan and continuously being implemented in good conditions, while others are not being implemented well because of lack of fund and human resources. During the project, MOTA was planning to newly introduce the methodology established in the project to Qalqilya, Tubas and Salfit, but new projects have not been started in these areas due to lack of fund. As to the Indicator 2, new tourist sites have not been developed since the project completion because MOTA does not have funds to develop new tourist sites. Regarding the Indicator 3, the number of tourists visiting the sites has been clearly increasing, more than 30% until 2019 in all of the target sites except Nablus, where Tourist Information Center (TIC) has been closed, although the number of tourists dramatically decreased in 2020 due to the COVID-19 crisis (information was not available at two sites, Bethlehem and Hebron). Regarding the Indicator 4, according to the interview with MOTA, According to the information of MOTA, more than 70% of those involved in the activities have been satisfied in total. On a regional basis, all the target sites have achieved the target level except for Bethlehem, where those who are engaged with tourism sector expected more creative activities.

<Other Impacts at the time of Ex-post Evaluation>

There have been positive impacts in terms of gender through participation of women in pilot projects on mosaic, weaving, and embroidery, etc. In addition, the relationship with Jordan has been strengthened as tourism agent in Palestine and Jordan started mutual visits. No negative impact has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Aim	Indicators	Results
(Project Purpose)	(Indicator 1) The	Status of the Achievement: partially achieved (partially continued)
	methodology for	(Project Completion)
The methodology	incorporating CBT into	•"The tourism development methodology that considers CBT" established through project activities
of tourism	Palestine tourism	was not documented in the MOTA's tourism strategies and action plans, although the methodology
development in	development is explicitly	was shared within MOTA by internal circular notice and it was functioning.
Palestine,	outlined into MOTA' s	(Ex-post Evaluation)
considering CBT, is	tourism strategy and action	Refer to the Indicator 1 of the Overall Goal
established.	plan.	
	(Indicator 2) CBT activities in	Status of the Achievement: achieved (partially continued)
	Jericho that are described in	(Project Completion)
	the action plan are sustained	• Six items of CBT activities out of seven were being implemented.
	(at least 7).	(Ex-post Evaluation)
		Refer to Indicator 1 of the Overall Goal

	(Indicator 3) Promotion	State	e of the Ar	hievement: not	rifiable (not	verifiable)				
	activities in Palestine that are	Status of the Achievement: not verifiable (not verifiable) are (Project Completion)								
	described in the action plan	• Four types of activities introduced by the project were described in the action plan in						ı plan in 20	16 ;	
	are sustained (at least 70%).	further development and expansion of the project activities but the percentage is not clear.								
		<ul><li>(Ex-post Evaluation)</li><li>Activities described in the action plan in 2020 are actually implemented: participation in fairs</li></ul>								
					-		• •	-		Ian
(Overall Goal)	(Indicator 1) Tourism		promotion through brochures and website although the percentage is not clear. (Ex-post Evaluation) partially achieved							
(o vorum obur)	strategies and/or action plans	(2.1	Current Situations in Activities in the Latest Action Plan in Six Target Areas					Areas		
The methodology	are drafted or revised, and	Jericho · Package proje								and
of tourism	activities in 9 areas are begun		preparations already done but not con							
development	or continued based on the	don't have time to visit all the stalls in the Market, there w			here was no	motivation	ı for			
established by the	methodology for tourism			the venders to p	•		e stalls in the	he market. I	Moreover, t	here
project is actively implemented in	development established by the project.			were not enough				1 :4 - 1:4	-f 4h - D - J	
Palestine and the	the project.			• Bedouin Lifes Tent were improv						Juii
number of tourists				Honey Project						
visiting the				• Embroidery P		-				the
developed tourist				capacity to sell t	their product	ts. They lim	ited the proo	duction dem	and-based o	only
sites by the project				and the project is	-					
is increased to				Bedouin Wove		0	association la	acks fund an	id infrastruc	ture
benefit the local community.		11-1		to continue the w			C		) - 44 - 11 Du - 3	
community.		не	oron	Package Proj Continued in ver			formation s	igns and P	ottery Proj	fect
		Bet	hlehem				erv good cor	nditions		
		Detineneni		<ul> <li>Sethlehem</li> <li>Specialty Shop Project: Continued in very good conditions</li> <li>Wool products business: No information available</li> </ul>						
					ject for developing TIC: Continued in very good conditions				nditions	
		Al	Al Bireh • Soap business: No information available							
		Nał	olus	<ul> <li>Package Proje</li> </ul>	ect for deve	loping infor	mation sign	s: Continued	d in very g	;000
			conditions							
			Package Project for developing TIC: Just after project completion, a TIC facility was damaged because of demonstration against the m							
			MOTA headquarters and MOTA Nablus have a plan to repair the facility and							
			nominate staff to work there.							
		Tul	Tulkarem         • Package Project for developing information signs, Package           developing TIC, Package Project for producing pamphlets: Continue						ge Project	fo
									ntinued in v	very
		good conditions								
		• Qalqilya, Tubas, Salfit : In addition to above 6 target areas, MOTA added these 3 areas as sites to plan to develop new tourist activities with the methodology established in the project. However, no projects have been implemented due to lack of fund								
	(Indicator 2) 9 new tourist	no projects have been implemented due to lack of fund. (Ex-post Evaluation) not achieved								
	sites are developed after the	<ul> <li>(Ex-post Evaluation) not achieved</li> <li>No new tourist sites have been developed due to lack of funds<sup>1</sup>.</li> </ul>								
	project.				1					
	(Indicator 3) Number of	(Ex-t	oost Evalu	ation) achieved						
	tourists visiting the sites			f Tourists Visiting	the Sites De	veloped base	ed on the Me	thodology o	f the Project	t
	developed based on the		Name	e of tourist site		No. of to	urists visitin	g the site		
	methodology of the project				before	2017	2018	2019	2020	
	increases by 30%.				2016					_
			Jericho T	TIC	5,174	6,623	5,925	7,239	No	
			Bedouie	Lifestyle	(2015) Approx.	416	501	489	informat ion	1
				ce in Jericho	Approx. 50*	410	501	409	(Dramati	
				m Select Shop	Approx.	No inform	ation		cally	
				P	715**				dropped	1
			Hebron I	Pottery	1,000	No inform	ation		due to	
				Handmade	(2015)				COVID	
			Pottery F	• ·			I		19	1
			Al Bireh		722	1,819	2,320	2,402	crisis)	
			Nablus T		0	0	0	0	-	
			Tulkaren	n TIC	933	3,211	2,815	2,916		

<sup>&</sup>lt;sup>1</sup> New tourist sites are under development at the time of ex-post evaluation with external support. For example, Japan is continuing its support for construction and management of protective shelter and presentation of the Great Bath at Hisham Palace in Jericho. World Bank supported the Abraham Path Initiative to create job for youth and women.

	<ul> <li>*Calculated 100 in 2 years from April 2014 to April 2016. Average No. of persons per year is 50.</li> <li>**Calculated 5,000 in 7 years from 2009 to 2016. Average No. of persons per year is approximately 715.</li> </ul>
(Indicator 4) 70 % of those involved in the activities developed based on the methodology of the project are satisfied.	<ul> <li>(Ex-post Evaluation) achieved</li> <li>According to the information of MOTA, more than 70% of those involved in the activities have been satisfied in total. On a regional basis, all the target sites achieved the target level except for Bethlehem, where they expected to have more creative activities and the activities developed did not meet their expectation<sup>2</sup>.</li> </ul>

Source: JICA documents, Questionnaire and interview to MOTA headquarter office, Questionnaire to municipalities

### 3 Efficiency

Although the project cost slightly exceeded the plan, the project period was within the plan (ratio against the plan: 101% and 100%, respectively). The outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

# 4 Sustainability

<Policy Aspect>

In the MOTA Strategy (2017-2022), tourism is considered as the fastest growing economic sector and the priority in tourism sector is given to high quality tourism product, including development of tourism sites as well as improvement of competitiveness and the service level. The concept of CBT was not incorporated in the MOTA Strategy (2017-2022). However, according to MOTA, it is supposed that the concept of CBT be included within the new version of the Strategy. In Jericho, a program of municipality includes the guiding services and promotion of local products supported by the project.

### <Institutional/Organizational Aspect>

MOTA has sufficient number of staff members, with 150 at headquarters and a total of 300 in 10 branch offices. In the municipality offices, two to three staff members are engaged in tourism sector. In general, they are conducting their duties based on their mandate and responsibilities, and there is not so much organizational difficulty except the fact that the number of staff is not sufficient in one municipality. The Jericho Heritage Tourism Committee (JHTC) developed by the project (Phase 1) is not functioning currently, as all the members have their own work at other organizations and nobody could dedicate enough time and efforts to the activities at JHTC and the idea of formulating the JHTC was not matching with the ministry's top priorities. Representative for JHTC from Jericho municipality was changed frequently, which affected the smooth implementation of JHTC activities. MOTA considers that the private sector can lead this kind of effort better, since it could directly impact on their business but that the private sector cannot afford to lead JHTC. <Technical Aspect>

The MOTA staff have capacity necessary to implement their duties such as skills in communication, ICT, marketing/promotion, and management, although their skills need to be further improved. MOTA participates in international tourism fairs abroad at MOTA's own budget and it is a good opportunity for them to improve their marketing and promotion skills. Training programs are not implemented with MOTA's own budget but donors provide training opportunities. Various tourism brochures (general brochures, tourism maps, brochures for archeological sites/cuisine/CBT and Jericho book, etc.) developed by the project have been still utilized. Currently, the new design website of MOTA developed by the project is a helpful tool, which is being used by MOTA in tourism promotion and marketing since its launch until now.

## <Financial Aspect>

MOTA has annual budget for the management and maintenance of the cultural heritages, but there is no fund to develop new tourist sites or to rehabilitate the existing sites in an appropriate manner. In order to develop new tourist sites, MOTA needs to get funds, including those from donors.

# <Evaluation Result>

In light of the above, some problems have been observed in terms of the policy, institutional/organizational, technical and financial aspects of the implementing agency. Therefore, the sustainability of the project effects is fair.

### 5 Summary of the Evaluation

The project partially achieved the Project Purpose, i.e., establishment of the methodology of tourism development, considering CBT. Although CBT was not documented explicitly in MOTA's Strategy or action plan, most of the CBT activities in action plan in target areas were implemented as well as promotion activities. At the time of the ex-post evaluation, a majority of the activities, although not all of them, introduced by the project are implemented, therefore, the project effects have been partially continued. The Overall Goal, i.e., implementation of the methodology of tourism development established by the project and increase of the number of tourists, is partially achieved. A majority of activities in action plan are being implemented and the number of tourists was increasing until 2019 but new tourist sites have not been developed due to lack of funds. Regarding sustainability, some problems have been observed in the policy, institutional/organizational, technical and financial aspects, because of shortage of training opportunities and financial resources. In the efficiency, the project cost slightly exceeded the plan. Considering all of the above points, this project is evaluated to be partially satisfactory.

# III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• To ensure sustainability, it is necessary to clarify communication channel through the focal point of the project. The person of the focal point, preferably the project director, should be involved in all the details of the implementation stage even for the other directorates to ensure sustainability even in the case of the job rotation. If there is one main contact person who knows everything about the project, it

<sup>&</sup>lt;sup>2</sup> Tourism in Bethlehem is much advanced than other areas in Palestine and they thought they could do more advanced activities such as making film for promotion. Therefore, the relative satisfaction was low.

is more likely to assure the sustainability of the project and to enhance its impact.

Lessons learned for JICA:

When designing a project, which targets several different areas, it is necessary to take into consideration the diversity of the needs among each target area. It is desirable to implement activities, depending on the priorities of each area. Needs of each city differ based on the tourism attractions available, number of tourists visiting, and people's experience in tourism industry. Thus, customizing the activities based on such analysis would be more satisfactory to those involved and raise the future commitment and sustainability. Deeper investigation that considers the opinion of all counterparts, not only implementing agency, will increase the satisfaction as well as the commitment of the counterpart and sustainability of the activities.



TIC in Jericho which was developed by JICA project (Phase 1) is providing the information to the tourists.



New design website of MOTA. It was developed by the project as one of the most important priorities of MOTA.

Country Name	Project for Productions of Integrated Digital Terrain Model and Navigational Chart in the Kingdom of Cambodia	Electronic						
Kingdom of Cambo								
1. 1 Toject Outline								
Background	In Cambodia, the Sihanoukville Port is the sole deep-water port facing the outer sea, and the revitalization of international trade by developing the Port and its surrounding areas became an important issue. Although navigational chart covering information about water depth and facilities was essential for safe boating, onl out-of-date chart was available in the country. In addition, in July 2012, the International Maritime Organizatio (IMO) mandated installation of an electronic chart display system (ECDIS) for passenger ships of more than 50 GT (gross tonnage) and tankers of more than 3,000 GT (all new ships are subject to this requirement). In the future not only new ships but also existing ships were going to be required to install ECDIS in accordance with the typ and size of ships. Therefore, it was necessary for the country to produce electronic navigational charts (ENC) is accordance with the global standards responding to the latest ECDIS.							
Objectives of the Project	<ul> <li>The project aims to produce electronic navigational charts for sailing in the surrounding sea areas of the Sihanoukville Port, thereby contributing to strengthening the navigation safety and enhancing the international credibility of the Sihanoukville Port.</li> <li>1. Expected Goals through the proposed plan<sup>1</sup>: 1) Strengthening the navigation safety in and around the Sihanoukville Port, 2) Enhancing international credibility of the Sihanoukville Port.</li> </ul>							
Activities of the Project	<ul> <li>Project Site: The Sihanoukville Port and its surrounding areas</li> <li>Main Activities: 1) Collection, processing and analysis of chart information, 2) Acquisition, pranalysis of digital hydrographic survey data, 3) Implementation of oceanographic observations for counterparts on operation and management of ENC, etc.</li> <li>Inputs (to carry out above activities)</li> <li>apanese Side</li> <li>Mission members: 11 persons</li> <li>Trainees Received: 5 persons</li> <li>Third country training: 5 persons (the Philippines)</li> <li>Equipment: multi-beam echo sounder, global navigation satellite system positioning system, unmanned aerial vehicle, PCs, etc.</li> <li>Local expense: cost for project activities</li> </ul>	on (tide), 4) Department of onstruction of						
Project Period	uly 2013 – December 2016 Extension: January 2016 – Project Cost (ex-ante) 302 million yen, (actual) 473 m December 2016)	-						
Implementing Agency	Department of Waterway Infrastructure and Port Construction of Ministry of Public Works a DWIPC/MPWT) (Waterways Department was renamed to the DWIPC in October 2016)	nd Transport						
Cooperation Agency in Japan	Aero Asahi Corporation.							

### 1 Relevance

<Consistency with the Development Policy of Cambodia at the Time of Ex-Ante Evaluation>

The project was consistent with Cambodia's development policy of the "National Strategic Development Plan" (2009-2013) giving importance to "safety enduring of ships and ports".

<Consistency with the Development Needs of Cambodia at the Time of Ex-Ante Evaluation>

The project was consistent with Cambodia's development needs of producing ENC in accordance with the global standards responding to the latest ECDIS for securing navigation safety and international credibility.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with "The Country Assistance Policy for Kingdom of Cambodia" (2012) positioning "strengthening of economic base" including "development of economic infrastructure" as one of the priority areas. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Objectives at the time of Project Completion>

The objectives of the project were achieved at the time of project completion. Through the project, hydrographic survey data and information necessary for editing ENC around the Sihanoukville Port, such as tide, were prepared, and the staff of the DWIPC were trained so that they would be able to design, collect and process such survey data and information (Output 1). On top of that, the project established the Database of Integrated Digital Geospatial Terrain Model of Land and Sea (DTM) (Output 2) which was also essential for editing ENC, and transferred the related skills to the staff of the DWIPC. As a result, ENC at a 1:10,000 scale (harbor navigation) was firstly produced at the original project period and ENC at a 1:80,000 scale (coastal navigation) was additionally produced at the extended

<sup>&</sup>lt;sup>1</sup> The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

project period (Output 3). Furthermore, in order for the staff of the DWIPC to appropriately operate and manage the ENCs, the project enhanced the skills of the staff (Output 4).

<Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

The proposed plan has not been utilized at the time of ex-post evaluation. The DWIPC and the Sihanoukville Autonomous Port (Port Autonome de Sihanoukville: PAS) have yet to be able to publish and distribute the ENCs at 1:10,000 and 1:80,000 scales because it is necessary to first sign a memorandum of understanding (MoU) with the United Kingdom Hydrographic office (UKHO), which has the international sales market and effective mechanism to provide ENCs to vessels in service internationally which Cambodia does not have at the moment. Before the official communication in late 2018, there had been some discussions initiated by the MPWT with the UKHO about the MoU preparation and necessary procedures. Then, both sides began drafting the MoU in early 2019, and the DWIPC sent their inputs to the Office in February 2020 after the internal review and approval within the DWIPC and the MPWT. However, upon receiving the draft MoU, the UKHO could not respond immediately because of staff turnover and the unexpected global pandemic of COVID-19, which made it challenging for the newly assigned staff to implement the works including reviewing the draft MoU. Due to these reasons, their reviewing process has been hindered, which has also caused delays in publishing the ENCs. Thus, it may take more time to publish the ENCs. This has also prevented the DWIPC from issuing waterway notifications, since it can only be done (and widely distributed) on the UKHO's platform. It should be noted, however, that the DWIPC has continuously sent reminders to the Office and made as many efforts as possible to conclude the MoU after the project completion. They will keep following up until the MoU is approved and signed.

The ENC at a 1:10,000 scale was updated in 2018 whereas the one at a 1:80,000 scale has never been updated since the project completion because there have been no significant changes on coastal areas around the Sihanoukville Port. Furthermore, according to the DWIPC, they have collected new data for shoreline mapping along four coastal provinces, including Preah Sihanoukville province, once per year. Carrying out shoreline mapping in different provinces can take a long time, and the coverage area hinges on the amount of DWIPC's annual budget. Thus, it is difficult to collect the data for all of the coastal provinces at once, and they have divided the coverage into several according to the available budget amount. Conducting shoreline mapping is a mandatory obligation, since it is necessary to incorporate its data when updating the ENCs in the future.

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

The expected goals through the proposed plans have been partially achieved at the time of ex-post evaluation. As mentioned above, the latest DTM and Vector Fair Sheet have been necessary to update the ENCs. Therefore, the DWIPC has continued to produce the DTM and the Vector Fair Sheet on the surrounding areas of the Sihanoukville Port since the project completion (Indicator 1). In terms of sea-level conditions (Indicator 2), the DWIPC has continuously used the sea-level conditions (water depth of 0.99 m) set by the project and has not set a sea-level condition (water depth of 0 m) by themselves after the project.

According to the DWIPC and the PAS, no accident in and around the Sihanoukville Port has occurred before and after the project, which indicates that the navigation around the area has remained safe since the project completion. Furthermore, the DWIPC reported that the Port earned the international credibility thanks to the ENCs developed in accordance with the international standards and will be further enhanced if the MoU with the United Kingdom Hydrographic office is signed.

<Other Impacts at the time of Ex-post Evaluation>

Some positive impacts were confirmed at the time of ex-post evaluation. With the skills and knowledge acquired through the project, the DWIPC newly produced two paper nautical charts at a 1:20,000 scale by leveraging the hydrographic survey data constructed by the project. One was jointly produced with the PAS to update an existing paper nautical chart as a new channel dredging at the PAS was completed. After its updating, the DWIPC and the PAS made 100 copies of the chart and distributed them to their contracted container shipping lines and ships for free of charge and internal use. According to them, the lines and ships have used them. The other one was produced to response to the request from PAPA Port, a privately-owned port located in Kampot province. There were no other positive or negative impacts confirmed.

<Evaluation Result>

In light of the above, despite the fact that the postponement of the reviewing and signing process of the MoU between the MPWT and the UKHO has significantly affected the utilization status of the proposed plan, what has been achieved so far is believed to be critical for Cambodia's future navigational safety; therefore, the effectiveness/impact of the project is fair.

Aim	Indicators	Results
(Utilization Status of the Proposed Plan) The Government of Cambodia appropriately provides users (including shipping companies) navigational charts (electronic navigational charts) and hydrographic information essential for safe maritime transportation.	<ol> <li>The status of the publication of the ENC of Cambodia (No. of copies).</li> <li>The number of waterway notifications issued.</li> </ol>	<ul> <li>The DWIPC and the PAS have not published and distributed the ENCs at 1:10,000 and 1:80,000 scales produced by the project, since the MoU with the UKHO, which has the international sales market, has not been signed. This is mainly due to the influence of COVID-19 pandemic. However, the said MoU has already been drafted by both the DWIPC and the Office, and the DWIPC will keep following up until it is signed.</li> <li>(Ex-post Evaluation) Partially Achieved.</li> <li>Waterway notifications have yet to be issued, since the above-mentioned MoU has not been signed mainly due to the COVID-19 pandemic. It should be noted, however, the draft MoU has been approved by the Cambodian side and the notifications will be issued as soon as the signing process is over.</li> </ul>
<ul> <li>(Expected Goals through the Proposed Plan)</li> <li>1) Strengthening the navigation safety in and around the Sihanoukville Port, 2) Enhancement of</li> </ul>	<ol> <li>Production of DTM and Vector Fair Sheet on the surrounding areas of the Sihanoukville Port.</li> <li>Standard sea-level conditions (water depth of 0 m) of the surrounding areas of</li> </ol>	<ul> <li>The DWIPC has continued to produce the DTM and the Vector Fair Sheet on surrounding areas of the Sihanoukville Port, which is essential for editing and updating the ENCs produced by the project.</li> <li>(Ex-post Evaluation) Not Achieved</li> </ul>

Status of Achievement of Utilization Status of the Proposed Plan and Expected Goals through the Proposed Plan

international credibility of the Sihanoukville Port is set. the Sihanoukville Port.	
Source : Final Report, Interview and questionnaire to the DWIPC and the	e PAS

### 3 Efficiency

The project cost and period exceeded the plan (ratio against the plan: 157% and 140%, respectively). The original output, ENC at a 1:10,000 scale, was produced as planned, and the additional output, ENC at a 1:80,000 scale, was also produced due to its urgent demand. For the production of the ENC at a 1:80,000 scale, Japanese experts were additionally dispatched, which contributed to an increase in the project cost. The project period was also extended. Therefore, the efficiency of the project is fair

## 4 Sustainability <Policy Aspect>

"The law on Waterway and Marine" (2015-2020), which is scheduled to come into effect in 2020, aims to improve the implementation and management of waterway and marine transportation and "the sub-decree on Navigation Survey and Mapping" (2020), which has been planned to be approved in 2020, aims to improve survey and mapping standards for ENC. As the project aimed to strengthen the navigation safety in and around the Sihanoukville Port and enhance the international credibility of the Port by producing ENC in accordance with the international standards, it has been endorsed by such national policies.

<Institutional Aspect>

In October 2016 just before the end of the project, Waterways Department, an organization responsible for the operation and maintenance of the ENCs produced by the project, was renamed the DWIPC. As the DWIPC fully took over the roles and responsibilities of Waterways Department, the change did not have any negative impact on the operation and management of the ENCs. According to the DWIPC, 4 staff have been allocated there, and as there has not been any problem by the time of ex-post evaluation, the number is considered to have been sufficient.

### <Technical Aspect>

The staff of the DWIPC have sustained the knowledge and skills necessary for the operation and management of the ENCs produced by the project. In the background, the staff received trainings served by the project. On the other hand, the organization has mentioned that as there is no formal and internal training, the staff cannot update their knowledge and skills. Therefore, they plan to apply for the membership of the International Hydrographic Organization by 2021 thereby enabling their staff to take advantage of trainings and other opportunities to improve their knowledge and skills.

In addition, according to the DWIPC, the prescription for digital hydrographic survey and the ENC production manual developed by the project have been used continuously by their staff when performing their tasks of the operation and management of the ENCs. <Financial Aspect>

No accurate budget data of the DWIPC was available. According to the DWIPC, they have been allocated the budget of between 50,000 US dollars (USD) and USD 80,000 from the MPWT every year, and the 2018 budget was around USD 57,000. They also claimed that the amounts have been so small that they sometimes face difficulties in conducting hydrographic survey and fixing small items they identify in the survey and that more budget will be needed for large-scale repairs. Taking into consideration that some data to update the ENCs is collected every year and the sufficient number of staff has been secured, it can be concluded that DWIPC's budget has been secured to some extent.

Once the MoU with the United Kingdom Hydrographic office is signed, the DWIPC is supposed to secure their budget by selling ENCs. However, as the Sihanoukville Port is smaller than other ports and the number of ships which come to the Port is relatively small, the sales of the ENCs will not reach a satisfactory level. Thus, the DWIPC is required to make any further efforts to secure a sufficient budget.

### <Evaluation Result>

In light of the above, as some problems have been observed in the financial aspect, the sustainability of the effectiveness through the project is fair.

# 5 Summary of the Evaluation

The ENCs at 1:10,000 and 80,000 scales produced by the project have not been published and distributed by the DWIPC and the PAS yet. Waterway notifications also have yet to be issued. This does not indicate that The Government of Cambodia appropriately provides users (including shipping companies) navigational charts (ENCs) and hydrographic information essential for safe maritime transportation. However, this is mainly because the MoU between the UKHO and MPWT has not been signed. As for sustainability, there is some room for improvement in the financial aspect. As for efficiency, the project period and cost exceeded the plan; however, this was due mainly to the additional output of project, the preparation of ENC at 1:80,000.

Considering all of the above points, this project is evaluated to be partially satisfactory.

## III. Recommendations & Lessons Learned

# Recommendations for Implementing Agency:

- The DWIPC should secure the source of revenue to improve their financial condition and ensure the sustainability of the project effects. While selling the ENCs can be an additional source of revenue, the amount could be small. Therefore, the DWIPC is encouraged to seek more financial support from the government and secure other sources of funding by presenting the importance of hydrographic survey and related activities.
- Since publishing the ENCs mainly depends on this MoU signing, the DWIPC should continuously follow up with the Office by arranging online meetings for a more effective communication and together setting timeline, if possible, to accelerate the MoU conclusion.

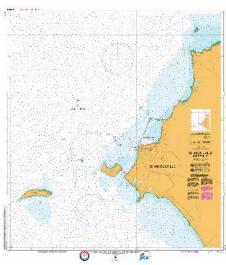
Lessons Learned to JICA:

• Several opportunities such as publishing the ENCs for external use and issuing waterway notifications are being held back, since the MoU with the United Kingdom Hydrographic office has not been signed yet. Therefore, JICA' future projects should review important factors, such as the MoU signing, that can support the project's faster outcome delivery, and incorporate them in the project activities at

### the time of planning.

•

It can be seen that this project is not very sustainable due to some problems in the technical and financial aspects. For future technical cooperation projects, JICA should review the implementing agency's long-term plan in supporting the project even after its completion at the early stage (formulation stage) of the project. One of the main items to be mentioned in the long-term plan should be about a financial aspect, in which the implementing agency needs to assure JICA of its capability to secure sufficient budget to sustain the project's impacts and update staff's technical capacity on their own after the project completion.



The newly produced paper nautical chart at a 1:20,000 scale

Country Name Lao People's Democratic Republic		Project for Urban Development Management				
I. Project Outline						
Background	In Vientiane Capital, the capital city of Laos, with a population of 800,000 (as of 2009), significant urban expansion from city centers to rural areas has been progressing along with the growth of economy and population. The government of Laos prepared urban development plans and regulations placing high priority on simultaneous pursuit of economic growth, social development, and environment protection. However, the master plan at that time was not necessarily suited to the situation and consistent with other rules and regulations. In order to address those issues, the government implemented the "Project for Urban Development Master Plan Study in Vientiane Capital" (2010-2011) with the assistance of Japan and updated the master plan for Vientiane Capital by preparing the "Vientiane Capital Urban Development. Following the project, enhancement of the capacity of staff of the city government for urban planning and development management consistent with the Master Plan was highly required.					
Objectives of the Project	<ul> <li>Through the enhancement of the capacity of the staff of Vientiane Capital City for urban development management including legal documents analysis, database creation, planning and project management, the project aimed at the strengthening of the capacity of staff to implement urban planning and development management, thereby contributing to the consistent management of urban development with the Master Plan for Vientiane Capital.</li> <li>1. Overall Goal: Urban development in Vientiane Capital will be managed consistent with the established Master Plan.</li> <li>2. Project Purpose: The capacity of staff regarding urban development in Vientiane Capital to implement urban</li> </ul>					
Activities of the Project	planning and development management will be strengthened.         1. Project Site: Vientiane Capital         2. Main Activities:         1) Enhancement of the capacity for analyzing structure of legal documents related to urban development management and proposing improvement,         2) Enhancement of the capacity for creating basic data base (land use plan) for urban development management,         3) Enhancement of the capacity for urban planning of related agencies (focus on Inner Zone <sup>1</sup> and Historic Area <sup>2</sup> ),         4) Enhancement of the capacity for urban development control (focus on Historic Area),         5) Enhancement of the capacity for implementing cityscape projects through the pilot project (focus on activities for cityscape in Historic Area).         3. Inputs (to carry out above activities)         Japanese Side       Lao Side         1) Experts: 10 persons       1) Staff Allocated: 11 persons         2) Trainees Received: 15 persons       2) Land and Facilities: project office         3) Equipment: PCs, printers, projectors, GIS       3) Local cost: cost for utility of offices (electricity, software, etc.					
Project Period	(extension: Oc 2017)	3 - March 2017 tober 2016 - March	Project Cost	`	nte) 199 million yen, (actual) 267 million yen	
Implementing Agency		and Transport Research Public Works and Trans	· · · ·	, Depa	artment of Housing and Urban Planning (DHUP),	
Cooperation Agency in Japan	Nippon Koei C	Co., Ltd., Tamano Consul	ltants Co., Ltd.			

<Special Perspectives Considered in the Ex-Post Evaluation>

Indicator 1 for the Project Purpose (Improvement of control system of urban development) was unspecific and not clarified even in the terminal evaluation (2016). Therefore, in this ex-post evaluation, according to the Completion Report (2017), three measures out of the four measures aimed to be improved by the project for improving the control system of urban development, excluding the revision of building code which was out of the scope of the project, were used as the Indicator 1. The three measures were 1) proper control system (permission system, countermeasures against violation, etc.), 2) reasonable land use plan and zoning code, and 3) qualified operation of these measures.

1 Relevance

<Consistency with the Development Policy of Laos at the Time of Ex-Ante Evaluation>

The "7th Five Year Social and Economic Development Plan for Vientiane Capital 2011-2015" aimed at the achievement of a good balance between socio-economic development and preservation of urban environment in simultaneous pursuit of economic development,

<sup>&</sup>lt;sup>1</sup> One of the six planning zones proposed by the Master Plan, which located outside the historic area and inside the inner ring road characterized with the stock of past industrial investment and accumulated urban functions.

<sup>&</sup>lt;sup>2</sup> One of the six planning zones proposed by the Master Plan, which located in the central part of the City characterized with historic heritages and low-rise shop houses.

social development and environment protection. Therefore, the project was consistent with the development policies of Laos at the time of ex-ante evaluation.

<Consistency with the Development Needs of Laos at the Time of Ex-Ante Evaluation>

Development and construction in Vientiane Capital in the late 1990's was controled by the ministerial orders and city acts whose regulatory values were not necessarily reasonable, and the same regulations were applied to different structures. Therefore, the master plan at that time compliant with those regulations was not effectively executed. After getting the new Master Plan and experience of theoretical and practical exercises of urban planning through the "Project for Urban Development Master Plan Study in Vientiane Capital" (2010-2011), it was required for the staff of the city government to apply their knowledge and skills to the urban development management for Vientiane Capital and improve the effectiveness of the Master Plan. Therefore, the project was consistent with the development needs of Laos at the time of ex-ante evaluation.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The "Country Assistance Policy for Lao People's Democratic Republic (Lao PDR)" (April 2012) set the development of economic and social infrastructure as one of its four priority areas (intermediary goals). To realize a balanced economic growth, the Policy planned to provide the assistance in the fields of environmental management, water treatment plants, and urban planning that contributed to building an environmentally harmonious and comfortable society. Therefore, the project was consistent with the Japan's ODA policy for Laos at the time of ex-ante evaluation.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the time of project completion. The project improved control systems of urban development in Vientiane Capital by formulating the Urban Development Control System, and the Detail Land Use Plan and Detail Zoning Code for Inner Zone (Indicator 1). Proper operation of these control systems including the monitoring and control enforcement activities were not realized due to the delay of approval of the Land Use Plan and Zoning Code waiting for the approval of the Master Plan<sup>3</sup> by the government (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have partially continued. Although the Master Plan was waiting for the Prime Minister Decree on its enactment, the development control systems updated and improved by the project have been used for the management and control of urban development in Vientiane Capital as they were approved by the Provincial Assembly of Vientiane Capital.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal was partially achieved at the time of ex-post evaluation. Although the Land Use Plan and Zoning Code prepared by the project were not yet approved by the National Assembly, most development activities including construction projects have been managed and controlled with reference to the Land Use Plan and Zoning Code. Besides, DPWT and the Office of Public Works and Transport (OPWT) have utilized the on-site inspection check list developed by the project for inspection and monitoring of building constructions in Vientiane Capital.

<Other Impacts at the time of Ex-post Evaluation>

According to the questionnaire survey on DPWT, the local residents and business operators such as shop owners and companies involved in the pilot project<sup>4</sup> have been playing important roles for the maintenance of streetlights and gardens constructed by the pilot project including cutting of trees and grass, changing lightbulbs, decorating trees for events, etc. Moreover, those local residents and business operators have tried to apply the experience of maintenance works in the project to other places. Besides, after the dissemination of the Detail Land Use Plan and Detail Zoning Code to the districts and villages in the Inner Zone Areas, the number of districts and village heads, including female heads, who participated in the urban planning and development management activities conducted by the administrative authorities has been increased. No resettlement and land acquisition were caused by the project and the projects proposed by the Master Plan. No other negative impact on natural, social and economic environment has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Aim	Indicators	Results
Project Purpose:	Indicator 1: Improvement of control system	Status of the Achievement: Partially achieved (partially continued)
The capacity of staff	of urban development.	(Project Completion)
regarding urban		The project formulated the Urban Development Control System, and the
development in Vientiane		Detail Land Use Plan and Detail Zoning Code for Inner Zone. However,
Capital to implement		proper operation of these control systems was not realized during the project
urban planning and		period waiting for their approvals by the government.
development management		(Ex-post Evaluation)
will be strengthened.		The Land Use Plan and Zoning Code have been waiting for the approval by
		the government. However, the urban development control systems updated
		and improved by the project have been applied to the management and
		control of urban development in Vientiane Capital as they were approved by

Achievement of Project Purpose and Overall Goal

<sup>&</sup>lt;sup>3</sup> The Master Plan prepared in 2011 by the "Project for Urban Development Master Plan Study in Vientiane Capital" (2010-2011) has been revised to be the "Mater Plan for Vientiane Capital 2030." The Master Plan 2030 was approved by the National Assembly in December 2020 but Decree on the Master Plan Enactment has not been issued by Prime Minister.

<sup>&</sup>lt;sup>4</sup> The pilot project consisted of a soft component and a hard component. The soft component was composed of workshops and events for promoting stakeholders' understanding on cityscape refining, and the hard component was composed of cityscape refining construction works.

		the Provincial Assembly of Vientiane Capital.
	Indicator 2: Improvement in construction	Status of the Achievement: Partially achieved (partially continued)
	monitoring and construction control	(Project Completion)
	enforcement.	The system for construction monitoring and construction control enforcement
		was prepared by the project. However, the monitoring and control
		enforcement activities were not implemented due to the delay of approval o
		the Land Use Plan and Zoning Code waiting for the approval of the Maste
		Plan by the government.
		(Ex-post Evaluation)
		The Land Use Plan and Zoning Code developed by the project were accepte
		by the Vientiane Capital Assembly, the Ministry of Public Works an
		Transport (MPWT), and the Political Bureau Central Committee, and waiting
		for Prime Minister Decree on the enactment of the Master Plan.
Overall Goal:	Newly constructed buildings are aligned	(Ex-post Evaluation) partially achieved
Urban development in	with the revised Master Plan.	According to the questionnaire survey on DPWT, although the Land Us
Vientiane Capital will be		Plan and Zoning Code were not yet officially authorized by the Nationa Assembly, most development activities including construction projects hav
managed consistent with		been managed and controlled with reference to the Master Plan, e.g. land-us
established Master Plan.		ratio, floor-area ratio, building coverage ratio, building height, etc. DPW
		and OPWT have utilized the on-site inspection check list developed by th
		project for inspection and monitoring of building constructions in Vientian
		Capital.

# 3 Efficiency

Due to the delay of the commencement of pilot project, both of the project period and cost exceeded the original plan (the ratio against the plan was 117% and 134% respectively). The outputs were produced as originally planned by the end of extension period of the project. Therefore, efficiency of the project is fair.

# 4 Sustainability

<Policy Aspect>

The Mater Plan and the Land Use Plan and Zoning Code prepared by the project were not yet enacted by the Government. The "Political Bureau Resolution on New Period for Development of Vientiane Capital" (2020) defined the direction and policies of the urban development of Vientiane Capital for the New Period (2021-2025) in line with the direction and policies of urban development stated in the Master Plan. The resolution also referred to the 56 priority projects proposed by the Master Plan.

<Institutional/Organizational Aspect>

The Urban Planning Management Unit was established in DPWT after the project in 2017 for construction monitoring, land use and building construction control, and housing and urban development patrol. However, activities of the unit have been limited due to limited human resources.

# <Technical Aspect>

According to the questionnaire and interview surveys on PTRI, the researchers, technical and managerial staffs of PTRI have kept using the knowledge and skills learned in the project to their daily works including urban planning, technical improvement, control and management. They are currently working on the extension of GIS application introduced by the project to make detail land use plans for districts and villages and to improve the database of inventory and statistical data of urban development. Brochures, references, and design reference books produced by the project have been utilized for direct and indirect urban development activities. OPWT, for example, distributed the brochures to districts, villages, and public and private organizations for promoting their understanding of and cooperation with building construction management and control.

<Financial Aspect>

DPWT, PTRI and DHUP have managed to perform their mandated activities with the government budget though it's limited, and the financial support from development partners. Although the budget for implementing the projects proposed by the Master Plan has been limited, it is expected to be increased once the Master Plan is approved by the National Assembly. <Evaluation Result>

In light of the above, slight problems have been observed in terms of the policy, institutional/organizational and financial aspects of the implementing agencies. Therefore, the sustainability of the effectiveness through the project is fair.

# 5 Summary of the Evaluation

The Project Purpose was partially achieved by preparing proper control systems for urban development and the land use plans and zoning codes but not realizing qualified operation of these measures based on the approved rules and regulations because the rules and regulations have not been approved by the government during the project period. The Overall Goal was partially achieved by promoting urban development in Vientiane Capital consistent with the Master Plan although the Master Plan has not yet been approved by the National Assembly. As for sustainability, approval of the Land Use Plan and Zoning Code, limited human and financial resources have remained as issues. As for efficiency, both of the project period and cost exceeded the plan. Considering all of these points, this project is evaluated to be partially satisfactory.

# III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• Due to the delay of approval of the legal documents prepared by the project including construction regulations and the Land Use Plan and Zoning Code, the plans and rules and regulations updated by the project have not been officially executed. It is recommended that the counterpart agencies including DHUP, PTRI, Vientiane Capital, and DPWT make efforts as much as possible to accelerate the approval process of the government.

Lessons Learned for JICA:

- Though the project aimed at updating rules and regulations for urban development and strengthening their enforcements, the approvals of them by the government were set aside as important assumptions. Therefore, despite the approvals of rules and regulations were critical for the achievement of project purpose and overall goals, no specific activities were implemented by the project. As for a project having approvals by the government as critical issues, not putting the approvals aside as external factors, some specific activities for ensuring and accelerating the approvals are to be included in the project plan.
- Though DHUP was the major counterpart to get the approvals on the plans and legal documents prepared by the project, DHUP's involvement in the project was limited. As for a project having approvals by the government as critical issues, it is recommended to identify the process, schedule, and responsible players for approval at the planning stage of the project, and to plan accordingly getting involve the necessary players.



Dissemination Meeting on Regulatory Reforms for Construction Permits held on 7<sup>th</sup> February, 2020



Current situation of cityscape improved area Well maintained lights and gardens along Anou Road in Historic Area

# Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Kyrgyzstan Office: March 2020

					conducted by Kyrgyzstan Office: March 2020
Country Name			elopment fo	r M	laintenance Management of Bridges and
Kyrgyz Republi	Tunnel	S			
I. Project Outline					
Background	Kyrgyzstan has the road network with the total length of 34,000 km approximately, and its traffic volume accounts up to 95% of the passenger and freight traffic. Most part of the road network in Kyrgyzstan was constructed during the Soviet era. After the country's full independence in 1991, road maintenance activities had not been carried out adequately because many Soviet technicians left Kyrgyzstan. The low level of budget allocation and execution for road repair and maintenance led to an annual loss of approximately 200 km of road surface, and the worsening of the road conditions hindered smooth trade with the neighboring countries as well as the passenger and freight traffic.				
Objectives of the Project	<ul> <li>Through development of the database and capacity building of the Ministry of Transport and Communication (MOTC), the project aimed at improving MOTC's capacity on maintenance cost estimation of bridges and tunnels, thereby contributing to improvement of the maintenance status of bridges and tunnels.</li> <li>1. Overall Goal: Maintenance status of bridges and tunnels is improved in Kyrgyzstan</li> <li>2. Project Purpose: MOTC's capacity is improved for maintenance cost estimation of bridges and tunnels on the basis of inspection results.</li> </ul>				
Activities of the project	<ol> <li>Project site: Whole regions of Kyrgyzstan (all of about 1,100 bridges and 5 tunnels on the international and national roads)</li> <li>Main activities: Development of the database on bridges and tunnels, training of DEP* staff on regular maintenance, training of PLUAD*/UAD* staff on inspection and condition rating, training of staff of RMD*, PLUADs/UADs and DEPs on preparation of the maintenance management plan, etc.         <ul> <li>*Abbreviations: DEP: Local level Roads Management Unit, PLUAD: Oblast-level Roads Management Unit, UAD: Main Road Management Unit, RMD: Road Maintenance Department.</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Kyrgyz Side</li> <li>Experts from Japan: 11 persons</li> <li>Staff allocated: 41 persons</li> <li>Equipment: Dynamic response intelligent revenue.</li> <li>monitoring system, Schmidt hammer, infrared</li> <li>Local cost: expenses for travel and equipment. camera, electric drill, test hammer, etc.</li> </ul> </li> </ol>				
Project Period	<ol> <li>Local cost: June 2013 to Jan</li> </ol>	Cost for travel, project of travel, project of the second	Project Cost	(ex-	ante) 198 million yen, (actual) 221 million yen
Implementing Agency		sport and Roads (MoT	2		m the Ministry of Transport and Communications
Cooperation Agency in Japan	CTI Engineering	International Co., Ltd.,	Central Nippon	Expr	ressway Co., Ltd.

# II. Result of the Evaluation

# 1 Relevance

<Consistency with the Development Policy of Kyrgyzstan at the time of ex-ante evaluation and project completion>

The transport and road sector was prioritized in the "Country Development Strategy" (2009-2011) for improvement of the quality of economic development. The "Road Sector Development Strategy 2015-2020" specifically aims at rehabilitation of international, national and local roads, improvement of the road management system and involvement of private sector in road maintenance. The target bridges and tunnels were located on these international and national roads. Thus, the project was consistent with the development policy of Kyrgyzstan at the time of both ex-ante evaluation and project completion.

<Consistency with the Development Needs of Kyrgyzstan at the time of ex-ante evaluation and project completion>

After the country's full independence in 1991, maintenance activities were not carried out adequately, and the low level of funding annually led to a loss of road surface. The project was consistent with MOTC's needs for effective and efficient maintenance management of bridges and tunnels which were located in the international and national roads at the time of both ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

In the "Country Assistance Policy for the Kyrgyz Republic" (2012), one of the two priority areas was maintenance management of the transport infrastructure and correction of regional disparities, which included a support for capacity development of road maintenance management.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the project completion. Maintenance budget documents with breakdowns for both bridges and tunnels were prepared (Indicator 1). The database system was newly developed, and it was used for formulating maintenance budget for bridges and tunnels (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued since the project completion. The Ministry of Transport and Roads (MoTR) prepared the maintenance budget documents with breakdowns for bridges and tunnels for 2018 and 2019, and the budget document for 2020 was under preparation as of November 2019. The budget documents have been formulated on annual basis. MoTR has utilized the data from the developed database system for formulating maintenance budget for bridges and tunnels.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved by the time of ex-post evaluation. The regular inspection has been conducted, and the data on routine maintenance of bridges and tunnels have been updated by RMD at least twice a year (Indicator 1). RMD prepared the short-term bridge maintenance plan for 2017-2018, but after that it has not developed any plan for maintenance of bridges and tunnels (Indicator 2). The budget plan has been developed, not based on the maintenance management plan (Indicator 3), but only on the actual needs and requests from RMD's structures such as UADs and the Regional Offices (ROs) as well as different authorities (parliament members, local authorities etc.). Among the bridges included in the maintenance management plans for 2014-2016 and 2017-2018, four bridges were repaired. Regarding tunnels, all of the existing five tunnels were repaired during the project period (Indicator 4). After the project completion, no tunnel has been repaired, because any has not needed to be repaired yet, which also leads to the non-existence of a new maintenance management plan.

<Other Impacts at the time of Ex-post Evaluation>

No positive or negative impacts were confirmed at the time of ex-post evaluation.

<Evaluation Result>

Therefore, the project efficiency is fair.

Therefore, the effectiveness/impact of the project is fair.

Achievement of the Project Purpose and Overall Goal

Aim	Indicators			Results				
(Project Purpose)	1. Maintenance budget document							
MOTC's capacity is	e	(Project Completion)						
improved for	tunnels is prepared by [June 2015].	- Maintenance budget documents with breakdowns for bridges (2015-2017) were						
maintenance cost	tumers is prepared by [sure 2015].		ared in November 2014. Mainter					
estimation of bridges and			els (2014-2016) were prepared in		intents wh	in oreakdowns for		
tunnels on the basis of			post Evaluation)	0000001 2013.				
inspection results.			TR has prepared the maintenance	budget document	with break	downs for bridges		
inspection results.			tunnels for 2018 and 2019.	ouaget accument	with of <b>cu</b>	tao wills for offages		
	2. Data from the newly developed		is of achievement: Achieved (Cor	tinued)				
	database system is utilized for	-	ject Completion)	<u>timucuj.</u>				
	formulating maintenance budget for		ata from the newly developed	database system	is utilized	d for formulating		
	bridges and tunnels.		tenance budget for bridges and tu			a for formationg		
	orrages and tannets.		post Evaluation)	2010.				
			TR has utilized the data from the	ne developed data	hase syste	m for formulating		
			tenance budget for bridges and tu			in for formation.g		
(Overall goal)	1. Regularly reported and updated		is of achievement: Achieved.					
Maintenance status of		-	post Evaluation)					
bridges and tunnels is			ta on routine maintenance of bridg	es and tunnels hav	e been up	dated at least twice		
improved in Kyrgyzstan.	0		ar by RMD.	, ,	1			
	2. Formulation of maintenance		is of achievement: Partially achie	ved.				
	management plan for bridges and	-	post Evaluation)					
	tunnels	- Aft	er the project completion, RMD	developed the new	w short-ter	rm plan for bridge		
		main	tenance for the period 2017-2018					
		- The	e maintenance management plan f	for tunnels has not	been deve	loped.		
	3. Preparation of budgetary							
	allocation from the maintenance	(Ex-j	post Evaluation)					
	management plan for bridges and	- The	e budget has not been allocated fo	r bridges and tunne	els based o	on the maintenance		
	tunnels		agement plan.					
	4. A bridge and a tunnel chosen by		is of achievement: Achieved.					
	maintenance management plan	· ·	post Evaluation)					
	based on the nation-wide		ong the brides prioritized for repa					
	management criteria which is		loped, one bridge was repaired du	ring the project pe	riod, and t	hree were repaired		
	prepared in the project are	after	the project.					
	repaired/replaced.		Repaired bridge	Location	Year			
		1	At Bashy-Lugovoe	30+500 km	2013			
		2	Tokmok-Don Aryk-Rot Front	14+000 km	2016			
		3	Sosnovka-Kara Bulak	9 km	2018			
		4	Myrzake-Kara Shoro	40 km	2017			
		- Fiv	e tunnels underwent repair works					
			Repaired tunnel	Location	Year			
		1	Tunnel #1	313m, 409 km	2014			
		2	Tunnel #2	355m, 410 km	2014			
		3	Tunnel #3	694m, 427 km	2014			
		4	Kolbaev tunnel	130 km	2015			
		5	Tashkomur tunnel	260m, 455 km	2015			
<u> </u>	n Report and information provided by	RMI	D.					
3 Efficiency								
Both the project cost an	nd period exceeded the plan (ratios a	agains	st the plan: 112% and 110%, res	pectively). Output	ts were pr	oduced as planned		

#### 4 Sustainability

#### <Policy Aspect>

One of the measures stated in the "Main Directions for Development of Road Sector for 2016-2025" is the introduction of system for maintenance of bridges and tunnels developed and recommended.

#### <Institutional Aspect>

The demarcation of responsibilities between MoTR and the Road Management Units under the Oblast-level has remained same, that is, MoTR Headquarters makes decisions on policy, regulation and budgeting, and RMD takes responsibility for the nationwide maintenance, database system for maintenance planning, and inspection and condition rating. The Project's recommendation on the division of responsibilities for data management among RMD, UADs/ROs and DEUs has not been incorporated. There have been 44 staff assigned to RMD, and the number has been sufficient to carry out duties, according to RMD itself. Under the Oblast-level, ROs, UADs and DEUs have overseen data management of maintenance, five-year visual inspection, disaster countermeasures, cleaning, and so on. Out of the six interviewed ROs and UADs, four units answered that the number of staff has been sufficient. The network system has not been developed to connect data of RMD, UADs/ROs and DEUs, though it had been expected as a recommended action, because the software has been only installed at RMD by the project. RMD as well as UADs and ROs do not feel any inconvenience in transferring the relevant data by other means such as facsimile.

#### <Technical Aspect>

RMD answered that their staff have sustained sufficient skills, as they have utilized the database system manual developed by the project. As well, the interviewed ROs and UADs replied that their staff

have sustained sufficient skills. However, any refresher training for existing staff or introductory training for newly joined staff have not been conducted at RMD, ROs, UADs and DEUs. The reason is that the staff is overloaded with road works and that the management is not willing to support their busy staff's participation in the training. Out of 30 Master Trainers trained by the project, 21 have remained in MoTR.

