Internal Ex-Post Project Evaluation 2017

Evaluation Report

May 2023

Japan International Cooperation Agency

（JICA）

EV
JR
23-23

List of Internal Ex-post Evaluation

Type of Assistance	Project Start Year*	Type of Evaluation	Country	Sector/Theme	Project Name	Project Number
T	2006	Ex-post Evaluation	Indonesia	Higher Education	Project for Research and Education Development on ICT in ITS (PREDICT-ITS) Phase 1	200600272
T	2006	Ex-post Evaluation	Cambodia	Agriculture / General	Battambang Rural Area Nurturing and Development (BRAND)	200601400
T	2009	Ex-post Evaluation	Myanmar	Health / Health Care	Strengthening Capacity of Training Teams for Basic Health Staff	200601879
T	2005	Ex-post Evaluation	Vanuatu	Fisheries	The Project for Promotion of the Grace of the Sea in Coastal Villages (Phase 1)	200602835
T	2005	Ex-post Evaluation	Guatemala	Basic Healthcare	Project for Child Health in Department of Quetzaltenango	200603058
T	2007	Ex-post Evaluation	Ethiopia	Health / Health Care	Strengthening Infectious Disease Prevention, Control and Response in Amhara National Regional State	200604583
T	2006	Ex-post Evaluation	Kenya	Development Planning / General	Smallholder Horticultural Empowerment Project	200604759
T	2005	Ex-post Evaluation	Uganda	Vocational Training	Secondary Science and Mathematics Teacher's Project (SESEMAT)	200604969
T	2008	Ex-post Evaluation	Sierra Leone	Health / Health Care	Project for Integrated Rural Health Improvement	200605501
T	2007	Ex-post Evaluation	Niger	Primary Education	Support to the Improvement of School Management through Community Participation ("School for All") Phase II	200608872
T	2010	Ex-post Evaluation	Bolivia	Health / Health Care	Project for Strengthening Health Network in Rural Region Focusing on Mother and Child Health	200700540
T	2009	Ex-post Evaluation	Bangladesh	Measurement / Map	Bangladesh Digital Mapping Assistance Project	200700578
T	2010	Ex-post Evaluation	Madagascar	Fisheries	Rural Development Project through the Diffusion of Aquaculture of Tylapia in the Region of Boeny, Mahajanga	200700691
T	2009	Ex-post Evaluation	Senegal	Agriculture / General	Project on Improvement of Rice Productivity for Irrigation Schemes in the Valley of Senegal	200701698
T	2010	Ex-post Evaluation	Zambia	Basic Healthcare	Project for Strengthening Community-based Child Health Promotion System in Urban Areas (SCHePS)	200701997
T	2008	Ex-post Evaluation	Ethiopia	Health / Health Care	Improving Maternal and Child Nutrition Status in Oromia Region (COBANA)	200702139
T	2008	Ex-post Evaluation	Iran	Agriculture / General	Establishment of participatory water management system in Golestan province	200702186
T	2009	Ex-post Evaluation	Cambodia	Health / Health Care	The Project on Strengthening of Medical Equipment Management in Referral Hospitals	200800190
T	2009	Ex-post Evaluation	Viet Nam	Electrical Power	Electric Power Technical Standards Promotion in Vietnam	200800242
T	2009	Ex-post Evaluation	Viet Nam	Agriculture / General	Improvement of Extension System for Applying Better Farming System and Cultivation Techniques for Poor Farmers in the Mekong Delta	200800264
T	2010	Ex-post Evaluation	Viet Nam	Agriculture / General	Strengthening the Capacities for the Field of Management of Vietnam's Crop Production Sector for Improving the Productivity and Quality of Crop's Products	200800265
T	2009	Ex-post Evaluation	Bangladesh	Weather / Earthquakes	Project on Development of Human Capacity on Operation of Weather Analysis and Forecasting	200800332
T	2009	Ex-post Evaluation	Nepal	Environment Issue	Participatory Watershed Management and Local Governance Project (PWMLGP)	200800382
T	2009	Ex-post Evaluation	Pakistan	Health / Health Care	The District Health Information System Project for Evidence-based Decision Making and Management	200800391
T	2011	Ex-post Evaluation	Vanuatu	Fisheries	The Project for Promotion of the Grace of the Sea in Coastal Villages (Phase 2)	200800465
T	2009	Ex-post Evaluation	Guatemala	Water Supply	Strengthening of Water Associations and Community Development Project	200800496
T	2010	Ex-post Evaluation	Mexico	Machine Tool Industry	Project for Human Resource Development in the Technology of Plastic Transformation	200800530
T	2009	Ex-post Evaluation	Ethiopia	Agricultural Engineering	Project for Capacity Building in Irrigation Improvement	200800811
T	2009	Ex-post Evaluation	Ghana	Agriculture / General	Sustainable Development of Rain-fed Lowland Rice Production Project	200800821
T	2009	Ex-post Evaluation	Ethiopia	Agriculture / General	Quality Seed Promotion Project for Smallholder Farmers (QSPP)	200800822
T	2009	Ex-post Evaluation	Nigeria	Water Supply	Project for Enhancing the Function of the National Water Resources Institute	200800878
T	2009	Ex-post Evaluation	Bhutan	Weather / Earthquakes	Study on GLOFs (Glacial Lake Outburst Floods) in the Bhutan Himalayas	200802770
T	2009	Ex-post Evaluation	China	Health / Health Care	Project for Capacity Development on Mental Health Services for Reconstruction Support of Sichuan Earthquake	200804896
T	2009	Ex-post Evaluation	Indonesia	Health / Health Care	Identification of Anti-Hepatitis C Virus (HCV) Substances and Development of HCV and Dengue Vaccines	200900261
T	2009	Ex-post Evaluation	Cambodia	Development Planning / General	The Project for Capacity Development for Implementing the Organic Law at Capital & Provincial Level	200900375
T	2009	Ex-post Evaluation	Laos	Primary Education	Project for Improving In-service Teacher Training for Science and Mathematics Education	200900384
T	2010	Ex-post Evaluation	Laos	Rivers / Erosion Control	Project on Riverbank Protection Works Phase II	200900397
T	2009	Ex-post Evaluation	Viet Nam	Trade	Project on Strengthening the System and Operation on Standards and Conformance	200900409
T	2010	Ex-post Evaluation	Viet Nam	Health / Health Care	Project for Implementing Maternal and Child Health Handbook for Scaling Up Nationwide	200900423
T	2010	Ex-post Evaluation	Viet Nam	Environment Issue	Project for Capacity Building for National Greenhouse Gas Inventory	200900449
T	2009	Ex-post Evaluation	Dominican Republic	Tourism / General	Project on Sustainable Tourism based on Public-Private Partnership in the Dominican Republic	200900658
T	2010	Ex-post Evaluation	Guatemala	Health / Health Care	Project for Maternal and Child Health in Quetzaltenango, Totonicapan, and Solola in the Guatemala	200900666