Disbursed	budget	of N	1oTR	for	construction	and	maintenance
(thousand ]	KGS)						

	2016	2017	2018	2019
Bridges	43,364.3	69,196.0	60,653.7	52,941.0
				(plan)
Tunnels	NA	64,979.0	64,978.0	83,500.0
				(plan)

<Financial Aspect>

The budget of MoTR for construction and maintenance of bridges

increased much in 2017, but continuously decreased afterwards in 2018 and 2019, while the budget for tunnels have been on an increasing trend, as the table shows. MoTR did not provide a clear answer as to whether the budgets have been sufficient. Regarding ROs and UADs, all of the six interviewed offices answered that the budget allocation to their offices has not been sufficient for maintenance management of bridges or tunnels.

<Evaluation Result>

In light of the above, there have been problems in the institutional, technical and financial aspects. Therefore, the sustainability of the effects is fair.

#### 5 Summary of the Evaluation

The Project Purpose was achieved, and the project effects have continued. The Overall Goal has been partially achieved. In other words, MoTR has strengthened its capacity for maintenance cost estimation of bridges and tunnels on the basis of inspection results, but it has not formulated the maintenance management plan for preparing budget plans. As a result, maintenance works have been conducted not based of the plan but requests from the field. Regarding sustainability, absence of continuous training and insufficient budgets have been considered as problems. As for efficiency, both project period and cost exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing agency:

- MoTR is recommended to conduct refresher training for existing staff and introductory training for newly joined staff at RMD, ROs, UADs and DEUs in order to sustain their skills for maintenance management of bridges and tunnels, by coordinating their work to save time for capacity building. Applying for JICA Follow-up Cooperation Scheme could be considered. Lessons Learned:

- In the project, it was expected that the budget should be allocated based on the maintenance management plan for bridges and tunnels. Actually, the maintenance management plan has been developed, but the budget plan has been formulated principally based on the needs and requests from the field level. The "appropriateness" of the budgeting process should be considered by examining the conditions surrounding the implementing agency such as the relationship with external organizations including local authorities or other force majeures such as natural disasters in the country context.



Bridge (Myrzake-Kara-Shoro) before repair.



Bridge (Myrzake-Kara-Shoro) repaired in 2016.

Country Name		The Project	for Canaci	ity Enk	nancement	of Groundwater and Seawater Intrusion
Republic of Cub		Management	ioi Capaci	ity Lill	lancement	of Groundwater and Seawater Influsion
_		Wanagement				
I. Project Outline	-					
Background	Cuenca progress rising s exceeds of total supply through assessm	Sur, with an area sion of seawater i ea levels caused by ed the level which water use in 2011 shortage caused out Cuba. Never	a of 300 km <sup>2</sup> , ntrusion was r y climate chan would affect a . Without prop by the progr theless, there influence of s	which is reported in age. It was agricultur per manager ression co were no seawater	s one of the e in the area of the s confirmed the ral crops. The gement of group of seawater in ot sufficient to intrusion to a	al area, there exists a groundwater source area called essential sources of water supply in the region. The Cuenca Sur as a result of reduced annual rainfall and hat salinity of some wells in the Province of Artemiss e use of groundwater nationwide accounted for 33.3% bundwater, it was forecasted that there would be wate intrusion in groundwater aquifers in coastal areas technologies and human resources to carry out ar aquifers, salinization simulation and future forecas
Objectives of the Project	seawate Provine ground prepara 1. Ove diss 2. Proj deve *1) The e Ir Apr ager som part * <sup>2</sup> ) App	er intrusion contr ces of Mayabeque water developme tion method of Gr rall Goal: The p eminated and utili ect Purpose: Cap elopment* <sup>2</sup> and m Research, Project ageniería: GEIPI) ovechamiento de l necies under their r e of the project a icipating in the Pr	rol, and expen- e and Artemis nt and mana roundwater Ma- reparation me ized in other an acity is impr- anagement in t and Engineer and the Wat Recrusos Hidra respective umb activities besic oject" mean al	rimental sa, the p gement, anageme ethod of reas. roved in the object ring Corp ter Reso ráulicos: brellas a des the ll of these	implementation project aimed thereby con- ent Plan. Groundwater the institution ctive area, inclu- poration Group ource Manage GEARH) who nd other wate target group e institutions.	ndwater models, study on groundwater recharge and tion of the groundwater management plan in the d at improving the capacity of the institutions for attributing to dissemination and utilization of the extrement Plan, developed in the Project, is ons participating in the Project* <sup>1</sup> for groundwater cluding limitations imposed on saline intrusion. up (Grupo Empresarial de Investigaciones, Proyector ement Corporation Group (Grupo Empresarial de ose original mandate was to provide training to loca er-related institutions were planned to participate in (implementing and leading agencies). "Institution of levels would enable new groundwater developmen
Activities of the project	<ol> <li>Mai and guid</li> <li>Inpu Japanes</li> <li>Inpu Japanes</li> <li>Th</li> <li>Th</li> <li>Th</li> <li>Es</li> <li>Th</li> <li>Th&lt;</li></ol>	n activities: Monit seawater intrusio eline/manual, etc. ts (to carry out ab se Side cperts from Japan: 1	toring of aquife on control, de pove activities) : 11 persons 0 persons nersible pur ection equipr nt, vehicle, etc.	èrs, elabo levelopm ) mp, ge ment, e	Cul (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2	of Mayabeque and Artemisa. groundwater models, study on groundwater recharge groundwater management plan and the operation ban Side Staff allocated: 57 persons Land and facilities: Office space in Habana and Quivicán, etc. Local cost: Activities operation, etc.
Project Period		ry 2013 to January	y 2017	F	Project Cost	(ex-ante) 442 million yen, (actual) 445 million yer
Implementing Agency						nal de Recursos Hidáulicos: INRH)
Cooperation Agency in Japan	Kokusa	i Kogyo Co., Ltd.				

# **II. Result of the Evaluation**

<Special Perspectives Considered in the Ex-Post Evaluation>

- Because of the outbreak of COVID-19, information was collected through a questionnaire survey and phone interviews to make evaluation judgement in the ex-post evaluation. Site visits were not conducted.

1 Relevance

<Consistency with the Development Policy of Cuba at the time of Ex-ante Evaluation>

The water sector was highly prioritized as well as the sectors of food, transportation, housing and so on in the national development plan at the time of ex-ante evaluation. Also, the water resource sector was prioritized by the Ministry of Economy and Planning which supervised the planned economy of Cuba. Thus, the project was consistent with the development policy of Cuba.

<Consistency with the Development Needs of Cuba at the time of Ex-ante Evaluation>

In Cuba, drought and salinization were serious problems due to climate change, and it was predicted that the amount of groundwater available for water supply and agricultural use would decrease throughout the country. The provinces of Mayabeque and Artemisa were

important agricultural production areas, and water resources needed to be managed in terms of promoting agricultural activities. In this sense, the project was consistent with the development needs of Cuba at the time of ex-ante evaluation. <Consistency with Japan's ODA Policy at the time of Ex-ante Evaluation>

In October 2000, environmental conservation, agriculture and fisheries were recognized as development areas between the project identification mission team and the Cuban side. As groundwater development and management was included in the environmental conservation area, the project was consistent with Japan's ODA policy at the time of ex-ante evaluation<sup>1</sup>. <Evaluation Result>

In light of the above, the relevance of the project is high.

#### 2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. The draft Groundwater Management Plan was submitted to INRH by GEIPI and GEARH. INRH and GEARH started the control of extracted water volume in the Provinces of Mayabeque and Artemisa, as recommended in the plan (Indicator 1). Through the project activities, related organizations including INRH strengthened various technical skills related to groundwater management, including monitoring, research method on water quality, assessment of the level of aquifers/seawater intrusion, and graphic processing.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

Since the project completion, the project effects have continued. GEARH and GEIPI formerly belonged to separate public corporation groups directly under INRH, but they were moved under the umbrella of the Integrated Management of Terrestrial Waters (Gestión Integrada de las Aguas Terrestres: GIAT) of the Superior Organization of the Corporation Directorate (Organización Superior de Dirección Empresarial: OSDE), which was administrated by INRH, as a result of the organizational restructuring in 2019. There has been no change in duties of INRH and GEARH and their collaborative relationship with provincial organizations, and they have continued the control of extracted water volume, as recommended in the Groundwater Management Plan. The groundwater model developed by the project has not been updated due to human resource shortages, but the developed Groundwater Management Plan has been updated at the same time each year since it was approved in December 2017.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved by the time of ex-post evaluation. The strengthening of hydrological program and the management of indicators related to water productivity for developing the groundwater management plan have been implemented in the Ariguanabo watershed in the Province of Artemisa, which has been positioned as one of the most important watershed areas for the national interest in the document of INRH. Since the project completion, training and experience sharing have been carried out so that the groundwater management plan could be developed in other areas based on the project experience. For example, the Water Resources Management Corporation (Empresas de Aprovechamiento Hidráulico: EAH) of Artemisa Province conducted training on groundwater use methods for a total of 75 farmers and municipality officials in 2018 and 2019. As well, EAH of Mayabeque Province conducted training on the water balance management for a total of 52 employees of INRH, provincial officers of the Ministry of Agriculture, and employees of Sugar Enterprise Group in 2018 and 2020. GEIPI conducted five training workshops in 2017 and 2018 for a total of 118 employees of the Research, Planning and Engineering Corporation Groups (Empresa de Investigaciones, Proyectos e Ingeniería: EIPI) of all provinces and EAH of Artemisa and Mayabeque. Training topics included GIS, hydrology, thematic hydrographic mapping, and aquifer analysis. Some of these trainings were supported by the Training Institute of Villa Clara under INRH.

Firstly, since the project completion, the Groundwater Management Plan prepared by the project has been put into full operation in the Provinces of Artemisa and Mayabeque. This has led to the securing of agricultural water. According to INRH, water use for agriculture has increased by 2% in both provinces, andin Mayabeque Province, the Agriculture and Livestock Corporation expanded the irrigated area. The experience of operating the Groundwater Management Plan in both provinces was reflected in the "National Water Policy" in 2018. Secondly, the importance of functions of the Dique Sur (51km long dyke built in 1991 on the coast from Artemisa Province to Mayabeque Province) was reaffirmed by the project, and its renovation was carried out in 2017. This has resulted in a rise in water levels in the wells near the dyke and improved the balance between fresh and salt water.

Eight of the 10 automatic water-gauges provided by the project were stolen or destroyed. This was due to the fact that the purpose of the equipment and the importance of monitoring of the groundwater level were not properly understood by community residents. To solve this, INRH explained the importance of groundwater monitoring and equipment maintenance to the community residents, and the monitoring wells have been locked up.

No negative impact on the natural environment has occurred. <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of the	Project Purpose an	d Overall Goal

Aim	Indicators	Results			
(Project Purpose)		Status of achievement: Achieved (Continued)			
Capacity is improved in the	volume extracted is	(Project Completion)			
institutions participating in the	implemented on the basis of	- INRH and GEARH started the control of extracted water volume in the Provinces			
	Groundwater Management				
development and management in	Plan.	Plan.			
the objective area, including		(Ex-post Evaluation)			
limitations imposed on saline		- INRH and GEARH has continued the control of extracted water volume, as			
intrusion.		recommended in the Groundwater Management Plan.			
(Overall goal)	1. The preparation of	Status of achievement: Achieved.			
		(Ex-post Evaluation)			

<sup>1</sup> Ministry of Foreign Affairs, "ODA Databook 2013."

The preparation method of Groundwater Management Plan, developed in the Project, is disseminated and utilized in other areas	Plan is started in more than one area that is different	- The hydrological program for the development of the groundwater management plan has been implemented and indicators related to water productivity have been managed in the Ariguanabo watershed in the Province of Artemisa.
Source: Project Completion Report	and information provided by I	NRH and OSDE-GIAT.

#### 3 Efficiency

The project period was as planned, but the project cost slightly exceeded the plan (ratio against the plan: 100% and 101%, respectively). Outputs were produced as planned. Therefore, the project efficiency is fair.

# 4 Sustainability

<Policy Aspect>

In the "National Water Policy", necessity of rational use of water in underground aquifers and water quality risk management and weather risk management has been described. Also, another policies, "Efficient and Rational Use of Water" (2018-2030) and "Actions for Mitigation of the Impacts of Extreme Weather" (2018-2030), have included programs for developing and strengthening groundwater management.

## <Institutional/Organizational Aspect>

As mentioned above, GEARH and GEIPI were moved under the umbrella of OSDE-GIAT of INRH as a result of the organizational restructuring in 2019. INRH has become the administrative body responsible for managing the performance of the two corporation groups, and the organizational structure has been designed to promote and disseminate improved groundwater development and management capacity. In all of EAH of Artemisa and Mayabeque and EIPI of Habana, there has been a personnel shortage in departments related to hydrological services, water balance, and so on, because there have been few qualified personnel. In addition, only one of the three employees of EIPI of Habana who had worked at the project has remained working, who, however, would soon retire. As a solution to these issues, it has been planned that new personnel would be recruited from the university graduates for the year 2020, in coordination with the Ministry of Labor and the Ministry of Higher Education.

Results of the groundwater monitoring has been shared with EAH of Mayabeque and Artemisa in the form of a GIS database, which has been reflected in the database via the site (GIS Hidrocuba) on the INRH cloud server. EAH of other provinces have been able to access the database of INRH via the website or off-line where it is not available. INRH and OSDE have signed joint research agreements not only with the University of José Antonio Echeverría, with which the project established the collaboration mechanism, but also with other universities and research institutions. INRH has also worked with the Ministry of Agriculture, the Ministry of Revolutionary Armed Forces, the Sugar Enterprise Group and the Ministry of Science, Technology and Environment on policies related to the efficient use of water and combating climate change. Besides these agencies, INRH has collaborated with the Ministry of Communications, the Ministry of Industry, the Cuban Institute of Radio and Television, the Ministry of Education and the Ministry of Higher Education on groundwater management and development.

## <Technical Aspect>

INRH has sustained the system for the information management and utilization needed to promote improved groundwater development and management capacity, as it has developed the national hydrogeological map and a program to integrate various types of information and decision-making (Hidrocuba). OSDE-GIAT has had training records for capacity development of data monitoring and management related to hydrological services, water balance, hydrogeology of underground aquifers, etc, and it has used the records when conducting site visits. The guidelines and manuals for developing the Groundwater Management Plan prepared by the Project have been utilized. Some of the equipment provided by the project have remained unrepaired because of the inability to repairers in the country and the unavailability of spare parts in the country due to the economic sanctions imposed by the United States, while other equipment have been in good condition and have been utilized. The list of contacts and suppliers of equipment prepared by the project has been utilized, and most have been repaired and procured in the country.

<Financial Aspect>

The budget information of OSDE-GIAT specific for improving capacity of underground water development and management was not available, but the total budget has been expected to increase as shown in the table. However, the budget for capacity building would be financed in the domestic currency, but there has been a restriction that

Table: Budget Plan of OSDE-GIAT (CUC	)
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	2020	2021	2022	2023	2024
Revenue	599,529.7	602,527.3	605,540.0	608,567.7	611,610.5
Expenditure	488,173.0	489,149.3	490,127.6	491,107.9	492,090.1
Expenditure	488,173.0	489,149.3		491,107.9	

Source: Questionnaire survey with SDE-GIAT.

sufficient convertible Cuban pesos (CUC)  $^2$  for procuring equipment and spare parts from other countries have not been secured. Regarding INRH, the budget of 2019 was more than 709 million pesos (for which it could not be confirmed if it was CUC or Cuban pesos (CUP)). INRH answered that the budget has been sufficient, although the financial data specific for improving capacity of underground water development and management was not available.

<Evaluation Result>

In the light above, there have been slight issues in the technical and financial aspects. Therefore, the sustainability of the effects is fair. 5 Summary of the Evaluation

The Project Purpose was achieved, and the project effects have continued. Related organizations have improved the capacity for underground water development and management, including the preparation and implementation of the Underground Management Plan. The Underground Management Plan has been continuously operated in the target provinces. With regard to the Overall Goal, the Underground Management Plan has been started in other areas. Regarding sustainability, although some equipment has been unrepaired,

 $<sup>^2</sup>$  Cuba has a dual currency system. The two currencies coexist; One is Cuban peso (CUP) which are generally circulated in the country, and the other is convertible Cuban peso (CUC) which can be exchanged with foreign currencies. The exchange rate in the market is fixed at 1USD=1CUC=24CUP. However, exchange rates different from that in the market are used at government organizations, such as 1USD=1CUC=1CUP or 1CUP=10CUP, and therefore it is not stable and sufficient to secure the budget in CUC. The 6<sup>th</sup> Congress of the Communist Party in 2011 has decided on a policy to resolve the dual currency system, but the specific timing has been still unclear.

the organizational structure including the network among the related organizations have been sustained. As for efficiency, the project cost slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing agency:

- For further effective and sustainable dissemination of the project results

The groundwater management capacity was strengthened by the project, and certain effects have continued since the project completion. In order to further demonstrate management capacity and bring impacts in the future, it is recommended to INRH to focus on effective implementation of the developed groundwater management plan, and to strengthen communication and coordination with water users, especially with stakeholders of other ministries such as the Ministry of Agriculture and Livestock (corporations under related ministries, municipalities, and so on), which is a major consumer. Strengthening collaboration with relevant agencies would further ensure the sustainability of the project effects.

## - Mid-term and long-term of human resource development

Given the ongoing reorganization of ministries, state-owned enterprises and other organizations, human resource development in the field of groundwater management should be addressed across generations and organizations. It is recommended to INRH to further promote cooperation and personnel exchange with the universities and research institutes that have already begun to make joint efforts, especially to develop the capacity of young people.

## Lessons Learned:

- Procurement of the equipment in light of the economic sanctions and foreign currency shortages

As Cuba has been in the severe economic environment under the economic sanctions imposed by the United States, it has been difficult to import goods from the United States and even third countries and the situations have been changing. Therefore, careful consideration was needed in the selection of equipment to be provided. In case that it is expected at the project planning stage that importing additional spare parts is difficult, it would be effective to accurately identify the spare parts needed for maintenance and management at the initial stage of equipment selection, and to provide necessary parts along with the provision of equipment. And, by the time of project completion, it is important to clarify the procurement process (list of the suppliers, procedures, section in charge of securing budgets, timing, etc.) so that spare parts could be procured at the appropriate timing.



JICA Borewell #1 in operation (Artemisa)



GPS equipment (EAH of Artemisa)

			601	nuucleu by Ethiopia Onice. August, 2020			
Country Name Federal Democratic Repu of Ethiopia	blic Project for Groundwater H	Project for Groundwater Resources Assessment in the Middle Awash River Basin					
I. Project Outline							
Background	The access rate to improved drinking water sources in rural areas of Ethiopia was 42% which was far below the average coverage rate of 60% in Sub-Sahara Africa (UNICEF/WHO 2008). Thus, it was necessary to quickly respond to securing safe water. In Ethiopia, 90% of the water sources were dependent on groundwater, but there was little information on groundwater for effective groundwater development and sustainable groundwater use.						
Objectives of the Project	(a) Groundwater will be effective purposes and it will be appropriate	Expected Goals to be achieved by utilization of the proposed plan <sup>1</sup> : a) Groundwater will be effectively developed in the Middle Awash River Basin for drinking water or other purposes and it will be appropriately managed based on the management plan developed under the project. b) The water supply coverage of the small towns will be improved in the Middle Awash River Basin.					
Activities of the Project		ent of groundw cilities for small ctivities) (To be o	towns selected from checked during the Ethiopian Side 1) Staff allocat				
Project Period	October 2013-December 2015		Project Cost	(ex-ante) 250 million yen (actual) 374million yen			
Implementing Agency	Groundwater Directorate of the Ministry of Water, Irrigation and Energy (MoWIE, formerly Ministry of Water, Irrigation and Electricity)						
Cooperation Agency in Japan	Kokusai Kogyo Co., Ltd.						

# **II. Result of the Evaluation**

1 Relevance
< Consistency with the Development Policy of Ethiopia at the Time of Ex-Ante Evaluation and Project Completion>
The project was consistent with the development policy of Ethiopia both at the time of ex-ante evaluation and project completion. The
"Growth and Transformation Plan (GTP) 2010/11-2014/15" set forth four goals and seven strategies which included improvement of the
access to safe water.
<consistency and="" at="" completion="" development="" ethiopia="" evaluation="" ex-ante="" needs="" of="" project="" the="" time="" with=""></consistency>
The project was consistent with the development needs of Ethiopia for groundwater development both at the time of ex-ante evaluation
and project completion. The Awash River middle basin area (about 20,000 km <sup>2</sup> out of 119,000 km <sup>2</sup> in the Awash River basin area), which
is the target area of this project, is located in the northern part of the Great Rift Valley and is susceptible to drought as experienced with
serious damages in 2011. There has been an increasing need to develop less susceptible groundwater resource as an effective response to
the vulnerability to drought. The population of Oromia Region was about 27 million, accounting for about 40% of the total population of
Ethiopia. The water supply coverage was 68.5% (2010) in Oromia Region, which was the same level as the national average, but this
region had the largest population that was unable to access safe water. After the project completion, the national average of the water
supply coverage (based on the standard of GTP-II 2015/16-2019/20) has been still low. (For example, the coverage was 65.7% in 2017),
whereas the water supply coverage in Oromia Region was 59.3% <sup>2</sup> , obviously lower than the national average. Therefore, the needs to
groundwater development were still high.
<consistency at="" evaluation="" ex-ante="" japan's="" oda="" of="" policy="" the="" time="" with=""></consistency>
The project was consistent with Japan's ODA policy to Ethiopia. Priority areas in ODA to Ethiopia include rural water supply, human
resource development for water resources, and cooperation for exploration of groundwater <sup>3</sup> .
<evaluation result=""></evaluation>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Objectives at the time of Project Completion>

At the project completion, the following outputs were achieved for the expected goals: (1) Groundwater potential of the major groundwater aquifers and groundwater regions in the Middle Awash River Basin is assessed and a set of geological and hydrogeological map at a scale of 1:250,000 was produced. (2) Water supply scheme development plan of the small towns selected from Oromia Region was formulated.

<sup>3</sup> Source: ODA country databook 2013

<sup>&</sup>lt;sup>1</sup> The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the

medium-to-long-term goals which will be attained as a result of materializing the proposed plan ("output" of the project). <sup>2</sup> Source: ONE WASH National Programme - A Multi-Sectoral SWAp: PHASE II Programme Document

< Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

After the project was completed, the proposed utilization of the outputs has been partially fulfilled. Table 1 shows the plans which have utilized or are to utilize the developed hydrogeological maps.

According to the survey result, the developed hydrogeological maps have been utilized for the groundwater development in the Oromia small towns water supply project, funded by a grant aid program of the Government of Japan. In the construction plan proposed in this assessment project, 10 small towns were prioritized among the total of 30 small towns in this project area. Finally, seven small towns were selected for the water supply project funded by the Government of Japan, and the test well drilling was being underway at the time of ex-post evaluation. Besides the use of the hydrogeological maps, a field investigation in early 2020 revealed that a test borehole drilled during this assessment project was planned to be utilized for water supply in a neighbour town by another development partner (USAID). However, the maps have not been updated and upgraded since 2015 to more detailed versions by the Government of Ethiopia because of no allocation of the budget and insufficient staff members.

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

At the time of ex-post evaluation, the expected goals have not been achieved by the small towns water supply project as described above.

<Other Impacts at the time of Ex-post Evaluation>

MoWIE and Oromia Water and Energy Resources Development Bureau (OWERDB) reported that no negative impact had been observed on the natural environment during test well drilling in this assessment project. No land acquisition and resettlement occurred. As the drilling sites were outside of the national parks, and there was no other protected area. Therefore, the project had no negative impact from this aspect.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

$\mathbf{T} 1 1 1 0 1 0 1 0 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 0 1 0 1 0 1 0 0 0 0 0 0 0 0$		
Table 1 Status of Achievement of Utilization	Status of the Proposed Plan and Expec	cted Goals through the Proposed Plan

Aim Indicators		Results				
(Utilization Status of the Proposed	(Indicator 1)	(Ex-post Evaluation) partially				
Plan)	Status of utilization of	The plans which have utilize				
(a) Appropriate groundwater	hydrogeological map of	Name of the plan	Status of	Status of	Status of financial	
development/management plan will	Middle Awash River		planning	implementation	2	
be formulated and put it into	created for groundwater	National groundwater	Detailed	Not yet	(financial sources) No budget has been	
implementation by the Government of		development mapping	planning	implemented	yet allocated yet	
Ethiopia with the support from		development mapping	was	implemented	from the	
development partners based on the			completed.		Government of	
groundwater potential assessment					Ethiopia	
study which are carried out by the		Project for Development of	Detailed	Preparatory	Grant aid from the	
project and on hydrogeological map		Water Supply Facilities of	planning	field	Government of	
which will be produced by the project.		Small Towns in Oromia	was	investigation	Japan has been	
(b) The small town water supply		Region	completed.	(test borehole	allocated for water	
schemes development plan (facility				drilling) is	supply facilities in 7	
plan and maintenance plan) which				underway.	small towns.	
will be elaborated by the Project will						
be adopted and implemented by the	(Indicator 2)	(Ex-post Evaluation) partially	achieved			
Government of Ethiopia with the	Implementation status	s See the indicator 1 above.				
support from development partners.	of the proposed small					
	city water supply					
	scheme (facility plan					
	and maintenance plan)					
(Expected Goals through the Proposed		(Ex-post Evaluation) not achie	eved			
Plan)	number of facilities	No facilities have been comple	eted yet.			
(a) Groundwater will be effectively	constructed based on the					
developed in the Middle Awash River	proposed water supply					
Basin for drinking water or other	scheme (urban areas,					
purposes and it will be appropriately	rural areas, etc.),					
managed based on the management	(Indicator 2) Water	(Ex-post Evaluation) not achie				
plan developed under the project.	supply rate, distance and	No change, because of incomp	pletion of the	new water supply f	àcilities.	
(b) The water supply coverage of the	time to water supply					
small towns will be improved in the	facility in small town					
Middle Awash River Basin.	area					
	(Indicator 3)	(Ex-post Evaluation) partially				
	Establishment of water	In all seven small towns water				
	management committee	the water tariff of the respecte incompletion of the new water			ed because of	
	and water tariff	meompreuon of the new water	suppry lacing	105		
	collection					
Source : Interview of Ground water st	udy & development direct	orate team, MoWIE and OWE	RDB			
3 Efficiency						

Both the project cost and project period exceeded the plan (the ratios against the plan: 150% and 113%, respectively). Complex geological conditions along the Great Rift Valley and insufficient drilling skills and improper drilling preparation of the contractor caused quite long time to complete the planned boreholes. This resulted in the additional costs although the outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

There have been policies which support groundwater development: The "Water Resources Management (WRM) Policy", which has been applied since 1999, and a newly drafted WRM policy in 2020, which was being currently discussed at the time of ex-post evaluation. The Water Resources Management (WRM) Policy of 1999 includes eight policy objectives referring directly to groundwater. A newly drafted WRM policy in 2020 focuses on the occurrence, and distribution of groundwater, protection and minimum modification of groundwater recharge areas, and legislations, standards and guidelines for sustainable management of groundwater.

MoWIE has been mandated to design policies and legal frameworks for the development of water resources including groundwater. OWERDB has supervised water and sewerage projects in Oromia Region. Their organizational settings for groundwater development are shown in Tables 2 and 3.

#### Table 2: Organizational setting for groundwater in MoWIE

с. <i>(</i> ;	Roles and	No. of personnel	
Section	responsibilities	Current	Plan
Groundwater study and development	Conducting extensive groundwater study, analysis and design	4	7
Groundwater project coordination	Technical and managerial coordination of different projects with respect to operation	1	5
Groundwater information and data base management	Managing groundwater archives	1	4
Total		6	16

Table 3: Organizational	setting for	proundwater in	OWERDB
1 uole 5. Organizational	betting for	Stoulla water III	OUTTINDD

с. <i>Г</i> .	Roles and	No. of personnel	
Section	responsibilities	Current	Plan
Hydrology and groundwater	Managing the regional water resource, particularly groundwater	2	6
Design and study	Conducting detail groundwater resources study and design	2	5
Project coordination	Coordinating all operational groundwater projects	2	5
Planning and monitoring	Supervising groundwater data as per plan	1	2
Total		7	18

Source: MoWIE report 2018

Source: OWERDB report 2018

The total number of staff required in MoWIE and OWERDB was 34 but only 13 were in place at the time of ex-post evaluation. Both MoWIE and OWERDB have been making their efforts to secure the planned number of personnel.

<Technical Aspect>

Technical level of MoWIE and OWERDB has been sufficient, as senior and experienced staff have been still working in the offices. <Financial Aspect>

The budget has been secured for the water supply project in the seven small towns. However, MoWIE has not secured the budget for updating the hydrogeological maps and data base.

<Evaluation Result>

There have been some problems observed in the institutional and financial aspects. Therefore, the sustainability of the effects from the project is fair.

# 5 Summary of the Evaluation

At the project completion, all the outputs were achieved as (i) the hydrogeological maps were completed in accordance with the evaluation of groundwater productivity, and (ii) construction plan of new water supply facilities and renewal plan of existing water supply facilities were developed by utilizing the hydrogeological maps. After the project was completed, seven small towns were selected in the project of new water supply facilities funded by the Government of Japan. However, some problems have been observed in terms of the effectiveness (utilization), and institutional and financial aspects of the sustainability, and both the project cost and project period exceeded the plan with respect to the efficiency.

Considering all of the above points, this project is evaluated to be partially satisfactory.

# III. Recommendations & Lessons Learned

# **Recommendations for Implementing Agency:**

MoWIE and OWERDB are recommended to update the hydrogeological maps on a regular basis by their existing organizational framework (e.g. Ground water information and data base management section). Unless there is sufficient staff or budget, it is recommended to assign professionals or allocate required amount of budget for proper maintenance and utilization of this precious information. Such continuous efforts will make development of groundwater and water supply services faster and more economical. **Lessons Learned for JICA:** 

This project required a significant amount of time and cost compared with the initial plan for completion of the drilling investigations. The geological formations in the Great Rift Valley are so complex that sufficient amount of time, well-maintained drilling machines, and advanced operational skills are essential to excavate deep boreholes. The following groundwater development for water supply needs to be carefully planned with sufficient drilling work period and budget that enable well-experienced drilling operators to join the project and make adequate preparations. It is thus better to put a premium on technical experience and advancement rather than merely economical advantage in procurement of the drilling contractor for construction of deep wells in this region.



Preparatory field investigation (test borehole drilling) proposed and implemented as a result of this project

The test borehole developed in this project and an operation building constructed by USAID (behind) which are to be utilized for water supply to a nearby town

Country Name	The Project for the Study on Togo Log	istics Corridor De	evelopment
Republic of Togo	<b>j v</b> 8 8	,	
I. Project Outline			
Background	In West Africa, the West African Economic promote measures with the aim of facilitating ph were designated as priority development corric development sector strategies of the member con Logistics Corridor (TLC) was one of the eleven of countries including Burkina Faso, Mali, and Nig related to TLC had been separately considered a realize synergy effects due to lack of cohesiv insufficient comprehensive analysis and consider the entire TLC. c	hysical distribution in t dors to harmonize the untries through a regio designated corridors that ger. Due to the great p and partly implemented we coordination among	the area. In 2001, eleven corridors transportation and infrastructure and integrated program. The Togo at supplied materials to landlocked potential of TLC, various projects d. However, these projects did not g them under the situation with
Objectives of the Project	<ol> <li>Expected goals through the proposed plan through implementation of the priority project</li> <li>Expected utilization of the proposed plan: 1) will be adopted as the corridor development feasibility study under this study will be oper</li> </ol>	cts. A development plan to plan of the governme	b be formulated based on the study
Activities of the Project	<ol> <li>Project site: Whole of Togo</li> <li>Main activities: 1) Surveys on the current formulation of a TLC development plan, 3) F and recommendations</li> <li>Inputs (to carry out above activities) Japanese Side         <ol> <li>Experts from Japan: 18 persons</li> <li>Training in Japan: 9persons</li> </ol> </li> </ol>	status of social and e	ority projects, 4) Initial assessment
Project Period	August, 2012 – September, 2013	Project Cost	(ex-ante) 400 million yen (actual) 279 million yen
Implementing Agency	Ministry of Public Works and Transport (MPWT)		
Cooperation Agency in Japan	Central Consultant Inc., Yachiyo Engineering Co.	., Ltd.	

# II. Result of the Evaluation

# 1 Relevance

<Consistency with the Development Policy of Togo at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policies of Togo at the time of ex-ante evaluation and project completion. "The Poverty Reduction Strategy Paper (PRSP)" (2011-2015) aimed at achievement of economic growth through economic revitalization using Lomé Port. In addition, "the Strategy for Accelerated Growth and Promotion of Employment (SCAPE: Stratégie de croissance accélérée et de promotion de l'emploi)" (2013-2017) prioritized strengthening of TLC under the economic infrastructure development which was one of the five pillars.

<Consistency with the Development Needs of Togo at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the needs of Togo for a comprehensive development plan of TLC in order to ensure efficient and effective development of the corridor at the time of ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA policy for Togo<sup>2</sup> prioritizing support for infrastructure development and human resource development

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<sup>&</sup>lt;sup>1</sup> The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

<sup>&</sup>lt;sup>2</sup> Ministry of Foreign Affairs, "ODA Country Databook 2012"

<Status of Achievement for the Objectives at the time of Project Completion>

The objectives of the project were achieved by the time of project completion. A TLC development plan with implementation program including the existing development projects for 2030 was developed (Output 1). Feasibility studies (FS) were conducted on projects for bypass construction between Bouzalo and Binako of the National Road (Route Nationale: RN) 17 and for bridges construction on roads between Katchamba and Sadori (Output 2). A seminar was held in August 2013 in order to discuss about the TLC development plan and the results of the feasibility studies with the development partners and stakeholders (Output 3). The capacity of counterpart staff in how to develop and maintain the logistic network was improved (Output 4).

<Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

The proposed plan has been utilized. The TCL development plan was included in the SCAPE (2013-2017) and the government of Togo approved the "National Development Plan" (2018-2022) based on the "Project on the Corridor for West Africa Growth Ring Master Plan (WAGRIC)" (2015-2018) supported by JICA which was an updated version of the project (Indicator 1). Out of the total 20 prioritized projects with the feasibility studies by the project, including 17 road projects, 1 railway projects, axle load control project and a dry port construction project, construction of bypass of RN 17 and rehabilitation of the railway have been under preparation (Indicator 2). In addition, out of the 17 road projects prioritized by the project, 6 projects have been under preparation/implementation with financial support by the development partners, including the African Development Bank (AfDB), the Islamic Development Bank (IsDB) and the West African Development Bank (WADB)

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

The expected goals through the proposed plan have been partially achieved. According to the traffic volume data for the period from 2013 to 2018, the traffic volume increased globally though the latest traffic survey had been conducted at the different observation points from the baseline traffic survey under the project.

<Other Impacts at the time of Ex-post Evaluation>

No other negative impact, including impact on natural environment and social environment, was observed at the time of ex-post evaluation.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is high.

Status of Achieveme	nt of	Utilization Status of the Proposed Pla	an and Expected Goals through the Proposed Plan
Aim		Indicators	Results
Jtilization Status of the Proposed Plan: ) A development plan to be formulated based on the study wil be adopted as the corrido development plan of the government of Togo,	e 1 r	study is approved.	<ul> <li>➤ The TCL development plan was included in the" Strategy for Accelerated Growth and Employment Promotion (SCAPE)" (2013 -2017).</li> <li>➤ In 2018, the government of Togo approved the National Development Plan (2018-2022) based on the Project on the Corridor for West Africa Growth Ring Master Plan </li> <li>✓ (2015-2018), which was updated version of the TLC development plan, supported by JICA.</li> </ul>
The projects with a feasibility study under this study will be operationalized.	2)	The projects prioritized by this project are implemented by Japan and other donors.	<ul> <li>(Ex-post Evaluation) Achieved.</li> <li>The following priority projects have been under preparation:</li> <li>Construction of bypass of RN 17 connecting between Bouzalo and Binako has been under preparation but the bidding process has been behind the schedule.</li> <li>Rehabilitation of the railway section between Lomé and Bitta has been under preparation by AfDB.</li> <li>Construction and Asphalting of the Sokode bypass road by JICA has been under preparation and FS will be starting in 2020</li> <li>The following projects listed by the project have been completed.</li> <li>Rehabilitation of fishery port in Lomé by JICA</li> <li>Interconnection of customs clearance systems between Togo and Burkina Faso.</li> </ul>
Expected Goals through the Proposed Plan Physical distribution of the TLC will be acilitated through implementation of he priority projects.	1)	Increase in the traffic volume in the TLC (The baseline data should be collected by the traffic survey under the project)	(Ex-post Evaluation) Partially achieved According to the traffic data for the period from 2013- 2018, the traffic volume increased globally. However, it is difficult to compare exactly with baseline date because the government of Togo took different method for data collection and different observation points from the ones conducted by the project.
Source: Final Report, Information provi			

## Status of Achievement of Utilization Status of the Proposed Plan and Expected Goals through the Proposed Plan

3 Efficiency

The project cost and the project period were within the plan (ratio against the plan: 70% and 100%, respectively). Therefore, efficiency of the project is high.

4 Sustainability

<Policy Aspect>

The latest "National Development Plan" (2018-2022) included WAGRIC which is the updated version of the TLC development plan. Therefore, the implementation of the TLC development plan has been endorsed by the development policies of the government of Togo. <Institutional Aspect> MPWT is a responsible ministry for implementation of the TLC development plan. Under MPWT, the Directorate of Survey Plan, Monitoring and Evaluation is responsible for the TLC development plan with 11 staff members. The Directorate of Road Construction is responsible for implementation of road construction projects with 12 staff members and the Directorate of Road Transport and Railway has 5 staff members. Sufficiency of personnel in each directorate has not been clarified without no response to the inquiries by the ex-post evaluation team.

#### <Technical Aspect>

The counterpart staff of MPWT who were engaged in the project of WAGRIC has further improved their capacity for planning and implementing projects under the corridor development plans with the technical support by JICA after the project completion. In particular, they have been enhancing their capacity of coordination among stakeholders for the corridor development, including the development partners and the neighboring countries.

#### <Financial Aspect>

The government of Togo made continuously lots of efforts to assure the budgets for priority project as below. However, it is hard to say the government has a certain perspective for secure all the necessary budget.

In January 2013 when project had been implemented, UEMOA and JICA organized joint seminar three times for finance mobilization and enhancement awareness to invest more of other development partners such as the European Union (EU) and AfDB.

More recently, in mid-i July 2019, EU and the government of Togo organized an event named "Rencotnre B2B" (Meeting B to B). In the end of July 2019 UEMOA and JICA organized a round table for finance mobilization and the government of Togo participated in the meeting to find more finance. On behalf of the Ministry of Infrastructure and Transport, the Director of Plan, Survey and Monitoring and Evaluation had joined as a member of the delegation of Togo.

In addition, in August, 2019, the government of Togo organized a business forum with inviting Japanese private companies in merge with the 7<sup>th</sup> Tokyo International Conference for African Development (TICAD7) held in Japan.

# <Evaluation Result>

In light of the above, there have been problem observed from the financial aspect of the implementing agency. Therefore, the sustainability of the project effects is fair.

#### 5 Summary of the Evaluation

The project achieved the objectives to formulate the TLC development plan and the TLC plan have been utilized for the development and rehabilitation of the transport infrastructure including roads and bridges, port and railway. As for sustainability, the government of Togo has faced some difficulties to mobilize funds for the implementation of the projects in the TLC plan in despite of their various efforts. Considering all of the above points, this project is evaluated to be highly satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency: (For MPWT)

Since the TLC development plan is a mid-term or long term development plan, it is necessary to arrange a monitoring system for the progress of the priority projects. Also, it is essential to consider clarify responsibilities of MPWT and other relevant ministries, including the responsible ministries for development plans and to follow the process to implement the development plan continuously because the TLC development plan is a part of the national development plan. In addition, it is inevitable to select a directorate to coordinate the development partners since the projects related RN 1, which is a part of the target of the TLC development plan, have attracted interests by the other donors.

#### Lessons Learned for JICA:

The output of the project is a part of the national development plan and has been consistent with the development policy of Togo. In addition, after the project completion, TLC has been updated as one of the major corridors in the WAGRIC master plan, which was supported by JICA, from the viewpoint of the regional corridor development in West Africa, and became a major part of the current national development plan of Togo. Technical cooperation supporting formulation of master plan is an important tool for JICA in case of ODA for countries including Togo and very effective. On the other hand, the recipient government often requests JICA to support implementation of the prioritized projects which are selected in the master plan. Therefore, it is essential to continuously advocate the related ministries, such as the Ministry of Planning and the Ministry of Finance as well as to involve them in the project in order to make the master plan be approved and utilized as the national policy.



RN1: Truck with trouble and congestions on the road



Concept meeting with the goverment of Togo

Country Name		Project for Study on D	ili Urban Mas	ster Plan
Democratic Republic of Timor-Leste				
I. Project Outline				
Background (commu urban p overarc issues v number		nities). The Dili Municipali opulation growth rate at 4.19 opulation was expected to a sing countermeasure underta- vere arising such as uncontr- of vehicles, higher risks of	ty accommodate % which was far each 30% of the ken against succolled urbanization natural disaster,	ses 6 sub-districts, 31 sucos (villages) and 241 aldeias ed a population of 234,026 (2010 Census) with the above the national average growth rate (2.45%). The ne national population in 2020. There had been no ch rapid growth of urban population. Various urban on, traffic congestion due to a rapid increase in the degraded sanitary condition due to underdeveloped as issues further obstructed the economic activities.
Objectives of the Project	thereby quality of 1. Expe imple devel (plan will b Note: Th Conside	contributing to implementation of life and industrial vitality. cted Goals through the proper emented in a harmonized we oped with high quality of ning capacity) of the relevan- be developed, and urban developed, and urban developed the project was categorized a rations" (2010).	on of urban dev osed plan <sup>1</sup> : By u ay in the Dili b life and industr at government as elopment will be as B based on t	the "JICA Guidelines for Environmental and Social
Activities of the Project	Cruz, 2. Main socio analy capao law u 3. Input Japaneso 1) Missi 2) Train 3) Equij Informa Position Design Power S 4) Oper	, and Cristo Rei in Dili Distri activities: Review and an -economic conditions as we rsis of urban infrastructure; U city development of human fundergoing or preparation by s (to carry out above activitie e Side fon members: 13 persons ees received: 2 persons oment: Copy Machine, Print tion System (GIS) Softwar ing System (GPS), Auto C (CAD), Projector, UPS (fu upply), etc. ational cost.	ct) and Tibar Vi alysis of present all as industrial Jrban Master for resources; Propo Timor-Leste for es) er, Geographic e, PC, Global omputer-Aided	ring four sub-districts (Dom Alexio, Nain Feto, Vera llage of Bazartete Sub-district in Liquica District. t conditions of Timor-Leste; Review and analysis of development potentials and constraints; Review and mulation; Technology transfer of urban planning and osal and advice to coordinate other relevant plan and implementation of urban master plan. Timor-Leste Side 1) Staff allocated: 11 persons 2) Equipment: Computer, etc.
Project Period	(Extended August 2		Project Cost	(ex-ante) 255 million yen, (actual) 239 million yen
Implementing Agency		v of Public Works (MPW) (C e again changed to MPW in 2		finistry of Planning and Strategic Investment in 2015 administrative changes)
Cooperation Agency in Japan		Koei Co., Ltd., Pacet Corp.		~ /

## **II. Result of the Evaluation**

<Constraints of Evaluation>

- Because of the outbreak of COVID-19, information was collected through a questionnaire survey to make evaluation judgement in the ex-post evaluation. Site visits were not conducted.

1 Relevance

<Consistency with the Development Policy of Timor-Leste at the time of Ex-Ante Evaluation>

The project was consistent with the development policy of Timor-Leste at the time of ex-ante evaluation, as t Dili Metropolitan Area was selected as the national strategic zones in the "Strategic Development Plan" (2010-2030).

<Consistency with the Development Needs of Timor-Leste at the time of Ex-Ante Evaluation>

The population of the Dili Municipality was increasing, and the urban population was expected to reach 30% of the national population in 2020. The project was consistent with the development needs of Timor-Leste for development of the master plan of the urban area to tackle with issues such as uncontrolled urbanization, traffic congestion risks of natural disaster, and degraded sanitary conditions. <Consistency with Japan's ODA Policy at the time of Ex-Ante Evaluation>

<sup>&</sup>lt;sup>1</sup> This goal is expected to be realized through mid-term/long-term time period and therefore is beyond the time frame of this evaluation. Therefore, in principle, it will not be considered within this evaluated.

Capacity improvement of the government and public sector and infrastructure development for revitalizing economic activities were two of the priority areas in the "Country Assistance Policy for Timor-Leste" (2012). <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Objectives at the time of Project Completion>

The objectives of the project were achieved by the project completion. By the time of project completion, the "Dili Urban Master Plan toward 2030," which included the Action Plan, was developed. Recommendations with regard to the approval process for implementation of the Master Plan were included in the Master Plan itself. The personnel of MPW who worked in the project was trained through OJT on data analysis and processing, formulation of policy and strategies, and so on. Almost all of them considered that their technical knowledge related to urban planning increased.

<Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

The "Dili Urban Master Plan toward 2030" has not been officially approved by the Government of Timor-Leste but utilized as a reference. It was considered that the cost and time for implementation of the plan would be huge in DMA where the population has been growing and private and current infrastructures have been scattered. The plan has not yet been officially approved, because laws and regulations that would provide the basis for making it a legal plan have not yet been in place. However, it has been utilized by MPW for planning and implementing projects in DMA. Among the 19 priority projects proposed in the Action Plan of the "Dili Urban Master Plan toward 2030," ten have been implemented (four transport development projects and six urban infrastructure projects) although some of them have not been fully completed, and two has been in the designing and preparation stages (one transport development project and one urban infrastructure project).

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

The Expected Goal has been partially achieved. Although the "Dili Urban Master Plan toward 2030" has not been officially approved, some of the projects proposed in the Action Plan have been implemented as infrastructure development projects of each sector. First, there has been infrastructure improvements, such as a newly constructed seaport in Tibar, an improved road network in DMA and a constructed facility at the National University of East Timor (UNTL). Second, the improved road network has contributed to the mitigation of traffic congestion in some areas, though it has caused an increase in the traffic volume in commuting hours in the morning and evening. Third, the period of the water supply has been slightly improved by the efforts of the Government of Timor-Leste, though the data was not available. However, this improvement has not been attributed to the Dili Master Plan for Water Supply which was proposed in the Action Plan and then prepared by the Asian Development Bank. The plan has not been executed because it has not been presented to the Councils of the Ministries, thus the Government of Timor-Leste has not allocated the budget for its execution.

Regarding capacity development of the personnel for implementation of the master plan, short-term objectives by 2020 had been set in the "Dili Urban Master Plan toward 2030" as capacity development of the National Directorate of Housing and Planning (DNHPU) for carrying out their duties on spatial management and for providing training to municipality staff. As for its capacity for spatial management, DNHPU has developed the Law on Basic Spatial Management (no. 6/2017) in 2017. However, three laws (the Land Classification and Qualification Law, Spatial Planning Law, and Urban Development and Building Law) which are necessary to enforce the mentioned law have not been developed, although it is mentioned that they should be developed within 90 days of the enactment. On the other hand, DNHPU has not provided training for the municipality staff, due to the limited number of staff allocated for training. Another reason was that DNHPU has not got the authority to give training to the municipality level staff.

<Other Impact at the time of Ex-post Evaluation>

For the implementation of the projects proposed in the Action Plan funded by the Government of Timor-Leste, there were land acquisition and resettlement in the construction work such as road widening, construction of kerb, rain and water collection pits, and pipeline installation. However, the influence was minimal for the nearby communities, and they were compensated based on the appropriate law of Timor-Leste which is equivalent to JICA Guideline for compensation, . A feasibility study on the Capacity of Ground Water for Water Supply in Dili was conducted, and including this study, there has been no negative impact on the natural environment.

Regarding the universal design of the developed infrastructure, a few facilities such as parking lots have been designed with the concept. However, most users have been misusing the facilities without understanding the purpose, which has hindered persons with disabilities from using them.

Unexpectedly some minor negative impacts have been reported by MPW. For example, the Project for Establishment of Standard on Kerb, Rainwater Collection Pits was completed. First, some pits were too small to drain rainwater, and it was overflowing. For this, MPW has been repairing them. Second, people have thrown wastes on the constructed pits, which has hindered rainwater drainage. As well, the Secretary State of Environment has been working for raising people's awareness.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is fair.

	Utilization of the Proposed Plan					
Aim Indicators		Indicators	Results			
(Status	of	achievement	of	the	1. Formulation of Dili Urban Master	Status of achievement: Achieved.
Objectiv	/es)				Plan toward 2030.	(Project Completion)
						- The Master Plan which includes the Action Plan was developed.
					2. Formulation of Action Plan	Status of achievement: Achieved.
					toward 2020	(Project Completion)
						- The Master Plan which includes the Action Plan was developed.
					3. Proposals and recommendations	Status of achievement: Achieved.
					with regard to the approval process	(Project Completion)
					of the Dili Urban Master Plan and	- Recommendations with regard to the approval process for
					laws/regulations in urban planning.	implementation of the Master Plan were included in the Master Plan itself.

Utilization of the Proposed Plan

	4. Capacity development on urban planning through the Project	(Project Completion) - Through the day-to-day cooperation between Japanese experts and C/P, the technology transfer was carried out. The contents of the technology transfer included the locations and sources of required data, current status of data and officials at each concerned organization, compilation of minutes of the meeting and reports, methods of analysis and data processing, compilation and synthesizing with other information, methods for the formulation of policy and strategy.
(Utilization Status of the Proposed Plan) The developed master plan is approved as the urban development plan of Dili Metropolitan Area, and project are implemented based on the		<ul> <li>(Ex-post evaluation)</li> <li>The "Dili Urban Master Plan toward 2030" was not officially approved by the Government, because it was considered that the cost and time for implementation would be huge.</li> <li>It has been utilized by MPW as reference.</li> </ul>
master plan.	2. Number of the action plans started based on the master plan	<ul> <li><u>Status of achievement: Partially achieved</u></li> <li>(Ex-post evaluation) <ul> <li>The following projects have been implemented:</li> </ul> </li> <li>Development of off-street parking and fringe Parking</li> <li>Improvement of Ring-road and traffic management in CBD</li> <li>Road widening of current road network between Comoro and CBD</li> <li>Domestic Ferry Terminal and other related Facilities (JICA's grant aid project)</li> <li>Survey on the Capacity of the Ground Water for Water Supply</li> <li>Establishment of a Standard for the Sewerage System of the Building for Connection to the Public Sewerage System</li> <li>Establishment of Standard on Kerb, Rainwater Collection Pits and Connection Pipelines</li> <li>Upgrade Dili Substation</li> <li>Extension Distribution Network</li> <li>Development of National ICT Center</li> <li>The following has been in the designing and preparation stage:</li> <li>President Nicolau Lobato International Airport Development Project (1) (JICA's ODA loan project)</li> </ul>
(Expected Goals through the proposed plan) By utilizing the proposed plan, projects of each sector are implemented in a harmonized way in the Dili Metropolitan Area, and the sustainable city will be developed with high quality of life and industrial vitality. In addition, the administrative capacity (planning capacity) of the relevant government agencies in Timor-Leste related to the urban		<ul> <li>Status of achievement: Achieved.</li> <li>(Ex-post Evaluation)</li> <li>There has been improvement in some of the infrastructure mentioned, such as:</li> <li>✓ Construction of new Seaport in Tibar, funded by the Government of Timor-Leste</li> <li>✓ Rehabilitation of the Airport in under discussion to be funded by Government of Timor-Leste and Government of Japan.</li> <li>✓ The road network in DMA have been improved which was funded by Government of Timor-Leste</li> <li>✓ The UNTL has been receiving support from government of Japan for improvement of its facility and infrastructure.</li> </ul>
planning will be developed, and urban development will be induced appropriately.	congestion	<u>Status of achievement: Not verified.</u> (Ex-post Evaluation) - According to MPW's observation, the traffic congestion has been mitigated except at certain hours (8 a.m. and 5 p.m.) at some spots (Audian, Colmera, etc.) where the road network has been improved but the transportation has bee also increasing.
	3. Improvement of the water supply ratio	(Ex-post Evaluation) - The period of water supply has been slightly improved as a result of the government program and other international supports, but not due to the Master Plan for Water Supply.
	4. Capacity development of urban planning administration (planning and updating)	
(Source) Project Completion Report, an 3 Efficiency	d questionnaire survey with MPW.	

Although the project cost was within the plan (ratio against the plan: 94%), the project period exceeded the plan (ratio against the plan: 193%). Outputs were produced as planned. The project period was extended twice. First, it was extended for five months in July 2015, due to the change of the implementing agency after the reorganization of ministries (Ministry of Public Works to MPSI). Second, it was extended for nine months in January 2016. MPSI was newly established under the 6<sup>th</sup> government formed in 2015, and it needed time to

# formulate policies and programs while waiting for the appointment of the Minister. Therefore, the efficiency of the project is fair. 4 Sustainability

# <Policy Aspect>

Development of DMA has been prioritized in the "Strategic Development Plan" (2010-2030). The 8<sup>th</sup> Government of Timor Leste (2018-2023) has set a priority to develop the basic infrastructure in DMA such as road networks, drainage and water supply system, in their national development program for 5 years. The Spatial Planning Law was enacted in 2017 as the basis for official approval of the "Dili Urban Master Plan toward 2030."

<Institutional/Organizational Aspect>

DNHPU has been in charge of implementation of the proposed master plan. However, it has not been approved as a General Directorate since it was transferred to MPW in 2017, due to the low priority on housing and urban planning programs. Because of the uncertain status without a General Director, it has had disadvantages in program approval and budget allocation. The total number of personnel of DNHPU was 16 as of June 2020: one director, four administration and finance staff and 11technical staff, and two staff for GIS management. The number of staff has not been sufficient, but some projects have been implemented. DNHPU has expected to recruit more personnel if the budget was allocated. Regarding the coordination with project execution agencies, DNHPU has organized meetings to share information on issues and regulations related to spatial planning, housing, and urban planning. <Technical Aspect>

Most of DNHPU staff to whom the project transferred techniques were not employed for life, but were employed on a fixed-term, oneyear basis, and therefore they have left DNHPU since the project was completed. DNHPU technical staff have had the relevant educational background such as urban planning, architecture, civil engineering, geodetic, and information technology. Although DNHPU has not established a compulsory training system for its staff, it has conducted short-term training or information sharing when a new system or material was introduced. As explained earlier, DNHPU has not conducted any training for the municipality staff, due to the budget and human resource shortages.

<Financial Aspect>

DNHPU has not secured a sufficient budget for implementation of the proposed master plan, because it has been part of the whole government programs, and sometimes priorities have been put on other government projects than those proposed in the "Dili Urban Master Plan toward 2030." On the other hand, some project execution agencies have secured sufficient budgets for implementing proposed projects. For example, the Ministry of Transport and Communication has secured the budget for Rehabilitation of the International Airport, and the Ministry of State Administration has secured the budget for the Improvement of Tibar Dumpsite Conditions and Operations. <Evaluation Result>

In light of the above, problems have been observed in terms of the institutional/organizational, technical and financial aspects of the implementing agency. Therefore, the sustainability of the project effects is fair.

#### 5 Summary of the Evaluation

In the project, the "Dili Urban Master Plan toward 2030" was prepared. Since the time of project completion, some projects have been implemented, although the plan has not been officially approved. As result of the implemented projects, positive impacts have been confirmed such as developed infrastructure and mitigated traffic congestion. Regarding sustainability, the section in charge of the master plan has not been approved as a general directorate, and due to the uncertain status has hindered a sufficient allocation of budgets and human resources. Concerning efficiency, the project period exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- It is recommended to the Government of Timor-Leste to upgrade DNPHU to a General Directorate and approve the "Dili Urban Master Plan toward 2030" as an official master plan.
- When DNHPU is officially approved as a general directorate, it is recommended to DNHPU to explain the importance of the master plan and prepare a precise budget plan so that a sufficient budget would be allocated by the Government of Timor-Leste.
- It is recommended to DNHPU conduct training on area planning, land use, public services management, database, etc. to the municipality staff so that they could manage urban development of DMA.
- It is recommended to DNHPU to monitor the work, impacts and issues of implemented projects which could be the baseline for future urban development projects.
- Lessons Learned for JICA:
- In the project, some projects have been already implemented and positive impacts have been confirmed. On the other hand, some projects have not been even planned due to financial and human resource constraints, which has been caused by the uncertain status of the incharge section. It can be considered that the proposed master plan was developed based on the overestimation in terms of the institutional and financial capacity of the Government of Timor-Leste. In just established countries or post-conflict countries, the legal system, government budget and human resources are weak. Therefore, it is important to carefully examine the government's capacity and develop a master plan which could be implemented with its financial and human resource capacity. For those parts that are not easily addressed by the government's own efforts, it is advisable to assign experts to assist in building an organizational structure to implement the master plan within the project. Alternatively, it is desirable to dispatch an expert to support to establish an organizational structure for the master plan implementation in parallel with the project or conduct follow-up cooperation; It is necessary to flexibly consider means for implementation of the master plan regardless of the scheme.
- If the laws and regulations related to spatial planning are not sufficiently developed by the partner government in a project that expects the approval and implementation of the master plan after the project completion, support for the development of the legal system to clarify the institutional position of the master plan should be included in the project in which the master plan is developed at the same time.



Constructed domestic ferry terminal.



Improvement of Ring-road and traffic management in CBD (Comoro Bridge 3)



Developed off-street parking and fringe parking (Colmera Area)

Country Name	
Socialist Republic	Project for Building Disaster Resilient Societies in Vietnam (Phase 2)
of Viet Nam	

## I. Project Outline

I. Froject Outline	
Background	The Central Region of Viet Nam was vulnerable to water-related disasters due to heavy rainfall caused by tropical low pressure and mountainous geography. From 2009 to 2012, JICA assisted in the project titled "Project for Building Disaster Resilient Societies in the Central Region" in Provinces of Thua Thien Hue, Quang Nam and Quang Ngai (hereinafter referred to as "the Phase I Project"). One of the major achievements of the Phase I Project was formulation of an integrated flood management plan (IFMP) which was approved in Thua Thien Hue Province. Under the concept of Integrated Flood Management (IFM) <sup>2</sup> , further assistance for flood risk reduction in Thua Thien Hue Province and three new target provinces in the Central Region was requested by the Government of Viet Nam.
Objectives of the Project	<ul> <li>The project aimed to strengthen the capacity for IFM planning and implementation; through i) strengthening the institutional arrangements at the central level, and ii) conducting various measures and capacity development for IFM in the four target provinces (Nghe An, Ha Tinh, Quang Binh, and Thua Thien Hue), thereby strengthening resilience of societies against water-related disasters.</li> <li>Overall Goal: Resilience of society against water-related natural disasters is strengthened under the integrated flood management (IFM) system.</li> <li>Project Purpose: Capacity for IFM planning and implementation is strengthened at the central level and in target provinces.</li> </ul>
Activities of the Project	<ol> <li>Project Site: Hanoi City; Provinces of Nghe An, Ha Tinh, Quang Binh, Thua Thien Hue</li> <li>Main Activities:         <ol> <li>[At the Central Level] To strengthen institutional arrangements for IFM;</li> <li>[In Thua Thien Hue Province] To implement the IFMP formulated in the Phase I Project;</li> <li>[In Quang Binh Province] To formulate an IFMP through conducting flood disaster impact analysis, etc.;</li> <li>[In Nghe An and Ha Tinh Provinces] To conduct training on flood risk analysis, etc.;</li> <li>[In Ha Tinh and Quang Binh Provinces] To implement small-scale river bank protection works;</li> <li>[In Nghe An, Ha Tinh, Quang Binh Provinces] To develop manuals for embankment inspection and dam operation, etc; and</li> <li>[In the four provinces] To implement community-based disaster risk management (CBDRM).</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side Vietnamese Side</li> <li>Experts:17 persons 1) Staff Allocated: 56 persons</li> <li>Trainees Received: 36 persons 2) Office space in Hanoi and the four provinces</li> <li>Equipment: Survey equipment, digital elevation 3) Operation Costs maps, etc.</li> </ol> </li> </ol>
Project Period	August 2013 – August 2016     Project Cost     (ex-ante) 407 million yen, (actual) 515 million yen
Implementing	Directorate of Water Resources (DWR)* under the Ministry of Agriculture and Rural Development (MARD)
Agency	* Since August 2017, Vietnam Disaster Management Authority (VNDMA) under MARD is in charge.
Cooperation Agency in Japan	Earth System Science Co., Ltd.; IDEA Consultants, Inc.

## **II. Result of the Evaluation**

<Constraints on Evaluation>

• Due to Coronavirus Disease (COVID)-19 pandemic, the evaluation judgment was made by analyzing information acquired, through sending/ collecting questionnaires and telephone interviews with officials concerned. Neither face-to-face interviews nor site visits were conducted.

1 Relevance

<Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation>

The project was consistent with "National Strategy for Natural Disaster Prevention, Response and Mitigation to 2020", published in 2007, which aimed to mobilize all resources to effectively implement disaster prevention, response and mitigation up to 2020.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation>

The project was consistent with development needs of Viet Nam for strengthening disaster-related measures, especially in the Central Region.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project aligned with "Country Assistance Program for Viet Nam (2012)", supporting to "address threats such as disasters and

<sup>&</sup>lt;sup>1</sup> This technical assistance project is under the account of a Japanese ODA Loan Project, "Support Program to Respond to Climate Change", and aimed to enhance its development effects (Disaster Risk Reduction among others).

<sup>&</sup>lt;sup>2</sup> Integrated Flood Management is a process promoting an integrated - rather than fragmented - approach to flood management. An integrated flood management plan should address the following six key elements: i) Manage the water cycle as a whole; ii) Integrate land and water management: iii) Manage risk and uncertainty; iv) Adopt a best mix of strategies; v) Ensure a participatory approach; and vi) Adopt integrated hazard management approaches. <Source> World Meteorological Organization (2009) "Integrated Flood Management Concept Paper"

climate change" under a priority area, i.e. "Responses to Fragility". <Evaluation Result>

In light of the above, the relevance of the project is high.

# 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The project achieved its Project Purpose at the time of project completion. Upon reviewing the legal system for IFM, "Law on Natural Disaster Prevention and Control" and "Law on Hydrometeorology" were enacted in 2013 and 2015 respectively (Indicator 1). The promptness of sharing real-time river information data between the Ministry of Natural Resources and Environment (MONRE) and MARD was increased (Indicator 3). In both Thua Thien Hue and Quang Binh Provinces, the relevant authorities initiated to secure funding for implementation of the IFMPs formulated under the Phase I Project and this project (Indicator 4).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued till the time of ex-post evaluation. In both the central and provincial levels, most of activities introduced by the project have been continued. Under the project, training and related activities on hydro-meteorological management and institutional arrangements in flood risk management were conducted through introducing experiences in Japan. After the project, MARD and MONRE have made a lot of efforts and progress in data sharing and collaboration, such as creation of the Vietnam Disaster Monitoring System in 2018, which allowed VNDMA/MARD to automatically integrate real-time data into one tool for monitoring. Thanks to these efforts, the promptness of real-time sharing of hydro-meteorological data between MARD and MONRE was further increased after project completion, which enabled MARD to make more timely decisions for disaster preparation and response<sup>3</sup>. Such improvement has been assured through training on flood risk analysis conducted in MONRE, MARD and localities after the project. <Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved. It is remarkable that the above mentioned "Law on Natural Disaster Prevention and Control" was amended on June 17th 2020, which stipulated that Integrated Flood Management Plans (IFMPs) should be focused in both central- and provincial-level natural disaster prevention and control plans (Indicator 1). In each of Thua Thien Hue and Quang Binh Provinces, the IFMP is being implemented through various programs/projects for both non-structural and structural measures. Funding was secured from different sources (central budget, provincial budget, ODA and contributions<sup>4</sup>, etc.) (Indicator 2).

<Other Impacts at the time of Ex-post Evaluation>

Under the project, an IFMP was not formulated for Nghe An or Ha Tinh provinces, but flood risk analysis, embankment inspection/protection and CBDRM have been continued. It has improved the capacity of disaster prevention and mitigation of the Departments of Agriculture and Rural Development (DARDs) in these two provinces. Furthermore, a notable impact is that the concept of IFM was succeeded by a project assisted by the World Bank, namely "Emergency Natural Disaster Reconstruction Project (2017-)", under which, IFMPs were formulated for three river basins in other provinces, by utilizing the know-how and the manual developed by this project. On the other hand, no negative impact has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

	Achie	vement of Project Purpose and Overall Goal
Aim	Indicators	Results
(Project Purpose) Capacity for IFM (Integrated Flood Management) planning and implementation is strengthened at the central level and in target provinces.	review legal systems necessary for IFM (especially regarding river basin management).	<ul> <li>Status of the Achievement: achieved (continued)</li> <li>(Project Completion)</li> <li>Upon reviewing the legal system for IFM, "Law on Natural Disaster Prevention and Control" and "Law on Hydrometeorology" were enacted in 2013 and 2015 respectively.</li> <li>(Ex-post Evaluation)</li> <li>Refer to the Overall Goal Indicator 1.</li> <li>Status of the Achievement: not applicable</li> <li>(Project Completion)</li> <li>The Joint Action Plan was considered not necessary any more, because each government agency's roles were specified in the above-mentioned laws.</li> </ul>
	<ol> <li>Promptness of real-time river information data sharing between MONRE and MARD is increased.</li> </ol>	<ul> <li>Status of the Achievement: achieved (continued)</li> <li>(Project Completion)</li> <li>Promptness of real-time river information data sharing between MONRE and MARD was increased in both the central and provincial levels, though it was expected to be further improved both quantitatively and qualitatively.</li> <li>(Ex-post Evaluation)</li> <li>MARD can obtain data on water level and rainfall every six hours from MONRE through a software. Besides, the Vietnam Disaster Monitoring System, applied in 2018, allows MARD to automatically integrate real-time data into one tool to monitor and make decisions for disaster preparation and response.</li> </ul>

<sup>&</sup>lt;sup>3</sup> A Grant Aid Project by JICA, "Project for Emergency Reservoir Operation and Effective Flood Management Using Water related Disaster Management Information System (2017-)", is expected to contribute to further improvement.

<sup>&</sup>lt;sup>4</sup> It is notable that a private company funded automatic hydrology/meteorology observation stations in Quang Binh Province.

(Overall Goal)	<ul> <li>measures to secure funding for IFM implementation.</li> <li>"Target provinces" here mean only Thua Thien Hue and Quang Binh Provinces where IFMPs were formulated.</li> </ul>	(Ex-post Evaluation) achieved	
Resilience of society against water-related natural disasters is	develop legal systems necessary for introduction of IFM (especially regarding river basin management).	On June 17 <sup>th</sup> 2020, "Law on Natural Disaster Prevention and Con supplemented, which incorporated IFMPs at both the national (Article 15, Clause 4 and 6).	
strengthened	2. Financial arrangements are	(Ex-post Evaluation) achieved	
under the IFM	secured for IFMP		(2017 2020)
ystem.	implementation.	Implementation of the IFMP in Thua Thien Hue Province (	
	(Thua Thien Hue and Quang	Programs/Projects	Fund Sources - Central and
	Binh Provinces)	Non-structural (9 programs/projects)         Examples:         -       Enhancing flood and storm warning capacity         -       Public awareness raising         -       Protecting forests         -       Compiling guidelines on housing construction and land use         Structural (8 programs/projects)         Examples:         -       Upgrading an embankment, culverts, and pump stations         -       Dredging and protecting erosion of coasts and river banks         -       Amending the layout for residential areas         -       Constructing rescue centers in inundation-prone areas	Provincial budget (including Local Disaster Prevention and Control Fund) - Funding from various organizations/ programs
		Implementation of the IFMP in Quang Binh Province (20	017-2020)
		Programs/Projects	Fund Sources
		Non-structural (12 programs/projects)	- Central and
		<ul> <li>Examples:</li> <li>Preparing flood hazard maps for two river basins</li> <li>Establishing hydrology/meteorology database</li> <li>Establishing hydrology/meteorology observation stations</li> <li>Training on CBDRM</li> <li>Training on search and rescue forces</li> <li>Structural (7 programs/projects)</li> <li>Examples: <ul> <li>Repairing/constructing embankments and reservoirs</li> <li>Upgrading a local road for securing transport during flood</li> <li>Building storm shelters for boats/ships</li> <li>Improving flood drainage</li> </ul> </li> </ul>	Provincial budget - ODA (the World Bank, Green Climate Fund, etc.) - Funding from various organizations/ programs

3 Efficiency

While the project period was within the plan, the project cost exceeded the plan (ratio against the plan: 100% and 127%, respectively). The increase in the project cost is partly attributed to: (i) an increase in target basins for flood risk analysis in Ha Tinh Province; and (ii) additional survey work for formulating the IFMP in Quang Binh Province. Other outputs were produced as originally planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

"National Strategy for Natural Disaster Prevention, Response and Mitigation to 2020" and "Natural Disaster Prevention and Control Plan (2019-2020)" are still effective till 2020, while the new strategy and plan are under preparation. Aside from them, "Community Awareness Raising and Community-Based Disaster Risk Management (CBDRM) Program (2009-2020)" under Decision No.1002/QD-TTg has mainstreamed community disaster management in Viet Nam. Also, the proposal for extending CBDRM program period until 2030 has been submitted to Prime Minister.

<Institutional/Organizational Aspect>

At the central level, in August 2017, the Vietnam Disaster Management Authority (VNDMA) was established under the Ministry of Agriculture and Rural Development (MARD)<sup>5</sup>, which has promoted leadership in disaster risk management. In the VNDMA, 185 staff are

<sup>&</sup>lt;sup>5</sup> During the project, the Directorate of Water Resources (the former DWR) under MARD was in charge of disaster management, but the DWR was separated into (i) the VNDMA and (ii) the current DWR. The latter is currently in charge of utilization and management of water resources such as irrigation.

allocated, which is considered as sufficient because the Authority has been able to continue activities introduced by the project. At the provincial level, the Departments of Agriculture and Rural Development (DARDs) in the target four provinces secure the staff who are full-time in charge of disaster risk management, including promoting activities introduced by the project. Therefore, the number of staff in the responsible organizations is evaluated as sufficient.

<Technical Aspect>

The four DARDs in the target provinces sustain their skills through annual training as well as daily work, based on the know-how and deliverables (flood risk maps and technical manuals for embankment inspection, etc.) introduced by the project. Also, cooperation with other donors is further enhancing the skills of both MARD and DARDs. For example, the IFMP Formulation Manual prepared by the project was utilized as a reference for formulating IFMPs for other river basins with assistance of the World Bank. <Financial Aspect>

Both at the central and provincial levels, the necessary funds are secured to implement the activities introduced by the project. Funding sources are diverse: central and provincial government budget, ODA and NGOs. Aside from them, the Local Disaster Prevention and Control Fund was established through Decree 94/2014/ND-CP, which came into effect in 2014 and required private companies and individuals to contribute to the Fund. According to the four provinces under the project, the Fund is now being used mostly for construction/repair of small-scale structural works and community raising awareness for Disaster Risk Reduction. <Evaluation Result>

In light of the above, no problem has been observed in terms of the policy, institutional/organizational, technical, financial aspects. Therefore, the sustainability of project effects is high.

## 5 Summary of the Evaluation

The project achieved the Project Purpose (i.e. Capacity for IFM (Integrated Flood Management) planning and implementation is strengthened at the central level and in target provinces). The project effects have continued, and the Overall Goal (i.e. Resilience of society against water-related natural disasters is strengthened under the IFM system) has been achieved. It is remarkable that the concept of IFM has been incorporated into the amended "Law on Natural Disaster Prevention and Control", and succeeded by another donor and expanded to other provinces after project completion. Regarding the Sustainability, no major problem has been observed in terms of the policy, institutional/organizational, technical, financial aspects. As for the Efficiency, the project cost exceeded the plan. Considering all of the above points, this project is evaluated to be highly satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• "Law on Natural Disaster Prevention and Control", amended on June 17<sup>th</sup> 2020, stipulates that the Integrated Flood Management Plans (IFMPs) should be focused in both central- and provincial-level natural disaster prevention and control plans. However, related legal documents to guide the formulation of IFMPs in details have not yet been issued. It is recommended that, based on the experience of formulating/implementing IFMPs with JICA and the World Bank, the Vietnam Disaster Management Authority (VNDMA) under MARD prepare related legal documents to guide how to formulate an IFMP as well as how to integrate a river-basin IFMP into a province's overall disaster management plan.

Lessons Learned for JICA:

Under this project, various activities were implemented in four provinces in Viet Nam, and the ex-post evaluation has confirmed that those activities have been sustained until now. The former Directorate of Water Resources (DWR) and the current VNDMA have been taking good leadership in coordinating of the four provinces: i) to participate in project implementation, and ii) to promote general disaster risk management after project completion. In case of implementing project activities in many provinces in Viet Nam, overall leadership and coordination by an implementing agency at the central level is vital for success.



Small-scale River Bank Protection Work in Ha Tinh Province



CBDRM Activity (an evacuation drill) in Thua Thien Hue Province

C				conducted by Tunisia Office: June, 2020		
Country Name Republic of Tuni		Project for Strengthening	the Capacity for T	ourism Promotion		
-	51a					
I. Project Outline						
Background	created m resources as natural relatively Morocco JICA in purpose of Collection foreign to new tour	hore than 490,000 both dir such as historical sites repu- tourism resources includin lower profitability from the and Turkey. mplemented "the Study on To of designing a tourism man n Survey in 2010 to examin purists arrival drastically de	ect and indirect en resented by the UN g the Mediterranea e tourism industry of Fourism Developme aster plan and act he the possibility of ecreased after the F countries in additio	e main industries accounting for around 15% of GDP and it polyment in 2010. The country had a variety of tourism ESCO World Cultural Heritages, traditional culture as well in Sea and the Sahara Desert. Nevertheless, the country had compared with neighbor tourism-oriented countries such as ent Master Plan in Republic of Tunisia" (2000-2001) for the ton plans for the country, and also conducted the Data future corporation in Tunisia. However, the number of the evolution of January 2011 and it was necessary to attract on to the current segment of European and its neighbor		
Objectives of the Project	the tourist monitorin strengther of tourists 1. Over under 2. Proje build	sm sector, ii) training on ag of the tourism marketin ning tourism marketing and s. all Goal: Tourists are diver r the public and private part ext Purpose: Tourism mark ling partnership among the	tourism marketing g and promotion a promotion capacit sified through impl mership. ceting and promot Ministry of Tourisr	anism for promoting the public and private partnership in and promotion, and iii) planning, implementation and activities based on the action plans, the project aimed at y in the target areas, thereby contributing to diversification ementation of marketing and promotion in the target areas on capacity is strengthened in the target areas through and Handicrafts (MOTH), the Tunisian National Tourism buding the private sector		
Activities of the Project	<ol> <li>Proje</li> <li>Main partn imple</li> <li>Input</li> <li>Japanese</li> <li>Expe</li> <li>Train</li> </ol>	<ol> <li>Main activities: (i) Establishment of an organizational mechanism for strengthening the public and private partnership in the tourism sector, (ii) training on tourism marketing and promotion, and (iii) planning, implementation and monitoring of the tourism marketing and promotion activities based on the action plans</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side Tunisian Side         <ol> <li>Experts: 9 persons</li> <li>Staff allocated: 40 persons</li> <li>Facilities and equipment: Project office, office</li> <li>Equipment: printer and projector</li> </ol> </li> </ol>				
Project Period	January 2	013 – January 2016	Project Cost	<ol> <li>Local cost: travelling cost for seminar participants</li> <li>(ex-ante) 270 million yen, (actual) 303 million yen</li> </ol>		
Implementing Agency				Fourism and Handicrafts (MOTH)		
Cooperation Agency in Japan	JTB Corp	oorate Sales Inc				
II. Result of the Eval	uation					
The project was co and Social Programm regional development. <consistency the<br="" with="">The project was c</consistency>	onsistent wit e (Jasmine Developme onsistent w	th Tunisia's development po Plan)" (2011-2016), and ent Needs of Tunisia at the	blicies of "the 12th "the Five-Year De Fime of Ex-Ante Ev needs of promoting	valuation and Project Completion> Five-Year Development Plan" (2010-2014), "the Economic velopment Plan" (2016-2020) emphasizing promotion of valuation and Project Completion> g the regional development in the Southern Region of the		

country through strengthening tourism marketing and promotion capacity in the Southern Region.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy for Tunisia at the time of ex-ante evaluation in 2012 putting priority on (i) upgrading the industries, (ii) mitigation of regional disparities, and (iii) environmental protection<sup>1</sup>. <Evaluation Result>

In light of the above, the relevance of the project is high

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. New materials for promoting tourism in the target areas such as a Japanese website, DVDs, photo libraries and two kinds of brochures were created under the public and private partnership, and they were revised and updated at least four times during the project period (Indicator 1). Also, the Tourism Fair such as the Tourism EXPO Japan was held three times in 2013, 2014, 2015 under the public and private partnership (Indicator 2).

<sup>&</sup>lt;sup>1</sup> Source: Ministry of Foreign Affairs, Japan, "ODA Country Data Book 2012".

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued after the project completion. The photo library created by the project was integrated to the other master photo library that ONTT owns. The materials such as DVD and brochures have been regularly updated since the project completion. The tourism fair has been organized continuously under the public and private partnership after the project. For example, total 87 tourism fairs were organized in 2018 including 1 in Japan, 62 in EU (including 14 in France), and 24 in other countries. <Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved by the time of ex-post evaluation. The number of nights Japanese and Chinese tourists spent in the target areas has increased by 12,779 nights (Indicator 1). Also, the share of Japanese and Chinese tourists in the overall tourists has increased by 204% in terms of number of nights spent in the target areas (Indicator 2). The contributing factors for full achievement of the above two indicators are considered to be: (i) the ONTT's strategy to target the big Chinese market; (ii) the cooperative approach with the Embassy of Tunisia in Japan to promote a collaboration with the Japan Association of Travel Agents (JATA); and (iii) mitigation of security alert level of Tunisia by the Ministry of Foreign Affairs of Japan (February 2018 and March 2019). The number of nights spent by tourists of all nationalities in the target areas was 473,604 as of October 2019 (Indicator 3). According to the ONTT, they are estimating another 130,230 nights of tourist in November and December 2019 due to the major touristic events in these two months. Given those facts and the upward trend of the tourist arrivals for the recent years, it is reasonable to say that the target will be achieved in 2020. <Other Impacts at the time of Ex-post Evaluation>

No other positive or negative impacts of the project were confirmed at the time of ex-post evaluation.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

	Achievemen	t of Project Purpose and C	overall Goal				
Aim	Indicators			Results			
(Project Purpose) Tourism marketing and promotion capacity is strengthened in the target areas through building partnership among the MOTH, the ONTT and other relevant organizations including the private sector,	Indicator 1 New materials for promoting tourism to the target areas under the public and private partnership (such as a website and brochures) will be revised and updated at least four times during the project period.	<ul> <li>Status of the Achievement: achieved (continued) (Project Completion)</li> <li>The project created a Japanese website. DVDs, photo libraries and two kinds of brochures.</li> <li>After the creation of website in April 2014, the following updates were made:</li> <li>Added special topics with pictures on the Northern region in April 2014</li> <li>Added special topics with pictures on the Southern region in June 2014</li> <li>Display of the website was revised in August 2014</li> <li>Updated the news page in December 2015 and January 2016</li> <li>After the brochure for the Northern region and the Southern region are made respectively in September 2013 and in September 2014, they were revised in 2015 and a Japanese tourist map of Tunisia was prepared.</li> </ul>					
		(Ex-post Evaluation)					
		(i)Number of revision an	<u> </u>	2017	2010	2010 *	
		W-1	2016	2017	2018	2019 *	
		Website DVDs	10	6	1	0	
		Photo libraries	1	1	1	1	
		Brochures	0	0	1	0	
		*As of June 2019.	Ŭ	Ŭ	Ŧ	Ū	
	Indicator 2 Tourism Fair is to be held at least three times under the public and private partnership.	<ul> <li>After the completion integrated to the other reviews the integrated</li> <li>Tangible materials su years.</li> <li>Status of the Achievemen (Project Completion)</li> <li>The MOTH/ONTT as planned (total three ti</li> <li>The public and privat exhibition display, an shared in the working</li> </ul>	r master photo li l photo library a ch as DVD and mt: achieved (co ssisted the Touri mes). e sectors discuss d the results of p	ibrary that ON nd replace wi brochures are ntinued) sm EXPO Jap sed and deterr	ATT owns. An th new ones is updated less pan in 2013, 2 nined the ther	nually, ONTT f necessary. frequently every 014, 2015 as ne of the	
		(Ex-post Evaluation)					
		(i)Number of Tourism Fa	2016	2017	2018	2019 *	
		Japan	1	2017	1	1	
		France	16	16	14	11	
		Other EU countries	54	49	48	42	
		Other countries	9	28	24	17	
		*As of June 2019.	· ·				
(Overall Goal) Tourists are diversified through implementation of marketing and promotion in the target	Indicator 1 The number of nights of Japanese and Chinese tourists increase by 7,800 nights in the target areas.	<ul> <li>(Ex-post Evaluation) achieved</li> <li>The total number of nights of Japanese and Chinese tourists increased by 11,704 nights in the target areas in comparison between 12,779 nights in 2013 and 24,483 in 2019.</li> <li>In terms of the number of nights of Japanese tourists, it declined sharply from</li> </ul>					
areas under the public		9,948 nights in 2013 to 3,469 in 2016, mainly due to security concern after a series					

Achievement of Project Purpose and Overall Goal

and private partnership,		of terrorism attac	cks occurred i	n Tunisia froi	n 2015 to 201	16.		
		Number of nights of Japanese and Chinese tourists in Tozeur Governorate and Kébili						
		Governorate	1					
			2013 (baseline)	2016	2017	2018	2019 *	
		Japanese	9,948	3,469	3,006	5,119	5,084	
		Chinese	2,831	4,880	20,320	29,073	19,399	
		Sub-total	12,779	8,349	23,326	34,192	24,483	
		All foreign tourists	N.A.	N.A	N.A	N.A	N.A	
		All nationality	506,417	282,841	435,172	503,455	473,604	
		Share of Japanese and Chinese in all tourists (all	2.52%	2.95%	5.36%	3.82%	5.16%	
		nationality) * As of October 20						
The of J the								
The tour targ will	e number of nights spent by rists of all nationalities in the get areas (Tozeur and Kébili) l increase by 16.2 % from 5,417 in 2013 to 588,208 in							

#### 3 Efficiency

Although the project cost exceeded the plan (ratio against the plan: 112%), the project period was within the plan (ratio against the plan: 100%). The outputs were produced as planned. Therefore, the efficiency of the project is fair.

#### 4 Sustainability <Policy Aspect>

The Five-Year Development Plan" (2016-2020) focuses on "Human Development and Social Inclusion" as the 3rd pillar and executing the tourism strategy in favor of the local communities and promoting utilization of national resources such as national heritages are raised as one of the prioritized actions. Moreover, the tourism sector is one of the important pillars in the regional development plans such as those of the southern regions.

<Institutional Aspect>

There has not been any change in the institutional structure for the tourism promotion system in Tunisia. ONTT is responsible for implementation of the national tourism strategy, and undertakes (i) tourism sector development, (ii) management and regulation of the tourism industry, (iii) tourism marketing and promotion, and (iv) trainings for the tourism industry. On the other hand, "PPP Taskforce" which is a platform between the public and private sector for the tourism promotion in Tunisia established in Tozeur Governorate by the project, has been maintained. Although PPP Taskforce has not been formed in Kebili Governorate, discussions have been regularly made between the public and private sectors for tourism promotion in the governorate. The Regional Commissariat of Tourism initiated the dialogue with the private sector (including NGO and associations), which can be considered as an alternative of the PPP Taskforce. <Technical Aspect>

In order to disseminate the knowledge transferred by project, ONTT organized several training courses. Also, ONTT regional office organized a series of seminars and conference for the capacity building of trainers of tourism centers and schools. The target area was expanded to the whole regions of Tunisia. Furthermore, the collaborative working approach among the different actors practiced in the project or the experiences obtained in targeting of the Japanese market were applied with emphasizing an importance to assure the security risk and establishing the PPP initiative at the regional level.

Among three activities under the PPP Taskforce, which are (i) tourism marketing and promotion, (ii) tourism product development, and (iii) tourism human resource development, the activity for (iii) the tourism human resource development has been undertaken by the public and private partnership in Tozeur Governorate continuously.

ONTT Training Program

Training course	No. training sessions	No. of Participants
(i) Human resource development in the tourism sector	2 (in 2016)	10
(ii) Tourism marketing and promotion	1 (in 2017)	13
(iii) Tourism product development	1 (in 2017)	13
(iv) Service standards	8 (in 2018)	More than 10 for each session
(iv) Hospitality	8 (in 2018)	More than 10 for each session

<Financial Aspect>

The ONTT manages to conduct the maintenance of the website, updating broachers, training programs, and coordination for PPP Taskforce introduced by the project with the current budget. While more budget allocation is desirable to expand as well as to further develop tourism promotion activities in Tunisia, it can be considered manageable.

<Evaluation Result>

Therefore, the sustainability of the effects through the project is high.

5 Summary of the Evaluation

The project has achieved the Project Purpose and the Overall Goal to diversify tourists through strengthening tourism marketing and promotion capacity in the target areas under the public and private partnership. As for efficiency, the project cost exceeds the plan. The project effects have been continued after the project completion as the tourism promotion activities based on the public and private partnership have been maintained in Tozeur Governorate and ONTT have been trying to disseminate the knowledge transferred by project. Considering all of the above points, this project is evaluated to be highly satisfactory.

## III. Recommendations & Lessons Learned

## Recommendations for Implementing Agency:

- Currently, only 1 or 2 theme(s) are developed in the training program for a particular year. Therefore, training programs should desirably be improved, for instance, by increasing the frequency of the training session and by upgrading the contents/subjects of the program.
- Lessons Learned for JICA:
- Relation-building and collaboration with the key actors such as the Embassy of Tunisia in Japan facilitated to conduct the activities to promote tourism in Tunisia including facilitation to the GoT's participation in tourism fairs, maintenance and update of the Japanese website. The Embassy can play a significant role in facilitating the understanding of the Tunisian on important elements such as Japanese tourists' preferences and expectations. According to the ONTT, this is one of the contributing factors for the increase in tourist arrivals including the Japanese tourists. Therefore, it is important to identify the key collaborators and to build a good relation with them in order to keep the project activity and its impacts sustainable both during and after the project period.



Joint Committee Meeting (in Kebili Governorate)



Visit to a ONTT Hotel School (in Tozeur Governorate)

Country Name	
Socialist Republic	Project for strengthening TOT functions at Hanoi University of Industry (HaUI)
of Viet Nam	

# I. Project Outline

Background	The development of high-quality human resources was an urgent task for the Government of Viet Nam (GOV) to realize its vision to basically become an industrialized country by 2020. In line with the GOV's vision, the Government of Japan had been assisting Hanoi University of Industry (HaUI) through technical cooperation projects known as: "The Project for Strengthening Training Capability for Technical Workers Course in Hanoi Industrial College <sup>1</sup> (2000-2005)" and "Project for Human Resource Development of Technicians at Hanoi University of Industry (2010-2013)". As a result, graduates from HaUI were highly rated in the industry, and the GOV recognized HaUI as a model institution of providing high-quality human resources for Japanese enterprises in Viet Nam. To further respond to the needs of the industry in Viet Nam, it was expected to transfer the accumulated know-how of HaUI to other vocational training institutions (VTIs). The outputs of this project are expected to be utilized for JICA's future projects in industrial human resource development.				
Objectives of the	Through i) development of effective training schemes (i.e. overall plans on how to conduct training courses) for upgrading trainers' capacity of VTIs, ii) development and conduct of new TOT (Training of Trainers) courses by HaUI for other VTIs, and iii) TOT by HaUI for Technique Technology College (TTC) and Ho Chi Minh Vocational College of Technology (HVCT); the project aimed for HaUI to properly manage technical transfer to other VTIs in the field of machining, electronics and electricity, etc., thereby contributing for VTIs to introduce and adopt "HaUI Technical Model"*. * "HaUI Technical Model" means the model which has been developed through JICA's technical cooperation projects with HaUI since 2001. The model is composed of: (a) development of curriculum reflecting labour market needs by using				
Project	Curriculum Development Based on Ability Structure (CUDBAS) <sup>2</sup> and PDCA (Plan, Do, Check, Action) cycle, (b) technical improvement in targeted occupations, (c) soft skill such as 5S and Safety First, (d) enterprise partnership including employment support, and (e) skill test.				
	<ol> <li>Overall Goal: "HaUI Technical Model" is introduced and adopted by Vocational Training Institutions (VTIs) in and around Hanoi and Ho Chi Minh City.</li> <li>Project Purpose: Hanoi University of Industry (HaUI) can properly manage technical transfer to other VTIs in occupations such as machining, electronics and electricity based on "HaUI Technical Model".</li> </ol>				
	<ol> <li>Project Site: In and around Hanoi/ Ho Chi Minh City*</li> <li>The project originally targeted only Hanoi area through technical transfer from HaUI to TTC, but HVCT was added in June 2015 through approval of the Joint Coordination Committee, and thus the project included the area of Ho Chi Minh City.</li> </ol>				
Activities of the Project	<ol> <li>Main Activities: Based on "HaUI Technical Model", following activities were implemented in the field of machining, electronics, and electricity, etc.:         <ol> <li>To set up a working group, and to review/develop TOT schemes for VTIs</li> <li>To develop curriculums and materials for new TOT courses, and conduct the courses by HaUI for VTIs</li> <li>To train trainers of TTC and HVCT by HaUI, and to conduct TOT by TTC and HVCT for other VTIs</li> </ol> </li> <li>Inputs (to carry out above activities)         <ol> <li>Japanese Side</li> <li>Experts: 12 persons</li> <li>Staff Allocated: 46 persons</li> <li>Trainees Received: (Japan: 31 persons; Thailand: 1</li> <li>Buildings and Equipment: project offices, etc. and training equipment at HaUI, TTC and HVCT</li> </ol> </li> </ol>				
	<ul> <li>3) Equipment: Wire-cut Electrical Discharge 3) Local Cost</li> <li>4) Local Cost</li> </ul>				
Project Period	June 2013 - March 2017 (Extension: June 2016 - March 2017)Project Cost(ex-ante) 193 million yen, (actual) 246 million yen				
Implementing Agency	<ul> <li>Ministry of Industry and Trade (MOIT)*; Hanoi University of Industry (HaUI)</li> <li>* In 2016, the Ministry of Labour, Invalids and Social Affairs (MOLISA) was assigned as the sole state management agency for vocational education and training.</li> </ul>				
Cooperation Agency in Japan	Ministry of Health, Labor and Welfare; Japan Organization for Employment of the Elderly, Persons with Disabilities and Job Seekers				
II. Result of the Evalu					
Constraints on Evaluation					

<Constraints on Evaluation>

• Due to Coronavirus Disease (COVID)-19 pandemic, the evaluation judgment was made by analyzing information acquired, through sending/collecting questionnaires and telephone interviews with officials concerned. Neither face-to-face interviews nor site visits were conducted.

1 Relevance

<Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation>

 $<sup>^1\,</sup>$  Hanoi Industrial College became Hanoi University of Industry (HaUI) in 2005.

<sup>&</sup>lt;sup>2</sup> CUDBAS means "Curriculum Development Based on Ability Structure".

The project was consistent with "Vocational Training Development Strategy (2011-2020)", which prioritized improving capacity of vocational trainers.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation>

The project was consistent with development needs of Viet Nam for strengthening vocational education and training, especially through transferring the accumulated know-how of HaUI to other VTIs.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with "Country Assistance Program for Viet Nam (2012)", supporting to "develop the industry and human resources" under a priority area, i.e. "Promotion of Economic Growth and Strengthening of International Competitiveness".

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The project achieved the Project Purpose at the time of project completion. Ten (10) TOT courses' curriculums, textbooks and manuals developed by the project were approved by the General Directorate of Vocational Training (GDVT) under MOLISA as "National TOT Program" in October 2016. During the project period, 48 courses were conducted with 532 participants from 40 VTIs (Indicator 1). The participants' average acquisition score on knowledge/ skills increased from 2.2 to 3.6 (in a 5-level scale) according to "before/ after-the-course questionnaires" (Indicator 2), and their satisfaction rate on the TOT courses was 93.5% on average (Indicator 3). <<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued till the time of ex-post evaluation. TOT courses have been conducted by HaUI based on "HaUI Technical Model"; not only for machining, electronics, and electricity (developed under the project) but also for automobile and IT, etc., for both VTIs and enterprises. HaUI holds regular meetings with TTC and HVCT on TOT courses, and dispatches experts and lends equipment to TTC/HVCT when necessary. Moreover, HaUI plays a coordinating role with enterprises, being updated with their needs for human resource development. HaUI has been working towards comprehensive cooperation with enterprises through activities such as: job days (fairs), recruitment seminars, trainees' site visit, OJT and skill testing.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved. The cumulative number of participants of TOT courses by HaUI, TTC and HVCT based on "HaUI Technical Model" reached 3,319 at the end of 2019, exceeding the target of 1,000 (Indicator 1). Currently, there are at least 4 VTIs, including HaUI, which provide training based on "HaUI Technical Model", and thus the target of "more than 3 VTIs" was achieved (Indicator 2). HaUI, TTC and HVCT conducted TOT for other VTIs, some of which have applied "HaUI Technical Model" however have not fully reported back to HaUI on how they have applied the model.

Moreover, HaUI, TTC and HVCT shared the opinion that it had recently become more difficult to recruit participants for TOT courses, possibly because these VTIs had to increase its tuition after the project completion to cover necessary costs; and other VTIs interested in TOT had already dispatched their trainers. Nonetheless, HaUI, TTC and HVCT keep conducting training (not necessarily TOT) based on "HaUI Technical Model", and play pivotal roles with enterprises in the nearby areas.

<Other Impacts at the time of Ex-post Evaluation>

"HaUI Technical Model" is highly evaluated by MOIT and Ho Chi Minh City Department of Labour, Invalids and Social Affairs. They recommended other VTIs to adopt this model. It is notable that the project originally targeted only Hanoi area through technical transfer from HaUI to TTC, but HVCT was added in June 2015 as a key VTI in the southern area, resulting in expanding project effects. Currently, HVCT plays a coordinating role with more than 70 enterprises, adopting "enterprise partnership including employment support" under "HaUI Technical Model". On the other hand, no negative impacts have been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal

Aim		Indicators	Results					
(Project Purpose)	1.	Number of courses, certified participants,	Status of the Achievem	ent: achieved (continued	d)			
Hanoi University of		and participating VTIs in training courses	(Project Completion)/ (Ex-post Evaluation)					
Industry (HaUI) can		for upgrading/updating trainers' capacity	TO I Courses Conducted by Haur based on Haur rechnical Model					
properly manage		conducted by HaUI reaches 25, 250 and 15		Under the Project	Afte	r the Proje	ect	
technical transfer to		respectively.		(2014 Jul2016 Dec.)	2017	2018	2019	
other Vocational			No. of TOT	48	78	38	15	
Training Institutions			Courses		(55)	(35)	(13)	
(VTIs) in occupations			No. of Certified	532	1,594	535	294	
such as machining,			Participants		(1,283)	(505)	(274)	
electronics and			No. of Participating	40	20	17	4	
electricity based on			VTIs (not including		(2)	(5)	(0)	
"HaUI Technical			enterprises)	parentheses are TOT co	anna a (an al	an antom	مامناء معط	
Model".				those developed under				
			electronics an	1	the project	(I.e. Inden	nnng,	
	2.	Average score in knowledge and skills,	Status of the Achievem	ent: achieved (continued	d)			
		about components of "HaUI Technical						
		Model", of trainers who participated in	in Average score improved from 2.2 to 3.6.					
		training for upgrading/updating trainers'	s' (Ex-post Evaluation)					
		capacity improves from 2.0 to 3.0*.	Average "after-the-course" score maintains higher than 3.0. One example					
		* in a 5-level scale	(Electronics Course in	May-July 2018) shared	by HaUI sh	ows the av	erage	
			knowledge score as 3.5	, and the average skill s	core as 3.7.			

	3.	More than 80% of trainers who	Status of	the Achievement: achieve	ed (contin	nued)		
		participated in training courses for	(Project C	Completion) Average satis	sfaction ra	te was 9	3.5%	
		upgrading/updating trainers' capacity are	e (Ex-post I	Evaluation) Average satis	sfaction ra	te mainta	ins more	than 80%. The
		satisfied with the training.	same exam	mple shared by HaUI sho	ws 100%	as the sa	tisfaction	rate.
(Overall Goal)	1.	More than 1,000 trainers participated in	1,000 trainers participated in (Ex-post Evaluation) achieved					
"HaUI Technical		training courses for upgrading/updating No. of Trainers Participated in TOT based on "HaUI Technical Model"						
Model" is introduced		trainers' capacity.	ty. Under the Project After the Project Cumulative					
and adopted by VTIs						Total		
in and around Hanoi			HaUI	532	1,594	535	294	2,955
and Ho Chi Minh			TTC	160	10	0	0	170
City.			HVCT	103	91	0	0	194
			Total	795	1,695	535	294	3,319
	2.	More than 3 VTIs provide training courses	es (Ex-post Evaluation) Achieved					
		based on "HaUI Technical Model".	on "HaUI Technical Model". 4 VTIs currently provide training courses based on "HaUI Technical Model",					
		namely HaUI, TTC, HVCT and the Hanoi College of Industrial Economics.						
Source : JICA documents; Questionnaires and interviews with HaUI, TTC and HVCT.								

#### 3 Efficiency

Both the project cost and period exceeded the plan (ratio against the plan: 127% and 128% respectively). One of the reasons for extending the project period was adding HVCT as one of the two VTIs for technical transfer of HaUI. Therefore, the efficiency of the project is fair.

#### 4 Sustainability

<Policy Aspect>

"Vocational Training Development Strategy (2011-2020)" and other related national policies, including "Master Plan on the Development of Vietnam's Human Resources (2011-2020)", are still effective till 2020; while new policies are to be issued in 2021. Under the current policies, the ratio of workers who complete vocational training is aimed to reach 55% of the total workforce in 2020. <Institutional/Organizational Aspect>

All of HaUI, TTC and HVCT sustain their institutions with sufficient number of trainers and administrative staff. In HaUI, "Center for Enterprise Partnership" was established as a specialized division for TOT courses. TTC has the Division of Relations with Enterprises, and maintains linkage with enterprises in organizing job fairs, OJT, and skill testing for enterprises' workers. HVCT established "Quality Assurance Division" for enhancing the monitoring and evaluation of training activities, and thus training quality is ensured. HVCT also has been coordinating with more than 70 enterprises for annual job fairs, site visits to factories and sharing training materials including 5S. <Technical Aspect>

All of HaUI, TTC and HVCT have maintained the necessary skills for TOT based on "HaUI Technical Model" with PCDA approach. The training materials developed under the project are still being utilized. <Financial Aspect>

Each of HaUI, TTC and HVCT has its own revenue including fees collected from participants and enterprises. In the case of HVCT, it conducts training through cost sharing with enterprises. HVCT also procured equipment under MOLISA's budget, namely "National Target Program on Vocational Education and Training, Employment and Occupational Safety<sup>3</sup>". As mentioned above, it has recently become difficult for these 3 VTIs to recruit TOT trainees from other VTIs, which can be financially due to the increase in tuition after the project completion, as well as inadequate budget of other VTIs to send their trainers to TOT courses. Subsidies come from MOLISA to VTIs to join TOT courses, but only to a limited extent.

## <Evaluation Result>

In light of the above, some problems have been observed in terms of the financial aspects of the implementing agency. Therefore, the sustainability of the project effects is fair.

#### 5 Summary of the Evaluation

The project achieved the Project Purpose (i.e. Hanoi University of Industry (HaUI) can properly manage technical transfer to other Vocational Training Institutions (VTIs) in occupations such as machining, electronics and electricity based on "HaUI Technical Model"). The project effects have continued, and the Overall Goal (i.e. "HaUI Technical Model" is introduced and adopted by VTIs in and around Hanoi and Ho Chi Minh City) has been achieved. Regarding the Sustainability, some problems have been observed in terms of financial aspects, but no problem has been observed in terms of the policy, institutional/organizational, and technical aspects. As for the Efficiency, both the project cost and period exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• In the coming years, it is recommended that the targeted VTIs under the project, i.e. HaUI, TTC and HVCT, seek for possible ways to advertise TOT courses to more VTIs. Moreover, HaUI, TTC and HVCT are suggested to conduct a follow-up survey with other VTIs, whose trainers participated in the TOT courses, to learn: 1) whether the VTIs apply "HaUI Technical Model", and 2) what improvements are made to their training courses.

#### Lessons Learned for JICA:

Under the project, HVCT was added to the project scope to expand the TOT (developed under the project) not only to originally targeted Hanoi area but also to the southern area of the country. This helped to disseminate the project effects to a wider area than

<sup>&</sup>lt;sup>3</sup> "Target programs", including this, were approved by Resolution No.73/NQ-CP (dated August 26<sup>th</sup> 2016) for investment for the period of 2016-2020.

planned. Now at the time of ex-post evaluation, HVCT has been continuing with training courses and sharing "HaUI Technical Model" with other VTIs and enterprises in and around Ho Chi Minh City. For example, HVCT has been coordinating with more than 70 enterprises for annual job fairs, site visits to factories and sharing training materials including 5S. Thus, it was a flexible and wise decision to bring in HVCT to the project.

Recently, HaUI, TTC and HVCT have become more difficult to recruit participants for TOT courses, possibly because these VTIs had to increase its tuition after the project completion to cover necessary costs; and other VTIs interested in TOT already dispatched their trainers. At the time of planning training courses under a similar project, it is important to deliberately consider the course contents and tuition to ensure the sustainable needs of the training courses.



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A TOT course by HaUI



A TOT course by HVCT

Country Name		During for Description of the America Direct Desire Loning time Desire 42					
Republic of Ecuad		Project for Reactivation of "Catarama River Basin Irrigation Project"					
I. Project Outline							
Background	hindering factor was frequent changes in responsible organizations. In order to activate agricultural development activities, the "Support for Planning of Catarama River Basin Irrigation Reactivation Project" (2011) was implemented. And then, the Government of Ecuador requested the Government of Japan to reactivate CRBIP.						
Objectives of the Project	manage establis thereby 1. Over 2. Proje	Through operation and maintenance of the irrigation system, dissemination of irrigation agriculture management techniques for farmers, and development of the irrigation area expansion plan, the project aimed at establishing an agricultural promotion structure using an irrigation agricultural model suitable for the target area, thereby contributing to the enhancement of the land use. 1. Overall Goal: Land use of target area of CRBIP is enhanced. 2. Project Purpose: Agricultural promotion structure using irrigation agricultural model suitable for the target area is established.					
Activities of the project	Cata 2. Mair plan facil prep 3. In Japanes 1) Ez 2) Tr 3) Ec eq 4) Lo	<ol> <li>Project site: Three areas in the Catarama River Basin in the Province of Los Rios (Sibimbe I, Sibimbe II, and Catarama)</li> <li>Main activities: Development of the Geographic Information System (GIS) database, preparation of the model plan for O&amp;M of irrigation facilities in the secondary canals, training of farmers on O&amp;M of irrigation facilities/irrigation agriculture management, operation of demonstration plots, identification of suitable crops, preparation of strategies for O&amp;M of the irrigation system and development of tertiary canals, etc.</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Experts from Japan: 9 persons</li> <li>Staff allocated: 29 persons</li> <li>Equipment: Office equipment, agricultural equipment including sprinklers, GIS software, etc.</li> <li>Local cost: Vehicle maintenance, operation of the</li> </ol>					
Project Period	June 20	013 to June 2016 Project Cost (ex-ante) 409 million yen, (actual) 533 million yen					
Implementing Agency	Decent	tralized Autonomous Provincial Government of Los Rios (GADPLR)					
Cooperation Agency in Japan	Kokusa	ai Kogyo Co., Ltd.					

# II. Result of the Evaluation

## 1 Relevance

<Consistency with the Development Policy of Ecuador at the time of Ex-ante Evaluation>

The national irrigation plan for 2012 to 2027 focused on utilizing existing irrigation facilities. The provincial development plan of Los Ríos of 2012 aimed at diversification of production and revitalization of agricultural production. Thus, the project was consistent with the development policies of Ecuador at the time of ex-ante evaluation.

<Consistency with the Development Needs of Ecuador at the time of Ex-ante Evaluation>

Improvement of agricultural productivity was a crucial issue in the agricultural sector of Ecuador. Irrigation and drainage facilities were constructed by the preceding project, but effects were limited due to insufficient utilization of the irrigation facilities and shortage of techniques for irrigated agriculture. The project was consistent with the development needs of Ecuador for further reactivation of the past project effects.

<Consistency with Japan's ODA Policy at the time of Ex-ante Evaluation >

In the "Country Assistance Policy for the Republic of Ecuador" (2012), one of the priority areas is "reduction of disparities," and the related issue is "promotion of community development and development of basic infrastructure."

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. Based on knowledge and experiences accumulated during the project period, the irrigation agriculture model for small farmers was established (Indicator 1). The model had three elements: i) O&M by GADPLR of major irrigation facilities of the Catarama Irrigation System; ii) Following O&M activities by the farmers in the irrigation blocks such as cleaning of tertiary canals, water distribution to farmers' plot, water fee payment, and fraud prevention; and iii) request of new tertiary canal construction by farmers' groups through the irrigation users' associations to GADPLR. "The Irrigation Area Expansion Plan" (IAEP) was officially approved by the Provincial Council (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued. First, the irrigation agriculture model established by the project has been sustained, through training and seminars for farmers provided by the Department of Irrigation, Drainage and Dredging (DRDD). Training topics have included insect pest management, comparison of rice varieties for the dry season, agricultural administration plan, and others. At the time of ex-post evaluation, training has been under suspension due to the authority change and pandemic of COVID-19. Second, IAEP has been still a part of the Provincial Plan of Irrigation and Drainage (2016-2031). Based on the plan, GADPLR has constructed tertiary canals to increase the irrigation surface and carried out the "O&M Plan" in facilities for primary secondary canals. GADPLR has also invested in the maintenance of the Catarama Pumping Station in 2018. Third, irrigation facilities including the pumping station set by the project have been still functioning.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved. The usable irrigation surface has increased to more than 1,800ha (target value) in 2017, 2018 and 2019 in the three schemes of Catarama Irrigation System (Sibimbe I, Sibimbe II, and Catarama), attributed to the training and seminars for farmers conducted by DRDD, constructed tertiary irrigation canals, identified new users, partially updated cadasters of irrigated areas. Another promoting factor was the outreach program implemented jointly by the Technical University of Babahovo and the associations of irrigation users, in which senior students of the Faculty of Agronomy carried out training for farmers in 2017/2018. Training topics included cultivation of rice, corn, and peanuts, crop diversification, pest control, soil analysis, organic fertilizers, institutional strengthening, and so on. Handbooks developed by the project were utilized for the training. The decrease in the irrigation area in 2019 from the previous year was caused by the farmers' decreased motivation due to the uncertainly regarding market rice prices during the harvest. <Other Impacts at the time of Ex-post Evaluation>

Some positive impacts have been reported. First, as agricultural activities have been promoted, more women have come to get involved in activities such as soil preparation, fumigation activities, weed control, and harvest, and they have also become active in 12 irrigation Sub-boards of the Catarama Irrigation System. Second, some agricultural companies have organized a trade show of peanuts and corns and invited farmers there for promoting sales, as farmers have grown the crops which were recommended by the project.

On the other hand, there has been no obvious negative impact, but there have been concerns about farmers' inappropriate handling of agrochemical containers; They have not washed their tools or thrown away containers directly into irrigation or drainage canals. Although the project did not directly incorporate the use of chemical products, the development of agricultural activities has required the use of agrochemicals such as pest control, disease control and weed control. In order to avoid these farmers' behaviors, GADPLR provided training on "triple lavado (washed three times)" for users of irrigation for safety handling of agriculture inputs. Also, GADPLR signed an agreement with a private company named InnovAgro to implement the program called "Campolimpio" (2015-2020) and built a center for collecting containers of chemical products. At the time of ex-post evaluation, GADPLR was discussing to renew the agreement with InnovAgro.

## <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

	Achievement of the Project Purpose and Overall Goal						
Aim	Indicators	Results					
(Project Purpose)	1. A model of irrigation agriculture			tinued).			
	based on the suitable techniques for		Project Completion)				
	agricultural families of small and	- The irrigation ag	riculture model for	small farmers w	ho owned less th	an 20ha	
agricultural model suitable for	medium scale of each target area is	was established.					
the target area is established.	proposed.	(Ex-post Evaluation					
			agriculture model				
			ning has been prov				
		•	ded by the project	t have been culti	vated, such as co	orn, rice	
		and peanuts.					
	2. IAEP as a policy of GADPLR is	Status of achieveme		<u>tinued).</u>			
	adopted. (Project Completion)						
		- The IAEP was ap			s a part of the Pro	ovincial	
			ainage Plan in Ma	y 2016.			
		(Ex-post Evaluation					
		- IAEP has been st					
			l some projects ha	ve been impleme	ented on the plan		
(Overall goal)	1. The usable irrigation surface is	Status of achieveme					
Land use of target area of CRBIP is enhanced.	increased to 1,800ha which equals	(Ex-post Evaluation		• .aa	, · · 1		
CRBIP is enhanced.	40% of the irrigation target area.		irrigation surfaces	v	t areas increased	to more	
		Table: Usable irrigat	each of 2017, 2018	8 and 2020.			
		Table: Usable Imga	2017	2018	2019		
		Sibimbe 1	745.20	788.58			
		Sibimbe 2	630.39	698.64	759.43 583.37		
		Catarama Total	529.62	585.73	530.76		
		Total	1,905.21	2,072.95	1,873.56		
Source: Project Completion Per	l ort and information provided by GAE						
3 Efficiency	on and mormation provided by GAL	JELN.					
	1	1.1.1.1	(	1	11200/		
	d was as planned, the project cost		(ratio against the	e pian: 100% ar	ia 130%, respe	ctively).	
Outputs were produced as plar	med. Therefore, the project efficie	ency is fair.					

Achievement of the Project Purpose and Overall Goal

4 Sustainability

## <Policy Aspect>

The Provincial Irrigation and Drainage Plan (PIDP) of Los Ríos (2016-2030) has included policies such as an expansion of the irrigation system coverage, increase in the systemic agricultural productivity, capacity development for the administration, operation and maintenance (O&M) of the irrigation and drainage systems, and so on.

<Institutional/Organizational Aspect>

There has been basically no change in the organizational structure of GADPLR to promote IAEP since the time of project completion. Although the coordination between DRDD and the Department of Productive Development (DDP) had been expected, DDP's active involvement has kept almost null because a part of its technical staff, who were initially involved in the project, was transferred to DRDD for implementing agricultural management and organizational strengthening activities in the Catarama Irrigation System. The section of GIS has not functioned since 2018, because the technicians in charge have terminated the contract and the license to use the ArcGIS introduced by the project expired. For DRDD, 26 personnel have been assigned and they have been sufficient to carry out functions of O&M in irrigation areas, agricultural and crop management, and organizational strengthening. <Technical Aspect>

DRDD personnel have sustained skills and knowledge necessary to promote IAEP and support irrigation users regarding the agricultural model. Training opportunities were given to DRDD personnel on integral parcel irrigation, accessories for irrigation systems, pesticides and chemicals management, and so on. Manuals on cultivation techniques of corn, peanut, rice and soybean have been used by DRDD technicians for training for irrigation sub-board members and farmers.

<Financial Aspect>

GADPLR has secured approximately 5.6 million US dollars (USD) for promoting IAEP since 2017. According to GADPLR, these funds have been sufficient. The average annual cost for administration and O&M of the irrigation and drainage system in the Catarama River Basin from 2017 to 2019 was 410.38 thousand USD, and 2,405.38 thousand USD were

Table: Revenue of GADPLR for promoting IAEP         (Unit: thousand USD)					
Source	2017	2018	2019	2020	
User fee collection	39.04	43.04	38.63	N.A.	
Ministry of Finance	1,975.18	1,975.18	1,975.18	1,975.18	
Ecuadorian Development Bank	3,632.30	3,630.61	3,645.90	3,567.80	
Total	5,646.52	5,648.83	5,659,71	N.A.	

Source: GADPLR

invested for five construction works of tertiary canals during the same period. User fees have been collected from farmers and they have been used for facility provision, which has complied with their payment. <Evaluation Result>

In the light above, slight problems have been observed in terms of the institutional/organizational aspect of the implementing agency. Therefore, the sustainability of the effects is fair.

## 5 Summary of the Evaluation

The Project Purpose was achieved, and the project effects have continued. The established model for irrigation agriculture has been sustained as GADPLR and farmers have conducted O&M of the irrigation facilities. The irrigation surface has been expanded as targeted. Regarding sustainability, although further strengthening of the organizations setting, there has been no concern in the technical and financial aspects for promoting IAEP. As for the project efficiency, the project cost exceeded the plan. Considering all of the above points, this project is evaluated satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing agency:

- It is recommended to GADPLR to take the following actions to make clear impacts of the irrigation and drainage system of Catarama and motivate farmers for further efficient and productive irrigation agriculture: i) to develop a methodology for quantifying production indices such as product prices and crop yields; ii) to show achievements of tertiary canal construction (construction area and number of beneficiaries); and iii) to keep a record of corrective and preventive O&M of irrigation facilities.
- It is recommended to GADPLR to update the license of GIS software and hire a technician to manage GIS equipment provided by the project for irrigation planning management and irrigation facility management.
- The collaboration between DRDD which takes responsibility for IAEP implementation, civil works and O&M of facilities and DDP which oversees agricultural management and organizational strengthening in rural areas is important. It is recommended to GADPLR to reorganize activities and demarcation between DRDD and DDP according to their responsibilities so that DDP would become active again for further enhancement of the land use in the Catarama Irrigation System. Lessons Learned:
- Since the time of project completion, some agricultural companies have organized a trade show of peanuts and corns and invited farmers there, as farmers have grown the crops which were recommended by the project. If a project introduces new crops with commercial potential, it is desirable to actively involve agricultural companies which deal with agricultural equipment or sell seeds for cultivation of such crops as part of the project, so that farmers could get not only practical information for cultivation but also get some agricultural inputs and/or funds for promoting introduction of these crops during the experimental phase.
- Since the time of project completion, there have been concerns about farmers' inappropriate handling of agrochemical containers.
   When providing guidance on agricultural management which includes the cultivation of crops with use of pesticides, it is important to include information on the proper use of pesticide materials in the training.



A male farmer and female farmer working together for manual weeding in peanut crop (Sibimbe II scheme)



Exposure of chemical and organic agricultural inputs in April 2018 (Catarama scheme)

Country Name	The Project for the Formulation of Master Plan for the Market-Oriented Agriculture in Burkina					
Burkina Faso	Faso (PAPAOM <sup>1</sup> )					
I. Project Outline						
Background	In Burkina Faso, agriculture accounted for 30% of GDP, employing about 85% of the workforce in 2005. Subsistence crops, such as sorghum, millet, maize and cowpea, and cash crops, such as cotton, peanuts, and sesame seeds, were produced by rain-fed cultivation with extensive farming. Burkina Faso structurally depended on two export commodities; namely gold and cotton, which accounted for 67% and 17% of export revenues in 2010, respectively. It was essential for the sustainable economic growth of the country to transform from such monoculture and to promote diversification of agricultural products.					
Objectives of the Project	<ul> <li>Through the formulation of the Master Plan for agricultural development and promotion of competitive products in cross-border trade and Action Plan to promote target products as well as the implementation of pilot demonstration of business models on the promotion of agricultural products and reduction of the agricultural investment risks, the project aimed at implementation of the Action Plan and priority projects, thereby contributing to agricultural development through diversification of agricultural products.</li> <li>1. Expected goals through the proposed plan<sup>2</sup>: Agricultural development through diversification of agricultural products</li> <li>2. Expected utilization of the proposed plan: Based on the Master Plan, the Action plan and priority projects are implemented by the government of Burkina Faso, donors, NGOs as well as the private sector.</li> </ul>					
Activities of the Project	<ol> <li>Project site: the whole of Burkina Faso</li> <li>Main activities: (1) conduct survey and analysis to select target agricultural products; (2) conduct value chain analysis on the target products; (3) formulate a master plan (M/P) including action plan (A/P); (4) implement demonstration projects in priority areas; (5) select priority projects based on the demonstration; (6) conduct necessary donor coordination to expedite the A/P; (7) draft a guidebook for agricultural investment for the target agricultural products; (8) finalize the M/P</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Experts from Japan: 10 persons</li> <li>Staff allocated: 8 persons</li> <li>Equipment: Vehicles, office equipment, (2) Land and facilities: Project office for Japanese training equipment</li> <li>Local Cost</li> <li>Local Cost</li> </ol>					
Project Period	March 2013-August 2015 (Extended period: April 2015-August 2015)Project Cost(ex-ante) 410 million yen (actual) 444 million yen					
Implementing Agency	The Ministry of Agriculture and Hydro-Agricultural Development (MAAH), General Directorate of the Promotion of Rural Economy (DGPER) (The Ministry of Agriculture, Water Resource, Sanitation, and Food Security (MARHASA) was renamed MAAH in 2017)					
Cooperation Agency in Japan	NTC International co., Ltd. Overseas Merchandise Inspection co., Ltd.					

# II. Result of the Evaluation

#### 1 Relevance

<Consistency with the Development Policy of Burkina Faso at the Time of the Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policies of Burkina Faso at the time of ex-ante evaluation and project completion. The "Strategy for Accelerated Growth and Sustainable Development (Stratégie de Croissance Accélérée et de Développement Durable:

SCADD)" (2011-2015) emphasized economic growth targeting a 10 % annual growth rate. Agriculture and rural development were placed as one of the prioritized sectors. Also, the government's objectives and priorities for the agricultural sector were stated in the "National Programme for the Rural Sector (PNSR)" (2011-2015) which represents the operational framework of the SCADD's vision for rural development and the Rural Development Strategy (SDR) in 2013.

<Consistency with the Development Needs of Burkina Faso at the Time of the Ex-Ante Evaluation and Project Completion>

The project was consistent with the needs of Burkina Faso at the time of ex-ante evaluation and project completion. There had not been any national strategy to promote agricultural products in the context of export promotion. Development efforts lacked the entire picture to direct how best to synergize the related projects of developing the agricultural value chain along with the capacity development of various people involved. Furthermore, functional business models were needed to establish in the given market conditions. <<Consistency with Japan's ODA Policy at the Time of the Ex-Ante Evaluation>

<sup>&</sup>lt;sup>1</sup> PAPAOM: Projet d'Appui à l'élaboration d'un schéma directeur pour la Promotion d'une Agriculture Orientée vers le Marché au Burkina Faso.

<sup>&</sup>lt;sup>2</sup> The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

The project was consistent with Japan's ODA policy for Burkina Faso<sup>3</sup>. Japan supported the promotion of competitive agricultural products in international trade at the time of ex-ante evaluation.

<Evaluation Result>

In light of the above, the relevance of the project is high.

## 2 Effectiveness/Impact

<Status of Achievement for the Objectives at the time of the Project Completion>

The Master Plan and the Action Plan to promote target products were formulated and submitted to the Government of Burkina Faso as planned by the time of the project completion. Pilot projects based on business models for agricultural products (mango, strawberry, onion, soybean) were implemented to demonstrate the marketability of each project in the respective target market in order to reduce the agricultural investment risks.

<Utilization Status of the Proposed Plan at the time of the Ex-post Evaluation>

The proposed plan has been partially utilized at the time of the ex-post evaluation. Although it could not launch all of the projects proposed in the Master Plan, follow-up activities and projects have been implemented to promote the target products by various actors including the Government of Burkina Faso, donors, NGOs, farmers' cooperative, and the private sector.

<Status of Achievement for Expected Goals through the Proposed Plan at the time of the Ex-post Evaluation>

The expected goals through the proposed plans have been partially achieved. Production of three target products has generally increased with the exception of soybean as was not verified with pertinent information/data. Among the four target products, dried mango is a notable case in point in terms of market-oriented development through the promotion of the food-processing industry whose aspiration to become competitive in the international market. As for onion and strawberry, it was confirmed that newly introduced varieties by the project have brought about the production increase and a higher income level of the farmers. Thus, the plans proposed by the project is deemed to have promoted the productivities of those target products. Furthermore, the diversification of agricultural productions is observed in vegetables and cash crops in the domestic market mainly due to the multiple supports provided by the MAAH.

<Other Impacts at the time of the Ex-post Evaluation>

It should be noted that negative impacts on the natural and social environment were observed at the time of the ex-post evaluation. As stated above, the project has served to increase the production of dried mango through the introduction of dryers, and so on, whereas the waste was irresponsibly discharged in neighboring residential areas. Dumped waste after processing foodstuffs has caused degradation of water quality and the infestation of flies so that some of the local residents have petitioned their municipalities.

On the other hand, the project has had impacts on gender. Women were very much involved in the implementation of the pilot projects, especially in terms of mango/soybean processing and marketing of strawberry/onions. For mango processing, it was reported that the cluster workforce consists of 90% women and 10% youth.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is fair.

Aim	Indicators	Results		
Utilization Status of the Proposed Plan Based on the Master Plan, the Action plan and priority projects are implemented by the government of Burkina Faso, donors, NGOs as well as the private sector.	implemented by other donors,	According to t in the Master I PAPAOM was	uation) Partially achieved the field survey, although it could not la Plan, mainly due to the lack of funding, t s considered being implemented since so lucts had been carried out or are in the or Table 1 <u>Main Activity/Project</u> <u>Market</u> • Marketing • Standardization of product quality • Competitive pricing and maximizing profit • Sharing good practices through training • Dried mango and processed cashew commercialization support project in the Enhanced Integrated Framework (EIF) <sup>4</sup>	he Action Plan formulated during ome of the major components for agoing process as listed below. Actor Mainly driven by the "Mango Cluster" of member private companies, led by the Mango Professional Association (APROMAB). Ministry of Industry Trade and Handicrafts (MICA) /International NGO (the Netherlands)/ Ministry of Youth, Professional Training, and Employment
		Subregional market (MJFPE)		
		Strawberry	<ul> <li>Input Supply /Co-operative Revolving Fund</li> <li>Training in Organic Fertilizer Production</li> </ul>	Regional Chamber of Agriculture/Private companies
		Domestic ma Onion	• IFAD funded under the Neer-	МААН

Status of Achievement of Utilization Status of the Proposed Plan and Expected Goals through the Proposed Plan

<sup>&</sup>lt;sup>3</sup> Ministry of Foreign Affairs, "ODA Country Databook" (2013)

<sup>&</sup>lt;sup>4</sup> This multilateral aid framework provides various supports for the least developed countries in order to integrate them into regional and global trading systems. 6 multilateral donors formed a consortiam; the World Trade Organization (WTO), the International Trade Center (ITC), the United Nations Conference on Trade and Development (UNCTAD), the World Bank, the International Monetary Fund (IMF) and the United Nations Development Program (UNDP)

		Tamba Project <sup>5</sup> (its Sector Support Project known as "ProFil")       Soybean     • Dispatched JICA expert on the development of the soya sector					
		throughout its value chains.					
Expected Goals through the Proposed Plan Agricultural development through diversification of agricultural products	(Indicator 1) Production of the target products	<ul> <li>(Ex-post Evaluation) Partially achieved</li> <li>Mango<sup>6</sup>: Approx. 80,000 tons of mango processed per year including 2,750 dried mango an 5,000 tons for production of mango juice by DAFANI (a member of the Mango Cluster in Hauts-Bassins region in 2018.</li> <li>Strawberry: Improvement of production with new varieties introduced by PAPAOM i Boulmiougou (Ouagadougou, Central Region).</li> <li>Onion: Improvement of production with new varieties introduced by PAPAOM as one of the varieties (Préma 178) enables to extend the harvest period. And the onion producers is Korsimoro (Sanmatenga Province, Central Region) were able to transfer their acquire knowledge to other villages in the Central North Region and the Central West region</li> <li>Soybean: not verified</li> </ul>					
	(Indicator 2) Trade volumes of the target products in the markets (international, west African region, domestic)	<ul> <li>No information provided by the relevant ministries and field survey could not be conducted due to the security situation in the region.</li> <li>(Ex-post Evaluation) Partially achieved <ul> <li>Mango:</li> <li>Increase in exports to Spain and North Africa via Mauritania-Morocco along with a growing demand for compliance with international norms and standards.</li> <li>Approx. 6 tons of dried mangoes exported by SATIG (a member of the Mango Cluster in 2018</li> <li>Strawberry:</li> <li>Expansion of trade volume has been manifested in an increase of income level employment as well as the expansion of membership of the cooperative.</li> <li>Onion:</li> <li>Expansion of trade volume has been manifested in an increase of income level and a higher standard of living and notable job creations of the value chains.</li> <li>Soybean: not verified.</li> <li>No information provided by the relevant ministries and field survey could not be conducted due to the security situation in the region.</li> </ul> </li> </ul>					
	(Indicator 3) The level of adoption of the Master Plan in governmental institutions and policies	(Ex-post Evaluation) Partially achieved The diversification of agricultural productions, which was the key objective of the Master Plan, has been accelerated in terms of vegetables (e.g. okra, zucchini, cucumber, eggplant, chili ) and cash crops (e.g. rice, cowpeas, peanuts) in the domestic market, due to the availability of irrigation and plains for farming, and the MAAH's support for capacity building and provision of inputs for farming such as seeds and fertilizer.					

producers of Korsimoro. 3 Efficiency

Both of the project cost and period slightly exceeded the plan (ratio against the plan: 108% and 117%, respectively). The outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability <Policy Aspect>

The "Agricultural Sector Development Strategy" (2019-2023), and the "Silvicultural, Pastoral and Agricultural Production Sector Policy" (2017-2026) have coherently addressed the promotion of market-oriented agriculture. The former has envisaged synergizing agricultural industries in the sector to increase the total productivity in order to ensure food security and poverty reduction. The latter has resonated with the former to target competitive areas of the agricultural sector to spearhead the strategic initiative. As above, improvement of agricultural productivity, higher-value-added agricultural products, self-sufficiency on food, and expansion of export of agricultural products have been addressed in the Burkinabe policy.

<Institutional Aspect>

The steering system defined by the Master Plan has remained structurally unchanged to promote the market-oriented agriculture in Burkina Faso. All the project for the international market and product development/incubation has been led by the MAAH (DGPER) in close collaboration with the MCIA and MESRSI (Ministry of high education, scientific research, and innovation). On the same token, projects for the sub-regional market and domestic market have been led by the MCIA in close collaboration with the MAAH (DGPER). The MAAH has been organized to carry out nationwide promotion at the central and decentralized levels. The Ministry has arranged a sufficient number of trained technicians to be deployed close to local producers in the zones and production units. Furthermore, under the jurisdiction of the MAAH, technical support zone (ZAT) and Technical support unit (UAT) agents are mandated to accompany the producers in the villages.

<sup>&</sup>lt;sup>5</sup> Aligned with The International Fund for Agricultura Development (IFAD) strategy in Burkina Faso, the Neer-Tamba project aims to reduce poverty by: (1) increasing the income of the target group through the development of microenterprises and agricultural industries; (2) increased production and agricultural productivity due to introduced technologies (water and soil conservation, micro-irrigation, etc.); and (3) empowerment of the rural poor, especially women and youth.

<sup>&</sup>lt;sup>6</sup> Mango production in Burkina Faso has increased in parallel with growing market opportunity. From a larger perspective of the regional market, however, each of the competitive orientations among countries in the West Africa region is as follows; Burkina Faso is relatively competitive in dried mango, Senegal and Côte d'Ivoire in high quality fresh mango, and Ghana in high-value processed mango.

#### <Technical Aspect>

The Master Plan by the project has been placed under the technical supervision of the MAAH. Within the MAAH, the DGPER has been responsible for project management of the Master Plan and in collaboration with all the technical personnel structures involved to meet each need. It is judged that the MAAH/DGPER has acquired sufficient technical skills and level of knowledge to ensure proper implementation and monitoring of the relevant projects designed under the Master Plan. Based on the nation-wide enforcement system stated above, the MAAH has proceeded to build as many reservoirs around the villages as possible to make water available for agricultural production. Also, technical staff members have encouraged and provided assistance to concerned producers to form a cooperative in order to streamline the value chain.

#### <Financial Aspect>

According to the survey result, the MAAH has not secured budget nor provided any financial resources to the follow-up projects in the Master Plan as they should be initiated and driven by the private sector and farmers (cooperatives). The Government, inter alia, MAAH is to provide indirect supports, primarily to remove obstacles in each market and to regulate the legal and physical framework (e.g. farmland, water, and irrigation system, etc.) in order to avoid possible market failure for the healthy, balanced development of the market. Yet, it is also true to say that the implementation of the promotion for the four target products (mango, strawberry, onion, soybean) requires concerted efforts of the Government and its partners to mobilize a considerable amount of financial resources in order to foster the industry at this stage. In that sense, a considerable number of companies have taken over the funding as their own investment.

<Evaluation Result>

In light of the above, the sustainability of the project effects is fair.

#### 5 Summary of the Evaluation

The Master Plan and the Action Plan to promote target products were formulated as planned. Pilot projects based were duly implemented to demonstrate the marketability in the respective target market. Through a combination of market research and food processing techniques provided by the project, follow-up activities, and projects have been further implemented to promote the target products by various actors after the project completion. As for sustainability, the organizational setting and technical skills of the counterpart have been reinforced through the implementation of the project. On the other hand, the national budget has not been allocated although the related activities have been substantially sustained by the contributions of concerned partners/donors. As for efficiency, the project cost and the project period slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

#### III. Recommendations & Lessons Learned

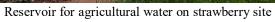
Recommendations for Implementing Agency:

The Master Plan was not fully implemented as planned due to a lack of financial resources. However, considering the potential benefits in terms of both nutritional value and net market share, soybean and strawberry are particularly promising among 4 target products for further public support and intervention. Regarding the recommended areas to be assisted by MAAH/DGPER for all the major agricultural products are as follows;

- Technical/financial support and material/equipment for the food-processing industry to increase the volume of processing, improve the quality of processing units and marketing (the international market in particular);
- · Technical and legal support to facilitate unionizing a cooperative or alike to lower various transaction costs in the market.
- · Sales promotion for newly introduced fresh and processed products (including new varieties of the existing products).
- · Technical support for the appropriate and sanitary waste disposal fit for the foodstuff processing industry
- Lessons Learned for JICA:

During the ex-post evaluation survey, it turned out that the Regional Directorate for Agriculture and Hydraulics of the North-Central Region (DRAAH-HB) had almost no information on the project and thus, could not engage any follow-up for the actors involved during the project implementation. A retired officer of the DRAAH-HB who was interviewed confirmed very limited involvement in project activities at the time of implementation. In order to effectively promote agricultural development such this, it is indispensable that a collaborative mechanism is built extending widely to all related organizations, including not only central and regional levels but also to villages/communities in the target farmland area. Thus, a challenge was to strengthen the establishment of an integrated system with which practical human resource management that also enabled to motivate staff at the decentralized level to engage in activities through the actualization of well-coordinated roles and information-sharing among various stakeholders. It is highly recommendable that, in the case of the projects jointly implemented in both central and decentralized levels, information regarding all the concerned institutions in the target areas should be rigorously collected from the stage of project planning with the aim of establishing a system for promoting development cooperation of all the levels in parallel even after the project completion.







Dried mango packaging at Danaya

Country Name Project on Regional Development Planning of the Southern Region in the Republic							
Country Name			elopment Pla	nning of the Southern Region in the Republic			
Republic of Tuni	sıa	of Tunisia					
I. Project Outline							
Background	One of the major challenges in Tunisia was correcting regional disparities through promoting a dynam convergence across the regions. The integrated regional development aimed, by sustainably utilizing the socio-economic and environmental potential of respective regions, at consolidating the competitiveness of the economic players and regions so that finally the standard of living and quality of life can rise for their populations. The Ministry of Development, Investment, and International Cooperation (MDICI) was responsible for strateg orientation of relevant inter-ministry partnership development. On the other hand, insufficient public-privation partnership, less competitive domestic industries and less attractive logistical and investment environment has resulted in insufficient availability of qualified personnel, a dynamic and effective distribution system and attractive living environment. The Southern Region was a typical region lagging behind which was covered almos by desert except coastal areas. The formulation of integrated regional development plan through participatory approach to solve the above situation was needed especially in the Southern Region. At the same time, capacity of planning and administrative management for participatory approach needed to be developed as well.						
Objectives of the Project	<ul> <li>Through formulation of regional development strategy for the period from 2015 to 2035 and regional development plan for the period from 2015 to 2025 as well as capacity development of planning and administrative management for participatory approach to Tunisian counterpart, the project aimed at developing a regional development plan through public consultation as a participatory approach, thereby contributing to promote sustainable regional development for reducing regional disparity by utilizing available resources and advantages, and promoting the living environment and quality in the Southern Region.</li> <li>1. Expected goal through the proposed plan<sup>1</sup>: Sustainable regional development is promoted to reduce regional disparity by utilizing available resources and advantages of the Southern Region.</li> <li>2. Expected utilization of the proposed plan: The regional development plan formulated through public consultation as a participatory approach by the Tunisian government.</li> </ul>						
Activities of the Project	<ol> <li>Proj</li> <li>Main deve man</li> <li>Inpu Japanes</li> <li>Mi</li> </ol>	ect site: 6 Governorates in the so n activities: Formulation of reg elopment plan for the period fro agement for participatory appro- its (to carry out above activities)	outhern region (Ga ional developmen om 2015 to 2025, ach to Tunisian co	abes, Tozeur, Kebilli, Gafsa, Medenine, and Tataouine) t strategy for the period from 2015 to 2035 and regional and capacity development of planning and administrative			
Project Period	March 2013 – December 2015 (Extension period: November 2014 – Project Cost December 2015) Project Cost (ex-ante) 300 million yen, (actual) 323 million yen						
Implementing Agency	Ministry of Development, Investment and International Cooperation (Ministère du développement de l'investissement et de la coopérationa internationale: MDICI) South Development Office (Office de Développement du Sud: ODS)						
Cooperation Agency in Japan	None						

< Special Perspectives Considered in the Ex-Post Evaluation >

[Definition of Expected utilization of the proposed plan by the project in the ex-post evaluation]

- There is an inconsistency in Expected utilization of the proposed plan by the project between the R/D and ex-ante evaluation sheet as below:
- a) **R/D**: The regional development plan will be developed through public consultation as a participatory approach
- b) **Ex-ante evaluation sheet:** The regional development plan formulated through public consultation as a participatory approach will be approved by the Tunisian government.
- As drafting the regional development plan is considered as an output of this project, therefore, this ex-post evaluation utilizes "Expected utilization of the proposed plan" defined by the ex-ante evaluation sheet.

#### 1 Relevance

<Consistency with the Development Policy of Tunisia at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Tunisia's development policies of "the 12th Five-Year Development Plan" (2010-2014), "the Economic and Social Programme (Jasmine Plan)" (2011-2016), and "the Five-Year Development Plan" (2016–2020) emphasizing promotion of reginal development.

<Consistency with the Development Needs of Tunisia at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Tunisia's development needs of formulation of integrated regional development plan through

<sup>&</sup>lt;sup>1</sup> The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

participatory approach in the Southern Region to mitigate the regional economic disparity.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy for Tunisia at the time of appraisal in 2012 putting priority on (i) upgrading the industries, (ii) mitigation of regional disparities, (iii) environmental protection and (iv) South-South cooperation<sup>2</sup>. <Evaluation Result>

In light of the above, the relevance of the project is high

2 Effectiveness/Impact

<Status of Achievement for the Objectives at the time of Project Completion>

The objectives of the project were achieved by the time of project completion. The project could successfully formulate the regional development strategy for the period from 2015 to 2035 (Output 1) and the regional development plan for the period from 2015 to 2025 (Output 2). Through the project, the capacity of Tunisian counterpart for planning and administrative management for participatory approach was developed (Output 3).

< Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

The Proposed Plan has been partially utilized at the time of ex-post evaluation. The regional development plan (2015-2025) formulated by the project has not been officially approved by the Tunisian government yet (Indicator 1), due to an inconsistency in understanding the definition of expected utilization of the proposed plan between the Tunisian government and JICA. However, the plan and the strategy formulated by the project has served as a reference for Tunisian national and regional development plan, and many infrastructure development projects in the priority sectors in the South Region such as transport and logistics, social services infrastructure, energy, water and environment, tourism, urban development and science and technology, industry, etc. were actually implemented by the government. For example, there were five investment activities/projects in 2017 and eight investment activities/projects in 2018 in the Southern Region (Indicator 2).

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

The Expected Goals have been partially achieved by the time of ex-post evaluation. There was an increase in the number of newly established enterprises in the priority sector in the Southern Region. Although there is a variation in the number of newly established enterprise among the different sectors, the sectors of agriculture, fishery, livestock breeding, food processing indicated a strong growth of number of newly established enterprise from 822 in 2015 to 1,452 in 2018. Also, the improvement of social services was observed in the Southern Region. For example, number of beds in hospitals for 1,000 inhabitants increased from 1.67 in 2015 to 1.86 in 2017, and the ratio of number of inhabitants / basic health center improved from 3,769 in 2015 to 3,611 in 2017. The water supply connection rate in the Southern Region was almost stable at 99.2-99.3% from 2015 to 2017. However, it was reported that the quality of supplied water has improved in Djerba and Tozeur after the operation of seawater and groundwater desalination plants.

<Other Impacts at the time of Ex-post Evaluation>

No other positive or negative impacts of the project were confirmed at the time of ex-post evaluation.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is fair.

Status of Achievement of Utilization Status of the Proposed Plan and Expected Goals through the Proposed Plan

<ul> <li>development plan formulated through public consultation as a participatory approach will be approved by the Tunisian government.</li> <li>The Tunisian government did not recognize the approval of the plan as an indicator of expected utilization of the proposed plan as there was an inconsistency in understanding the definition of expected utilization of the proposed by the Tunisian government.</li> <li>The Tunisian government and JICA as mentioned earlier at Special Perspectives Considered in the Ex-Post Evaluation.</li> <li>However, the regional development plan (2015-2025) and the reginal development strategy (2015-2035) formulated by the project has served as a reference for the elaboration of the orientation note and the regional contents for the south regions under the 5-year development plan (2016-2020) of the Tunisian government.</li> <li>The project plan has also been shared by MDICI and ODS with sectoral ministries concerned with the regional development to elaborate their sectoral strategies.</li> <li>The Tunisian government approved a series of major projects in priority sectors in the South Region such as transport and logistics, social services infrastructure, energy, water &amp; environment, tourism, urban development and</li> </ul>	Aim	Indicators	Results
Indicator 2       Indicator 2         Number of investment activities       (Ex-post Evaluation) Achieved         implemented in the Southern region       • No. of investment activities: 5         based on the regional development       • No. of investment activities/projects: (i) Sfax-Gabès Highway, (ii) Zarzis         project.       • No. of investment activities: (i) Sfax-Gabès Highway, (ii) Zarzis         port development, (iii) Ground water quality improvement in Tozeur, (iv)       Industrial zone for gypsum cluster, (v) Authentic tourism federation of         Dhaher (Berber destination)       (2018)         • No. of investment activities: 7	(Utilization Status of the Proposed Plan) The regional development plan formulated through public consultation as a participatory approach will be approved by the Tunisian	Indicator 1 The regional development plan formulated by the project is approved by the Tunisian government as the government plan.	<ul> <li>(Ex-post Evaluation) Not achieved <ul> <li>a) Date of approval:</li> <li>The regional development plan (2015-2025) formulated by the project has not been officially approved by the Tunisian government.</li> <li>The Tunisian government did not recognize the approval of the plan as an indicator of expected utilization of the proposed plan as there was an inconsistency in understanding the definition of expected utilization of the proposed plan between the Tunisian government and JICA as mentioned earlier at Special Perspectives Considered in the Ex-Post Evaluation.</li> <li>However, the regional development plan (2015-2025) and the reginal development strategy (2015-2035) formulated by the project has served as a reference for the elaboration of the orientation note and the regional contents for the south regions under the 5-year development plan (2016-2020) of the Tunisian government.</li> <li>The project plan has also been shared by MDICI and ODS with sectoral ministries concerned with the regional development to elaborate their sectoral strategies.</li> <li>The Tunisian government approved a series of major projects in priority sectors in the South Region such as transport and logistics, social services infrastructure, energy, water &amp; environment, tourism, urban development and science and technology poles, industry, etc. proposed in the reginal development strategy (2015-2035).</li> <li>(Ex-post Evaluation) Achieved (2017)</li> <li>No. of investment activities: 5</li> <li>Type of investment activities: 5</li> <li>Type of investment activities; 5</li> <li>Type of investment activities; (i) Sfax-Gabès Highway, (ii) Zarzis port development, (iii) Ground water quality improvement in Tozeur, (iv) Industrial zone for gypsum cluster, (v) Authentic tourism federation of Dhaher (Berber destination)</li> </ul> </li> </ul>

<sup>&</sup>lt;sup>2</sup> Source: ODA Country Data Book 2012, Ministry of Foreign Affairs, Japan.

through the Proposed	Indicator 1 The number of newly established	rehabilitation, (vi) Djerba sea quality improvement in Ben (Ex-post Evaluation) Achieved	awater desali Guerdane.	(under study nation plant,	(vii) Ground	abès port water				
Plan)	enterprises in the priority sector in	1) No. of newly established enterprises in the priority sector in TunisiaPriority sector2015201620172018								
Sustainable regional development is	Tunisia as well as the Southern Region.	Agriculture, fishery, livestock	4,726	4,763	4,898	5,199				
promoted to reduce		breeding, food processing	-	(+1%)	(+4%)	(+10%)				
regional disparity by utilizing available		Mining, and other industries	1,028	928 (-10%)	898 (-12%)	596 (-42%)				
resources and advantages of the		Total	5,745	5,691	5,796	5,795				
Southern Region.				(-1.1%)	(0.7%)	(0.7%)				
Southern Region.		<ul><li>Note: Percentages of variation a for comparison.</li><li>2) No. of newly established enter <b>Region</b></li></ul>		-	-	-				
		Priority sector	2015	2016	2017	2018				
		Agriculture, fishery, livestock	822	930	1,129	1,452				
		breeding, food processing	- 022	(+13%)	(+37%)	(+77%)				
		Mining, and other industries	143	(+15)(-152) (+6%)	120 (-16%)	<u>(-38%)</u>				
		Handicraft	1,147	1,006 (-12%)	1,225 (+7%)	959 (-16%)				
		Total	2,112	2,088 (-1%)	2,474 (+17%)	2,500 (+18%)				
		Note: Percentages of variation a for comparison.	re calculated		ng 2015 as a	base year				
	Indicator 2 Social services are improved such as improvement in accessibility to hospitals, water supply and schools in the Southern Region.	<ul> <li>(Ex-post Evaluation) Partially achieved</li> <li>1) Accessibility to hospitals</li> <li>Number of beds in hospitals for 1,000 inhabitants increased from 1.67 in</li> </ul>								

#### 3 Efficiency

Both the project cost and the project period exceeded the plan (Ratio against the plan: 107% and 170%, respectively). The main reasons for the delay were delays in the project activities from 2013 to 2014 due to the deteriorated security situation in the Southern Regions, the general elections in 2014, and the frequent change of counterpart staff. The outputs were produced as planned. Therefore, the efficiency of the project is low.

## 4 Sustainability

<Policy Aspect>

The government of Tunisia gives a high importance to the participatory approach for formulation of the regional development plan, and has recommended to all administrations concerned to consider applying this approach for preparation of the next development plan for the period from 2021 to 2025.

<Institutional Aspect>

There has not been any change in the institutional structure for the regional development in Tunisia. MDICI supervises ODS for the monitoring and evaluation of the regional development strategies, plans and actions in the Southern Region and coordinates between all regional development departments and sectoral departments (ministries) with regard to the approach, methods and procedures applied for monitoring and evaluation. ODS is responsible of the coordination of implementation, monitoring and evaluation of the regional development strategies, plans and actions in the Southern Region under the supervision of MDICI. Although there is an issue of insufficient human resources in MDICI and ODS, the existence of a plan for reshuffling of civil servants is likely to secure a reinforcement of the human resources of MDICI and ODS in the future. Also, the development taskforces, which had been established by the project as a coordination body for the public-private partnership at the governorate level, was reorganized to the "Regional Development Committees" composed of representatives of public and private sectors, NGO's, members of Parliament, and so on. Also, "Public-Private dialogue

platforms" were established for promotion of the economic development in the governorates of Gafsa, Gabès and Medenine under the EU funded project, "Regional Initiative of Support to a Sustainable Economic Development" (2015-2019). At the national level, "Sectoral Committees" with representatives from the related ministries, labor and trade unions, NGOs, private sector, and so on were established. The above coordination mechanisms at national and regional levels have been maintained at the time of ex-post evaluation. <Technical Aspect>

ODS has regularly carried out monitoring and evaluation for implementation of the government's 5-year development plan for 2016-2020 in the six governorates of the Southern Region according to guides and manuals prepared by MDICI with support of experts from the German TC Agency (GIZ) and UNDP. MDICI and ODS have participated to seminars and workshops to maintain and disseminate the knowledge and skills for planning and administrative management for participatory approach developed by the project. <Financial Aspect>

MDICI received 475 million Tunisian Dinar (TND) in 2015, 568 million TND in 2016, 534 million TND in 2017 and 569 million TND in 2018 for their annual budgets, which included the budgets for monitoring and evaluation of the 5-year development plan. Based on the allocated annual budgets, MDICI and ODS have conducted their activities without major problems. <Evaluation Result>

In light of the above, the sustainability of the effectiveness through the project is high.

## 5 Summary of the Evaluation

The expected goal through the proposed plan and the expected utilization of the proposed plan were partially achieved by formulation of the regional development strategy and the regional development plan as well as by capacity development of Tunisian counterpart for planning and administrative management through participatory approach. Although the regional development strategy formulated by the project has not been officially approved by the Tunisian government, its visions was shared by the government and proposed projects and activities were incorporated into the government development plan. In terms of sustainability, no major problems have been observed in the policy, institutional, technical, and financial aspects. As for efficiency, both the project cost and the project period exceeded the plan. Considering all of the above points, this project is evaluated to be partially satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• It is necessary to establish a database with all data and statistics for an effective monitoring and evaluation of indicators related to the effectiveness /impacts of the project. For this purpose, a data collection process has to be conducted in coordination with other ministries and administrations and even through specific surveys, as necessary.

Lessons Learned for JICA:

- In order to secure the sustainability of the project effects, the implementing agency should secure enough human resources to maintain an appropriate implementation of the main activities developed by the project. At least, as such a shortage of resources was predictable, JICA should have discussed with the implementing agency a plan to improve the situation and reach the level of resources that secures the sustainability of the project activity.
- Some good practices in relation with the dissemination of the knowledge and skills developed by the project have been realized by MDICI and ODS who followed an effective approach in this regard. Mainly two interesting examples are noted:
  - MDICI elaborated, with support of experts from the German TC Agency (GIZ) and UNDP, Guidelines about the management and the practice of the participatory approach for development planning, and employed experts for a best application of such a new approach in the planning process; and
  - MDICI and ODS disseminated, through participations in seminars and workshops, the knowledge and skills obtained from the project to different target groups, including staffs of ministries, development project stakeholders, NGOs, academia, etc.



Steering Committee Meeting at the central level (MDICI)



One of the 21 public consultation meetings held in the Southern Region during the project implementation period

Country Name Republic of Cote d'Ivoire		Digital Topographic Ma	pping Project for Urba	n Infrastructure Development		
I. Project Outline	d'Ivoire					
Background	capital of the country annual economic gro maintenance of the e infrastructure to be growth brought abou the significant short situations, urban plan	y, and its environs. In the an owth recorded 8%. However existing infrastructure and is replaced or rehabilitated or t a dramatic increase in the age of infrastructure to ac uning and development base	rea, trunk and sub roads er, the political and mil nvestment on new infra onsiderably deteriorated population by 200% (3 commodate the rapidly ed on highly accurate dat			
Objectives of the Project	<ol> <li>Expected goals through the proposed plan<sup>1</sup>: Urban infrastructure development has been promoted in the Greater Abidjan.</li> <li>Expected utilization of the proposed plan: The digital topographic map and the orthophoto map produced by the Project have been utilized for preparation of urban plan in the Greater Abidjan.</li> </ol>					
Activities of the Project	<ol> <li>Main activities: specification, 2 symbolization, 4 image, 6) Techni</li> <li>Inputs (to carry of Japanese Side</li> <li>Experts from Ja</li> <li>Equipment by Japan: sprinte camera, PC, etc</li> <li>Equipment by</li> </ol>	<ul> <li>Aerial photography and</li> <li>Geographic Information</li> <li>ical transfer, 7) Seminar/wo</li> <li>but above activities)</li> <li>pan: 11 persons</li> <li>cooperation agency in</li> <li>r, handy GPS, handy</li> </ul>	data for topographic r d site survey, 3) Dig System (GIS) data stru- rkshops for data utilizati Ivorian Side (1) Staff allocated: 11 (2) Land and facili	l persons ties: office space in Center of l Remote Sensing for Japanese		
Project Period	October 2013 – Octo	ber 2015	Project Cost	(ex-ante) 600 million yen (actual) 635 million yen		
Implementing Agency	Geographic Informat reorganized to CIGN		GN) (Center of Cartograp	bhy and Remote Sensing was		
Cooperation Agency in Japan	Asia Air Survey Co.,	Ltd.				

<Special Perspectives Considered in the Ex-Post Evaluation>

This project set "Preparation of urban plan using the digital topographic map or/and the orthophoto map, and its approval by the Government of Cote d'Ivoire." as one of the indicators in the Expected Goals through the Proposed Plan. As indicated in the indicator, after the project, some urban plans were prepared using the digital topographic map and the orthophoto map produced by this project and approved by the Government of Cote d'Ivoire. However, it should be considered that the other development planning project "Project for the Development of Urban Master Plan in Greater Abidjan" (2013-2015) also contributed to achieving the indicator because the Expected Goals through the Proposed Plan of the project included the same indicator.

1 Relevance

<Consistency with the Development Policy of Cote d'Ivoire at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policy of Cote d'Ivoire of "The National Development Plan" (2012-2015) declaring preparation of public facilities map and road infrastructure map as a prioritized project for urgent reconstruction at the time of ex-ante evaluation and at the time of project completion.

<Consistency with the Development Needs of Cote d'Ivoire at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Cote d'Ivoire's development needs of execution of urban planning and development on the basis of highly accurate data in order to replace and rehabilitate the deteriorated infrastructure in Abidjan.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy for Cote d'Ivoire (2013), which was under consideration at the time of ex-ante evaluation, prioritizing "acceleration of economic growth" including urban infrastructure in Abidjan as one of the two priority areas. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Objectives at the time of Project Completion>

The objectives of the project were achieved by the time of project completion. A series of items related to the digital topographic map of Abidjan city and its surrounding was produced, such as a set of aerial photos, a set of 1:5,000 scale digital orthophoto data, a set of result

<sup>&</sup>lt;sup>1</sup> The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

of ground control point survey (data), a set of result of aerial triangulation (data), a set of 1:2,500 scale digital topographic maps (data), a set of 1:2,500 scale digital topographic data, and a set of technical specification (Cartographic Symbology and Application Rules) (Output 1). The capacity development of counterpart personnel was carried out, and they acquired the expertise in the technical target areas at a certain level, including aerial photography, ground control point survey, aerial triangulation, and etc. (Output 2). On top of these, some suggestions for organizational enhancement were proposed, such as updating of the digital topographic map and orthophoto map produced by the project, reinforcement of the communication infrastructure for WebGIS, and so on (Output 3).

<Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

The proposed plan has been utilized at the time of ex-post evaluation. The digital topographic map and the orthophoto map developed by the project have been sold to the various organizations, including the government authorities of the National Office of Technical and Development Studies (BNETD) and the Directorate of Infrastructure an Transport of BNETD (BNETD-DIT) and the Côte d'Ivoire Water Utility (SODECI) and the development partner such as the African Development Bank (AfDB).

However, as a budget for updating the maps has not been allocated to CIGN, CIGN has yet to update the maps even at once since the project completion.

Following the suggestions proposed as Output 3, the communication infrastructure for WebGIS was reinforced in order to make it possible for anyone to see and buy WebGIS on the internet. Also, in order for the Government of Cote d'Ivoire to formulate its development plans, tourist map, hazard map, road management data, and data for the development of airports and harbors were created. Yet, technical trainings and seminars on GIS have not been provided to the staff of CIGN because, according to CIGN, the staff has pragmatic experiences and sufficient qualifications.

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

The expected goals through the proposed plans has been achieved. Urban plans using the digital topographic map or the orthophoto map were prepared through projects implemented by different organizations such as JICA and Prime Minister's Office, and they were approved by the Government of Cote d'Ivoire. Also, development projects using the digital topographic map and the orthophoto map were formulated and have been under implementation.

<Other Impacts at the time of Ex-post Evaluation>

No other positive and negative impacts were observed at the time of ex-post evaluation.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is high.

Status of Achievement of Utilization Status of the Proposed	Plan and Expected Goals through the Proposed Plan

Status of Achievemen	t of Utilization Status of the Proposed Pla	in and Expected Goals	s inrough the Proposed Plan
Aim	Indicators		Results
	· ·	<ul> <li>The digital topogr by the project hav</li> <li>CIGN did not h formulated by using</li> </ul>	Achieved raphic map and the orthophoto map developed to been sold to a wide range of organizations. ave any information related to plan/project ng the digital topographic map. The digital topographic map and the orthophoto
		Item The digital topographic map The orthophoto	Selling places PFO Africa, Cabinet MERLIN, Cabinet TERRABO, BNETD, SODECI, African Development Bank, Gauff Consultant Afrique BNETD-DIT
Plan: Urban infrastructure development has	1) Preparation of urban plan using the digital topographic map or/and the orthophoto map, and its approval by the Government of Cote d'Ivoire.	<ul> <li>Urban plans us orthophoto map y and they were ap <the digital="" li="" topo<=""> <li>JICA "Projecting in Greater Ab</li> <li>Prime Mini Municipality</li> <li>The orthophoto</li> <li>The World Ba</li> </the></li></ul>	Achieved sing the digital topographic map or the were prepared through the following projects, proved by the Government of Cote d'Ivoire. graphic map> et for the Development of Urban Master Plan bidjan" (2013-2015) ster's Office "Emergency Plan of the of Abobo" (2016) map> ank "Urban Development Project" (2018)
	projects in each sector such as road, water and sewage, and other infrastructure developments, using the digital topographic map and the orthophoto map	<ul> <li>(Ex-post Evaluation)</li> <li>The developmen and the orthopho the following situ</li> <li>JICA grant a d'Ivoire-Japa construction</li> <li>JICA ODA lo Intersections evaluation</li> <li>AfDB "The</li> </ul>	Achieved t projects using the digital topographic mar to map were formulated and have been under
Source: Final Report Summary, interview	v and questionnaire with CIGN		
Efficiency			
			cost slightly exceeded the plan (ratio again
e plan: 106%). The outputs were prod	luced as planned. Therefore, the effic	iency of the project	is fair.

4 Sustainability

#### <Policy Aspect>

"The National Development Plan" (2016-2020) sets the prioritized areas including development of infrastructures harmoniously distributed on the national territory and preservation of the environment. As the project aimed at producing the digital topographic map and the orthophoto map for preparation of urban plan in the Greater Abidjan, it has been backed up by the national policy. <Institutional Aspect>

There has been a change in the institutional setting for operating, maintaining, and updating the digital topographic map and the orthophoto map developed by the project. Although CCT was the organization which plays the role at the stage of project implementation, it was transformed to CIGN after the project completion. Thus, CIGN has taken the role at the time of ex-post evaluation. 40 staff members have been deployed there. According to CIGN, the number of staff members has been sufficient because they have relevant expertise and have performed their roles without any major problems.

<Technical Aspect>

As mentioned above, as the staff members of CIGN have relevant degree and experiences, they have sustained the necessary knowledge and skills for operating, maintaining, and updating the digital topographic map and the orthophoto map developed by the project. In addition, they have an internal training system on the maps, except for GIS, for a technical transfer within the organization.

Some of the manuals (Leveling and Aerial photography) produced by the project still have been utilized to develop an urban plan, while the rest of the manuals (The GPS observation, Installation of aerial signal markings, and Pricking) are unlikely used as CIGN has not recognized them. Also, the technical specification (Cartographic Symbology and Application Rules) produced by the project has been continuously used to reflect symbols on a map.

<Financial Aspect>

The CIGN had not received a budget from the Government of Côte d'Ivoire for a long time. However, the National Office for Technical Studies and Development where CIGN belongs postulates and obtains contracts whose remuneration ensures its operation, thereby CIGN is able to operate and maintain the digital topographic map and the orthophoto map developed by the project with the budget, which can be confirmed by the above-mentioned status of the project's effectiveness/impact and sustainability. However, to update the maps needs a further budget, and even though CIGN has made the requests to Ministry of Economy and Finance, the budget has not been allocated yet even at once since the project completion. The situation is likely to be continued in the upcoming few years. <Evaluation Result>

Therefore, the sustainability of the project effects is fair.

5 Summary of the Evaluation

The digital topographic map and the orthophoto map developed by the project have been utilized by different organizations such as JICA, AfDB, and the government authorities of Cote d'Ivoire. As for sustainability, although the budget for operating and maintaining the maps has been allocated, the one for updating the map has yet to be allocated since the project completion. As for efficiency, the project cost slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

Due to the lack of budget of CIGN, the digital topographic map and the orthophoto map generated by the project have not been revised, even once since the completion of the project. The relevance of maps will decrease over time if they are not updated. However, the update plan and its budget requested from CIGN to Ministry of Economy and Finance indicate CIGN's will to update and sustain the project effects. Therefore, in order to enhance the sustainability of the project, it is recommended that CIGN diversify its sources of funding and seek the assistance of donors (UNDP, AfDB, etc.) or other partners to carry out the implementation of maps updating.

Lessons Learned for JICA:

Even though it is ideal to update the maps produced by the project every three year, CIGN has not been able to update the maps due to lack of its budget. It is recommended that JICA closely monitor the process of securing the budget at the time when the budget distribution is carried out.



Mapping software and user licenses offered by JICA





Map printer offered by JICA

Country Name	Project for the Development of Urban Master Plan in Greater Abidjan							
Republic of Côte d'Ivoire	J I J							
I. Project Outline								
Background	After the independence of Côte d'Ivoire in 1960, the country achieved high GDP growth rate and the City of Abidjan achieved the growth to be the political and economic center of the country. However, the problems associated with urbanization had been aggravated in Abidjan during the decade long civil war since 2002. The issues of uncontrolled urbanization had constrained reconstruction and stabilization of the country. In particular, the population growth pressure brought about the large-scale urban poverty with 200 million urban poor and the disordered urban development. There were considerable disparities between the actual situation and the latest urban plan prepared in 2000. Therefore, there was a necessity for formulating an updated urban development plan based on the results of assessment and analysis of the urban plan in 2000.							
Objectives of the Project	<ol> <li>Expected goals through the proposed plan<sup>1</sup>: A sustainable urban development plan in line with the national development policies is implemented in the Greater Abidjan area.</li> <li>Expected utilization of the proposed plan: 1) The urban development plan formulated by the project is approved via an appropriate process of Cote d'Ivoire. 2) Projects targeted by the feasibility study or priority projects are implemented.</li> </ol>							
Activities of the Project	<ol> <li>Project site: Greater Abidjan area (Abidjan Autonomous District and 6 expanded communes)</li> <li>Main activities: 1) Evaluation of the master plan 2000, 2) Formulation of the Urban Master Plan for Great Abidjan, 3) Formulation of the Transport Master Plan for Great Abidjan, and so on</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Côte d'Ivoire Side</li> <li>Experts from Japan: 27 Persons</li> <li>Staff allocated: 35 persons</li> <li>Training in Japan: 12 persons</li> <li>Gperation Cost: Cost for the use of the office, etc.</li> </ol>							
Project Period	(3) Operation Cost: Cost for the use of the office, etc.         February, 2013 – March 2015         (Extended Period: October 2014 – March 2015)         Project Cost         (ex-ante) 400 million yen         (actual) 636 million yen							
Implementing Agency	Ministry of Construction, Housing, Sanitation and Urban Development (MCLAU) (The name of ministry changed to the Ministry of Construction, Housing and Urban Development (MCLU: Ministère de la Construction, du Logement et de l'Urbanisme in July, 2018)							
Cooperation Agency in Japan	Oriental Consultants Global Co., Ltd., Japan Development Institute, International Development Center of Japan, Asia Air Survey Co., Ltd.							

1 Relevance

<Consistency with the Development Policy of Côte d'Ivoire at the Time of Ex-Ante Evaluation >

The project was consistent with the development policies of Côte d'Ivoire at the time of ex-ante evaluation. The "National Development Plan" (2012-2015) included a strategy aiming at provision of an appropriate environment and livelihood for all the citizens in the country. <Consistency with the Development Needs of Côte d'Ivoire at the Time of Ex-Ante Evaluation >

The project was consistent with the needs of Côte d'Ivoire at the time of ex-ante evaluation. There was great needs for improving the urban problems in the Greater Abidjan area caused by the disordered urbanization and urban development through an appropriate urban planning for the area.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA policy for Côte d'Ivoire" prioritizing to support acceleration of economic growth including improvement of functions of Abidjan<sup>2</sup>.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Objectives at the time of Project Completion>

The objectives of the project were partially achieved by the time of project completion. The urban development plan approved in 2000 was evaluated (Output 1) and the Urban Master Plan for Greater Abidjan for 2030, including the Transport Master Plan, was developed (Output 2). However, a feasibility study on the high priority project was not be able to be conducted because the selection of the high priority projects was not agreed at the inter-ministerial meeting as scheduled (Output 3).

<Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

The proposed plan has been utilized at the time of ex-post evaluation. The Urban Plan of Greater Abidjan (Schéma Directeur d'Urbanisme du Grand Abidjan: SDUGA) were approved by the Decree No. 2016-138 on March 9th, 2016 (Indicator 1). Most of the priority projects selected in SDUGA have been under implementation by the donors' support including JICA and the public-private partnership (PPP) (Indicator 2).

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

<sup>2</sup> MOFA, "Country ODA data book 2012".

<sup>&</sup>lt;sup>1</sup> The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

The expected goals through the proposed plan have been achieved. Out of the 18 projects under implementation, 2 projects have been already completed, 6 projects with work in progress and 3 projects with work starting (Indicator 1). As for improvement of traffic jam (Indicator 2), the road length has been increased by the projects implemented under the proposed plan and the public transportation service has been expanded. Abidjan Transport Company (Société des Transports Abidjanais: SOTRA) has increased their bus fleet and two new lagoon transport companies have been established for the last two years. Those have contributed to increase in the number of public transport passengers and to mitigate the traffic jams in the area though the data of the public transport passengers were no available. Also, although there is no statistic data on traffic volume, it is reasonably presumed that the completed road projects have had a positive impact on reduction of the traffic jams in the project areas.

<Other Impacts at the time of Ex-post Evaluation>

According to the questionnaire result provided by the counterparty agency, the main benefit perceived by them is regarding the unified visualization among the stakeholders about the future development plan of Greater Abidjan, The Project contributed to improving understanding of the different sector master plans by contemplating the information into one plan. The project also contributed to improving the quality of communication among the stakeholders (not just among the government agencies, donors, but also with the private sector). It allowed the Ivorian government to communicate more cohesively with their partners, as most priority projects were numbered and given priority categories. Finally, as regards to the environmental and social effects, the Project did not involve any feasibility study; thus, there is no direct effect due to the Project.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is high.

Status of Achievement of Utilization S	Status of the Proposed Plan and Ex	spected Goals through the Proposed Plan
Status of Hemevement of Othization	Status of the Proposed Plan and Ex	apeeted Gould infough the Proposed Plan

Aim		Indicators	Results
Jtilization Status of the Proposed Plan:	1)	The urban development plan is	(Ex-post Evaluation) Achieved
) The urban development plan		approved as the government plan.	The Urban Plan of Greater Abidjan (Schéma Directeur
formulated by the project is			d'Urbanisme du Grand Abidjan: SDUGA) were approved by the
approved via an appropriate process of Côte d'Voire.			Decree No. 2016-138 on March 9th, 2016
Projects targeted by the feasibility	2)	Priority projects and/or projects	(Ex-post Evaluation) Achieved
study and/or priority projects are	Í	targeted by the feasibility study are	18 priority projects have been under implementation by the donors
implemented.		started.	support including JICA and PPP:
implemented.		started.	Public transport: 2 projects
			Road: 12 projects
			Improvement of intersections: 4 projects
Expected Goals through the Proposed	1)	Implementation status of the	(Ex-post Evaluation) Achieved.
Plan		proposed projects	The 18 priority projects under implementation have been in the
A sustainable urban development plan		1 1 1 5	following status:
			Preparatory work in progress: 1 project
n line with the national development			Agreement of execution signed: 1 project
olicies is implemented in the Greater			<ul> <li>Call tender phase: 5 projects</li> </ul>
Abidjan area.			Work starting: 3 projects
			<ul> <li>Work in progress:6 projects</li> </ul>
			Work completed: 2 projects
	2)	Improvement of traffic jams (Road	(Ex-post Evaluation) Achieved
		area ratio and the number of public	The road length has been increased by the abovementione
		-	projects.
		transport passengers)	Abidjan Transport Company (SOTRA) increased the bu fleet
			> Two new lagoon transport companies have been established.

3 Efficiency

Both of the project cost and period exceeded the plan (ratio against the plan: 159% and 130%, respectively). The outputs were decreased from the planned ones because the planned feasibility study on the high priority project had not been conducted due to the time consuming process to make consensus on the selection of the priority projects at the inter-ministerial meeting. On the other hand, during the latter part of the project, under the circumstances of post-crisis after the establishment of Ouattara administration in 2011, in order to rapidly resume the development of the country, JICA and the study team decided to conduct pre-FS of a priority transport project in this project. This is the main reason why the project cost and period had exceeded. Therefore, efficiency of the project is low 4 Sustainability

<Policy Aspect>

"The National Development Plan" (2016-2020) prioritizing development of strategic infrastructure has endorsed promotion of urban development in the Greater Abidjan area.

<Institutional/Organizational Aspect>

The Department of Urban Planning of MCLU has 44 staff members but the number of staff has not been sufficient. Since the department has been involved in all urban development projects in a crosscutting manner, the number of senior staff, in particular, has not been sufficient to address all requests. Therefore, the contract staff has been recruited in order to support the tasks of the department. Besides, the urban transport component has been implemented by the Ministry of Transport. A new agency (AMUGA: Autorité de la mobilité urbaine dans le Grand Abidjan) for the transport development was established by the Decree No.2019-100 of 30 January 2019 and will be operational by the appointment of the senior executives. Also, the transport infrastructure projects have been implemented by the implementing agencies such as Agency of Road Management (AGEROUTE: Agence de Gestion des Routes) under the Ministry of Equipment and Road Maintenance (formerly Ministry of Infrastructures), and the Ministry of Transport. <a href="#"></a> (Technical Aspect>

MCLU has sufficient expertise in planning and reviewing urban development plans and their staff has sustained the technical capacities in urban development management through in-service training and seminars as well as workshops. The training sessions cover urban planning, urban management and Geographic Information System (GIS) and so on. Also, the executing agencies such as AGEROUTE and DGTTC (Direction Générale des Transports Terrestres et de la Circulation) have sustained proven experience in urban development projects.

## <Financial Aspect>

For urban development in the Greater Abidjan area, the budgets have not been sufficient to implement priority projects because the state budget to allocate the projects has been limited to cover all the planned development projects in general (the budget allocated from the partner agencies for the realization of public transport projects had been around 546.1 Billion CFA Franc (XOF), which is around 101.8 Billion Japanese Yen (JPY), according to the information provided by the Ministry of Transport). On the other hand, the priority project have been implemented by the financial supports by the donors including JICA.

<Evaluation Result>

In light of the above, there have been problem observed from the institutional/organizational and financial aspects of the implementing agency. Therefore, the sustainability of the project effects is fair.

#### 5 Summary of the Evaluation

The project has partially achieved its objectives but the urban development plan formulated by the project has been utilized through the implementation of the priority projects in the plan. As for sustainability, the number of staff and the budget have not been sufficient for the implementation of the urban development plan. As for efficiency, the project cost and the project period considerably exceeded the plan. Considering all of the above points, this project is evaluated to be partially satisfactory.

#### III. Recommendations & Lessons Learned

## **Recommendations for Implementing Agency:**

## For the implementation of this Master Plan, the Executing agencies should:

- set up an institution for coordination, execution and monitoring for the smooth and effective implementing of the Master Plan, as it involves many different Ministries.
- coordinate with the local governments (the communes) and formulate a more detailed plan for each local governments in order to effectively implement the Master Plan, as the Urban Master Plan of Greater Abidjan concerns not only the central government.
- track the number of realized projects and consider the update of Transport Master Plan in coordination with the Ministry of Transport, given the rapid realization of priority projects.
- update the masterplan taking into considerations the aspects of resource mobilization more in detail, in order to further facilitate its realization.

## Lessons Learned for JICA:

For the smooth completion and success of projects similar to this Master Plan, JICA:

- should consider that the rapidity of evolution of Urban Development may overtake forecasts and pay attention to forecasts of urbanization at the time of project planning and ex-ante evaluation.
- better support to establish a coordination institution with dedicated Ministries, structures and staff in order for the recipient country to implement and revise the plan in the post project period.
- better involve the stakeholders from the formulation stage to the implementation stage of a master plan.
- better consider issues of resource mobilization, for increasing the probability of realization of the indicated plans in a masterplan
- for masterplans involving local governments (or communes), JICA better consider how the detailed plans of each local governments will be formulated. JICA may assist them, depending on the scope of a project and environmental and social category of a project.
- for masterplans involving multi-sector issues, JICA better consider a formulation policy including schedules of individual master plans that are not included in the target sectors under a project, in order to ensure feasibility of the projects listed in an urban development master plan to be proposed by a project. Similary, JICA better consider how to make adjustment, coordination and/or alignment among the master plans for the individual sectors in order to ensure consistency of the urban development. If necessary, it is preferrable to support the recipient government to establish a coordination mechanism to formulate and implement those sub-sector master plans.
- better incorporate a public relations component in a project in order to enhance recognition about the contents of a masterplan.



A target area of the urban development plan: Slum in Adjame Commune in Abidjan



A target area of the urban development plan: Congestion in Plateau Commune in Abidjan in the evening

Country Name				conducted by Europia Onice. Jule, 2020			
Federal Democratic Rep of Ethiopia	ublic	The Project for Formulating Master Plan on Development of Geothermal Energy in Ethiopia					
I. Project Outline							
Background	wind energ surve geoth poter data unifc Unc assis asses	e Ethiopian electric sector addressed development of l power, with recognition of the importance of e gy resources, geothermal energy had become mor eys were commenced in Ethiopia in 1969 and nermal. However, only two sites were being devel ntial sites had been surveyed by various developm accumulation and comprehensiveness were not orm standards. der this circumstance, the Government of Eth tance in formulating a master plan for geoth ssment, prioritization of development and technica	nergy diversit e important as the surveys oped towards ent partners, v sufficient to iopia requested nermal develo al capacity bu	ty and energy mix. Among the domestic s a baseload power. Geothermal potential had identified more than 16 promising commercial operation. Since geothermal with different survey targets and methods, conduct resource assessments based on ed the Government of Japan technical opment including geothermal resource ilding for geothermal development.			
Objectives of the Project	2.	<ol> <li>Expected Goals to be achieved by utilization of the proposed plan<sup>1</sup>: Geothermal power development in Ethiopia will be promoted.</li> <li>Expected utilization of the proposed plan by the project: The capacity of GSE will be developed and ready to commence geothermal development projects.</li> </ol>					
Activities of the Project	1. 2. 3.	Project site: Addis Ababa and 16 potential promis Main activities: Data collection and desk review, Japan and database and masterplan development Inputs (to carry out above activities) nese Side Experts from Japan: 11 persons Training in Japan: information is not confirmed Equipment: Vehicles, MT probe	ing geotherma nation-wide Ethiopian Si - Staff a person Geoph	survey of geothermal energy, training in ide allocated: 10 Professional in average			
Project Period	September 2013-May 2015		Project Cost	(ex-ante) 180million yen (actual) 236million yen			
Implementing Agency Cooperation Agency in Japan	NIPI	ogical Survey of Ethiopia (GSE) PON KOEI CO., LTD., Geothermal Enginee elopment Co.,Ltd.	ring Co., Lt	d., Sumiko Resources Exploration &			

<Special Perspectives Considered in the Ex-Post Evaluation>

As there is no ex-ante evaluation sheet prepared, no indicators were set for this project. Under this ex-post evaluation, information on "Utilization Status of the Proposed Plan" was collected in accordance with examples of similar master plan type projects, and to what extent the proposed plan was utilized was assessed accordingly.

1 Relevance

<Consistency with the Development Policy of Ethiopia at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development policy of Ethiopia. Under the five-year "Growth and Transformation Plan" (GTP) (2010/11-2014/15), the strategic directions of the energy sector were development of renewable energy, expansion of energy infrastructure, and creation of an institutional capacity that can effectively and efficiently manage such energy sources and infrastructure. The main objective of the energy sector was to meet the demand for energy in the country by providing sufficient and reliable power supply that meets international standards at all time.

<Consistency with the Development Needs of Ethiopia at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with the development needs of Ethiopia for geothermal development. At the time of ex-ante evaluation, the geothermal development was limited to only two sites despite 16 potential sites had been identified. At project completion, the "Ethiopian Power System Expansion Master Plan" (2014) forecasted that the energy demand would grow from 1,445 GWh in 2013 to 146,691 GWh in 2037.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy to Ethiopia. Socio economic infrastructure was one of the prioritized areas under the "Country Assistance Policy to the Federal Democratic Republic of Ethiopia" (2012).

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Objectives at the time of Project Completion>

At project completion, the all outputs were achieved, as (i) Geothermal database was constructed using G\*BASE (Geothermal data base) software to systematically store various geothermal data, and (ii) A Master Plan for geothermal energy was formulated. The master

<sup>&</sup>lt;sup>1</sup> The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-tolong-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

plan for geothermal energy obtained acknowledgment by the Ministry of Water Irrigation and Energy to use as an input for future activities. The Masterplan prioritized (ranked) the geothermal prospects of the 22 sites, set targets for short, medium and long term geothermal power development and including other factors necessary for MP preparation.

< Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

Most of the recommendations and prioritization of the project have not been materialized. The project concluded that 610 MW of the priority S<sup>2</sup> should be developed from 2014-2018. Tendaho-2 (Ayrobera), Boseti and Meteka sites from priority A and B were nominated as priority sites. The first two sites (Tendaho 2 and Boseti) were proposed to conduct well test as early as possible. However, no power generation has started at Priority S sites until now. Except the surface exploration, there is no development in the three priority sites. Main reasons for the slow progress in the public sector are limited capacity in procurement, excess time consumed in environmental studies, slow implementation in resettlement plan etc. And in private sector, very long negotiation to settle Power Purchase Agreements and so on. According to GSE, measures on institutional restructuring and strengthening have been planned and maybe implemented in the short term and efforts have been underway to shorten negotiations and emplacement of new regulation to secure investment. However, there is no clear schedule about the plan and the implementation

The contents of the final report been utilized for geothermal development to some extent. According to the Master Plan, GSE is going to develop 22 sites instead of its initial plan to develop 16 sites. The environment issues raised in the Master Plan and proposed establishment of geothermal enterprise (Ethiopian Enterprise for Geothermal Energy Development, EEGeD) is considered by GSE. <Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

At the time of ex-post evaluation, the installed capacity of 7.2 MW has been developed, though 700 MW was the targeted installed capacity in 2018. The main problems are the long procurement procedure in government offices and the delay of formulating laws & regulation to determine the involvement of private sector.

<Other Impacts at the time of Ex-post Evaluation>

According to GSE, no negative impact on the natural environment by this project has been observed, and no land acquisition and resettlement occurred.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

3 Efficiency

Both the project cost and project period slightly exceeded the plan (the ratio against the plan: 131%, 117%). The project period was extended due to due to administrative delays in clearance of equipment. The outputs were produced as planned. Therefore, the efficiency of the project is fair.

# 4 Sustainability

<Policy Aspect>

There have been geothermal law and policy, legal and regulatory framework to support the geothermal power development. "Geothermal Resource Development Proclamation No. 981/2016" was introduced on September 16, 2016 to govern Ethiopians geothermal sector. Also, the "Geothermal Policy, Legal and Regulatory Framework" was formulated to give priority for geothermal energy development. The "National Energy Policy" issued in 1994 states that "solar and geothermal energy will be used, wherever possible for process heat and power generation". At the time of ex-post evaluation, the policy was being revised and waiting for endorsement from the concerned government bodies. Under the first policy objective, the revised policy states that: "Maximize development and utilization additional indigenous energy resource such as bio energy, wind, solar, geothermal, and hydro and hydrocarbon".

#### <Institutional Aspect>

Organizational setting for geothermal development is as follows:

·GSE conducts surface exploration and exploratory drilling and testing, if required.

· Ethiopia Electric Power (EEP, a power generating company) has various drilling projects under preparation for subsequent power plant construction.

· Ethiopia Energy Agency (EEA) regulates both public and private geothermal exploration and developments.

However, there have not been appropriate demarcation and the mandate overlaps. Necessary personnel for each agency has not sufficiently deployed. At EEP the staffing plan for deployment has not yet been approved, at EEA, due to low salary scale, it has been difficult to find employs from the market and at GSE, also salary scale and incentives have been low to obtain sufficient qualified personnel.

EEGeD, which was recommended to be established by the project, has not been established, as the government thinks necessary financial and in-kind inputs required for its functionality should be available. Such resources have been still being looked for, nonetheless, GSE submitted proposed to the government to establish it.

<Technical Aspect>

The technical level of each responsible agency has not been sufficient enough and technical level needs to be improved through time. For example, GSE needs foreign expert coaching to use instrumentation and interpret in geology, geochemistry and geophysics. Also, supervisors are required to conduct deep drilling. In case of EEA, additional professionals are required for evaluation of applications and follow up.

There has been number of efforts to sustain the effects by way of on the job training (OJT) and trainings given overseas. While such efforts need continue in the future too, there is still a need to further strengthen GSE technical level. After the project was completed, in order to solve the capacity problem at GSE, JICA has sent GSE's staff to Japanese universities and institutes for long term training since 2015.

#### <Financial Aspect>

Some budget has been secured for geothermal development (mainly for drilling). However, it is not enough to conduct all the planned development mentioned above..

<Evaluation Result>

<sup>&</sup>lt;sup>2</sup> Priority S projects are committed projects, Priority A projects are classified as "very high economy", and Priority B projects are classified as "high economy".

There have been some problems observed in the institutional, technical and financial aspects. Therefore, the sustainability of the effects through the project is fair.

## 5 Summary of the Evaluation

At the project completion, all the outputs were achieved as (i) Geothermal database was constructed using G\*BASE software to systematically store various geothermal data, and (ii) A Master Plan for geothermal energy was formulated. After the project was completed, most of the recommendations and prioritization of the project have not been materialized yet. However, contents of the final report of the project have been utilized for geothermal development to some extent. As for the sustainability, some problems have been observed in terms of the institutional, technical and financial aspects. As for the efficiency, both the project cost and project period slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

#### III. Recommendations & Lessons Learned

#### **Recommendations for Implementing Agency:**

There is no clear demarcation of duties and responsibilities among concerned organizations regarding geothermal development. This creates overlap of duties and responsibilities that result in duplication of effort, unnecessary expense and accountability problem. During the ongoing restructuring of the organizations, all stakeholders who are involved in geothermal development (Geological Survey of Ethiopia, Ethiopian Energy Agency and Ethiopian Electric Power) are recommended to set clear demarcation of duties and responsibilities among all actors according their professional and financial capacity to increase efficiency and save resources.

#### **Lessons Learned for JICA:**

After the project was completed, in order to solve the capacity problem at GSE, JICA has sent GSE's staff to Japanese universities and institutes for long term training since 2015. However, the students are still under study and GSE still have a capacity problem in performing all the necessary activities. An arrangement should have been made to have such trained manpower been assigned to proper positions before the project finished.





Aluto-langano Geothermal Site

Country Name The Project for the Improvement of Solid Waste Management in the					anagement in the West Bank		
Palestine		Inc	riejeet for the improvement of 50		unagement in the West Dunk		
I. Project Outline							
Background	In the West Bank of Palestine, Joint Service Councils (JSC) provide solid waste management services for its member local government units. At the time when the project was proposed, sanitary landfills were not available except in Jenin and Jericho. Most JSCs were facing difficulties in transferring solid waste to the landfills due to financial issues and ineffective waste collection services. As a result, open dump sites existed. The open burning and the open dumping had bad impacts on the environment and health conditions of residents. In addition, the existing landfill in Jericho was expected to fill up in near future. Therefore, the reduction of disposal waste and expansion of existing landfill in Jericho were urgently required.						
Objectives of the Project	This project aimed to improve the JSC's waste collection and transportation capacity, to promote the closure of random dumpsites and to reduce waste which ends at landfills by provision of waste collection /transportation equipment and construction and expansion of Solid Waste Management (SWM) related facilities <sup>(1)</sup> with technical assistance on recycling activities, thereby contributing to the improvement of the public sanitary condition and the health conditions of the people in Jenin, Hebron, Jericho, Salfit and Tulkarem. (1) Due to unsuccessful bidding, expansion of landfill site and construction of transfer station and material recovery facility in Jericho, which were included in the project scope at the time of ex-ante evaluation, were later excluded from the project, but executed separately under the assistance of the United Nations Development Programme (UNDP).						
Contents of the Project	<ol> <li>Project Site: Joint Service Councils of Jenin (including Zahret Al-Finjan Landfill), Hebron, Jericho (including Waste Transfer Station and Material Recovery Facility), Salfit and Tulkarem</li> <li>Japanese Side: Procurement of equipment and management guidance.*Facility construction such as transfer station, etc., was excluded as described above.</li> </ol>						
Project Period	E/N DateDecember 8, 2012G/A DateDecember 8, 2012March 31, 2015 (Revision)1		Completion Date	May 8, 2016 (Completion of soft-component activities)			
Project Cost	E/N	Grant I	Limit / G/A Grant Limit: 800 million yen, Ac	tual Grant Amo	ount: 799 million yen		
Executing Agency			Local Government (MOLG)		-		
Contracted Agencies	Main Contractor: Toyota Tsusho Corporation Main Consultant: NJS CO., LTD.						

<Constraints on Evaluation>

• Due to the state of emergency caused by coronavirus disease 2019 (COVID 19), all information was obtained through questionnaires to JSCs and MOLG and follow up phone calls/emails to MOLG between April and June, 2020. No interviews with JSCs and citizens or site visits were conducted.

• Due to the delay of project execution caused by the bidding failure, expansion of landfill and construction of transfer station and material recovery facility (for recycling) in Jericho were excluded from the project, but separately executed under the UNDP project and completed in December 2016. The effectiveness/impact and sustainability examined under this study include the outcome generated by the UNDP project.

• In addition, the outcome of the project studied under this ex-post evaluation is the combined effects with the subsequent JICA Technical Cooperation Project, namely, "Project for Technical Assistance in Solid Waste Management in Palestine (2015-2019)".

<Special Perspectives Considered in the Ex-Post Evaluation>

[Use of Supplementary Information]

• In addition to the two indicators set at ex-ante evaluation, this evaluation uses the following two supplementary information to incorporate effects of waste collection equipment and soft component in evaluation of effectiveness/impact, such as "Total number of dumpsites" (Supplementary Information 1), Utilization of collection equipment (Supplementary Information 2)

[Target Year for the Effectiveness]

• Due to the changes of project components, the project completion was delayed. As a result, the target year for the Effectiveness, which is three years after the project completion as stated in the ex-ante evaluation sheet, is shifted to May 2019.

1 Relevance

<Consistency with the Development Policy of Palestine at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, this project was consistent with "The National Strategy of Solid Waste Management (2010-2014)", which aimed to develop comprehensive, independent and growing solid waste management system including the development of wide area solid waste collection and disposal systems, the start of 3Rs (Reduce, Reuse and Recycle), as well as profitability improvement of recycling and business operation.

<sup>&</sup>lt;sup>1</sup> While Grant Agreement (G/A) was signed on December 8, 2012, the project implementation plan was reconsidered due to the unsuccessful bidding. Therefore, the G/A was revised on March 31, 2015.

<Consistency with the Development Needs of Palestine at the Time of Ex-Ante Evaluation >

This project was consistent with Palestine's development needs of waste management at the time of ex-ante evaluation as described in "Background" above.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, this project was consistent with "Local Governance", one of the seven priority areas which the Japanese Government agreed to assist based on the "National Development Plan (2011-2013)" referred to in "Country Assistance Program (December 2012)".

<Evaluation Result>

In the light of the above, the relevance of the project is high.

2 Effectiveness/Impact <Effectiveness>

The project objectives were achieved through combined efforts of this project and UNDP project<sup>2</sup>. The target JSCs' waste collection and transportation capacity has improved. All JSCs increased the daily volume of waste collected compared with the baseline. The target volume was achieved by all JSCs except for Jericho and Tulkarem (Indicator 1). The number of random dumpsites decreased from 29 in 2011 to 7 in 2019 (Supplementary Information 1). Affected by the suspension of a MOLG's project to establish a new sanitary landfill in Ramallah and Al Bireh Governorate, the remaining seven dumpsites, in Salfit, could not be closed as planned. MOLG is now looking to establish a few controlled dumpsites<sup>3</sup> elsewhere as an alternative solution. All vehicles procured under this project are currently used (Supplementary Information 2).

In order to reduce the volume of waste which ends at landfill, the project planned to construct the SWM related facilities including recycling in Jericho and to provide the technical assistance on segregation of recyclables for the staff in charge. Due to the project's reduction of its scope at a later time, the SWM related facilities were built by UNDP. The project effort therefore focused on the technical assistance on segregation of recyclables only, provided by five Japanese experts. Three of them were engaged in a study in support of the development of recycling strategies for JSCs, and two supported the planning and awareness raising of source separation in Jericho. However, source separation did not take root thus, the target volume of recyclables, set for Jericho JSC, was not achieved (Indicator 2). The recycling initiative in Jericho did not sustain, as residents and businesses did not cooperate with source separation. For the residents and business people to change their behaviors, it should take a long time. It was stated that the volume of materials which could be recovered was too small to attract a business partner, as Jericho is not a large city. With this in mind, Jericho JSC reported that they still continue awareness raising activities. In addition, Jericho JSC sought partnership with private sector to recover recyclables, but such partnership has not materialized yet.

For evaluation judgment, it should be noted here that the project inputs for Indicator 2 were significantly smaller than those for Indicator 1. It was confirmed by the study that the great majority of the project effort in monetary value was to be spent for the outputs related to Indicator 1. In this context, it should be fair to consider that the primary objective of this project was to improve the waste collection and transportation capacity of JSCs, which was achieved.

<Impact>

The improved capacity of JSCs to collect and transfer the waste led to reduction of waste piling up in public spaces and contributed to the improvement of sanitary conditions and public health. No negative impact on natural environments were reported by JSCs/MOLG. Most of JSCs confirmed that the increased volume of waste collected led to the improvement of the quality of SWM service. For example, before receiving the new vehicles and equipment, the waste collection service sometimes stopped as vehicles were old and it could take a couple of days to repair. After receiving the new vehicles, the service became regular. The closure of 22 dumpsites also contributes to the improvement in environmental and sanitary conditions. The extension of the Jericho landfill implemented by UNDP enabled Jericho JSC to save the transportation cost by maintaining its access to the expanded Jericho landfill. Without this extension the JSC would have required to transport the collected waste to another landfill far away. According to MOLG, the experience gained through the project was disseminated to other JSCs in the West Bank. In addition, the success of the JSCs in SWM encouraged other local government units (LGUs) to newly organize JSC of this kind.

<Evaluation Result>

Considering the points discussed above, the effectiveness/impact of the project is high.

#### Quantitative Effects

Indicator 1: Daily volume of waste collected (in 8-hour working period)

Indicator 1: Daily volume of waste collected (in 8-hour working period) (Unit: ton/day)								
Name of JSC	Baseline	Target	Actual	Actual	Actual			
	2011	2019	2017	2018	2019			
	Baseline Year	3 Years after	1 Year after	2 Years after	3 Years after			
		completion	Completion	Completion	Completion			
Hebron	46.0	308.0	348.1	371.6	385.8			
Jenin	204.7	148.0 <sup>(1)</sup>	250.0	280.0	300.0			
Jericho	45.0	59.0	47.0	49.0	55.0 <sup>(2)</sup>			
Salfit	53.5	62.0	62.0	64.0	67.0			
Tulkarem	30.1	133.0	75.3	73.7	81.5 <sup>(3)</sup>			

Source: Questionnaire responses of JSCs

Note:

(1) The target volume for Jenin JSC was set lower than the baseline considering that it would require the additional burden for Jenin to keep the collection capacity since Jenin should deal with replacement of many collection vehicles which would reach the life-span by the target year.

covering, and a fence.

<sup>&</sup>lt;sup>2</sup>As described above, the part of project objectives, "to reduce waste which ends at landfills by the construction and expansion of SWM related facilities" was covered by UNDP project. This ex-post evaluation study considered this portion as an external factor.

<sup>&</sup>lt;sup>3</sup> Controlled dumpsites have the minimum capacity as a landfill to meet environmental requirements, including leachate and leak control capacity, daily

(2) Jericho JSC arrived slightly short in the target year because the waste previously collected by Jericho from 3 LGUs in Tubas Governorate has now been collected by Tubas JSC itself upon an agreement reached in August 2017 between Jericho and Tubas.

(3) Tulkarem JSC originally planned to increase the coverage of waste collection services from 27 % in 2013 to 100% in 2019. However, the coverage remained 60% at the time of ex-post evaluation. This is because the existing older vehicles were not performing at their full capacity.

Indicator 2: Amount of recyclables collected in Jericho JSC								
Туре	of	Baseline	Target	Actual	Actual	Actual	Actual	
recyclables		2011	2019	2017	2018	2019	2020 (May)	
		Baseline Year	3 Years after	1 Year after	2 Years after	3 Years after	4 Years after	
			completion	Completion	Completion	Completion	Completion	
Plastic		0	800	0	0	0	0	
Metal		0	200	0	0	0	0	
Source: Question	nnaire	response of Jericho J	SC				·	

#### 3 Efficiency

While the project cost was as planned, the project period exceeded the plan (ratio against plan: 100%, 158%).

The project cost was as planned, but this was made possible as a result of the reduction in the project scope as is described under the <Constraints on Evaluation>. As the cost increased due to the devaluation of JPY against USD, the quantity of equipment was reduced in order to keep the cost within the E/N limit.

The longer project period is due to the fact that no bids were submitted in response to the tender despite that attempts were made three times. A major factor was the devaluation of JPY against USD. The JPY value against USD fell by about 20% when the tender was announced for the first time, compared with the value when the E/N was signed. Cost increase of vehicle and labor, and the perception of business risk in Palestine also discouraged the potential bidders. As a result, the contract was revised to exclude the construction component, to make it more attractive. The G/A was revised to reflect the changes in March 2015.

Therefore, efficiency of the project is low.

## 4 Sustainability

## <Institutional/Organizational Aspect>

MOLG bears the overall responsibility for the SWM, while each JSC should take responsibilities for the actual implementation and operation of waste management services. Supported by relevant national policies, MOLG has maintained the structure as it was at the time of ex-ante evaluation. After the project completion, the number of staff in Directorate of Joint Service Councils (DJSC) in charge of SWM under MOLG as well as that of each JSC increased in order to cope with the high workload and for the better services. MOLG receives capacity building support from World Bank's program as well as JICA Technical Cooperation Project and the position of a few staff members are financed by the Belgium's assistance. MOLG plans to recruit additional permanent employees.

Most of staff trained by the project continued to work for the SWM service with MOLG and JSCs. According to the questionnaire, MOLG and all five JSCs responded that they have sufficient skills to implement their services. One JSC responded that their technical capabilities were enhanced by the project, such as the increased expertise and capacity for handling and management of vehicles and planning to improve efficiency of the collection service. The evaluation also looked at the existence of an established training system as an important element for sustainability. MOLG has an institutionalized training system for their staff. While some JSCs mentioned that they do not have a training system on their own, both MOLG and JSCs receive external support for staff training, and most notably JICA has been providing targeted training for JSCs through its technical cooperation projects.

In response to the questionnaire survey conducted in April-June 2020, Jenin, Hebron and Jericho JSCs reported that they have sufficient budget for the Operation and Maintenance (O&M), whereas Salfit and Tulkarem JSCs reported that they face challenges. MOLG and all JSCs are currently experiencing a difficult time because of the COVID 19 crisis. Political tensions between the Government of Israel and the Palestinian Authority (PA) may negatively affect PA's financial stability. These conditions can affect the continuity of services and the necessary investments for the future by MOLG and JSCs.

<Current Status of Operation and Maintenance>

The maintenance of procured equipment has been properly conducted. All JSCs reported that they have a maintenance plan or a policy and conduct periodical inspection. All JSCs reported that they manage spare parts appropriately.

<Evaluation Result>

Some issues have been observed in terms of the financial aspect. Therefore, the sustainability of the project effects is fair.

#### 5 Summary of the Evaluation

The project achieved its objectives, through combined efforts of this project and UNDP project. The target JSCs' waste collection and transportation capacity has improved. The daily volume of waste collected increased, and allowed for regular waste collection services. The majority of random dumpsites were closed. These results are seen to be contributing to cleaner environment and better living conditions. On the other hand, the component, which had a minor part in the project in monetary value, to promote the reduction of waste which reaches landfills, was not achieved.

As for sustainability, there was no major issue in institutional and technical aspects, but some concerns are identified in financial aspect. Regarding efficiency, the project period exceeded the plan. Considering all of the above points, this project is evaluated to be partially satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations to Executing Agency:

To: MOLG

In order to secure the financial sustainability of SWM, MOLG should continue mobilizing financial support for JSCs from Ministry of Finance as well as should continue its effort to cultivate support for SWM services from the members of the public through effective engagement of mass media, social media and other awareness activities.

For further expansion of the project effects, MOLG should continue to extract best practice exercised in successful JSCs (such as Jericho) which can be replicable to not-so-successful JSCs, and encourage the transfer of expertise and materials among JSCs.
 To: each JSC

- In order to secure the financial sustainability, it is recommended that each JSC should continue to cultivate support for SWM services from the members of the public and LGUs in an effort to improve fee collection, through effective engagement of mass media, social media and other awareness activities.

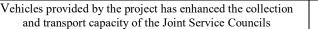
Lessons Learned for JICA:

- It is important for all JICA staff who deal with grant aid projects to thoroughly study the cases of unsuccessful tender and best practice of how to prevent it through training, seminar participation, etc. and to ensure that risk of tender failure and measures to avoid it are assessed, including assessment of the interest of potential bidders, at the planning stage. The unsuccessful tender resulted in the modification of the Original Design and a significant delay in project implementation, affecting the efficiency of the project.
- 2) It is important to encourage JICA staff members and partners to participate in trainings on project planning and evaluation which help them set realistic goal/indicators for evaluation. In addition, it is important for JICA staff members to fully discuss with consultants/experts and the Executing Agency on project goals and indicators at the planning stage.

It was mentioned in the Preparatory Survey that the project would improve (a) the health conditions of the people in target areas, and (b) Jericho JSC's financial conditions. Establishing clear evidence between the improved waste collection service and health conditions of people appears to be not feasible in the scope of the project evaluation of this kind. The statement of improving Jericho JSC's financial conditions appeared too ambitious as well. Setting too ambitious or unfeasible impact evaluation indicators make it more challenging for evaluators to conduct an objective and fair evaluation.

Photos







The expansion of Jericho Landfill, implemented by UNDP, enabled Jericho JSC to sustain their SWM services

Country Name	Miene Uvidno electric Devier Commercian Draiget in the Matner eliter area of Tecusicalna
Republic of Honduras	Micro-Hydroelectric Power Generation Project in the Metropolitan area of Tegucigalpa

#### I. Project Outline

Background	generation (: reflection of intensive dev import of for	In Honduras, there have been issues in the power sector, such as 1) high dependence on thermal power generation (57%), 2) high transmission and distribution losses (over 20%), and 3) power tariffs system without reflection of generation costs. In particular, the high dependence on thermal power generation resulted from the intensive development of small scale thermal power generation plants in the late 1990s. This led to the increasing import of fossil fuels and their soaring prices as well as the pressure on the fiscal balance due to the increasing expenditures for power subsidy.						
Objectives of the Project	To promote Tegucigalpa installations	To promote renewable energy use and improve the operation of the two target water treatment plants in Tegucigalpa Metropolitan Area (Concepción and Picacho) (through reduction of buying electricity), by installations of small-scale hydroelectric power generation facilities at the target water treatment plants, thereby contributing to socio-economic development and reduction of emissions of greenhouse gases.						
Contents of the Project	<ol> <li>Project Site: Concepción Water Treatment Plant and Picacho Water Treatment Plant in Tegucigalpa City</li> <li>Japanese side: Construction works, procurement of equipment (hydraulic turbines, generators, turbine/generator control system, etc.), technical training (water distribution from the water treatment plants and water required for power generation, operation of the water distribution plan, maintenance management).</li> <li>Honduran Side: Land acquisition, land clearance, provision of waste disposal sites, maintenance of access roads, etc.</li> </ol>							
Project Period	E/N Date G/A Date	March 18, 2013 March 18, 2013	Completion Date	December 15, 2015				
Project Cost	E/N Grant L	imit: 952 million yen	Actual Grant Amo	unt: 952 million yen				
Implementing Agency	National Autonomous Service of Aqueducts and Sewerage (SANAA)							
Contracted Agencies		Main Contractor: Hazama Ando Corporation. Main Consultants: NEWJEC Inc., Nihon Techno Co. Ltd.						

#### **II. Result of the Evaluation**

<Special Perspectives Considered in the Ex-Post Evaluation>

In the ex-ante evaluation, one of the quantitative measures of effectiveness was the reduction of CO2 emissions, which was a result of promoting the use of renewable energy (outcome). In the ex-post evaluation, this was verified as one of the expected positive impacts. <Constraints of Evaluation>

Because of the outbreak of COVID-19, information was collected through a questionnaire survey and phone interviews to make evaluation judgment in the ex-post evaluation. Site visits were not conducted.

## 1 Relevance

<Consistency with the Development Policy of Honduras at the Time of Ex-Ante Evaluation>

The Government of Honduras announced a policy to actively promote the introduction of renewable energy from the viewpoints of energy security and diversification of primary energy sources, curbing greenhouse gas emissions, and so on, in the "National Vision 2010-2038" and the "National Plan 2010-2022." Thus, the project was consistent with the development policy of Honduras at the time of exante evaluation.

<Consistency with the Development Needs of Honduras at the Time of Ex-Ante Evaluation >

In Honduras, the high dependence on thermal power was an issue to be tackled. This resulted in the expanding current account deficit associated with the increase in fossil fuel imports and the rise in fossil fuel prices as well as the larger pressure on the fiscal balance by the increase in electricity subsidy spending. The project, which aimed to promote the use of renewable energy and the efficient operation of the existing water treatment plants, was consistent with the development needs of Honduras at the time of ex-ante evaluation.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

In the "Country Assistance Policy for Honduras" (2012), "disaster prevention measures" was identified as a priority area, and the project, which aimed to mitigate the impact of climate change in the country through the promotion of the use of renewable energy, was positioned in line with this priority area. Thus, it was consistent with Japan's ODA policy at the time of ex-ante evaluation. <Appropriateness of Project Design/Approach>

In the project, the target values of the amount of power generation volume at the power generating end had been set within a certain range of the level of dam water and the amount of water pumped. However, climate change reduced the number of days of rainfall needed to maintain dam levels, and the demand for civilian water supply increased as the urban population grew. Therefore, at the time of ex-post evaluation, the operation level of the small hydroelectric power generation facilities was not attaining to the level initially expected. Although the approach itself to generate electricity using renewable energy through the construction and procurement of equipment for the small hydroelectric power generation and to improve the operation of the water treatment plants by reducing the electricity purchase amount was appropriate, it appears that the analysis of possible changes in external conditions and also target values were not sufficient at the preparatory survey and ex-ante evaluation.

<Evaluation Result>

In light of the above, the relevance of the project is fair.

2 Effectiveness/Impact

#### <Effectiveness>

The project objectives, namely promotion of renewable energy use and efficient operation of the water treatment plants, have been limitedly achieved. At both power generation plants of Concepción and Picacho, the power generation volume at the power generating end has not reached the target values of 2018 (1,650 MWh/year and 520 MWh/year, respectively) (Indicator 1). The reason for this is that the Concepcion Water Treatment Plant was continuously improved and expanded to meet the growing demand for water supply in the municipality, because the development of new water sources by the Government of Honduras was delayed, and this resulted in an increase in water delivery from the dam and then an increase in the friction loss in the conduits<sup>1</sup>. Accordingly, the effective drop was reduced. Also lowered dam levels due to reduced rainfall caused by climate changes also interfered with an effective drop that could generate electricity. Furthermore, as SANAA (implementing agency) has put the first priority on water supply, it has needed to attend the increasing demand for water supply due to the increasing population. Therefore, the power generation by the plant of Concepción has been suspended since February 2017. At the power generation facility of Picacho, the target amount of generated energy at the power generating end for 2018 was set based on water supply hours of about three to four days a week before the implementation of the project. However, at the time of ex-post evaluation, the water supply was limited to only one day a week caused by the water supply restrictions due to insufficient rainfalls, the generator's operating hours were limited. In addition, the flow rate during the water supply did not reach the generation flow rate. As a result, the power generation volume remained at only 75.2 MWh/year (126.9 MWh/year in 2019). Thus, power generation facilities of both plants have generated less electricity than planned, and the electricity cost reduction has not reached the target value (Indicator 2). It should be noted that it was not confirmed the actual performance of procured equipment in accordance with the original specifications at the ex-post evaluation.

As a qualitative effect, the operation and maintenance system of water distribution and power generation facilities by SANAAhas been strengthened. The first reason for this is that the power generation facility of Concepción was in operation until February 2017 and that of Picacho has been operated as of the time of ex-post evaluation, and those facilities have been maintained. Therefore, it can be said that the engineers for both power facilities obtained the basic knowledge of hydropower generation technology, power generation and distribution, and water distribution system operation, through the training provided in this project. Secondly, in order to strengthen the operation system for the power generation facilities, the small hydropower team was formed to be in charge of the operation and maintenance of the power generation facilities, and the following manuals and formats were developed (operation manual for the electricity business, ledgers of equipment, spare parts and fixtures, monitoring forms, operation manual of power generation equipment, inspection, and maintenance manual of water distribution equipment).

The use of renewable energy promoted by the project was expected to reduce CO2 emissions. However, as mentioned earlier, both water treatment plants have limited energy generation, and accordingly, he CO2 emission reductions have not reached the expected level (Table 1).

Among other impacts, the project was the first pilot small hydro project in Honduras to use renewable energy by utilization of unused energy produced by the water purification process. Although the technology has not yet been applied by other water treatment plants, it

	Target	Actual	Actual	Actual	Actual
	2018	2016	2017	2018	2019
Concepción	645	79.84	6.18	0	0
Picacho	203	11.61	19.59	29.40	49.62

Source: SANAA.

Note: A reduction coefficient of 391g/kWh was used to calculate CO2 emission reduction.

has been introduced to the public through newspapers and tours of the facilities for university and high school students. Besides, at the Concepción Water Treatment Plant, the additional conduits constructed by the project to reduce friction losses contributed to the increase in water pumped volume to meet the recent increasing water demand. Also, the conduits facilitated the decrease in the operating hours of booster pumps, which resulted in the reduction of power consumption for water purification through

For the construction of power generation facilities, there was an acquisition of vacant land adjacent to the existing aeration system at Concepción and vacant land on a slope along the existing water distribution channel at Picacho. Both properties were privately owned, and SANAA negotiated with the landowners following the regulations and no negative impact has occurred. There has been no negative impact on the natural exvronment.

<Evaluation Result>

In light of the above, the project objectives have not been achieved. Therefore, the effectiveness/impact of the project is low.

Quantitative Effects

Indicator				Actual 2016	Actual 2017	Actual 2018	Actual 2019
		Baseline 2012	3 years after project completion	1 year after project completion	2 years after project completion	3 years after project completion	4 years after project completion
Power generation volume	Concepción	-	1,650	204.2	15.8	0	0
at the power generating end (MWh/year)	Picacho	-	520	29.7	50.1	75.2	126.9
Electricity cost reduction	Concepción	-	225,967	15,823	1,227	0	0
(US\$/year)	Picacho	-	71,214	2,301	3,882	5,827	9,833
Source: SANAA.							
3 Efficiency							
The project cost was	as planned (rat	tio against the	e plan: 100%). C	On the other han	id, the project p	eriod exceeded	the plan (ratio a

<sup>&</sup>lt;sup>1</sup> At the Concepción site, small-scale hydroelectric power generation uses the difference in elevation between the water level of the storage dame ad the water level of the aeration system to generate electricity. In the project, additional conduits were installed in the waterway from the dam to reduce friction losses in the conduits, thereby increasing the effective drop.

the plan: 142%). The reason was that at the Picacho Power Treatment Plant, a pipe connection failure occurred during the trial period, and the equipment broke down due to a water leak. It took time to get the replacement parts from the manufacturer and then test drive them. Therefore, the efficiency of the project is fair.

#### 4 Sustainability

<Institutional Aspect>

At the time of ex-post evaluation, the waterworks were being prepared for transfer from SANAA to the Municipality of Tegucigalpa, and the water treatment plants of Concepción and Picacho remained under the control of SANAA. The power generation facility of Concepción has been stopped as mentioned above and has not been staffed. The organizational structure has not been sustained. As for the prospect of resuming operations, technical alternatives have been considered, and a trial run has been considered after an overhaul of the facility, if the power generation conditions are met. At Picacho, there have been five operators and three personnel in charge of maintenance (as well as security), with shifts that have allowed 24-hour operation. <Technical Aspect>

The operation and maintenance of the power generation facilities require knowledge of hydropower generation technology and the function and structure of power generation, distribution, and drainage facilities. For the power generation facility at Concepción, the relevant manuals and formats have not been used, as the facility has been closed. It can be judged that the staff assigned to the power generation facility at Picacho has sustained the necessary knowledge as it has been operated and maintained. The manuals for operation and maintenance of the power generation and distribution facilities, as well as water distribution facilities prepared by the project have been utilized. The ledgers were revised into a single form and have been utilized. Periodic monitoring formats have been also utilized. On the other hand, the manual and formats for the operation of the electricity business have not been used because no electricity has been sold. To maintain the technical level of the personnel, training was provided for new personnel, and daily operations have been provided through On the Job Training (OJT). Technical support has been available from ENEE if needed.

<Financial Aspect>

For SANAA's waterworks for the metropolitan area, expenditures have exceeded revenues until 2019. However, according to SANAA, payments for maintenance of facilities and equipment, including personnel costs for operating the power generation facility at Picacho, have been made appropriately. On the other hand, because of the limited power generation volume at the power generating end, the operation and maintenance expenditures have exceeded

Table 2: Revenue and en	xpenditure of SANAA
-------------------------	---------------------

	2017	2018	2019				
Revenue	776,268,631	1,122,304,152	794,343,663				
Expenditure	1,036,798,931	1,185,049,045	924,460,166				
Source: SANAA.							

revenues that would have been generated from the sale of electricity. Both the revenues and expenses have been down in 2019 due to the preparation period for the transfer of water services to the municipality.

<Current Status of Operation and Maintenance>

At both Concepcion and Picacho, the power generation facilities and main equipment (power plant buildings, water turbines, generators, divider valves, electric water intake valves, transformers and lightning rods, and so on) have been in good conditions. However, as mentioned above, the power generation facility at Concepcion has been closed and not maintained. At the Picacho power generation facility, pressure and vibration over time have caused cracks in the fasteners of the water pipes. Besides, there has been noise from the bearings on the generator shaft since the beginning, which the contractor tried to adjust but did not resolve. However, these issues have not affected operations.

In terms of maintenance of the Picacho power generation facility, the Energy Efficient Utilization Unit has conducted daily tours of the facility. The Maintenance Department has planned degradation overhauls inspections every five and 10 years, respectively. Consumables and spare parts have been prepared without problems. The daily operation record has been kept in the ledger. <Evaluation Result>

There have been slight issues in the institutional and financial aspects and current status of operation and maintenance. Therefore, the sustainability of the project effect is fair.

## 5 Summary of the Evaluation

The achievement of the project objectives, namely promotion of the use of renewable energy and the efficient operation of the water treatment plants, have been limited. This was because the conditions under which power could be generated, such as the dam water level and the pomped water volume, were not met. Regarding sustainability, one of the power generation equipment has not been operating, and accordingly, less staff has been assigned. As to efficiency, although the project cost was as planned the project period exceeded the plan. Considering all of the above points, this project is evaluated to be unsatisfactory.

#### III. Recommendations & Lessons Learned

Recommendations to Implementing Agency:

It is recommended that SANAA conduct a trial run of the Concepcion power generation equipment that has not been in operation for
more than two years, by adjusting the delivered water volume when the dam water level satisfies the required condition for power
generation in the rainy season, in order to confirm whether or not the equipment be ready for use (e.g., whether or not it be defective
or deteriorated). The condition of the equipment would be an important piece of information for SANAA and JICA to consider feasible
measures. For preparation of the trial, overhauling may pose a risk of electrical leakage. If the manufacturer needs to be present during
the overhaul, it is advisable to consult JICA Honduras Office.

Lessons Learned for JICA:

Although one of the intended quantitative effects of the project was an increase in the power generation volume at the power generation end, it was much lower than the target. This is since the conditions to be able to generate electricity, such as the dam water level and the amount of water pumped, have not been met, leading to a decrease in the number of days that power can be generated and to the suspension of operations. Therefore, in projects which introduce small-scale hydropower generation using unused energy produced at water treatment plants, it is necessary to project the increase or decrease in rainfall, the expansion of water supply demand due to the future increase in urban population, and the partner government's plan for water source development, including undesirable cases, in the preparatory survey and set the power generation conditions that could respond to long-term changes and develop the water supply plan. In relation to this, it is desirable to consider the specifications of the equipment for small hydropower generation to meet these conditions. Even small hydropower projects should be studied and examined in the same way as regular hydropower projects to a possible extent.

• In the case of renewable energy use in water treatment facilities, the public water supply corporation puts a priority on the water supply to citizens, so it cannot optimize the conditions that sacrifice water supply for power generation, which could be a secondary service. For projects which support secondary services for the implementing agency, it is necessary to confirm the possible influence caused by the trends of the primary service (water supply service in the case of this project). Therefore, it is advisable to consider several scenarios in the preparatory survey on targets for the number of days available for electricity generation and the power generation volume at the power generation end and cost-effectiveness including maintenance costs, from the viewpoint of the operation of the power generation facility, which is based on realistic water supply plans and is positioned as an adjunct to the water supply facilities.





Inside the building of Concepción power generation plant

Inside the bulding of Picacho power generation plant

Country Name		The Project for Improvement of Medical Equipment and Water Supply and Drainage Facilities for					
Republic of Tajikista	an Ma	Maternal and Child Health Care Institutions					
I. Project Outline							
Background	Tajikistan had a maternal mortality rate of 64 per100,000 live births, an under 5 mortality rate of 63 per 1,000 live births and an infant mortality rate of 52 per 1,000 live births, which were one of the worst among the Central Asian countries (UNICEF, 2012). Most of the hospitals and their medical equipment were constructed and procured in the 1960s and 1970s. In addition to the shortage of equipment, the existing equipment was severely deteriorated and damaged due to power outages and big voltage fluctuations. In addition, securing safe water at the primary health care settings was indispensable for preventing epidemics of preventable infections. However, the number of people who used updated water source was still low. Hence, there was a need to renovate water supply and drainage facilities.						
Objectives of the Project	supply an improvem	To improve the maternal and child health services by procuring medical equipment and renovating water supply and drainage facilities to health facilities in Dushanbe and Khatlon Province, thereby contributing to improvement of the health status of mothers and children. *The project objective is slightly modified in order to present more precise picture of this project.					
Contents of the Project	<ul> <li><sup>1</sup> The project objective is slightly modified in order to present more precise picture of this project.</li> <li>1. Project Site: <ul> <li>(1) Procurement of medical equipment: Maternity Hospital No.3 (Currently, Maternity Hospital No.1) in Dushanbe, Khatlon Oblast Provincial Hospital, five Number Hospitals in Khatlon Province (Jomi No. 1 Number Hospital, Jomi No. 3 Number Hospital, Rumi No. 1 Number Hospital, Rumi No. 2 Number Hospital, Shartuz No. 3 Number Hospital)</li> <li>(2) Renovation of water supply and drainage facilities: Jomi Central District Hospital and Shartuz Central District Hospital</li> </ul> </li> <li>2. Japanese side: <ul> <li>(1) Medical equipment: Anesthesia apparatus, electrosurgical unit, defibrillator, patient monitor, ventilator, ultrasound scanner, phototherapy unit, infant warmer, incubator, infant monitor, suction unit oxygen concentrator, fetal doppler, crash set, sterilizer, stethoscope, scale, stadiometer, and others</li> <li>(2) Renovation of water supply and drainage facilities and electric equipment</li> <li>(3) Technical assistance (Soft component): Setting up of a medical equipment maintenance system and development of a manual for preventive maintenance and check-up</li> </ul> </li> <li>3. Tajikistan side: To remove existing equipment and others.</li> </ul>						
Project Period	E/N Date G/A Date		March 28, 2013 March 28, 2013	Completion Date	November 21, 2015		
Project Cost			A Grant Limit: 602million yen		Actual Grant Amount: 601million yen		
Executing Agency				d Social Protection			
Contracted Agencies	Main Con	Ministry of Health (Currently, Ministry of Health and Social Protection) Main Contractor(s): Ogawa Seiki Co., Ltd, Dai Nippon Construction Main Consultant(s): Fujita Planning Co., Ltd, DAIKEN SEKKEI. INC.					

<Any special perspectives to be considered>

Target year to measure the effects: According to the ex-ante evaluation sheet, the target year to measure the expected quantitative effects was set three years after the project completion, and it was expected to be 2017. However, as the project was eventually completed in November 2015, the target was changed to 2018. Therefore, this ex-post evaluation verified the achievement level of project objectives based on the data of 2015 and 2018.

1 Relevance

<Consistency with the Development Policy of Tajikistan at the Time of Ex-Ante and Ex-Post Evaluation>

The project has been consistent with the development policies of Tajikistan. The "National Health Strategy of the Republic of Tajikistan (NHS)" (2011-2020) prioritizes maternal and child health. At the time of ex-post evaluation, improvement of maternal and child health has been continuously aligned with Tajikistan's development policies, such as NHS, "National Development Strategy of the Republic of Tajikistan (NDS)" (2016-2030), "Mid-Term National Development Strategy of the Republic of Tajikistan (MtDS)" (2016-2020). They prioritize improvement of accessibility, quality and efficiency of health services, which include upgrading of medical equipment and infrastructures of medical facilities. Enhancing child health and reducing infant and child mortality, as well as strengthening the system of maternal health are set as main priority actions.

<Consistency with the Development Needs of Tajikistan at the Time of Ex-Ante and Ex-Post Evaluation >

The project has been consistent with the development needs of Tajikistan for improvement of the maternal and child health. At the time of ex-ante evaluation, the maternal mortality rate, the under 5 mortality rate, and the infant mortality rate in Tajikistan were one of the worst among the Central Asian countries. At the time of ex-post evaluation, the needs for the project have been still high. The recent trends have shown gradual reduction of maternal, under 5, infant and neonatal mortalities. However, the mortality rates have been one of the worst in the region and it is estimated that Tajikistan will not be able to achieve the related Sustainable Development Goals (SDGs) by 2030. <Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA Policy to Tajikistan. The rural development including maternal and child health was one of the prioritized areas under the "Country Assistance Policy for Tajikistan" (2012)

#### <Evaluation Result>

In light of the above, the relevance of the project is high.

# 2 Effectiveness/Impact

### <Effectiveness>

The project achieved its objectives, as most of the target values of indicators for the expected quantitative effects were achieved, although many of the target hospitals have experienced the recent overall trend of decrease in the number of births in the country.

As for the Maternity Hospital No.1 in Dushanbe, significant increase in the number of ultrasound examinations and significant reduction of referrals to other medical institutions indicate the maternal and child health service improvement at the hospital. At the Khatlon Oblast Provincial Hospital, significant increase in the number of ultrasound examinations was possible due to the project, and it improved the services not only for children but also for mothers. As for the Jomi Central District Hospital and Shartuz Central District Hospital, although the project achieved 100% water supply at facilities, the target values for the other indicators such as the numbers of deliveries and pediatric inpatients were not fully achieved because of the recent overall reduction of the number of deliveries (the number of children) in the districts.

According to interview with relevant doctors, this happened thanks to well-planned family planning activities conducted by the Government of Tajikistan with the support of development partners and aimed at raising awareness of the population on health and economic-related negative consequences of frequent deliveries. The following data on the number of deliveries is taken from the Health Statistics Department of Khatlon Oblast:

Year	2015	2016	2017	2018
No of deliveries in Khatlon	101 675	98 384	91 568	85 408
Province				
No of deliveries in Jomi District	5 220	4 923	4 688	4 345
No of deliveries in Rumi District	5 695	5 953	5 177	5 087
No of deliveries in Shaartuz District	4 145	3 972	3 743	3 729

While there is decrease in overall number of deliveries in target districts, the number of deliveries at the target Number Hospitals increased and mothers have been more likely to access the services at the target hospitals instead of going to Central District Hospital or other districts, which indicate maternal and child health services improvement at the target hospitals.

The most equipment procured and facilities renovated by the project have been in good conditions, functional and utilized well by the hospitals. There has been some equipment that have not been functional despite the most possible effort and measures made by the hospitals, due to unavailability of spare parts at the market in the country. The drainage facility of Shartuz Central District Hospital has not been fully functional due to external factors (sewage water has not been smoothly discharged due to the problem of public sewage system of the district drainage system), which may affect sanitation situation of the hospital in the future.

As a qualitative effect of the project, it was expected that the project enables early detection and treatment of maternal abnormalities and infants' diseases. By utilizing the medical equipment provided by the project, hospitals have been able to early detect, accurately diagnose and timely and appropriately provide treatment for maternal abnormalities and infants diseases, which were not possible before the project. Equipment also eased the burden of the medical staff at the target hospitals for detection, diagnosis and treatment.

More patients appreciate improvement of the maternal and child health services at the target hospitals. All the hospitals reported that, more mothers provided positive feedbacks.

As a result of the soft-component of the project, regular check-up and preventive maintenance of the provided equipment have been in place, and management logbooks have been recorded and maintained by medical staff. There has been shortage in planned budget for maintenance, but some hospitals have been putting effort utilizing own income and out-of-pocket payment for maintenance. <Impact>

Maternity Hospital No.1 reduced the neonatal mortality rate at the hospital level to 0.78% in 2018, which reached the targeted "below 1.0%". The actual infant/child mortality rates in Khatlon Oblast Provincial Hospital were 1.0% in 2015 and 1.4% in 2018, which did not achieve its target value of "below 1.0%". The target value was calculated based on the number of inpatients and deaths of all pediatric departments, including those without the project support. In 2018, there was a significant increase in the number of deaths at other department with no equipment provided by the project, which influenced the overall infant/child mortality rate<sup>1</sup>.

No negative impact on natural environment was observed. There was no land acquisition and resettlement.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

#### Quantitative Effects

## 1.Maternal and child health services at Maternity Hospital No.1 in Dushanbe

	Baseline (2011)	Target(2017)	2015	2018
	Baseline	3 Years after	Year of Completion	3Years after Completion
	Year	Completion		
Deliveries	6,138	6,775	7,735	6,972
Inpatient newborns	6,427	7,039	7,744	6,990
Obstetric surgeries	561	607	898 (CS:806, VE: 92)*	1,054 (CS: 971, VE:83)
Ultrasound examinations	5,823	7,633	9,700	13,887
Referrals to other medical institutions	86	Reduce	152	34
*CS: Cesarean Section, VE: Vacuum Extraction				

<sup>&</sup>lt;sup>1</sup> The method of data collection at the hospital is not the same as the one used when the targets were set.

2.Maternal and child health services at Khatlon Oblast Provincial Hospital (Pediatric ward)									
	Baseline (2011)	Target (2017)	2015	2018					
	Baseline	3 Years after	Year of Completion	3 Years after Completion					
	Year	Completion							
Inpatients	2,710	3,074	2,580	2,452					
Ultrasound examinations	1,652	1,788	-	223 (pediatric ward)					
				9.079 (maternity ward)*					

\*Ultrasound Scanners were provided not only to Pediatric Ward but also Maternity Ward, therefore the survey results for 2018 cover the actual data at both wards.

# 3. Maternal and child health services at Jomi Central District Hospital and Shartuz Central District Hospital

<Jomi Central District Hospital>

	Baseline (2011)	Target (2017)	2015	2018
	Baseline	3 Years after	Year of Completion	3 Years after Completion
	Year	Completion		
Deliveries	4,514	4,886	3,959	3,897
Pediatric inpatients	1,330	1,428	Data missing	Data missing
Percentage of water supplied within the facility	-	100	-	100
that satisfies water quality standards				
<shartuz central="" district="" hospital=""></shartuz>				
	Baseline (2011)	Target (2017)	2015	2018
	Baseline	3 Years after	Year of Completion	3 Years after Completion
	Year	Completion		
Deliveries	3,685	3,989	3,414	3,270
Pediatric inpatients	1,048	1,126	930	695
Percentage of water supplied within the facility	-	100	-	100
that satisfies water quality standards				
4. Maternal and child health services at the ta	arget Number Hospi	itals (Total of the tar	get hospitals)	
	Baseline (2011)	Target (2017)	2015	2018
	Baseline	3 Years after	Year of Completion	3 Years after Completion
	Year	Completion		
Deliveries	1,652	1,823	2,506	2,982
Pediatric inpatients	447	484	921	985

3 Efficiency

Although the project cost was within the plan (the ratio against the plan: 99%), the project period significantly exceeded the plan (the ratio against the plan: 152 %). Due to significant fluctuation of the exchange rate between Japanese yen and the US dollar, list of equipment to be procured needed to be revised several times. Additional procurements of equipment were conducted 3 times in total, for using the remaining grant amount. Due to these procurement process, the actual project period exceeded the planned period. The output were produced as planned.

Therefore, the efficiency is fair.

Source: Questionnaire and interviews with the target hospitals.

4 Sustainability

<Institutional Aspect>

Each target hospital has established a proper system for operation and management of medical equipment and water supply and drainage facilities supported by the project, and the sufficient number of staff have been assigned. Only one exception is Shartuz Central District Hospital whose technical staff will be soon retiring, but the hospital has been taking measures to recruit a new technical staff. <Technical Aspect>

Except for Shartuz Central District Hospital, all the target hospitals have trained staff to appropriately handle and maintain the provided equipment and renovated facilities. Manuals and documents necessary for O&M which were prepared by the project, have been properly kept and utilized. An expert on medical equipment maintenance has been dispatched in 2019, and will be dispatched in 2020. <Financial Aspect>

There was not enough data to check if there was enough budget allocated for the project equipment. From the interviews conducted, some of the Central District Hospitals have been able to maintain the equipment and facilities from the government subsidies and income from the provision of paid services. However, some of hospitals in the rural areas have the government subsidy as the only income budget, which is not enough for the maintenance expense. There is no a well-established practice of budget planning for O&M of equipment by the hospitals and requesting budget from financial authorities. JICA has raised the importance of budget allocation at various levels, including through Japanese Expert and follow-up trainings where the importance of preventive maintenance, including budgeting was raised and discussed.

<Current Status of Operation and Maintenance>

- An appropriate after-sales maintenance service of the equipment has not been accessible. Availability and quality of maintenance service including spare parts has been limited in Tajikistan due to lack of specialists and lack of representations of manufactures for some equipment.
- As mentioned above, appropriate number of staff has been trained and assigned for maintenance of medical equipment and facilities, however, there is some room for further capacity building of technical staff.
- To enhance medical equipment maintenance, since 2018 JICA has been dispatching an expert and follow-up mission of KCCP on Medical Equipment Maintenance to Tajikistan.

<Evaluation Result>

As there have been some challenges in the institutional and financial aspects, the sustainability of the project effect is fair.

#### 5 Summary of the Evaluation

The project has achieved its objectives, as the project mostly attained the targets values of the expected quantitative effects set to measure the improvement of maternal and child health services such as the number of ultrasound examinations, though the number of deliveries at hospitals was affected by the overall tendency of the decrease in the number of deliveries in the country. As for the sustainability, problems have been observed in terms of the financial aspects. As for the efficiency, the project period significantly exceeded the plan due to repeated changes in procurement process.

Considering all of the above points, this project is evaluated to be satisfactory.

#### III. Recommendations & Lessons Learned

#### Recommendations to Executing Agency:

- The target hospitals do not have sufficient planned budget allocated by the government for O&M of the equipment and facilities. By the end of 2020, respective ministries and local governments are recommended to ensure the sufficient amount of budget allocation to the target hospitals for appropriate operation, management and maintenance of the provided equipment and the renovated facilities, in order to ensure their sustainable use.
- Most of the equipment have been in good condition, however, appropriate after-sales maintenance service is not accessible for some equipment. Availability and quality of maintenance service is limited for some equipment in Tajikistan due to lack of specialists and representations of manufactures. By the end of 2020, the Ministry of Health and Social Protection of the Population, and the related ministries and organizations are recommended to draw up a policy to strengthen measures for enhancing the countrywide system of management and maintenance service available and accessible for the hospitals, in order to ensure their sustainable use.
- Hospitals are recommended to systematically calculate their needs for maintenance of equipment and submit budget plans to the financial authorities for allocation of necessary budgets.

Lessons Learned

- When setting the target values for the number of deliveries, it is recommended to take into account the tendency of the number of

deliveries and its dynamics in the country or districts, as well as possible factors that may affect the target values (eg. continuous

promotion of family planning by the government).

- Based on the facts that some provided equipment items were not fully functional, and that in most of the cases it is difficult to find spare parts for replacement in Tajikistan and neighboring countries, even with most efforts of the hospitals to solve the problems, it is recommended to examine the regulations and conditions of the recipient country and the target facilities, as well as availability of spare parts and consumables at the stages of the design surveys for deciding the specifications of equipment in order to ensure effectiveness and sustainability of the project.
- It is important to concretely discuss with responsible personnel of the counterpart ministries and financial authorities of various levels during the project formulation, preparatory study and implementation, as well as to continuously discuss and promote necessary measures through monitoring and follow-up after the project completion.



A doctor is washing her hands with running water supported by the Project at Maternity Department at Jomi Central District Hospital



A pregnant woman is examined by a midwife using a Fatal Doppler provided by the Project at a Numeral Hospital in Jomi District

Country Name	
Independent State of Papua	Project for the Study on Lae-Nadzab Urban Development Plan
New Guinea	
L Davie of Octilized	

## I. Project Outline

Background	Lae was the second largest city in the Independent State of Papua New Guinea (PNG) with a dense population and flourishing industries as well as the major center for shipping. Boosted by the mining industry, the population and housing needs around Lae City drastically increased, exerting great demand of land for housing as well as urban public services. The existing "Lae-Nadzab Urban Development Plan (2005-2015)" was prepared and approved in 2005. However, due to lack of coordination between publicly financed infrastructure development and urban development, implementation of the plan had been limited. Under such circumstances, the Government of PNG requested the Government of Japan to assist in reviewing and updating the existing urban development plan.								
Objectives of the Project	<ul> <li>In Lae-Nadzab area, this project aimed to: i) formulate an urban development plan (2016-2025); and ii) implement a pre-feasibility study for a prioritized project under the plan, thereby contributing to the sustainable economic and social development of the area.</li> <li>1. Expected Goals through the proposed plan<sup>1</sup>: <ol> <li>Infrastructure projects and large-scale development projects are implemented with reference to the approved urban development plan.</li> <li>Priority projects are implemented with feasibility studies.</li> </ol> </li> </ul>								
Activities of the Project	<ol> <li>Project Site: Lae-Nadzab area</li> <li>Main Activities: (i) Reviewing the existing plan and identifying development issues, (ii) Conducting various field surveys including an Origin-Destination survey for transport development, (iii) Developing plans on land use and infrastructure development, (iv) Conducting environmental and social assessment<sup>2</sup>, (v) Preparation of the new "Lae-Nadzab Urban Development Plan (2016-2025)", and (vi) Conducting a pre-feasibility study for a prioritized project.</li> <li>Inputs (to carry out above activities)</li> <li>Japanese Side</li> <li>Mission Members:19 persons</li> <li>Staff Allocated: 20 persons</li> <li>Facilities: Office space, etc.</li> </ol>								
Project Period	May 2015 – November 2016 (Extended period: September – November 2016)Project Cost(ex-ante) 200 million yen, (actual) 253 million yen								
Implementing Agency	Morobe Provincial Administration (MPA); Lae Urban Local Level Government (LULLG)								
Cooperation Agency in Japan	Yachiyo Engineering Co., Ltd.; Kokusai Kogyo Co., Ltd.								

## II. Result of the Evaluation

 1 Relevance

 <Consistency with the Development Policy of PNG at the Time of Ex-Ante Evaluation>

 The project was consistent with "National Urbanization Policy (2010-2030)", which aimed "to strengthen the economic, social and environmental fabric of PNG's towns and cities by better managing the urbanisation process and urban growth challenges".

 <Consistency with the Development Needs of PNG at the Time of Ex-Ante Evaluation>

 As mentioned in "Background" above, the project was consistent with the development needs of PNG for updating the existing urban development plan of Lae City (the second largest city), so that its rapid growth could be better managed.

 <Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

 The project was consistent with "Japan's ODA Policy for the Independent State of Papua New Guinea (2012)", including infrastructure development under a missive of the Evaluation of Evaluation of Evaluation

development under a priority area, i.e. "Strengthening of the Foundation of Economic Growth".

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Objectives at the time of Project Completion>

The project achieved the Objectives at the time of project completion. The new Lae-Nadzab Urban Development Plan (hereinafter referred to as the LNUDP) was formulated for the period from 2016 to 2025; and a pre-feasibility study was conducted for "Construction of Bypass Highway behind Lae Tidal Basin", which was one of the five priority projects proposed in the LNUDP. The bypass project aimed to construct a bypass to the Lae Port to avoid congestion of an existing highway. The bypass was also expected to lead future urbanization in the Lae Tidal Basin, an expected development area behind the Lae Port. Three alternative alignments were suggested for

<sup>&</sup>lt;sup>1</sup> The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the

medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

<sup>&</sup>lt;sup>2</sup> According to "JICA Guidelines for Environmental and Social Considerations (April 2010)", this project is classified as "Category B", i.e. with non-significant but potential adverse impacts. In line with the guidelines, environment and social assessment was conducted in the course of formulating the urban development plan, as well as implementing the pre-feasibility study.

the bypass, whose length was ranging from 3.35 km to 7.70 km, and whose cost was estimated from PGK 97 to 230 million. <Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

Utilization status of the proposed plan has been partially achieved at the time of ex-post evaluation. Indicator 1 (approval of the LNUDP) has been partially achieved. Obtaining approval for a development plan as per "Physical Planning Act 1989" is a lengthy procedure in PNG. The provincial approval for the LNUDP was obtained, but the national approval has not yet been obtained. According to MPA and LULLG, the national approval is most likely to be obtained in late 2020 or early 2021, since they are currently working with the Minister of Lands & Physical Planning who is the parliament member from Lae District. On the other hand, Indicator 2 has been achieved. A feasibility study for "Construction of Bypass Highway behind Lae Tidal Basin" was conducted from July 2018 to January 2019, by utilizing the pre-feasibility study under the project, and the approval for the bypass alignment was granted. <Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

Expected goals through the proposed plan have been partially achieved. By 2050, the LNUDP proposed 75 infrastructure/ large-scale development projects, out of which, 35 were planned to commence by 2020<sup>3</sup>. At the time of ex-post evaluation, five projects were commenced, therefore Indicator 1 (implementation of more than half of the proposed projects) has not been achieved. However, it is notable that preparatory work, including a sort of feasibility study such as a land survey, was commenced for all the five "priority projects" (Indicator 2). For example, the subdivision plan for "Yalu-Nadzab Industrial Park Development" was prepared and approved, and discussions with land owners for "Construction of Yalu-Igam Highway" are on-going. It must be noted that the five priority projects are being pended (except for discussions with land owners) due to lack of funds. As discussed, the LNUDP has not been approved at the national level, and thus the budget from the central government cannot be allocated for the proposed projects under the LNUDP. The provincial government has allocated PGK 2.2 million since 2016, which enabled to commence the preparatory work.

No negative impact has been observed. There are land issues but is no "land acquisition", because more than 95%<sup>4</sup> of the land in PNG is "customary land", i.e. the land owned by communities (clans). Hence, MPA and LULLG have been working with locals and stakeholders to identify legitimate land owners and register their respective lands through "Integrated Land Group". According to MPA, many land owners are supportive to priority projects, and allow the projects to use their lands in the form of leasing, etc. <Evaluation Result>

In light of the above, the effectiveness/impact of the project is fair.

Status of Achievement of Utilization	n Status of the Proposed Plan and E	xpected Goals through the Proposed Plan

Aim		Indicators	Results						
(Utilization Status of the Proposed Plan)	1.	Approval of the urban development		-post Evaluation) partially achiev					
1. Lae-Nadzab Urban		plan		Steps for Approval of the Development Plan (as per "Physical Planning Act 1989") Progress					
Development Plan (2016-2025) is approved.				<ol> <li>Approval of the draft plan</li> <li>Approval of the plan refle provincial level</li> </ol>	at the provincial lev cting public commer	rel nts at the	Comp Comp		
2. A feasibility study for a priority project is conducted by				<ol> <li>Final approval by Ministe Planning is to be placed o</li> </ol>				bing eting late or early 2021)	
utilizing the pre-feasibility study implemented by the project.	2.	Conduct of a feasibility study for a priority project	(Ex-post Evaluation) achieved The feasibility study for "Construction of Bypass Highway behind Lae Tidal Basin" was conducted from July 2018 to January 2019, by utilizing the pre-feasibility study, and the approval was granted to the bypass alignment.						
(Expected Goals through the Proposed Plan)	1.	More than half of the infrastructure	(Ex	-post Evaluation) not achieved					
1. Infrastructure projects and large-scale		projects and large-scale development projects are implemented		Sector	No. of proposed projects under the plan	No. of proj planned commence 2020	to	No. of projects implemented	
development projects		with reference to the		a. Industry	5		4	-	
are implemented		approved urban		b. Land Use	20		10	3	
with reference to the		development plan.		c. Transport d. Flood Control	16		8	2	
approved urban			-	e. Water Supply	6		5	-	
development plan				f. Sewerage	9		1	-	
				g. Waste Management	4		2	-	
				h. Social Services	6		5	-	
				Total	75		35	5	

<sup>&</sup>lt;sup>3</sup> "Lae-Nadzab Urban Development Plan (2016-2025)" set its implementation stages for periods of 2017, 2018-2020, 2021-2025 and 2026-2050. Such program was subject to adjustment, in case of budgetary constraints. (Source: Final Report, p.15-1)

<sup>&</sup>lt;sup>4</sup> Source: Final Report, p.4-5.

2.	Priority projects are	2.	Implementation of priority projects is	(Ex-post Evaluation) achieve		atus of the Five Priority I	Projects
	implemented with feasibility studies.		commenced.	Project Title	Year	What has been done	Current status
	leasionity studies.			Construction of Bypass Highway behind Lae	2018 onwards	Preparatory work such as clearing of	Preparatory work is pending due to lack of
				Tidal Basin	onwards	land to set up a gravel road	fund. Identification and registration of land owners are on-going.
				Yalu-Nadzab Industrial Park	2018	Completion and approval of the subdivision plan.	Pending due to lack of fund
				Tidal Basin North Development	2018	Completion of the subdivision plan (under the process for the final approval)	Pending due to lack of fund
				Provincial Centre Development at Lae old Airport	2018	Preparation of the proposal (partially).	Pending due to lack of fund
				Construction of Yalu-Igam Highway	2019 onwards	Initial discussion with landowners	On-going
Sou	arce : Final Report and	othe	er JICA documents; Que	stionnaires and interviews wi	th MPA and	LULLG.	

#### 3 Efficiency

Both the project cost and period exceeded the plan (ratio against the plan: 127% and 119%, respectively). The Outputs of the projects were produced as planned. Therefore, the efficiency of the project is fair.

#### 4 Sustainability <Policy Aspect>

"National Urbanization Policy (2010-2030)" is still effective till 2030. For implementing the policy, the national government follows "Public Investment Program (PIP)" for budgeting, planning and executing the medium- to large-scale impact projects in the country. Moreover, to cope with the land issues specific to PNG, "National Land Development Program" is being budgeted from 2019 to 2022 for overall land use planning, including "customary land".

<Institutional/Organizational Aspect>

Both MPA and LULLG are facing insufficient staff, due to funding constraints<sup>5</sup>. Under MPA, the Lands and Physical Planning Division is in charge of urban development, but currently there is only one officer against the quota of four. Likely under LULLG, the City Planning Unit has only three staff (one city planner, one valuer, and one surveyor). Both MPA and LULLG are requesting for the provincial funds to recruit additional staff. On the other hand, both MPA and LULLG have good channels and relationship to collaborate with related agencies, such as the Department of Lands and Physical Planning, the Department of Works, Water PNG, and PNG Power Limited. <Technical Aspect>

After the project completion, MPA and LULLG staff participated in training on public awareness raising, and the participants held awareness-raising events on the LNUDP in public areas in November 2017 and February 2018. In addition, they attended training on approval process of development plans, and have been working towards the national approval of the LNUDP accordingly. It is notable that mobilization of "customary land" for priority projects is being implemented by MPA and LULLG, despite its difficulties. <Financial Aspect>

As mentioned above, the largest impediment to funding is that the LNUDP has not yet been approved at the national level. Nevertheless, MPA has allocated PGK 2.2 million (PGK 0.5 million annually from 2016 to 2019 and PGK 0.2 million in 2020), which enabled a feasibility study and the preparatory work of the five priority projects. Currently MPA and LULLG are working with the Minister of Lands & Physical Planning to get the LNUDP approved by late 2020 or early 2021. Once the LNUDP is gazetted, MPA is to request for budgeting through "Public Investment Program", so that the national government can fund some of the projects proposed in the LNUDP. Furthermore, both MPA and LULLG are planning to officially visit aid donors to seek avenues on how best the projects can be funded. <Evaluation Result>

In light of the above, problems have been observed in terms of financial and institutional/organizational aspects of the implementing agencies. Therefore, the sustainability of the project effects is fair.

#### 5 Summary of the Evaluation

The project achieved the Objectives at the time of project completion, by i) preparing "Lae-Nadzab Urban Development Plan (2016-2025)", and ii) conducting a pre-feasibility study for "Construction of Bypass Highway behind Lae Tidal Basin". At the time of ex-post evaluation, the plan has not yet been approved at the national level, which impedes funding for implementing proposed projects. On the other hand, a feasibility study or preparatory work is being conducted for all the five priority projects with the limited but continuous funding at the provincial level. Regarding the Sustainability, problems have been observed in terms of financial and institutional/organizational aspects of the implementing agencies, but no problem has been observed in terms of policy and technical aspects. As for Efficiency, both project cost and period exceeded the plan. Considering all of the above points, this project is evaluated to be partially satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for the National Government

The Department of Lands and Physical Planning should take the leading role as the mandated government agency to work with both Morobe Provincial Administration and Lae Urban Local Level Government to ensure "Lae-Nadzab Urban Development Plan (2016-2025)" is approved and gazetted by the National Executive Council. Such plan captures mega infrastructure projects that can be financed utilizing

<sup>&</sup>lt;sup>5</sup> MPA had to spend much funds for the national elections in 2017, and for "Asia-Pacific Economic Cooperation (APEC) 2018". For the latter, MPA had to renovate the terminal of the Nadzab Airport as the landing point of senior officials.

"Public Investment Program (PIP)" administered by the Department of National Planning and Monitoring.

#### Lessons Learned for JICA:

"Lae-Nadzab Urban Development Plan (2016-2025)" is well designed, which captures major impact projects for the development of Lae-Nadzab area. However, the plan is only "partially approved" in the context that only MPA sanctioned the plan, thus annually allocating funds since 2016. On the contrary, the plan has not yet been approved and gazetted by the national government, thus not attracting any large funding. Considering that the approval process of a development plan usually takes a long time due to relevant process involved, even after project completion, all concerned stakeholders should have kept working together and following-up on this plan to be approved and gazetted at an earlier stage. In this regard, not only the local government but also the national government like the Department of Lands and Physical Planning, as an implementing agency, would have preferably been involved in the project and the approval process from the initial stage, in order to have funded some of the impact projects proposed in the plan.

On the side of JICA, it should have continuously monitored the process of approval of the development plan. It would also be important for JICA to keep communicating with the implementing agencies, since an urban development plan requires long-term implementation by a partner country.



A billboard erected in 2019 promoting "Yalu-Nadzab Industrial Park Project" (The project is to be initiated by the Department of Commerce and Industry, supported by the provincial and national government.)

Country Name		The Project for Confide	nce-building throu	ıøh '	Rural Development
Bosnia and Herzego	ovina	The Project for Connuc			
I. Project Outline					
Background	(admini From 2 Srebren appreci (MOA) comme precedi situatio able to	istrative entities with high auton 2008 to 2013, JICA supported nica on Agricultural and Rura ated the results of this precedin of RS requested further assi nced in January 2014 in three ng project had rather focused on n, the Project emphasized to stree implement sustainable rural deve	omy): Federation of Bo a technical cooperation l Enterprise Developring project, the Ministri stance, and this new e adjacent municipalition on direct and tangible engthen the capacity of elopment.	osnia n pro nenť cy of proj es: I bene the r	rly 1990s, the country consists of two entities and Herzegovina, and Republic of Srpska (RS). oject, "The Project for Confidence-Building in " in Srebrenica Municipality of RS. Having Agriculture, Forestry and Water Management ect (hereinafter referred to as "the Project") Bratunac, Rogatica and Srebrenica. While the efits on people under the post-conflict difficult nunicipalities, so that they themselves would be
Objectives of the Project	Bratuna activitio populat 1. Ov Co and 2. Pro	ac, Rogatica and Srebrenica M es through municipal capacity ion. erall Goal: nfidence-building among the tar d rural development with inclusi oject Purpose:	lunicipalities, by way development, thereby get population is promoveness and fairness.	of c prom	r inclusive and fair community development in conducting agricultural and rural development noting confidence-building among the targeted through strengthening the system of agricultural opment is strengthened in each target area.
Activities of the Project	<ol> <li>Procession</li> <li>Maing</li> <li>Agentication</li> <li>Input set of the set of the</li></ol>	oject Sites: Bratunac, Rogatica and in Activities: i) To implement a proving livelihood; ii) To stren ricultural and rural development MOA of RS. buts (to carry out above activities	nd Srebrenica Municipa ogricultural and rural de gthen institutional cap ; and iii) To share the ; inery/equipment (A	alities evelo oacitio infor BiH 1) 2)	
Project Period		v 2014-March 2017	Project Cost	(ex-	ante) 383 million yen, (actual) 414 million yen
Implementing	- Mi	nistry of Agriculture, Forestry a	nd Water Management		
Agency	- Bra	atunac, Rogatica and Srebrenica	Municipalities		
Cooperation Agency	_				
in Japan					

<Constraints on Evaluation>

• Due to Coronavirus Disease (COVID)-19 pandemic, the evaluation judgment was made by analyzing information obtained through a questionnaire survey to the three municipalities and the MOA, and a telephone interview with officials engaged in the Project. Neither face-to-face interviews nor site visits were conducted.

<Special Perspectives Considered in the Ex-Post Evaluation>

• The Project Effects and impact for Srebrenica Municipality under this ex-post evaluation include those of the preceding project, namely "The Project for Confidence-Building in Srebrenica on Agricultural and Rural Enterprise Development (2008-2013)".

## 1 Relevance

<Consistency with the Development Policy of Bosnia and Herzegovina at the Time of Ex-Ante Evaluation>

The Project was consistent with "Medium Term Development Strategy of BiH (2010-2014)", which prioritized re-building the multi-ethnic co-existent society, and economic development through improving agricultural productivity.

<Consistency with the Development Needs of Bosnia and Herzegovina at the Time of Ex-Ante Evaluation>

The Project was consistent with development needs of BiH for economic reconstruction and confidence-building among ethnicities. In the targeted three municipalities, there were a considerable number of conflict-affected people. In addition, it was necessary to strengthen the capacity of the targeted municipalities, so that the municipalities themselves would be able to implement sustainable rural development. <Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The Project was consistent with the Japanese assistance policy towards BiH, which focused on "peace consolidation and ethnic reconciliation" as one of its two priority areas<sup>1</sup>.

<Evaluation Result>

In light of the above, the relevance of the Project is high.

<sup>&</sup>lt;sup>1</sup> Source: Ministry of Foreign Affairs, "ODA Country Data Book in 2013"

#### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project achieved the Project Purpose at the time of project completion. "Increase in the number of cases and types of agricultural and rural development activities initiated by the municipalities" (Indicator 1) was confirmed, compared with the project commencement. The types of activities can be categorized into three: i) 20 agricultural production activities with approximately 2,500 beneficiaries of both ethnicities, ii) small scale infrastructure development (such as irrigation, water supply, access roads/bridges) at 126 sites, and iii) the total of 77 training activities (lectures, workshops and study tours) for 1,528 participants. Each municipality played a pivotal role in planning and implementing these activities, and also decided its own criteria and process for selecting project beneficiaries. (JICA Experts only suggested the points to consider for beneficiary selection, such as the balance among ethnicities.) Thus, the targeted municipalities were strengthened in management and technical skills for agricultural and rural development, which resulted in the increase of satisfaction of community people with agricultural support (Indicator 2). The increase in income of beneficiaries was remarkable in Bratunac and Rogatica, while a decrease was observed in Srebrenica, compared with the project commencement (Indicator 3). <Continuation Status of Project Effects at the time of Ex-post Evaluation>

The Project Effects have been continued except for a few activities (Indicator 1). All the agricultural production activities are being continued, except for grassland recovery in Rogatica, where people do not attend any more. Developed small-scale infrastructures are all or mostly utilized in each municipality through repair. Moreover, agricultural support activities by each municipality are being continued in the form of training and information services through radio and meetings, etc. and each municipality observes that community people are satisfied with their services (Indicator 2). Regarding the increase in income of beneficiaries (Indicator 3), the three municipalities observe that the Project introduced agricultural technology, know-how and assets (infrastructure, livestock, orchards, machinery, etc.), which has kept increasing the income of agricultural households. For example, in Rogatica, 15 machines were handed over to two associations of potato growers, and they are being utilized by the members of the associations for free, which has decreased production costs and increased cultivation area. Also, D-HOPE (Decentralized Hands-On Program Exhibition), a participatory approach introduced by the Project, is continued through facilitation of the municipality. In Bratunac, an organization growing and providing raspberry seedlings was established under the Project, and now the organization has expanded to growing strawberry too. In Srebrenica, joint activities for agricultural production, such as sharing water sources and collection points for raspberry and milk, have been continuing.

On the other hand, there are activities which are not conducted any more by Bratunac or Srebrenica Municipalities, such as updating the farmers' database (developed under the Project), and facilitating D-HOPE activities.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved. The three municipalities are certain that the Project has brought positive awareness changes among ethnic groups, which can be confirmed by activities such as joint sale of agricultural products. The above-mentioned D-HOPE is one of the notable activities to exemplify awareness changes. Rogatica Municipality facilitates farmers and entrepreneurs of both ethnicities to sell products and build interrelationships, through recording selected farmers and their products in catalogues for distribution, and holding product exhibitions.

<Other Impacts at the time of Ex-post Evaluation>

According to the questionnaire survey to the MOA, participation of women in agricultural activities has been enhanced by the Project. Moreover, rural tourism has been developed in Zilicina Village in Rogatica, after constructing a bridge under the Project. On the other hand, no negative impact has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the Project is high.

		A	chiev	ement of Project	Purpose a	and Overall Goal			
Aim		Indicators		Results					
(Project Purpose)	1.	The number of cases and	Statu	Status of the Achievement: achieved (continued)					
Implementation		types of agricultural and	(Proj	(Project Completion)/ (Ex-post Evaluation)					
system for inclusive		rural development	i)	Agricultural Pro	duction u	nder the Project and Continuation	on	Status	
and fair community		activities initiated by the		Municipality		ler the Project (2014-2017)		Continuation Status (2020)	
development is		municipalities is		Bratunac		rry, Blackberry, Beekeeping,	1	All	
strengthened in each		increased.	-		Grassla	nd recovery			
target area.			-	D	<b>D</b>	4	-	4	
				Rogatica	recover	Fruits planting, Grassland y, Beekeeping, Dairy cow,		All except for Grassland recovery	
			_		Sheep, 1	Raspberry			
			-	<u> </u>	5 1	7		6	
				Srebrenica		rry, Blackberry, Green house	1	All	
						ion, Vegetable seedlings, ping, Sheep, Dairy cow, Fruits			
						g, Grassland recovery			
						9		9	
				Total		20		19	
			ii)	Small-scale infra	astructure	development under the Project	an	d Utilization Status	
				Municipa	lity	No. of Sites for Small-scale		Utilization status	
				wiunicipa	unty	Infrastructure development		(2020)	
				Bratunac		69		Mostly utilized (Note)	
				Rogatica		4		All utilized	
				Srebrenica		53	_	All utilized	
				Total	1	126	<u> </u>		
					0	respondent, due to COVID-19 pa field survey to check if all are bein		· · · · ·	

		and study tours, etc.) municipality is still b database are continued	e total of 77 training activities (technical training, D-HOPE workshops, were conducted by the three municipalities. Training for farmers by each being continued, but D-HOPE activities and utilization of the developed d by only Rogatica Municipality.
	2. Satisfaction of	Status of the Achievement:	achieved (continued)
	community people in the		
	target areas increased		terviews with beneficiaries during the terminal evaluation, they were
	with public services	(Ex-post Evaluation)	supports by the municipalities for conducting project activities.
	(agricultural support,		serves that community people are satisfied with their services, on the
	information service,	ground that farmers	need municipalities' information and participate in events/training
	others) relating to	organized by municip	
	community development		
	3. The income of the		partially achieved at project completion (continued)
	targeted population is	(Project Completion)	4 1 1 4 D 4 1 1
	increased.	2	ted under the Project showed: of the number of households with an annual income of more than 3,000
			(1) clearly increased from 45% in 2014 to 88% in 2016. [Sample size: 311
		(2014) and 340 (2016	
			ratio clearly increased from 52% in 2014 to 85% in 2016. [Sample size:
		283 (2014) and 290 (2	
			e ratio decreased from 85% in 2013 to 77% in 2016. [Sample size: 255
		(2013) and 334 (2016	
		(Ex-post Evaluation)	
		- Each municipality ob	serves that the Project increased agricultural assets and know-how, and
			uting to the increase of income of agricultural households.
(Overall Goal)	Positive awareness changes of		
Confidence-building	target population.		e certain that the Project has brought positive awareness changes among
among the target		ethnic groups.	
population is		Municipality	Notable Activities to Exemplify Positive Awareness Changes
promoted through		Bratunac	- Appearing to the market together
strengthening the			- Agricultural exhibition in the Raspberry Day
system of agricultural		Rogatica	- Continuation of D-HOPE approach, which contributed to building trust among ethnic groups through joint activities
and rural			such as solving problems and exhibition events
development with			- Construction of water bridge in Pjebcici Village by local
inclusiveness and			people of different ethnicities
fairness.			- Joint trip to an international agricultural fair
		Srebrenica	- Sharing water supply system
			- Joint sale of raspberry, fruits, and fresh milk

Source : Terminal Evaluation Report and other JICA documents, a questionnaire survey and telephone interviews with the three municipalities and the MOA.

#### 3 Efficiency

While the project period was as planned, the project cost exceeded the plan (ratio against the plan: 100% and 108%, respectively). The Outputs of the Project were produced as planned. Therefore, the efficiency of the Project is fair.

#### 4 Sustainability <Policy Aspect>

"Strategic Plan for Rural Development of Bosnia and Herzegovina (2018-2021)" is effective till 2021. Under the plan, six main goals are stated, namely: i) income stability, ii) strengthening competitiveness, iii) improving marketability, iv) sustainable management of natural resources, v) improving the quality of life, and vi) improving institutional and legislative capacities. <Institutional/Organizational Aspect>

At the entity level of Republic of Srpska (RS), the Ministry of Agriculture, Forestry and Water Management (MOA) has been providing financial incentives and training to farmers registered with the MOA. At the municipality level, the institutional setting established by the Project is still functioning in the targeted three municipalities. For example, the selection of beneficiaries through transparent criteria under the Project has been incorporated into the public calls for agricultural support. The number of staff members (five in Bratunac, five in Rogatica, and four in Srebrenica) is considered enough by each municipality. On the other hand, the evaluator observes that the agricultural support by Bratunac and Srebrenica Municipality could be further improved, such as utilizing the farmers' database developed under the Project for visiting those with low income and in needs. (Rogatica Municipality annually updates the farmer's database, and utilize it for effective assistance.)

<Technical Aspect>

The above-mentioned staff members in each municipality sustain their skills through their daily work and training/seminars. They have kept providing technical training/advice to farmers (such as crop protection and proper cultivation), and facilitating financial incentives and training by the MOA. The MOA provides training for both municipal officials and registered farmers, and the topics are requested through municipalities.

#### <Financial Aspect>

The above-mentioned financial incentives, for farmers reaching a certain production amount, are funded from the MOA's Agrarian

Budget which amounts to KM 75 million per annum for the total area of RS. (Aside from this, for Srebrenica Municipality, the grant amounting to KM 100,000 per annum is secured for agricultural entities.) At the municipality level, 0.5% of the total budget of each municipality is secured for agricultural and rural activities, but they are often not enough. For example, Srebrenica Municipality's budget is KM 40,000 per annum, but it is only enough for sowing in spring.

<Evaluation Result>

In light of the above, problems have been observed in terms of the institutional/organizational and financial aspects of the implementing agencies. Therefore, the sustainability of Project Effects is fair.

### 5 Summary of the Evaluation

The Project achieved the Project Purpose (i.e. Implementation system for inclusive and fair community development is strengthened in each target area). The Project Effects have continued, and the Overall Goal (i.e. Confidence-building among the target population is promoted through strengthening the system of agricultural and rural development with inclusiveness and fairness.) has been achieved. Regarding the Sustainability, problems have been observed in terms of institutional/organizational and financial aspects, but no problem has been observed in policy and technical aspects. As for the Efficiency, the project cost exceeded the plan. Considering all of the above points, this Project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

It is notable that Rogatica Municipality, one of the three targeted municipalities, sustains and expands the activities (introduced by the Project) to strengthen the municipal capacity. For example, Rogatica Municipality annually updates farmers' database developed under the Project for effective assistance. Also, Rogatica Municipality still actively links farmers and entrepreneurs through holding product exhibitions, by expanding the D-HOPE (Decentralized Hands-On Program Exhibition) approach introduced by the Project. Those activities, however, are not continued by the remaining two targeted municipalities (Bratunac and Srebrenica Municipalities). It is recommended that the Ministry of Agriculture, Forestry and Water Management (MOA) and the targeted three municipalities exchange their experiences and issues, and expand successful activities among the three targeted municipalities as well as other municipalities where applicable.

Lessons Learned for JICA:

The Project aimed to strengthen the capacity of targeted municipalities through implementing agricultural and rural activities, whereas the preceding project rather focused on direct and tangible benefits on people in Srebrenica Municipality for recovery from the conflict. Under the Project, the targeted three municipalities played pivotal roles in implementing agricultural and rural development and organizing various training and local fairs where experiences and products were exchanged. (One of such pivotal roles was selection of beneficiaries through setting transparent criteria, which has been incorporated into the public calls for current agricultural support.) The municipalities sustain the knowledge and skills gained by the Project. Especially, Rogatica Municipality still actively facilitates farmers and entrepreneurs of both ethnicities to build interrelationships, through holding product exhibitions. Thus, the approach of the Project, i.e. strengthening local government's capacity through agricultural and rural development, can be a good practice for future similar projects by JICA for peace-building, especially in the phase of consolidating the post-conflict recovery. The ex-post evaluation of this and preceding projects revealed that "confidence-building" among ethnicities has been surely continued through joint agricultural and rural activities. Even without visiting project sites, due to Coronavirus Disease (COVID)-19 pandemic, this was asserted by the interviewees and the evaluator. Considering the seriously devastated situation in the targeted three municipalities after the conflict, sustainability of confidence-building among ethnicities is noteworthy. Therefore, the approach of this and preceding through i) agricultural/rural development and ii) strengthening municipal capacity)



Bridge in Zlicina Village, Constructed under the Project, Promoted Rural Tourism Development (Rogatica Municipality)



Raspberry Production Assisted under the Project (Srebrenica Municipality)

Country Name	Project on Irrigation Scheme Development in Central and Eastern Uganda
Republic of Uganda	Troject on imgation Scheme Development in Central and Eastern Oganda
I. Project Outline	
Background	The agricultural sector is a key sector of the Ugandan economy. It accounted for approximately 20% of GDP (2013) and employed around 73% of the total labor force. Small and subsistence farming with low productivity occupied a dominant share at the farming scale of the country. Further, such farming was dependent on rain-fed conditions which was erratic and unreliable rainfalls in most parts of the country. Over the past many years, the rain-fed farming significantly affected the national food security, hence, it was crucially important to develop the abundantly available water resources to use for agricultural production in a sustainable way. The Central and Eastern regions have the largest cultivated area and production of major crops including rice. JICA has implemented the "Technical Assistance Support to Sustainable Irrigated Agriculture Development Project in Eastern Uganda" (2008-2011), "NERICA Rice Promotion Project" (2011-2019). Synergistic effects with these supports were expected.
Objectives of the Project	The project aimed at developing the irrigation scheme development plan for the Central and Eastern Uganda, thereby contributing to improvement of the agricultural productivity in the target area. 1. Expected Goals through the proposed plan <sup>1</sup> : The agricultural production is increased in the target area.
Activities of the project	<ol> <li>Project site: 12 sites for potential irrigation development in Central and Eastern Uganda.</li> <li>Main activities: Preparation of the master plan for 12 sites, implementation of the Pre-Feasibility Study (F/S) at 1 site and F/S at 2 sites, development of guidelines on irrigation development, training of the district technicians on irrigation and resource management, etc.</li> <li>Inputs (to carry out above activities) Japanese Side         <ul> <li>Ugandan Side</li> <li>Mission members: 16 persons</li> <li>Staff allocated: 6 persons</li> <li>Trainees received in Tanzania: 14 persons</li> <li>Equipment: Meteorological equipment, self-recording rain gauge, etc.</li> <li>Local cost: Survey costs, hiring local consultants, transportation, etc.</li> </ul> </li> </ol>
Project Period	May 2014 to December 2016 (Extended period: May 2016 to December 2016)Project Cost(ex-ante) 468 million yen, (actual) 520 million yenMinistry of Agriculture, Animal Industry and Fisheries (MAAIF), Ministry of Water and Environment
Implementing Agency Cooperation Agency in Japan	(MWE) NTC International Co., Ltd., Pasco Corporation.

# 1 Relevance

<Consistency with the Development Policy of Uganda at the time of Ex-Ante Evaluation>

The project was consistent with the development policy of Uganda at the time of ex-ante evaluation, as agriculture was positioned as a priority sector for the economic development in the "National Development Plan" (2010/11-2014/15) and the "National Development Plan II" (2015/16-2019/20), and irrigation was considered as one of the approaches for increasing agricultural production and productivity. <Consistency with the Development Needs of Uganda at the time of Ex-Ante Evaluation>

23% of the country's land was occupied by water sources such as rivers, lakes and wetlands, and weather conditions were suitable for agricultural production. On the other hand, the average cultivated area per farmer was small, and irrigation facilities were not much developed. Most self-sufficient small-scale farmers were dependent on rain-fed agriculture. Thus, the project was consistent with the development needs of Uganda for development of an overall irrigation development plan.

<Consistency with Japan's ODA Policy at the time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy for Uganda at the time of ex-ante evaluation, as one of the priority areas was income improvement in the rural areas in the "Country Assistance Policy for Uganda" (2012), and one of the programs was the promotion of rice cultivation.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Objectives at the time of Project Completion>

By the time of project completion, the Irrigation Scheme Development Plan (ISDP) was developed for the 12 candidate sites, and the feasibility study (F/S) was implemented in Sironko river basin/Acomai site and Atari river basin site and the pre-F/S was conducted in

<sup>&</sup>lt;sup>1</sup> This goal is expected to be realized through mid-term/long-term time period and therefore is beyond the time frame of this evaluation. Therefore, in principle, it will not be considered within this evaluated.

Namatala site. For capacity development of the personnel of the central and regional governments on the irrigation development plan, training was conducted on 7 modules, including basic GIS (Geographic Information System) training, irrigation project implementation, training in Tanzania, advance GIS training, hydrology and design, design of irrigation facilities, and project evaluation method. A total of 87 engineers were trained.

<Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

The proposed plan has been utilized by the implementing agency. ISDP was officially approved by MAAIF in 2018, based on which three projects have been implemented by MWE and MAAIF. Through these projects, potential irrigation sites of Ngenge, Acomai and Atari are at different levels of preparation and development. Besides, ISDP has been utilized as the guiding principle for F/S and community engagement for the irrigation schemes development in the country.

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

Achievement of the Expected Goal could not be verified. Production of rice in Uganda has increased from 237 thousand ton in 2014 to 246 thousand ton in 2018, but the data specific to Central and Eastern Uganda was not available. Also, based on the increase in the number of rice farmers and processors, it could be assumed that the rice irrigation and production area has been increasing. However, these increases have not been directly attributed to the project, according to the Rice Desk officer of MAAIF, since the positive trend was already on course before the project commenced. Reportedly, they have been results of previous projects such as JICA's "Sustainable Irrigated Agriculture Development Project in Eastern Uganda" (2008-2011), "NERICA Rice Promotion Project" (2008-2011), "Promotion of Rice Development Phase 1 (PRiDe I)" (2011-2016). These are in addition to other rice development projects supported by other Development Partners like the WB and African Development Bank (AfDB).

<Other Impact at the time of Ex-post Evaluation>

The following positive impacts have been confirmed. First, community mobilization and information flow has become easy to date, thanks to the established functions of coordination committees at the site/community and district levels. Second, as an impact related to gender, according to several District Local Government officers, agriculture production was previously mainly done by females, with men being more active from harvest onwards. However, with the increased awareness on the profitability of rice, men and youth began to play an active role in production as well, thus reducing the burden on women.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is high.

	Utilization of the	Proposed Plan				
Aim	Indicators		Result	5		
(Status of achievement of the	1. The Development plan for the	Status of achievement: Ac	hieved.			
Objectives)	target area is developed, and the	(Project Completion)				
	priority sites are selected.	- ISDP was developed for	the 12 candi	date sites, a	nd three	priority sites
		were selected for F/S and				
	2. F/S is conducted in 2-3 priority	Status of achievement: Ac	hieved.			
	sites.	(Project Completion)				
		- F/S was conducted in S	ironco/Acoma	i site and A	Atari site.	Pre-F/S was
		conducted in Namatala sit				
	3. Capacity of the personnel of the	Status of achievement: Ac	hieved.			
	central and regional governments	(Project Completion)				
	on the irrigation development plan,	Training was conducted of	n 7 modules.	Training co	ontents w	vere (a) basic
	the facility maintenance plan and	GIS training, (b) irriga				
	the water management plan is	Tanzania, (d) advance GI	S training, (e)	hydrology	and desig	gn, (f) design
	developed.	of irrigation facilities, an	d (g) method	of project e	evaluation	n. In total 87
		engineers among C/Ps,	districts, and	universitie	es attend	led different
		training.				
(Utilization Status of the Proposed	1. The Irrigation Scheme	Status of achievement: Ac	hieved			
Plan)	Development Plan for the Central	(Ex-post evaluation)				
The irrigation scheme development		- As of May 2020, the fol				
plan based on the Irrigation Scheme		(i) Farm Income Enhance				
Development Plan based for the		being implemented by M				
Central and Eastern Uganda developed by the project is	than one site.	project, Ngenge potentia irrigation scheme, with al				loped as an
implemented by the Government of		(ii) Agriculture Value (				(DP) being
Uganda.		implemented by MAAIF				
- ganaan		preparations for the devel				
		irrigation scheme have be		1	U	
		(iii) Project for the Estab	lishment of I	rrigation Sy	ystems in	Atari Basin
		Area to be implemente				
		cooperation of JICA.				
		development of Atari pote	ntial irrigation	n site as an i	rrigation	scheme have
		been on-going.				
(Expected Goals through the proposed plan)	1. The agricultural productivity (rice, etc.) is improved by more than		t verified.			
	10% in the priority development	- Rice production has incr	eased in the co	untry altho	uch data	for the target
increased in the target area.	area.	area was not available.		, aitiio	ugn uata	ior the target
		2014	4 2015	2016	2017	2018
		Rice production 237		237.39	240.99	246.53

		(thousand ton)					
		(Source) MAAIF S	Statistical A	Abstract 20	018.		
(Source) Project Completion Report and	l questionnaire surveys from MAAIF a	and District Local C	Governme	nts.			

## 3 Efficiency

Both the project cost and period exceeded the plan (ratio against the plan: 111% and 122%, respectively). Outputs were produced as planned. In the middle of the project period, there was opposition to the project by community people in the study area, who worried that the project was a ploy to grab their land. In order to solve the standoff, the project established coordination committees at the district and community levels, through which all information concerning project activities and plans was disseminated to the target community members. The project made and exchanged agreements with the target communities to restart the project activities. Thus, it took time more than planned. Therefore, the efficiency of the project is fair.

4 Sustainability <Policy Aspect>

Promotion of the irrigation scheme development has been prioritized in the "National Irrigation Policy" (2017) jointly developed by MAAIF and MWE and the "Irrigation Masterplan" which was under development at the time of ex-post evaluation, and the "Agriculture Sector Strategic Plan" (2015/16-2019/20).

<Institutional/Organizational Aspect>

The organizational setting to implement ISDP has been sustained. Per the National Irrigation Policy, MAAIF has taken the responsibility in on-farm irrigation development aspect while MWE has handled off-farm irrigation development aspects, in addition to water resource and wetland management and development. At the time of ex-post evaluation, MAAIF was undergoing a restructuring process as part of public sector realignment. At the time of ex-post evaluation, it was expected that the number of staff in charge of irrigation development would increase from about 40 to 100, and an Agricultural Engineer would be assigned for every district which would have technical support from MAAIF. It can be judged that MAAIF has sustained a sufficient number of staff to implement ISDP to some extent, as more technical personnel have been recruited in recent years. As well, MWE has sustained a certain number of staff to implement ISDP, although more recruitment would be needed, according to the Department of Water for Production (DWFP). MWE has established five Regional Water Offices (Central, Eastern, Western, Northern and Karamoja) and equipped them with technical personnel to further promote irrigation development in the country.

<Technical Aspect>

MAAIF has continuously organized refresher training courses for its personnel to sustain necessary skills and knowledge to implement ISDP, besides OJT in ongoing irrigation development initiatives, according to the Department of Agricultural Infrastructure, Mechanization and Water for Agricultural Production. Regarding MWE, its staff has sustained technical skills, according to DWFP, as they have applied acquired skills in other irrigation development projects. For further strengthening their skills, MWE would welcome the participation of its personnel in the "Project for the Development of Irrigation Systems in Atari Basin Area" (2018-2023) as OJT. The guidelines developed by the project have been utilized by the district staff of MAAIF and MWE for implementing irrigation development projects. One of them (Guideline for Management, Operation and Maintenance of Irrigation System by Water Users' Association) was being updated by MAAIF at the time of ex-post evaluation.

<Financial Aspect>

MAAIF has secured sufficient budgets for implementation of ISDP introduced by the project. According to MAAIF, the central government has provided budgets and would continue to do so as long as more funds are realized, including those from the World Bank and AfDB.

<Evaluation Result>

Therefore, the sustainability of the effectiveness through the project is high.

## 5 Summary of the Evaluation

In the project, the master plan for promoting irrigation scheme development (ISDP) was developed and F/S and pre-F/S were implemented. Since the project completion, ISDP was officially approved, and three projects proposed in ISDP have been implemented. Regarding the project efficiency, both the project cost and period exceeded the plan.

Considering all of the above points, this project is evaluated to be highly satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- It is recommended to MAAIF to conduct the national agricultural census. The last such census was done in 2008, and recently each province and district have gathered and managed the information in their own way. If the data on production, productivity, consumption, export, import, PH-Losses, and so on are managed in a unified way, it would be helpful to assess the implemented project effects and make more accurate conclusions for better project planning.

Lessons Learned for JICA:

- The project had initially considered that community people in the study area would understand the project objectives and activities. However, after the project started, they expressed strong opposition to it to the thought that they would be disenfranchised of their land as a result. In order to solve the standoff, the project established coordination committees at the district and community levels through which all information concerning project plans and activities was disseminated to target community members. Actually, these committees helped to not only clear up their misunderstandings but also raise awareness and even engagement which has continued even after the project. For implementing an irrigation project on land owned by the community (people), it is necessary to fully explain the project intention prior to the commencement. It is indispensable to incorporate a consensus-building process into the project activities and desirable to exchange some sort of document that shows consensus.

Country Name	Country Name Project for Capacity Building of Public-Private Partnership in Mongolia							
Mongolia					invate i artifetsnip in toongona			
I. Project Outline								
Background	Background In recent years, Mongolia attained favorable economic growth led by inflows of private capitals include investments by Japanese companies and skyrocketed international commodity prices of coal and copper which I associated with starting full-scale development of abundant mineral resources. In order to sustain the econom growth thereafter, it was necessary to promote infrastructure development including electric power systemet the tremendous demand for the infrastructure development. Under such situation, in 2009, the Government Mongolia launched a policy to promote the infrastructure development by a public-private partnership (P. scheme using private funds. On the other hands, the history of PPP in the country was young, policy a institutional arrangements for PPP were not well-established, and there was lack of human resources, knowled and experiences in that area.							
Objectives of the Project	officials in Mon of mate Innovat plannin 1. Ov	hrough planning, implementation and monitoring of awareness raising programs about PPP for government als and a wide range of practical stakeholders from a private sector to mass media, situation analysis on PPP ongolia, preparation, implementation and monitoring of activity plans based on the analysis, the development aterials and guidelines regarding PPP projects, the project aimed at enhancing the practical capacity of the vation and PPP (IPPP) Department of the Ministry of Economic Development (MED) for effective PPP ing and management, thereby contributing to further promotion of PPP in Mongolia. Dverall Goal: PPP is further promoted in Mongolia.						
Activities of the Project	<ol> <li>Procession</li> <li>Magov</li> <li>Sit</li> <li>on</li> <li>Inp</li> <li>Japanes</li> <li>Tr</li> <li>Tr</li> <li>Th</li> <li>Ex</li> </ol>	oject Site: Ulaanbaatar city in Activities: 1) Planning, impl vernment officials and a wide uation analysis on PPP in Mong the analysis, 4) Development of buts (to carry out above activities	range of practica olia, 3) Preparation materials and gui ) s (in Malaysia)	ıl sta on, ir delir	toring of awareness raising programs about PPP for tkeholders from a private sector to mass media, 2) nplementation and monitoring of activity plans based hes regarding PPP projects, etc. ngolian Side Staff Allocated: staff of the PPP section of the IPPP Department of the MED (the MED became the Invest Mongolia Agency later) Land and facility: office space in the IPPP Department of the MED Local expenses: utility cost, communication cost, travel expenses for counterpart staff, etc.			
Project Period	May 20	14 – April 2016	Project Cost	(ex-	-ante) 282 million yen, (actual) 221 million yen			
Implementing Agency	agency nationa	from the IPPP Department of th	e MED to the IM	A, b	form in December 2014 changed the implementing ut as a result of a new government inaugurated by the and its PPP section was transferred to the National			
Cooperation Agency in Japan	Japan E	conomic Research Institute Inc.						

1 Relevance

<Consistency with the Development Policy of Mongolia at the Time of Ex-Ante Evaluation>

The project was consistent with Mongolia's development policies of the "National PPP Policy" (2009) promoting infrastructure development via a PPP scheme using private funds and the "Action Plan of the Government of Mongolia" (2012-2016) raising actions regarding PPP and the establishment of its business environment as one of the priority challenges at the time of ex-ante evaluation. <Consistency with the Development Needs of Mongolia at the Time of Ex-Ante Evaluation>

The project was consistent with Mongolia's development needs of establishing institutions and policies, fostering human resources, enhancing knowledge and piling up experiences necessary for the promotion of infrastructure development via a PPP scheme at the time of ex-ante evaluation.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation >

The project was consistent with "The Country Assistance Policy for Mongolia" (2012) raising "sustainable development of mineral resources and strengthening of governance" as one of the priority areas, including the strengthening of financial management and monetary function by enhancing administrative abilities and transparency, the fostering of human resources with high-level knowledge and skills and the establishment of relative laws and institutions.

<Evaluation Result>

In light of the above, the relevance of the project is high.

#### 2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved by the time of project completion. As there was no project appropriate for case study trainings which was originally planned., the trainings could not be delivered. For the reason, this project failed to enable the IMA to pile up practical experiences within its organization. However, the project strengthened IMA's practical capacity on PPP to some extent through the provision of basic lectures about PPP (including procedures of procurement) in IMA's initial trainings and of topic-oriented programs<sup>1</sup> for major governmental organizations including the IMA (Indicator 1). The capacity of key line ministries (the Ministry of Road and Transport and others) was not able to be improved through the instruction and consultation of the IMA because the implementation of project activities was retarded due to the organizational reform in 2014. Yet, holding the above-mentioned topic-oriented programs led to the enhancement of the key line ministries' understanding of PPP (Indicator 2). Through the implementation of awareness raising programs on PPP for a private sector, draft and enactment of PPP related laws by the government and the holding of joint seminars with the Asian Development Bank (ADB) about the action plans prepared by the project, the reputation of Mongolian PPP environment went up among the private sector and donors/Development Finance Institution (DFI) (Indicator 3).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially continued since the project completion. After the project completion, as a result of a new government inaugurated by the national election in June 2016, IMA's PPP section was transferred to the NDA, and initially it was PPP section, but in 2018 it was upgraded to PPP division. The staff trained by the project has worked at the section even at the time of ex-post evaluation and has played central roles including the provision of technical instructions to other staff. Based on the fact, it can be considered that the NDA has still sustained its practical capacity on PPP. In addition, the staff trained by the project and other staff trained by them have given presentations about PPP for private companies and related agencies with interest in PPP projects, including the Ministry of Road and Transport, the Ministry of Health and the Ministry of Energy. They also have provided consultations for questions separately raised by such ministries. Thanks to the activities, the Ministry of Road and Transportation had a number of successful PPP projects, for example the "New Ulaanbaatar International Airport Operation Project" (2020-2035). Additionally, some of three guidebooks developed by the project (First Step guide for PPP Practitioner, PPP Project Screening Forms and PPP Check List for power Sector) have been used by the Ministry of Road and Transport, the Ministry of Health and the Ministry of Energy. In particular, the First Step guide for PPP Practitioner have been fully used by the three ministries. Apart from the above, under ADB's support, the Ministry of Finance holds trainings about public investment for all staff in charge of investment every year, and in its 2017 training, instructions and consultations about PPP were provided by the NDA. As for the reputation for Mongolian PPP environment among the private sector and donors/DFI, the ADB negatively reported that there has not been much improvement in the environment whereas the International Monetary Fund (IMF) and a private company positively answered that there has. Yet, it should be mentioned that the two organizations raised some challenges such as lack of communication between central and regional governments, difficulty in accessing to information about PPP projects and weakness of a mutual trust relationship between the central government and private companies.

Except for the above project effects, the action plans prepared by the project proposed amendment of the laws related to PPP, coordination among governmental organizations, dialogues between governmental organizations and private companies, the improvement of PPP procedures and others, and through the ex-post evaluation, it was confirmed that the following activities have been or are being undertaken: cooperation between ministries such as the NDA and the Ministry of Finance, dialogues between the government and private companies, the enhancement of the involvement of the Ministry of Finance, the improvement of PPP's procedure, the preparation of rules to prioritize public investment projects and guidelines/manuals related to public investment planning. On top of that, the NDA has actively disclosed information about PPP projects via media (its website, SNS including Facebook and mass media such as TV and newspapers) which was proposed by the action plans.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved at the time of ex-post evaluation. According to the NDA, as they do not conduct any study on the number of PPP candidate projects with revenue stream and potentiality for commercial viability, they do not know the number of such projects, and its increase or decrease was unclear (Indicator 1). The number of PPP projects with the completion of concession<sup>2</sup> agreements has increased from one project in 2017 to four in 2019 and is planned to be four even in 2020 (Indicator 2). The number of the PPP projects under implementation has increased from 13 projects in 2017 to 17 in 2019 and 17 projects have been in planning stage in 2020 (Indicator 3).

<Other Impacts at the time of Ex-post Evaluation>

No other positive or negative impacts were observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal
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Aim		Indicators					Indicators Results			Results	
(Project Purpose)	1. The practical capacity of IPP			of	IPPP	Status of the Achievement: Partially Achieved (Continued)					
Practical capacity of IPPP	y of IPPP Department is enhanced.					Practical capacity of IPPP Department is enhanced. (Project Completion)					(Project Completion)
Department for the	• Due to the organizational reform in 2014, the implementation of						• Due to the organizational reform in 2014, the implementing agency				
effective PPP planning							became the IMA from the IPPP Department of the MED.				
and management is	anagement is						• As there were no projects appropriate for case study trainings which were				
enhanced.	originally planned, the trainings could not be delivered. For the rea										
							this project failed to enable the IMA to pile up practical experiences				

<sup>&</sup>lt;sup>1</sup> Topic-oriented program is a program that widely covers from fundamental topics such as the concept of PPP to advanced topics including its procurement procedure, risk analysis and financial analysis.

 $<sup>^{2}</sup>$  Concession is to leave ownership rights of public facilities to national or regional authorities and grant the operating rights to private business partners for a long time.

r		
		within its organization. However, the project provided basic lectures
		about PPP (including procedures of procurement) in IMA's initial
		trainings and topic-oriented programs for major governmental
		organizations 40 times. 80% of the participants answered in the survey
		after the programs that they enhanced their understanding of PPP.
		(Ex-post Evaluation)
		• As a result of the inauguration of a new government in 2016, IMA's PPP
		section was transferred to NDA's PPP section. The staff trained by the
		project has worked at the section even at the time of ex-post evaluation,
		and NDA's practical capacity of PPP has been sustained.
	2. The capacity of key line ministries	Status of the Achievement: Partially Achieved (Continued)
	involved in the project is improved through	(Project Completion)
	the instruction and consultation by the IPPP	• The capacity of key line ministries could not be improved through the
	Department.	instruction and consultation of the IMA because the implementation of
		project activities was retarded due to the above-mentioned organizational
		reform. Yet, holding the previously-mentioned topic-oriented programs
		enhanced the key line ministries' understanding of PPP
		(Ex-post Evaluation)
		• The staff trained by the project and other staff given technical
		instructions by them have given presentations about PPP for private
		companies and related agencies with interest in PPP projects, including
		the Ministry of Road and Transport, the Ministry of Health and the
		Ministry of Energy. They also have provided consultations for questions
		separately raised by such ministries. Thanks to the activities, the Ministry
		of Road and Transportation had a number of successful PPP projects, for
		example the "New Ulaanbaatar International Airport Operation Project"
		(2020-2035). Additionally, some of three guidebooks developed by the
		project (First Step guide for PPP Practitioner, PPP Project Screening
		Forms, PPP Check List for power Sector) have been used by the Ministry
		of Road and Transport, the Ministry of Health and the Ministry of
		Energy. Especially, the First Step guide for PPP Practitioner have been
		fully used by the three ministries.
	3 The reputation for Mongolian PPP	Status of the Achievement: Achieved (Partially Continued)
	environment is improved among the private	· · · ·
	sector and donors/DFI.	• The project provided raising awareness programs on PPP for a private
		sector, which increased their interests in PPP.
		• Mongolian PPP environment had been gradually improving, for the
		government's actions such as the enactment of "the Law on Development
		Policy Planning" (2014) and the suggestion of a new PPP law.
		<ul> <li>By holding joint seminars with the ADB about the action plans prepared</li> </ul>
		by the project, the reputation for Mongolian PPP environment was
		improved among the donors.
		(Ex-post Evaluation)
		• According to a private company, PPP has been perceived as a quite
		positive one on a private company side, and the companies has taken
		initiatives such as planning and suggestion of new PPP projects;
		therefore, among the companies, the understanding and reputation for
		Mongolian PPP environment has been improved. On the other hand, it
		raised lack of communication between central and regional governments,
		difficulty in accessing to information about PPP projects and others as
		challenged.
		<ul> <li>Also, as opinions from the donors/DFI, the ADB negatively reported that</li> </ul>
		there has not much improvement in Mongolian PPP environment whereas
		the IMF positively did that there have been improvements in the
		understanding of PPP in the country. However, like the opinions from the
		private company, the IMF enumerated some challenges such as
		insufficiency of legislative environments and weakness of a mutual trust
		relationship between the central government and private companies.
(Overall Goal)	1. The number of PPP candidate projects	
		• The NDA was set of the table of the set of the table of the set
-	with revenue stroom and estantiality for	
Mongolio	with revenue stream and potentiality for	PPP candidate projects with revenue stream and potentiality for
Mongolia.	commercial viability is increased.	PPP candidate projects with revenue stream and potentiality for commercial viability.
Mongolia.	commercial viability is increased. 2. The number of PPP projects with the	PPP candidate projects with revenue stream and potentiality for commercial viability. (Ex-post Evaluation) Achieved
Mongolia.	<ul><li>commercial viability is increased.</li><li>2. The number of PPP projects with the completion of concession agreements is</li></ul>	<ul> <li>PPP candidate projects with revenue stream and potentiality for commercial viability.</li> <li>(Ex-post Evaluation) Achieved</li> <li>Since the project completion, the number of PPP projects with the</li> </ul>
Mongolia.	commercial viability is increased. 2. The number of PPP projects with the	PPP candidate projects with revenue stream and potentiality for commercial viability. (Ex-post Evaluation) Achieved

	excluding a build a	nd transfer $(BT)^3$ so	cheme]					
	2017	2018	2019	2020 (Plan)				
	1	2	4	4				
	Note: Under the c	urrent "Law on Co	ncessions" (2010),	a BT scheme had				
				16. Yet, the scheme				
				t was stopped until				
the approval of 2018 Budget Law, to sign new contracts using								
				substance, new BT				
				ering that the action				
	plans prepared by t							
	the number of PPI table.	projects using the	e scheme is exclud	ed from the above				
2 The much on of the DDD much of each ish		) Achieved						
3. The number of the PPP projects which		ct completion the	number of the PPP	projects under the				
have already started the implementation is	1 5	has been in an upw		projects under the				
increased.	impromonium	nus seen ni un up n						
	[The number of the	e PPP projects und	er the implementati	ion excluding a BT				
	scheme]	1 5		U				
	2017	2018	2019	2020 (Plan)				
	13	14	17	17				
	Note: the same as w	vritten in the above	note.					

Source : JICA internal documents, Project Completion Report, Questionnaire and interviews to major related organizations (the NDA, the Ministry of Finance, the Ministry of Health, the Ministry of Energy, the Ministry of Road and Transport, a private company, the ADB and the IMF)

3 Efficiency

The project period was within the plan (ratio against the plan: 100%) and the project cost was below the plan (ratio against the plan: 78%) because of partial changes in the planned project activities, such as the non-implementation of action plans developed by the project, due to external factors including the organizational reform in 2014. The outputs were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

The "Sustainable Development Vision 2030" (2016-2030) and the "Sustainable Development Vision 2050" (2020-2050) positioned a partnership with a private sector in the mid- and long-term as an important area, and the "Action Program of the Government of Mongolia" (2016-2020) also promotes PPP. As the project aimed at promoting PPP in the country, it has been endorsed by such national policies. <Institutional Aspect>

As mentioned above, after the inauguration of a new government in 2016, the organizational structure has changed, and the PPP section of the NDA was officially established, but in 2018 it was upgraded to PPP division. At the time of ex-post evaluation, the PPP section of the NDA takes responsibilities for planning and management of PPP based on "the Law of Mongolia on Concessions" (2010). Also, as the involvement of the Ministry of Finance in PPP projects has been in an upward trend, "Better coordination mechanism" proposed by the project was adopted, and the NDA and the Ministry of Finance jointly implement and monitor PPP projects through a co-working group. According to the NDA, only 6 staff members have been allocated to the PPP section, and the number has been insufficient. However, as the project effects have been sustained and even the Overall Goal has been partially achieved, a certain number of the staff is considered to have been secured.

<Technical Aspect>

The staff of the PPP section of the NDA has sustained the knowledge and skills necessary to plan and manage PPP. In the background, the staff trained by the project has remained at the section even at the time of ex-post evaluation, and they strengthen their knowledge and skills by participating in 1-2 domestic or international trainings every year as well as provide technical instructions and advice to new employees.

Among three guidebooks prepared by the project (First Step guide for PPP Practitioner, PPP Project Screening Forms and PPP Check List for power Sector), the First Step guide for PPP Practitioner has been referred as an introductory guidebook for new employees of the PPP section of the NDA. On the other hand, the NDA has not used the PPP Project Screening Forms because the current "Law on Concession" (2010) is not consistent with it, and even the PPP Check List for power Sector has not been used because its legislative environment has yet to be established at the time of ex-post evaluation even though there is a likelihood that it starts to be used in the near future by the NDA.

<Financial Aspect>

As the table shows, the budget of the NDA is composed of the budget allocated by the Ministry of Finance every year and the budget spent for concession. The NDA has secured its staff and planned and managed PPP within the budget allocated by the Ministry of Finance. According to the NDA, the budget has been insufficient. However, at the time of ex-post evaluation, as a certain number of the staff has been allocated to them and opportunities for trainings are given to their staff every year, the budget is considered to have been secured to some extent.

		6		(Unit: Mi	llion Tugrik)
	2016 2017		2018	2019	2020
	2010	2017	2018	2019	(Plan)
NDA's budget	309	1,001	1,714	1,629	1,999
Concession budget	70,705	176,154	78,998	137,364	323,583
Total budget	71,014	177,155	80,712	145,991	325,582

Budget fo	or the NDA
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<sup>&</sup>lt;sup>3</sup> A BT (Build and Transfer) scheme is one of the schemes which are applied in PPP projects, and its mechanism is that private companies build public facilities and transfer the right of operation of the facilities to central or regional governments after the project.

### <Evaluation Result>

In light of the above, slight problems have been observed in terms of the institutional, technical and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

### 5 Summary of the Evaluation

The project partially achieved the Project Purpose aiming at enhancing the practical capacity of the IPPP Department (the PPP section of the IMA at the time of ex-post evaluation) for the effective PPP planning and management and partially achieved the Overall Goal aiming at further promoting PPP in Mongolia. As for the sustainability, among three guidebooks developed by the project, two (PPP Project Screening Forms and PPP Check List for power Sector) have not been by the NDA at the time of ex-post evaluation. Yet, the PPP Check List for power Sector is likely to be referred by them in the near future. Also, they have still had the techniques necessary to sustain the project effects and secured a certain number or amount of staff and budget.

Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

• The action plan prepared by the project proposed law amendment, coordination within governmental organizations, dialogues between governmental organizations and private companies, the improvement of PPP procedures and others, and it was confirmed that the proposed has been progressed. However, the amendment of PPP law and the preparation of its related rules and guidelines have still been in the middle stage so that, by completing these, it is necessary to further enforce the organizational institution to plan and mange effective PPP (clarification of roles between the NDA and the Ministry of Finance).

Lessons Learned for JICA:

• Many of PPP projects are long-term projects setting 5-30 years as their project periods, and a certain amount of time is required to select a project suitable as a pilot project. Therefore, it was difficult to select a pilot project and provide a hands-on training within a short-term project like two years. In the future, where similar projects are formulated and planned, it should be quite considered to incorporate a hands-on training using a pilot project like a case study training into project activities. The topic-oriented programs alternatively held in the project could be an example to be referred for similar projects as it led to strengthening the practical capacity of sundry ministries/agencies related to PPP.



2016 PPP project: a project for construction of the 14th school in Ulaanbaatar city in Mongolia (demolition, construction and relocation) Photo resource:NDA

Country Name								
Federal Democratic Rep	oublic	The Pro	oject for Water Supply to Small Ci	ities in Souther	n Part of Amhara Regional State			
of Ethiopia								
I. Project Outline	_							
Background       The access rate to safe water in Ethiopia was 44% (2010, UNICEF/WHO), which was lower than         Sub-Saharan average of 61%. The Universal Access Program (UAP) which was launched in 2005 aimer         reaching100% of water supply rate by 2015 (100% in urban areas and 98% in rural areas). Amhara Region         State had the second largest population in Ethiopia where development of water supply facilities did not k         up with the increase in population.								
Objectives of the		1	, ,	11 /	cilities in small towns of the Amhara			
Project			hancing the operation and maintena					
Contents of the Project	M 2. Jap (1) Cc (2) Te W W 3. Eth - To - To	<ul> <li>Project Site: 9 sites in Amhara Region (Yetimen, Lumame, Wojel, Sedie, Dibo, Amanuel, Bikolo, Mertule Maryam, Gobeze Maryam)</li> <li>Japanese side</li> <li>Construction of water supply facilities with public faucet and rehabilitation of existing facilities</li> <li>Technical assistance (soft-component) for the enhancement of operation and maintenance capacity of Water Management Organizations (WMO, currently replaced by Town Water Utilities; TWU) and Woreda Water Office (WWO)</li> <li>Ethiopian side:</li> <li>To acquire the water rights of the water source for the construction of water supply facilities, To acquire the land for the water supply facilities, To construct and maintain the access roads from public main roads to the construction sites, and others</li> </ul>						
Project Period	E/N D	Date	June 10, 2013	Completion	June 13, 2015			
1 lojeet l'elloa	G/A E	Date	June 10, 2013	Date	Julie 15, 2015			
Project Cost	E/N C	/N Grant Limit / G/A Grant Limit: : 633 million yen Actual Grant Amount yen						
Executing Agency	Amhara Water, Irrigation and Energy Bureau, AWIEB (formerly Bureau of Water Resource Development of Amhara Regional State, AWRDB)							
Contracted Agencies		Consultant(s):	TONE ENGINEERING CORPOR. Kokusai Kogyo Co., Ltd.	ATION				

1 Relevance

<Consistency with the Development Policy of Ethiopia at the Time of Ex-Ante and Ex-Post Evaluation>

The project has been consistent with the development policy of Ethiopia. At the time of ex-ante evaluation, the "Universal Access Program 2 (UAP2)" (2011) aimed at achieving 100% of water supply rate by 2015 (from 80 % to 100% in urban areas and from 35% to 98% in rural areas). At the time of ex-post evaluation, the national five-year strategic plan, the "Growth and Transformation Plan 2 (GTP-2)" (2015/16 - 2019/20) aimed to provide rural water supply access at the GTP-2 minimum service level of 25 L/day/person within a distance of 1 km from the water delivery point for 85% of the rural population.

<Consistency with the Development Needs of Ethiopia at the Time of Ex-Ante and Ex-Post Evaluation >

The project has been consistent with the development needs of Ethiopia for water supply, especially in rural areas. At the time of ex-ante evaluation, the access rate to safe water was 44%, which was lower than the sub-Saharan average of 61%. At the time of ex-post evaluation, according to the Statistical Report for Amhara Region, the projected estimated population in Amhara Region in 2017 was 27.1 million: about 85.4% of the inhabitants living in the rural community, and 17% of the rural community used unprotected water sources, such as untreated river water (24%) and unprotected spring water (36%).

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA Policy to Ethiopia. Under the "Country Assistance Policy to Ethiopia (2012)", rural water supply was prioritized under the priority areas of Agriculture/Rural Development.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Effectiveness>

The project achieved its objectives in terms of all indicators (Indicators 1 to 3) in the target year. The water coverage ratio (Indicator 1), however, decreased and became lower than the target criterion at the time of ex-post evaluation (2019). This is attributable to rapid population growth (17.5% average annual growth) in comparison with the increase in population served (10.1%) after 2016. TWUs explained that Ministry of Water, Irrigation and Energy (MoWIE) and AWIEB had provided full commitment to establish new TWUs for all towns (Indicator 3) and standardized the TWUs with clear town utility management guidelines. Therefore, the capacity of maintaining water supply facilities has increased.

The structural appearance of the facilities has been generally good except in one town (Mertule Maryam), according to AWIEB. However, nearly half of the 95 public faucets have been out of function and unused in four surveyed sites. Two reasons for underutilization can be pointed out from the interviews; (1) decrease in water production from a constructed well and a developed spring which caused

insufficient water supply to some public faucets (35 faucets in 2 sites), and (2) inadequate maintenance of damaged faucets, water pressure control boxes, and gate valves by TWUs because of undeveloped supply chains and poor stock of the spare parts, particularly high-cost items, due to limited budget (7 faucets in 2 sites). TWUs have had a plan to store some of low cost items at their offices for urgent maintenance activities.

<Impact>

According to the beneficiaries<sup>1</sup>, positive impacts, such as decrease in the workload of fetching water, mortality of children from water-borne diseases and drop-out of children from schools have been reported. The respondents stated that the availability of water points at their nearby households and villages significantly reduced the workload of women and girls. This in turn enabled these women to spend more time for other productive activities. The households relied on the water (including drinking water) from the public faucets before the project. After the project, they get the water from the public or neighbor private faucets, and therefore the budget expenditure is not basically changed. The change in expenditure for water is small even if the individual water consumption increases, because the water tariff for the service is still low and affordable enough for their livelihood.

No negative impacts on surface environment have been observed, according to WWO and TWUs. However, there is a sign of negative impacts on the subsurface environment (groundwater). It was reported that water discharge from both some of the newly constructed wells and existing nearby wells had decreased. These phenomena indicate that groundwater may be at a risk of depletion.

There were some negative impacts caused by construction of the pipelines according to the interviews at 4 project sites in 2 towns. There were some claims from landowners to the constructed pipes, which pass through their land, and from the communities who were not able to be benefited from the pipes though they pass through the communities. The claims were successfully settled, because WWO applied the regional land use management and regulation guidelines to respond to most of the claims from the landowners and local communities. (For the latter case, TWU decided to build a new reservoir tank at their own cost and supplied the water to the communities.)

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

### Quantitative Effects

	Baseline	Target	Actual	Actual	Actual
	(2012)	(2016)	(2015)	(2016)	(2019)
	Baseline		Year of	Target year	3 years after
	Year		Completion		Completion
Indicator 1: Water coverage ratio at 9 towns	23.0%	80.4%	81%	81%	66.6%
Indicator 2: Population of water coverage at target 9 towns	13,810	56,912	57,335	57,335	76,473
	people	people	People	people	people
Indicator 3: Number of WMO (Now TWU) to be able to	0	9	8	9	9
operate and maintain water supply facilities sustainable					
Source: IICA documents questionnaire survey and interviews with	AWEIR WWC	s and TWUs			

#### 3 Efficiency

Both the project cost and project period were within the plan (the ratio against the plan: 94%, 100%). The outputs were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability

<Institutional Aspect>

TWU at each site is responsible for operation and maintenance (O&M) of the facilities under the project with the support by the relevant WWO. TWUs reported that the staffing and institutional arrangement were enough to perform their roles and responsibility. At the time of the field survey under the ex-post evaluation, the water service was on the progress of standardization throughout the Region to meet the increasing demand. The number of personnel is expected to increase.

According to WWOs under Woreda administration, the current structures of both WWOs and TWUs have been sufficient and interactive enough to execute the basic O&M functions of the water services required for the current conditions of the towns. WWOs and TWUs usually cooperate with each other to solve O&M problems at their own capacities. <Technical Aspect>

TWUs have had basic technical skills to operate and maintain most of the facilities. Senior operators and newly employed technicians (usually TVET - Technical and Vocational Education and Training graduates) acquired the techniques from the soft component (O&M training for the new facilities). However, technical capacity for specific maintenance has been insufficient. Although the senior operators has assisted the technicians to develop and upgrade their knowledge and skills for operating the pumps and generators, the engines of generators has been difficult to be fixed by their own technical skills without external or senior technicians who have advanced maintenance skills.

WWOs have had technical staff who supervises or assists TWU operators/technicians to repair the equipment and have had regular refreshment training such as basic generator maintenance, pipeline replacement, welding of pipes, and replacing gate valves, but the operators/technicians have not regularly applied precautions and monitoring of the equipment. There has been a lack of mechanisms that strictly manage and promote the supervising activities of WWO's technical staff to TWU's operators/technicians. <Financial Aspect>

The revenue of TWUs has increased because of increase in water fee collection, while the expenditure has also increased mainly due to the cost for fuel (mainly diesel fuel for the generators). The maintenance cost (spare parts, etc.) has been significantly small in the expenditure. An abrupt increase in maintenance cost in 2018 was attributable to the purchase cost of a generator for replacement of the damaged one. There is a possibility of increase in maintenance cost as the water facilities expand and get older. As per the explanation of WWOs, most of the budget (the gap between the total revenue and expenditure in the table below) goes to construction of new boreholes, trainings for its staff and administrative costs (excluding salary). Although the total number of boreholes increased, the maintenance cost

<sup>&</sup>lt;sup>1</sup> At the time of ex-post evaluation, 20 individuals (16 were women) in the selected four sample woredas were interviewed.

did not accordingly increase, this may imply insufficient engagement by WWOs in maintenance of the constructed facilities from a budgetary aspect.

Average Revenue and O&M Expenditure of TWUs\*

			(Unit: ETB)
Items	2016	2017	2018
Total Revenue:	2,800,000	4,300,000	6,500,000
• Water fee (collected fee on consumption basis)	2,800,000	4,250,000	6,300,000
•Others (New connections)	-	50,000	200,000
Total Expenditure:	2,699,000	3,600,000	5,400,000
•Salary (all staff)	245,600	345,600	432,000
•Fuel (for generators, etc.)	2,400,000	3,000,000	3,600,000
•Maintenance (spare parts, etc.)	24,000	175,000	1,200,000
•Others (office supplies, etc.)	30,000	79,400	168,000
Balance	101,000	700,000	1,100,000

Average Revenue and O&M Expenditure of WWOs\*\*

		(	Unit: ETB)
Items	2016	2017	2018
Total Revenue (for all WWO activities):	12,175,000	13,000,000	20,000,000
Expenditure (not all):	3,200,000	3,030,000	4,600,000
• Salary (all staff)	1,200,000	1,680,000	2,400,000
• Maintenance (spare parts, etc.)	1,700,000	1,150,000	1,500,000
• Others (office supplies, etc.)	300,000	500,000	700,000

\*\*Average of the four WWOs visited during the survey

\*Average of the four TWUs visited during the survey

<Current Status of Operation and Maintenance>

As per the technical guideline provided in the project, TWUs have applied lower level maintenance for the facility such as changing of faucets, gate valves and pipes. WWOs have supported the TWUs by technical training and providing some maintenance services that are beyond the capacities of TWUs upon request from the TWUs. However, there was an evidence that a damaged generator was not able to be fixed even by the woreda level. From the survey result, the WWOs did not have routine monitoring practices. According to WWOs, one reason is that WWOs have focused on and allocated a large proportion of their budget to construction of new facilities. Another reason is indicated from the interviews to the WWOs that they hesitate monitoring because they do not have sufficient storage of expensive spare parts and are afraid of finding damages which need such spare parts.

According to TWUs and WWOs, there have not been enough procured spare parts at the stock of Region, Zone and Woreda. Commodity spare parts such as faucets and pipes and consumables are locally available and cheap enough for procurement by TWUs and WWOs. But spare parts for specific generator components are not locally available and are not affordable by the woreda office even if they are found in big cities.

<Evaluation Result>

Some problems have been observed in terms of the technical and financial aspects, therefore, the sustainability of the project effect is fair.

### 5 Summary of the Evaluation

The project achieved the objectives in terms of the indicators (water coverage ratio, population of water coverage, and number of TWUs) in the nine towns at the target year, but the water coverage ratio dropped after the target year as the population rapidly increased. All targeted TWUs have become able to operate and maintain the facilities except for repair of complex equipment such as generators that require specific technical skills. Positive impacts such as decrease in the workload of fetching the water and water-borne disease have been observed. As for the sustainability, problems have been observed in the technical and financial aspects, however, there has been no noticeable problem in the institutional aspect.

Considering all of the above points, this project is evaluated to be satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations to Executing Agency:

Maintenance activities have been weak due to insufficiency in technical skills, maintenance budget, stock of spare parts. There also seems to be a lack of WWO's commitment to encourage their daily inspection and monitoring to TWU's maintenance activities. Therefore, the following actions would be recommended.

(a) AWIEB searches and establishes the network for equipment repair (manufacturers' agencies, shops, technicians, etc.), or sends WWO's technical staff to advanced repair training courses (e.g., at Ethiopian Water Technology Institute - EWTI)

(b) AWIEB and WWOs allocate more budget to maintenance and subsidize it to TWUs.

(c) AWIEB searches and establishes supply chains by contacting makers, other regions, and institutions (e.g., EWTI) and shares the information with WWOs and TWUs.

(d) AWIEB establishes regular follow-up mechanisms (e.g., guidelines) by which WWO's technical staff are promoted to supervise TWU's daily inspection and monitoring procedure.

The maintenance budget mentioned in (b) above would be better to be considered at the time to plan the budget for the next fiscal year. Other recommendations would be taken immediately.

Lessons Learned for JICA:

- Consider carefully the impacts on the groundwater conditions for sustainable production of water: Some water supply wells constructed in this project did not yield groundwater as planned. Furthermore, operation of the newly constructed wells reduced the groundwater production rates at some existing neighbor wells. These phenomena clearly indicate overestimation of groundwater production in this project and a potential risk to depletion of groundwater resource in the region, which may cause water conflicts. A similar future project would need to put a more premium on the impacts to the subsurface environment (groundwater conditions). The preliminary field survey should focus on not only water production but also drawdowns (changes in groundwater head) during pumping tests, which indicate the sustainability of groundwater resource and the impacts on other users of the resource. The project requires careful consideration of the regional groundwater balance and should be planned with a viewpoint of comprehensive water

resources management. As a result of these in-depth preliminary studies, it may be concluded, for example, that the project requires an enhanced groundwater recharge (water harvesting) to sustain the groundwater production at design rates while maintaining the groundwater reserve.

- Consider carefully the communities affected by the construction and operation of the planned facilities: It would be better to consider that communities affected by the construction and operation of the water facilities are included as beneficiaries of the project to avoid any conflict and sabotage against the project by the communities.
- Consider alternative sources of energy (power supply) to operate the facilities: Most of the operational cost goes to diesel fuel for generators. To reduce this operational cost and to increase the maintenance budget on the other hand, another energy source such as PV (photovoltaic) power would be better to be studied at the design phase. Although such an energy source may increase the initial (construction) cost, it is expected to significantly reduce the operational cost and enhance the sustainability of the project.



Water reservoirs (left: existing, right: newly constructed in this project, behind: newly constructed by TWU for the use by an additional community)



Public faucets abandoned because of no groundwater produced

Country Name	Project for Improvement of Equipment and Facilities on Meteorological and Hydrological
Lao People's Democratic Republic	Services

## I. Project Outline

Background	Laos is located in the Greater Mekong Sub-region and has ample rainfall of over 3,000 mm in a year, in particular, in northern and central hilly provinces. Floods took place every year in the river basin of Xe Bangfai, Xe Banghiang, Xe Done and Xe Kong and caused cumulative damages on agriculture and husbandry and on the local economies in the regions eventually. For mitigating the damages, it was necessary to capture the risk of disaster by monitoring real-time data of rainfall and river water level (precipitations, disaster-hit areas, etc.). However, since there was no observation network in Laos, automatic observation of surface meteorological phenomena and transmission of the observation data on a real-time basis has not been conducted. Under these circumstances, it was difficult to provide timely and accurate meteorological forecast and warning to the public, especially to the population in the affected river basins.							
Objectives of the Project	To improve the capacity of the Department of Meteorology and Hydrology (DMH) for meteorological and hydrological observation by providing automatic meteorological and hydrological observation equipment and deploying mutual observation data transmission systems in the eighteen meteorological observation stations in the country and for four target river basins in northern provinces, thereby contributing to the improvement of accuracy of weather forecast and flood disaster prediction.							
Contents of the Project	<ol> <li>Project Site: 18 provincial meteorological observation stations in Vientiane and 16 provinces, four river basins in southern provinces, namely, Xe Bangfai River in Ban Dong Makfai, Na Teu, Xe Banghaing River in Bang Kengkok, Dong Hence, Xe Done River in Souvannkhily, Phonbok and Xe Kong River in Phon Xai, Nang Yong.</li> <li>Japanese side:         <ol> <li>Provision of grant necessary for the procurement of equipment (Automatic Weather Observation System, Automatic Water Level Observation System, Automatic Rainfall Observation System, GTS<sup>1</sup> message switching system, World Meteorological Organization Information System (WIS), high resolution meteorological satellite data receiving system, etc.) and construction of facilities (power backup shed, equipment shed, etc.).</li> <li>Technical assistance (soft component of grant aid for operation and maintenance (O&amp;M) of equipment, maintenance of observation data accuracy, etc.).</li> </ol> </li> <li>Lao side: Logistical arrangements and clearances</li> </ol>							
Project Period	E/N Date G/A Date	March 4, 2014 March 11, 2014	Completion Date	November 23, 2017 (completion date of the soft component follow-up training)				
Project Cost			n ven Actual Grant					
Executing Agency	E/N Grant Limit / G/A Grant Limit: 584 million yen, Actual Grant Amount: 583 million yen							
Executing Agency	Department of Meteorology and Hydrology (DMH), Ministry of Natural Resources and Environment (MONRE)							
Contracted Agencies	Main Contractor: Marubeni Protechs Corporation Main Consultants: Japan Weather Association, International Meteorological Consultant Inc., CTI Engineering International Co., Ltd. Agent: Marubeni Protechs Corporation							

# II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

• In the ex-ante evaluation, the ex-post evaluation was scheduled to be conducted in 2019, three years after the project completion. However, since the project was completed in 2017, the ex-post evaluation was conducted in 2020. Therefore, the realization of quantitative and qualitative effects expected by the project was verified with the effects observed over a period from 2017 to 2020.

1 Relevance

<Consistency with the Development Policy of Laos at the Time of Ex-Ante Evaluation>

The "National Adaptation Program of Action (NAPA)" (2009) was formulated to cope with the negative impacts caused by the climate change on the main sectors including agriculture, forestry, water resources, and health. The Program included the improvement and expansion of meteorological and hydrological network and weather monitoring system, the establishment of early warning system in flood risk areas and so on. Therefore, the project was consistent with the development policies of Laos at the time of ex-ante evaluation. <Consistency with the Development Needs of Laos at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation in 2013, there was no meteorological observation network in Laos that could observe the surface meteorological phenomena automatically and transmit the observed data on a real-time basis. In addition, there were only a few hydrology observation stations which could observe the river water level and transmit the observed data automatically. It resulted for the DMH in difficulties in the timely provision of accurate meteorological and hydrological forecast and warning to the public, especially to the population in the target river areas. Therefore, the project was consistent with the development needs of Laos at the time of ex-ante evaluation.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The "Country Assistance Policy for Lao People's Democratic Republic (Lao PDR)" (April 2012) placed the development of economic and social infrastructure as one of its four priority areas (intermediary goals). To realize a balanced economic growth, the Policy planned to

<sup>1</sup> GTS: Global Telecommunication System

assist to build a society paying attention to the compatibility of environment and economic growth, sustainable development, and the necessity of measures against climate change. Therefore, the project was consistent with the Japan's ODA policy for Laos at the time of ex-ante evaluation.

<Evaluation Result>

In light of the above, the relevance of the project is high.

# 2 Effectiveness/Impact

## <Effectiveness>

The project has achieved its objectives by improving the capacity of DMH for meteorological and hydrological observation by providing the automatic meteorological and hydrological observation equipment and deploying mutual observation data transmission systems in the target observation stations and river basins. The equipment was provided as planned and has been properly functioning. Automatic meteorological observations were conducted in the 17 out of 18 target observation stations (Indicator 1) with the observation interval of 60 minutes (Indicator 2). One non-functioning station is in Khammuane province, which has not been working due to the total system breakdown since May 2020. The data have not been collected, and the observation has not been done as comprehensively as it could have been if all stations had been functioning. However, it did not affect the overall effectiveness of the project since other stations remained functioning properly. DMH plans to investigate to find the cause and solutions for the breakdown by the end of 2020. DMH has collected data from the 17 target observation stations in 10 minutes (Indicator 3) and transmitted them in 10 minutes after the collection (Indicator 4). Hydrological observation interval on the four target rivers has been shortened from 12 hours by direct observation by observation staff before the project to 1 hour by automatic observation after the project completion (Indicator 5). With these improvements of the capacity of DMH, flood arrival time prediction for the four target rivers, which was not conducted before the project, has become possible (Indicator 6).

### <Impact>

When floods were caused by the typhoon Mangkhut in central and northern part of Lao PDR in 2018, by using the water level data transmitted automatically from the hydrological stations equipped by the project, DMH issued and periodically updated warnings to the people in flood areas. Thus, the human and economic damages were reduced to the minimum. In time of peace, DMH has provided observation data to the authorities concerned including agriculture, water management, energy, and other sectors. The National Agriculture and Forestry Institute of the Ministry of Agriculture and Forestry, for example, has utilized the evaporation data from DMH for farming plans in cropping seasons. No resettlement and land acquisition were caused by the project, and no other negative impact on natural, social and economic environment has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Baseline 2013 Baseline Year	Target 2019 3 Years after Completion	Actual 2017 Completion Year	Actual 2018 1 Year after Completion	Actual 2020 3 Years after Completion
Not conducted.	Conducted in all the 18 target stations.	Conducted in all the 18 target stations.	Conducted in all the 18 target stations.	Conducted in the 17 target stations except the one in Khammuane province. DMH plans to investigate by the end of 2020 to find the cause and solutions for the total system breakdown of the station. The breakdown took place in May 2020.
180 minutes by manual observation. In 60-70 minutes.	60 minutes by automatic observation. In 10 minutes.	60 minutes by automatic observation. In 10 minutes.	60 minutes by automatic observation. In 10 minutes.	60 minutes by automatic observation in 17 stations.
More than 90 minutes after the collection of data.	In 10 minutes after the collection of data.	In 10 minutes after the collection of data.	In 10 minutes after the collection of data.	In 10 minutes after the collection of data in 17 stations.
12 hours by direct observation by observation staff. Not predicted.	1 hour by automatic observation. Predicted.	1 hour by automatic observation. Predicted.	1 hour by automatic observation. Predicted.	<ol> <li>hour by automatic observation in 8 stations.</li> <li>Predicted by 8 stations.</li> </ol>
	2013 Baseline Year Not conducted. 180 minutes by manual observation. In 60-70 minutes. More than 90 minutes after the collection of data. 12 hours by direct observation staff.	Dasenne 20132019 3 Years after CompletionBaseline Year2019 3 Years after CompletionNot conducted.Conducted in all the 18 target stations.180 minutes by manual observation.60 minutes by automatic observation.180 minutes by manual observation.60 minutes by automatic observation.In 60-70 minutes.In 10 minutes after the collection of data.12 hours by direct observation staff.1 hour by automatic observation.	Daserne 2013 Baseline Year2019 3 Years after Completion2017 CompletionNot conducted.Conducted in all the 18 target stations.Conducted in all the 18 target stations.Conducted in all the 18 target stations.180 minutes by manual observation.60 minutes by automatic observation.60 minutes observation.In 60-70 minutes.In 10 minutes after the collection of data.In 10 minutes after the collection of data.In 10 minutes12 hours by direct observation staff.1 hour by automatic automatic observation.1 hour by automatic after the collection of data.1 hour by automatic after the collection of data.	Dasenne 2013 Baseline Year2019 3 Years after Completion2017 Completion2018 1 Year after CompletionNot conducted.Conducted in all the 18 target stations.Conducted in all the 18 target stations.Conducted in all the 18 target stations.Conducted in all the 18 target stations.Conducted in all the 18 target stations.180 minutes by manual observation.60 minutes by automatic observation.60 minutes by automatic observation.60 minutes observation.In 60-70 minutes.In 10 minutes.In 10 minutes.In 10 minutesMore than 90 minutes after the collection of data.In 10 minutesIn 10 minutes12 hours by direct observation by observation staff.1 hour by automatic observation.1 hour by automatic automatic automatic observation.1 hour by automatic observation.

3 Efficiency

Although the project cost was within the plan (the ratio against the plan: 100%), the project period exceeded the plan (the ratio against the plan: 134%) due to the delay of tax exemption procedures for importing the equipment. Outputs were produced as planned. Therefore, the efficiency of the project is fair.

## 4 Sustainability

<Institutional/Organizational Aspect>

There has been no change either in organizational structures or in responsibilities and mandates of DMH since the time of ex-ante evaluation of the project. The total number of staff of DMH has been decreased from 305 in 2013 to 233 in 2020. This was mainly due to

retirements of the staff exceeded new staff recruitments and the government's policy to cut temporary staff of all government offices. Because of this, the manpower of DMH has not been sufficient for its expanding roles and responsibilities. <Technical Aspect>

According to the interviews with the technical staff of DMH, they themselves and provincial and district staff involved in the project have kept using the knowledge and skills learned in the project in their daily operations with the help of manuals and guidelines prepared by the project. On the other hand, they still need capacity development and training to catch up with the rapidly advancing technologies in order to meet the demand of the public for safety and security. However, training including refresher training, newcomers training, and support for self-study has been limited due to the limitation of the government budget. Training for the staff of DMH, therefore, depends on the external opportunities provided by the projects under the support of development partners including the World Bank, Asia Development Bank, Food and Agriculture Organization, and others.

<Financial Aspect>

The amount of budget for DMH has been on a slightly decreasing trend since 2015 due to the government budget cut. This was because, by cutting the budget of almost all sectors, the Lao government has preferentially allocated the budget to recovery works from the damages by natural disasters such as droughts and floods and the domestic animal infectious disease control against outbreaks of African swine fever and foot-and-mouth disease. Financial constraints of DMH have affected its activities particularly the training of the staff and operation and maintenance (O&M) of the equipment granted by the project.

<Current Status of Operation and Maintenance>

Operation check, maintenance check, and cleaning of observation stations have been conducted before and after the rainy season as suggested by the project and planned by DMH. Most of the facilities and equipment procured by the project have been well-maintained and in full utilization except some cases including the case in Khammuane province. Although the spare parts provided by the project are still in stock, it is not certain whether the budget for additional purchase in future is adequate due to the limited O&M budget. <Evaluation Result>

Some problems have been observed in terms of the institutional/organizational aspect, technical aspect and financial aspect. Therefore, sustainability of the project effects is fair.

## 5 Summary of the Evaluation

The project has achieved its objectives by improving the capacity of DMH through the procurement of equipment, construction of buildings, and technical training for the staff. Based on this capacity improved, automatic meteorological and hydrological observation and data transmission have become possible. Therefore, timely issuance and periodical updates of flood warnings to the people have been realized and contributed to the reduction of damages on human lives and economy. As for sustainability, most of the equipment and facilities have been well-maintained and operated. Technical level of the staff of DMH has been improved by the project, but the number of staff has been insufficient for its increasing roles and responsibilities. Financial constraints have caused insufficient training of the staff. As for efficiency, the project period exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

## III. Recommendations & Lessons Learned

Recommendations to Executing Agency:

- It is recommended for DMH to accelerate the investigation of the failed station in Khammuane province, fix the problem and restart its operation as soon as possible. And it's also recommended to document the cause and solutions for the problem. It could be a lesson learned to prevent the recurrence of similar problems in other stations.
- It is recommended for DMH to make an internal on-the-job training system to share the knowledge and skills the staff learned in the projects supported by the development partners. It is also recommended that DMH keeps requesting MONRE to recruit staff for DMH to cope with its expanding tasks and responsibilities.

Lessons Learned for JICA:

• O&M of the equipment granted by the project has not necessarily been implemented properly due to financial constraints. Funding for recurrent cost could be a critical factor in O&M of equipment or sustainability of effects of a grant aid project. Therefore, in a soft component of a grant aid project, adding to the technical training for O&M, it is recommended to include a planning of specific O&M plans implementable within the limits of O&M budget and human resource of the implementing agency.





Hydrological station in Songkhone village, Lamam District, Sekong Province Meteorological station in Seno, Savannakhet Province

Country Name		ject for Construction of Patrol V	essels for Enhancing	the Ability to Secure Maritime Safety and	
Republic of Djibout	ti Sec	urity			
I. Project Outline					
Background	The Gulf of Aden, off the shore of bordered by Djibouti, is the important waterway in maritime traffic, where approximately 18,000 merchant vessels transit annually. However, pirates had frequently appeared in the waters which hindered the maritime traffic seriously. For the matter, the Japanese Self-Defense Force, the US forces, and the French forces stationed in Djibouti implement countermeasures against it. Besides, there were other pending issues arising from Ethiopian and/or Somalian refugees who seek asylum in Yemen, illegal fishing, and contraband trade by foreign fishermen in the coastal waters of Djibouti. In order to cope with the above issues, the Government of Djibouti established the Djibouti Coast Guard (DCG) in 2011. However, patrol vessels and Information and Communication Technology (ICT) equipment required for maritime security operations were no sufficiently obtained. Thus, enhancement of the readiness against the threats was an immediate agenda for DCG				
Objectives of the Project	To enhance the patrol capacity for maritime transport in Djibouti's coastline, by providing patrol vessels for DCG, thereby contributing to the safety and security of the coastline and to ensuring its socio-economic activities in Djibouti.				
Contents of the Project	<ol> <li>Project Site: Djibouti City</li> <li>Japanese side</li> <li>Design and construct two 20m Craft Large patrol vessels</li> </ol>				
Project Period	E/N Date G/A Date	March 30, 2014 April 10, 2014	Completion Date	Nov.14, 2015 (Hand-over)	
Project Cost	E/N Grant	Limit / G/A Grant Limit: 924 milli	on yen, Actual Grant	Amount:842 million yen	
Executing Agency	Djibouti C	oast Guard (DCG)			
Contracted Agencies	Main Contractor: Sumidagawa Shipyard Co., Ltd. Main Consultant: Shipbuilding Research Centre of Japan				

## 1 Relevance

<Consistency with the Development Policy of Djibouti at the Time of Ex-Ante >

The project has been consistent with Djibouti's development policies as the Government of Djibouti has addressed the importance of safety and security of the maritime transport since 2010 and notably manifested its national initiative for social development such as in "Djibouti Vision 2035". Also, the Presidential Order was issued for the establishment of the Rapid Intervention Unit within the DCG. It has been eminently illustrative of the effort of enhancing military and civil institutions in order to be able to readily respond to the various threats in the territorial water of Djibouti.

<Consistency with the Development Needs of Djibouti at the Time of Ex-Ante >

The project has been consistent with Djibouti's development needs of the maritime safety and security of the Gulf of Aden. As the tertiary sector of the country covers approximately 80% of GDP and 60% of the labor force, port and harbor services coupled with trade, transshipment, financial services, yields an essential part of wealth and employment.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy towards Djibouti. As a result of the bilateral policy dialogue between Djibouti and Japan, its priority areas for assistance were decided to include strengthening maritime security capacity<sup>1</sup>. <Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Effectiveness>

The project achieved its objectives at the time of ex-post evaluation. According to the field survey, the two patrol vessels and ancillary equipment provided by the project have been fully utilized and have performed more than the designed capacity planned at the ex-ante evaluation. From the three aspects in quantitative effect, specifically, cruising capacity (Indicator 1), navigation capacity (Indicator 2) and the maximum number of people rescued from the operation (Indicator 3), cruise capacity both in terms of range and time period exceeded the target values to a large extent; Navigation capacity both in terms of the scale of wind waves and wave height met the target values; Further, the maximum number of people rescued by their operation of the vessels exceeded the target value and increased since the target year of 2018. From perspectives of qualitative effect, the survey result shows that the project has contributed to various aspects of security and safety in the Gulf of Aden. Migratory flows have notably increased in recent years due to regional instability from the civil wars in Somalia and Yemen. As such, the patrol vessels have rescued refugees and migrants from shipwrecks in the responsible area, in addition to the detection of illegal fishing, contraband trades, and terrorist acts.

<Impact>

The project has contributed to creating a deterrence effect to serve safe and smooth maritime transport and socio-economic activities

through joint operations and collaborations with partner countries. The European Union (EU), Japan self-defense force, and other countries have continued to engage in the operation to fight against piracy in the region. The annual numbers of commercial vessels passing the waters of Djibouti were 15,076 in 2017, and 19,863 in 2018, whereas the numbers of the commercial vessels attacked by pirates were 14 in 2017 and 5 in 2018 (3 commercial vessels were attacked in 2019, while a total number of commercial vessels in 2019 was not yet known). In this regard, however, those incidents occurred outside the territorial waters of Djibouti. Regarding the other impacts, there was no resettlement and land acquisition by the project. Beyond that, there was no negative impact observed at the time of ex-post evaluation. <Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

<Quantitative Data>

Inc	licators	Baseline 2013 Baseline Year	Target 2018 3 year after Completion	Actual 2016 Completion Year	Actual 2017 2 year after Completion	Actual 2018 3 years after Completion	Actual 2019 Ex-post evaluation
Indicator 1.	Range (nm)	Approx. 180	Approx.400	500	580	650	769
Cruise capability	Time period (hour)	Max. 8	Max 22	Max 30	Max 42	Max 51	Max 60
Indicator 2. Navigation	The scale of wind waves	Less than 3	Less than 4	Less than 3	Less than 4	Less than 4	Less than 4
capacity	wave height (m) * <sup>1</sup>	0.5~1.25	1.25~2.5	1.25~1.3	1.3~1.4	1.4~1.5	1.5~2
Indicator 3. N rescue operat	Max capacity of tion * <sup>2</sup>	20 persons	60 persons	25 persons	40 persons	70 persons	90 persons

Source : Ex-Ante Evaluation Sheet (JP), Preparatory Survey Report (JP), data provided by DCG

Note 1: Actual wave height when the patrol vessel is in operation.

Note 2: Total capacity by the two craft large patrol vessels

### 3 Efficiency

The outputs were produced as planned, and the project cost and period were within the plan (each ratio against the plan: 91 % and 95%). Therefore, the efficiency of the project is high

# 4 Sustainability

<Institutional Aspect>

Throughout the implementation of the project to the ex-post evaluation study, the established Chief of Naval Service in DCG remained to be in charge of the operation and maintenance of the project output. Although DCG is currently in the process to rearrange the services and to increase new service areas within the proposed new organizational structure, this structural change will not affect the department relevant to this project. DCG has a total of 740 staff and the Chief of Naval Service has been in charge of the Operation and Maintenance (O&M) in order to conduct maritime surveillance by the two patrol vessels with a total of 40 staff. To operate the vessel, two pilots, six technicians for maintenance were deployed and the rest of the crew are seamen. DCG perceived that needed manpower was sufficiently secured as there were two back-up pilots and three technicians among crew members on a steady basis to provide for contingencies. <Technical Aspect>

Although the technical level of each staff had not been officially evaluated, technicians of DCG were capable of keeping the patrol vessels well-maintained. DCG perceived that it could be attributed to a JICA technical cooperation project entitled "Project for Capacity Development of Djibouti Coast Guard" (Phase I: 2013-2016, Phase II: 2016-2018, Phase III: 2019-2024) of which phase III just commenced. In this regard, the project has provided the Chief of Naval Service a series of training courses such as operation management, and maintenance of the patrol vessels, safety control, search and rescue operations, towing operation, etc. There was a total of 16 staff members who participated in the training in 2017 and 42 in 2018, respectively. <Financial Aspect>

According to the survey result, DCG has secured the budget to cover the expenses for the O&M of the two patrol vessels for four consecutive years since 2016. Despite that the costs of operation in 2019 were 170 million Djiboutian francs (DJF) which almost doubled from that of 2018, DCG was capable of covering them. As for the costs of maintenance, DCG was able to cover 60 million DJF in 2016 and 2017, 125 million DJF in 2018, 131 million DJF in 2019. The trend of disbursement has mostly coincided with an increase in operation records indicated in the table above.

<Current Status of Operation and Maintenance>

At the time of the ex-post evaluation, two patrol vessels and ancillary equipment were fully functional. And DCG has been trained to maintain them to be in good condition for the most part on their own except for a water jet engine system. DCG impartially arranged to have it maintained by a Dubai Based company to ensure the performance. Regarding the procurement and management of necessary consumables and spare parts, however, DCG has found difficulty in setting up an effective system for efficient replenishment. Given the severe limitations of the availability of spare parts in the domestic market, DCG needed to import the proper quantity of them from foreign countries in a timely and cost-effective manner with due consideration of the fact that it requires time to receive them.

Therefore, the sustainability of the project's effect is high.

5 Summary of the Evaluation

The project achieved its objective to enhance safety and security in waters in Djibouti through improving the patrol capacity for maritime transport. As for sustainability, DCG has kept the patrol vessels functional through the O&M activities underpinned by public funding. Considering all of the above points, this project is evaluated to be highly satisfactory.

#### III. Recommendations & Lessons Learned

Recommendations for Implementing Executing Agency:

• DCG (Doraleh Camp)

In order to further enhance the sustainability of the project, the inventory management system should be put in place by enhancement of personnel capacity as well as the expansion of physical space for appropriate storage. Presently, storage does not have enough space for proper management of spare parts. Also, personnel in charge have difficulty replenishing a necessary item on a systematic basis. It is highly desirable that DCG should employ a strategy to reform an inventory system to increase efficiency and reduce unnecessary transaction and storage costs. This method requires administrative staff in charge to have an information processing system to forecast demand of the spare parts and consumables as accurately as possible. It would enable them to place an order based on the supply delivery schedule for the item either in or outside of the country. The strategy would improve the administrative and cost-saving process through evidence-based procurement over time.

### Lesson learned for JICA:

As some grant aid project provides machinery or equipment manufactured in Japan, it can be foreseen that the inventory of certain spare parts and consumables becomes an issue after some years of a planned operation. Normally, the Japan side is required to hand over the contact list of manufacturers/agents. However, there would be a challenge raised in the recipient side regarding the inventory management of those necessary spare parts and consumables especially unavailable in the domestic market. Also, without proper monitoring of the supply flow, it becomes critically prone to misappropriation of high-valued spare parts and consumables. As such it is important to plan the inventory management system as a component of the project before completion so that the recipient would be easily visualize how the effective and efficient procurement should be made along with the operation schedule even before actual operation on their own.



DCG Patrol vessel P-05 / P-06 (The photo was taken at the time of the project completion)

Country Name Republic of Senegal		Project for Updating Dakar Urbanization Master Plan by the Horizon 2025					
	I. Project Outline						
Background Dakar, the capital city of Senegal, had approximately 2.6 million people in 2011, which was mor 20% of the total population though the area covered only 0.3% of the national land. In addition, nearly 8 the industrial activities concentrated in Dakar. Due to rapid inflows of population from rural areas, urbar surrounding Dakar expanded disorderly while social and economic infrastructures were not suffice developed in the areas. The government of Senegal started projects with the "Dakar Urbanization Master by the Horizon 2025" for urban development, job creation, living environment improvement and on However, the Mater Plan became outdated in the rapid changes of social circumstances. Against backdrop, updating of the Master Plan was urgently required for improving urban environment in socioeconomic development and environment conservation coexisted with considerations to risk prev and urban disaster prevention.							
Objectives of the Project	<ul> <li>Through elaborating the urban development master plan and detail plans for a selected area, a pre-feasibility study for priority projects, and capacity development of the General Department of Urbanization and Architecture (DGUA) of the Ministry of Urban Renewal, Housing and Living Environment (MRUHCV), the project aimed at planned and effective land utilization in the region of Greater Dakar, thereby contributing to socioeconomic development of the region.</li> <li>1. Expected Goals through the proposed plan<sup>1</sup>: Socioeconomic development with planned and effective land utilization is realized in the region of Greater Dakar.</li> <li>2. Expected utilization of the proposed plan: Dakar Urbanization Master Plan by the Horizon 2025 is</li> </ul>						
Activities of the Project	<ul> <li>revised and approved.</li> <li>Project Site: Dakar Region and vicinity area of the new airport</li> <li>Main Activities: (1) evaluation of the current status, (2) development of the vision for Greater Dakar Region, (4) development of the strategies for Greater Dakar Region, (4) development of the spatial plan, (5) development of the Mater Plan and Detailed Urban Plan, (6) implementation pre-feasibility studies, (7) development of an Action Plan, and (8) capacity development.</li> <li>Inputs (to carry out above activities) Japanese Side         <ul> <li>Mission members: 30 persons</li> <li>Staff allocated: 23 persons</li> <li>Facilities and equipment: office</li> <li>Equipment: PC, printer, GPS recorder, GIS software, projector, screen, etc.</li> </ul> </li> </ul>						
Project Period	August (Extens	2014 - February 2016 sion: January 2016 - ry 2016)	Project Cost	(ex-ante) 480 million yen, (actual) 529 million yen			
Implementing Agency	General Department of Urbanization and Architecture (DGUA) (former DUA reorganized by the decree No. 2018-841 in May 2018), Ministry of Urban Renewal, Housing and Living Environment (MRUHCV)						
Cooperation Agency in Japan	RECS International Inc., Oriental Consultants Global Co., Ltd., PACET Corp., CTI Engineering International Co., Ltd., Asia Air Survey Co., Ltd.						

## 1 Relevance

<Consistency with the Development Policy of Senegal at the Time of Ex-Ante Evaluation and Project Completion>

One of the highly prioritized policies in the "National Social and Economic Development Strategy (SNDES)" (2013-2017) was a formation of the core of economic development centralized at special economic zones through the urban development of Dakar Region. Therefore, the project was consistent with the development policy of Senegal at the time of ex-ante evaluation and project completion. <Consistency with the Development Needs of Senegal at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with the development needs of Senegal at the time of ex-ante evaluation and project completion. According to the "Poverty Reduction Strategy Papers (PRSPs) for Senegal" (2006-2010 and 2013-2017) and other survey reports made by the development partners, green areas, farmlands and wetlands were decreasing as a result of rapid population increase and uncontrolled urbanization, and urban disaster risks were increasing due to the proximity of residences to factories and expansion of irregular settlements into unsuitable areas for development such as flood-prone areas.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA policy for Senegal at the time of ex-ante evaluation. In the "Country Assistance Program for the Republic of Senegal" (May 2012), one of the two major goals was the "provision of assistance to sustainable economic growth" placing the high priority on the "infrastructure development in urban areas" which has been the bottleneck to sustainable economic growth.

<Evaluation Result>

In light of the above, the relevance of the project is high.

<sup>&</sup>lt;sup>1</sup> The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

#### 2 Effectiveness/Impact

<Status of Achievement for the Objectives at the time of Project Completion>

The objectives of the project were achieved by the time of project completion by revising and submitting the "Dakar Urbanization Master Plan by the Horizon 2035" (the Master Plan) to MRUHCV by the time of project completion. The Mater Plan included urban development master plan, detail urban plan, guidelines for detail urban planning, pre-feasibility study, and action plan for implementation of the Master Plan as planned.

<Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

The Master Plan prepared by the project was approved by the decree No. 2019-641 in 27 March 2019 authorizing and making enforceable the Master Plan. Action Plans were also prepared by the project to improve the management capacity of DGUA for implementing the Master Plan. Out of 21 short-term action plans expected to be completed by 2018, 3 of them have been completed by the time of ex-post evaluation. As for institutional setting, the Department of Urbanization and Architecture (DUA) has been reorganized in May 2018 to be DGUA. Coordination and cooperation frameworks have been in process of preparation with related line ministries, national agencies, universities and training institutions. Legal bases also have been prepared under the decree for implementing the Master Plan. For project funding, DGUA has been discussing with the private sector and development partners including the World Bank and the Economic Community of West African States (ECOWAS). As a result, by the time of ex-post evaluation, out of 33 priority projects listed in the Master Plan, 8 projects have been commenced and 2 projects out of the 8 have been completed. The Action Plans were plans prepared to improve the management capacity of DGUA for implementing the Master Plan, while the priority projects were projects placed high priority in the Master Plan.

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

In order to transform the Dakar city's monopolar urban structure to a multipolar structure, the Daga-kholpa Urban Development Detail Plan has been developed in accordance with the Master Plan and approved by the decree No. 2017-595 in 24 April 2017 authorising the enforcement of the Plan to create a concerted development area (ZAC) of 300 hectares. Besides, land use plans for social infrastructures including housing estates have been screened by the criteria in conformity with the Master Plan.

<Other Impacts at the time of Ex-post Evaluation>

Environmental impact assessment and environmental control in construction works of the Master Plan projects has been executed complying with the Senegalese Environmental Code (Decree 2001-282). According to DGUA, reginal departments of environmental services have so far reported no serious environmental issues associated with the construction works. As for land acquisition and resettlement, 220 households have been currently in process of resettlement in the Train Express Regional (TER) Project with financial compensations and land allocations. The process is controlled by the Law No.2001-01 holding meetings with affected people and central and regional governments. The Strategic Environmental Assessment (SEA) for the Master Plan and the priority projects were undertaken according to the procedures stipulated by the Senegalese law and in line with the JICA Guidelines for Environmental and Social Considerations 2010, and submitted to and validated by the Department of Environment and Classified Establishments (DEEC). <Evaluation Result>

In light of the above, the effectiveness/impact of the project is high.

Aim	Indicators		î	Results	-			
Utilization Status of the Proposed Plan	Approval of the revised Master Plan as a plan designated by law.	•	<ul> <li>(Ex-post Evaluation) Achieved</li> <li>The Dakar Urbanization Master Plan revised by the project was approby the decree No. 2019-641 in 27 March 2019.</li> </ul>					
	Operationalization (stages of project approval, project preparation, project funding) of priority project proposed by the Mater Plan.	(Ez	x-post Evaluation) Partially The Action Plans was pre competency of DGUA development of the offi others. Out of 21 plans ex been completed (Table 1.) Table 1. Action Plans for	pared by the proje including infor cials, awareness pected to be comp	mation provis raising of loca pleted by 2018,	ions, capacity al people, and		
			Term	Total number of plans	Ongoing	Completed		
			Short (2016-2018)	21	12	3		
			Medium (2016-2020)	3	3	3		
			Long (2016-2025)	2	2	0		
			Total	26	17	6		
		•	Coordination and coopera line ministries, national a					
			been in process through the					
		•	Necessary legal bases ha					
			development plan under t					
		•	For project funding, DG					
			such as mining companie					
			and development partner			the Economic		
			Community of West Afric Out of 33 priority project			ham hava haan		
		•	commenced by the time of					
			them have been complete			o pro <b>jecto, 2</b> or		
	Progress of institutional arrangement for	(Ex	k-post Evaluation) Achieve					
	0		promoting urban planning of Dakar Region.	•	Responding to the propo			
			exclusively responsible o					
			DUA has been reorgani					
			departments including Development, Urban Pla					
			Development, Otban Pla	inning and Regula	mon which has	+ divisions III		

Status of Achievement of Utilization Status of the Proposed Plan and Expected Goals through the Proposed Plan

		charge of policy, planning, legislation and cartography respectively.
Expected Goals through the Proposed Plan (not to be assessed)	<ul> <li>Consistency of actual land use with the land use plan proposed by the Master Plan</li> <li>Situation of social infrastructure development proposed by the Master Plan.</li> <li>Development of the capacity of DUA for urban planning administration (situation of detail urban planning, etc.)</li> </ul>	x-post Evaluation) Partially achieved The Daga-kholpa Urban Development Detail Plan developed for transforming the monopolar urban structure of Dakar city to a multipolar one is consistent with the land use plan proposed by the Master Plan. Land use plans for social infrastructures including housing estates have been screened by the criteria in conformity with the land use plans proposed by the Master Plan. Organizational capability of DGUA has been developed through the implementation of the Action Plans and the priority projects.
Source: DGUA		
3 Efficiency		
		the plan: 110% and 106%, respectively). The outputs were produce
	ciency of the project is fair.	
4 Sustainability		
<policy aspect=""></policy>		DES placed 27 priority projects including the urban development of
including a creation of a r (TER) and an extension of <institutional aspect=""> According to the inter</institutional>	new city in Diamniadio, commissioning of a f the Transit Bus system, and others. view with DGUA, while the number of or	continuing the urban infrastructure development in Dakar Regio new international airport, construction of the Regional Express Trai fficials of DGUA increased from 35 in 2014 to 39 in 2019 and it f urban development in villes (cities) are 4.5 in average and it is no
sufficient for their worklos <technical aspect=""> Out of 23 counterpart s</technical>	ads and has caused delay of works. staffs in DGUA, 18 of them have been still	in their positions and have utilized and sustained the knowledge the on the Master Plan have been transferred to newly assigned staf
<financial aspect=""> The total budget for DO the budget amount of 2.5 p</financial>	million FCFA has been almost constantly all	015 to 1,500 million FCFA in 2019. For urban development for villo located to each city of Dakar, Pikine, Rufsque and Guédiawaye for t
		insufficient for implementing the projects planned in the Master Pla sector and development partners are ongoing.
Therefore, the sustainal	pility of the effectiveness through the project	t is fair.
5 Summary of the Evaluat		
Plan was approved by the activities delayed due to the private sector. As for sust	decree and has been slowly but steadily imp he insufficient personnel and the time-consu- tainability, some problems have been obser	t completion by revising and submitting the Master Plan. The Mate plemented. As for sustainability, implementation of some projects an iming negotiations for project funding with development partners ar ved in terms of institutional and financial aspects. As for efficiency the above points, this project is evaluated to be satisfactory.
III. Recommendations &	Lessons Learned	
Recommendations for Imp	plementing Agency:	
• Well-designed plans a project planned in the	re indispensable and appealing to funding a Master Plan, it is recommended DGUA to n sities of funding negotiations, and fully utili	agencies. Therefore, in order to accelerate the implementation of the nake updates and revisions on the Mater Plan developed by the proje ze it in the negotiations for project funding with the private sector an
• The projects planned in could be a critical fact	n the Master Plan have been implemented st or in project implementation for most devel	lowly mainly due to financial constraints of the Government. Fundin oping countries. If specific financing strategies could be incorporate with the implementing agency, it might increase the possibility



Amitié Bridge one of the priority projects planned by the Master Plan



Thiaroye Intersection Bridge one of the priority projects planned by the Master Plan

		-		conducted by Sri Lanka Office: March 2021	
Country Name Democratic Socialist Republic of Sri Lanka		Capacity Development Disaster Resilience	Project for C	reating Digital Elevation Model Enabling	
I. Project Outline					
Climate changes, and many natural hazards such as floothe damage of infrastructure. Under these circumstance"GOSL") announced a policy on disaster managementto minimize damages proactively rather than reactivelypreparing hazard maps of floods and landslides. Rapidaccurate elevation data. The Laser Detection and Rang			reinafter referred to as "Sri Lanka") was affected by the d and landslides had resulted in the loss of human lives and es, the Government of Sri Lanka (hereinafter referred to as riggered by the earthquake of Sumatra and tsunami in 2004 . GOSL had a plan to consolidate early warning system by preparation of hazard maps required efficient acquisition of ing (LiDAR) technology was the technology to acquire the in Sri Lanka. GOSL, therefore, had to rely on conventional		
Objectives of the Project	<ul> <li>This project aimed at production of LiDAR measurement raw data (7,800km<sup>2</sup>), Digital Elevation Model (DEM) data (3,200km<sup>2</sup>)<sup>2</sup> and ortho-photo data (3,200km<sup>2</sup>)<sup>3</sup> for the areas prone to natural hazards such as floods at landslides in Sri Lanka as well as technical transfer on the methods of thematic map preparation based on DEI thereby contributing to commencement of projects related to disaster prevention which utilize the DEM dat prepared by the project, by way of utilization of the DEM data prepared by the project in project planning formulation etc. related to disaster prevention.</li> <li>1. Expected Goals through the Proposed Plan<sup>4</sup>: Projects related to disaster prevention, which utilize the DEM data prepared by the project, are commenced.</li> </ul>				
Activities of the Project	<ol> <li>Prosure</li> <li>Prosure</li> <li>Prosure</li> <li>Prosure</li> <li>Prosure</li> <li>Prosure</li> <li>Prosure</li> <li>Prosure</li> <li>Input set</li> <li>In</li></ol>	bject Site : Districts of Colom rounding area. (The area prom- asurement raw data (7,800km <sup>2</sup> ).) An Activities: Production of Linsfer on the methods to prepare buts (to carry out above activitie	bo, Gampaha, N e to floods, land ) and the area w DAR measureme thematic maps bas s)	<ul> <li>Juwara Eliya, Kegalle, parts of Kandy, Badulla and the Islides, coastal erosion, etc. for LiDAR survey to acquire here natural disaster countermeasures were prioritized for nt raw data, DEM data and ortho-photo data and technical ased on the DEM.</li> <li>Sri Lankan Side <ul> <li>Staff Allocated: 35 persons from Photogrammetric Branch (22 persons), Mapping Branch (6 persons), GIS Branch (3 persons), Photo Laboratory (3 persons), Remote Sensing Branch (1 person) of SDSL.</li> </ul> </li> </ul>	
Project Period	January	2015 –December 2016	Project Cost	(ex-ante) 451million yen; (actual) 424 million yen	
Implementing Agency	Survey Department of Sri Lanka (SDSL), Ministry of Land and Land Development				
Cooperation Agency	Pacific Consultants Co., Ltd.; Oriental Consultants Global Co., Ltd.; Nakanihon Air Service Co., Ltd.; DMS Co.,				

in Japan

<Special Perspectives Considered in the Ex-Post Evaluation>

Ltd.

-Indicator for Utilization Status of the Proposed Plan (i.e. Results of utilization of the DEM data, thematic maps etc. by the relevant organizations in project planning, formulation etc.) was interpreted as "Results of utilization of the DEM data, thematic maps etc. prepared by the project by the relevant organizations in project planning, formulation, etc. related to disaster prevention" in light of the description of the Expected Utilization of the Proposed Plan (i.e. The DEM data prepared by the project is utilized in project planning, formulation, etc. related to disaster prevention). Its target year was set to be 2019 because ex-post evaluation was planned after 3 years from the completion of the project as per the Ex-ante Evaluation Sheet.

-Indicator for Expected Goals through the Proposed Plan (i.e. Results of commencement of development projects which utilize the DEM data.) is interpreted as "Results of commencement of projects related to disaster prevention which utilize the DEM data prepared by the project" in light of the description of the Expected Goal through the Proposed Plan (i.e., Projects related to disaster prevention, which utilize the DEM data prepared by the project, are commenced).

1 Relevance

High-precision digital elevation data.

<sup>&</sup>lt;sup>2</sup> The initial DEM preparation area was 3,000km<sup>2</sup>. It was increased by 200km<sup>2</sup> based on the request of the implementing agency for the data for the additional area due to the large-scale flooding caused by heavy rain in the LiDAR survey area in May 2016. Amendment of the area was agreed in June 2016 by JICA and the Study Team and contract between JICA and the Study Team was amended accordingly.

According to the Final Report (Summary) of the project, the ortho-photo preparation area is the same as DEM preparation area. It was increased from 3,000km<sup>2</sup> (i.e. the initial area at the time of commencement of the project) to 3,200km<sup>2</sup> in 2016 when DEM preparation area was increased from 3,000km<sup>2</sup> to 3,200km<sup>2</sup> as explained in footnote 2. For reference, the initial area for ortho-photo data was 7,800km<sup>2</sup> (same as the LiDAR survey area to obtain measurement raw data) according to the Record of Discussions (11/Sep/2014) and the Ex-ante Evaluation Sheet.

<sup>&</sup>lt;sup>4</sup> The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

<Consistency with the Development Policy of Sri Lanka at the Time of Ex-Ante Evaluation>

The project was consistent with a policy of Sri Lanka for disaster prevention as set forth by Sri Lanka Disaster Management Act (2005), a fundamental framework for activities of mitigation, preparedness, response and recovery.

<Consistency with the Development Needs of Sri Lanka at the Time of Ex-Ante Evaluation>

The project was consistent with the development needs of Sri Lanka for LiDAR measurement data and DEM data for the areas prone to natural disasters as stated in <Background> above.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's Country Assistance Policy to Sri Lanka (2012), which identified "Mitigation of vulnerabilities" as one of the priority areas under the basic policy of "Promotion of economic growth in consideration of merging regions".

<Evaluation Result>

In light of the above, the relevance of the project is high.

## 2 Effectiveness/Impact

<Status of Achievement for the Objectives at the time of Project Completion>

The Objectives were achieved at the time of project completion. As planned, the LiDAR measurement raw data (7,800km<sup>2</sup>), the DEM data (3,200km<sup>2</sup>), and the ortho-photo data (3,200km<sup>2</sup>) had been produced before the project completion. Techniques on thematic map preparation based on DEM were transferred to the relevant staff members of SDSL (35 in total). The Final Report of the project was officially received/accepted as the project output by SDSL.

<Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

As expected at the time of project completion, the DEM data, ortho-photo data etc. prepared by the project were utilized by Disaster Management Center (DMC), Irrigation Department, National Building Research Organization (NBRO), and 7 municipalities in project planning, formulation, etc. related to disaster prevention. In addition, they were utilized by 3 other government organizations i.e., Central Engineering Consultancy Bureau (CECB), Central Environmental Authority (CEA), and Ministry of Megapolis and Western Development (MMWD) for project planning, formulation, etc. related to disaster prevention.

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

Progress was already observed towards the Expected Goals through the Proposed Plan, which are medium-to-long-term goals. To the knowledge of SDSL, at least 3 projects related to disaster prevention, which utilized the DEM data, ortho-photo data etc. were commenced/implemented by 3 government organizations i.e., Irrigation Department, CEA, and CECB. <Other Impacts at the time of Ex-post Evaluation>

Various other positive impacts were observed. SDSL prepared the DEM data, ortho-photo data, and thematic maps for the remaining LiDAR area, using the transferred techniques and the provided equipment. The data and maps were used by DMC and NBRO for disaster resilience. The DEM data, ortho-photo data, and thematic maps prepared during and after the project completion were utilized for the purposes other than disaster prevention. For example, they were used by National Water Supply and Drainage Board (NWSDB), Urban Development Authority (UDA), and some local governments mainly for urban development and utility management. The DEM and ortho-photo data were also used to update 1:5,000 and 1:10,000 scale topographic data layers required for multiple uses of the country such as land use, road construction, etc. There was a synergetic effect with a JICA's technical cooperation project "Project for Capacity Strengthening on Development of Non-Structural Measures for Landslide Risk Reduction (Project Sabo)" (2019-2021) as the data from SDSL produced by this project was utilized in Project Sabo. Meanwhile, no negative impacts were observed.

In light of the above, the effectiveness/impact of the project is high.

Status of Achievement of Utilization Status of the Proposed Plan and Expected Goals through	h the Proposed Plan
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Aim	Indicators	Results			
(Utilization Status of	Results of utilization	(Ex-post Evaluation) achieved.			
the Proposed Plan)	of the DEM data,	Organization	Data/maps used	Projects, activities, etc. in which data/maps were used in planning*	
The DEM data	thematic maps etc. by	DMC	DEM data,	Risk Profile Project (2016-2025), flood and landslide disaster	
prepared by the	the relevant		orthophoto data	prevention, preparedness and post disaster operations	
project in project is	organizations in	Irrigation	LiDAR data,	Part of Comprehensive Climate Resilience Improvement Project	
used in project	project planning,	Department NBRO	DEM data DEM data	(CRIP) (2014-present), flood modeling project	
	1 5 1 0,	7 municipalities	DEM data DEM data	Upcountry Landslide Resilience Project (2016-prsent) Updating of town maps	
planning, formulation	formulation etc.	MMWD	DEM data DEM data.	Flood prevention and infrastructure development projects	
etc. related to disaster			ortho-photo	riodu prevention and infrastructure development projects	
prevention.	(Please see <special< td=""><td></td><td>data</td><td></td></special<>		data		
	Perspectives Considered	CEA	ditto	Land degradation mapping project	
	in Evaluation>)	CECB	DEM data	Flood modeling project (2017)	
		*SDSL did not have information of the exact name and period of most of the projects, activities, etc.			
(Expected Goals	Results of	(Ex-post Evaluation) partially achieved.			
through the Proposed	commencement of	-To the knowledge of SDSL, at least 3 projects related to disaster prevention, which utilized the DEM			
Plan)	development projects	data, ortho-photo data etc. were already commenced/implemented (i.e., flood modeling projects by			
Projects related to	which utilize the DEM	CECB and Irrigation Department, and land degradation mapping project by CEA).* *SDSL did not have			
disaster prevention,	data.	the information on the year of commencement/implementation.			
which utilize the DEM	I				
data prepared by the	(Please see <special< td=""><td></td><td></td><td></td></special<>				
project, are	Perspectives Considered				
commenced.	in Evaluation>)				
Source: SDSL					
3 Efficiency					

Both project period and cost were within their respective plans (ratio against the plan: 100% and 94% respectively). The outputs were produced as planned. Therefore, the efficiency of the project is high.

#### 4 Sustainability <Policy Aspect>

Sri Lanka Disaster Management Act (2005) stated in "Relevance" was still effective. In addition, Sri Lanka Sustainable Development Act (2017) set forth development and implementation of holistic disaster risk management at all levels in line with the Sendai Framework for Disaster Reduction (2015-2030).

<Institutional/Organizational Aspect>

Organizational structure of SDSL to prepare DEM and thematic maps from DEM data remained unchanged. The number of staff allocated to 5 relevant branches of SDSL was 25 in total (Photogrammetric Branch (17), Mapping Branch (2), GIS Branch (3), Photo Laboratory (2), and Remote Sensing Branch (1)). As compared with the project completion, the number of the relevant staff was decreased by 10 persons due to internal transfer (5) and retirement or resignation (5). According to SDSL, the number of staff of the 5 branches was appropriate to prepare DEM and thematic maps from DEM data as problems associated with insufficient manpower were not observed. SDSL continuously shared information with user organizations of DEM data and thematic maps from DEM data to promote their utilization. In order to enhance it, SDSL started to utilize National Spatial Data Infrastructure (NSDI)<sup>5</sup> launched in 2019 (the details could not be confirmed).

<Technical Aspect>

SDSL sustained technical capacity to prepare DEM data and thematic maps from DEM data through daily operation by the existing staff members trained by the project. For example, SDSL prepared DEM data and thematic maps of the remaining LiDAR area by themselves as stated in <Effectiveness/Impact>. The transferred techniques on preparation of an airborne LiDAR survey plan, however, were not utilized as the surveys outside the LiDAR survey area of the project were not conducted by SDSL due to lack of budget (see <Financial Aspect> below). It is noted that SDSL does not have internal training mechanism to transfer the acquired techniques in case new staff members join the relevant branches. SDSL mentioned that it would consider it in the future. SDSL also mentioned that they did not know how to update the transferred knowledge on the LiDAR technology in the future.

<Financial Aspect>

According to SDSL, it secured the necessary budget to prepare DEM data and thematic maps from DEM data as part of its regular budget allocated by the national government. A LiDAR survey, which was new to SDSL, was not part of their regular operation and, therefore, required additional budget. SDSL keened to conduct the surveys outside the LiDAR survey area of the project but it was not able to secure the additional budget for them.

<Evaluation Result>

In light of the above, sight problems have been observed in terms of the technical and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

The project achieved its Objectives at the time of project completion because the LiDAR measurement raw data (7,800km<sup>2</sup>), the DEM data (3,200km<sup>2</sup>), and the ortho-photo data (3,200km<sup>2</sup>) were produced and the methods on thematic map preparation based on DEM were transferred to the relevant staff members of SDSL. Utilization of the Proposed Plan was achieved because the DEM data, thematic maps, etc. were utilized by 6 government agencies and 7 municipalities in planning projects related to disaster prevention. Regarding the sustainability, slight problems were observed in terms of the technical and financial aspects mainly because the additional funds for LiDAR survey were not secured so that the transferred knowledge on LiDAR survey planning was not utilized. Nevertheless, no problem was observed in the policy and institutional/organizational aspects. Considering all of the above points, this project is evaluated to be highly satisfactory.

## III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- It is recommended that SDSL secure budget for LiDAR surveys outside the LiDAR areas of the project by government or donor funds so that the transferred techniques on LiDAR survey planning will be continuously utilized.

- If new staff members join the relevant branches in the future, SDSL should make sure the transferred techniques and materials of the project be shared to them by on-the-job training in order to sustain the knowledge,

Lessons Learned for JICA:

-In a project involving technical transfer of the state-or-art technology such as LiDAR technology, action plans for updating the relevant knowledge should be prepared so that the implementing agency can continuously utilize the transferred knowledge even the technology is updated. During project implementation, JICA should consider this point and consultant should discuss with the implementing agency how they would be able to update their knowledge; ex. sharing some information resource they would be able to get the latest know how (technology), introducing and suggesting to the implementing agency to participate in some groups which teach them the latest know how etc.

<sup>&</sup>lt;sup>5</sup> NSDI is a platform of geospatial information in Sri Lanka, which aims to create an ecosystem where government and private sector organizations can collaborate to manage, improve and exchange spatial data and information.