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T	2010	Ex-post Evaluation	Turkey	Education	School-based Disaster Education Project	200900870
T	2010	Ex-post Evaluation	Ethiopia	Primary Education	National Pilot Project for Strengthening Mathematics and Science Education （SMASEE）	200900928
T	2010	Ex-post Evaluation	Ethiopia	Government / General	The Project on Strengthening Multi Sectoral Planning and Budgeting Capacity in Oromia Region	200900933
T	2010	Ex-post Evaluation	Uganda	Livestock Sanitation	The Technical Assistance to Improve National Diagnostic Capacity for Animal Disease Control in Uganda	200901023
T	2009	Ex-post Evaluation	Burkina Faso	Primary Education	School Management Committee Support Project	200901058
T	2009	Ex-post Evaluation	China	Forestry / Forest Preservation	Project on forest restoration after the earthquake in Sichuan Province	200903176
T	2009	Ex-post Evaluation	Thailand	Environment Issue	Capacity Development and Institutional Strengthening for GHG Mitigation	200904765
G	2009	Ex-post Evaluation	Myanmar	Food Aid	The Project for Construction of Primary School-cum-Cyclone Shelter in the Area Affected by Cyclone "Nargis"	0960410
G	2009	Ex-post Evaluation	Ghana	Primary Education	The Project for Improvement of Access to Basic Education in Deprived Areas	0960650
G	2009	Ex-post Evaluation	Djibouti	New / Renewable Energy	The Project for Introduction of Clean Energy by Solar Electricity Generation System （Le Projet De Promotion De L'Énergie Propre En Utilisant Le Système Solaire Photovoltaïque）	0961290
G	2009	Ex-post Evaluation	Laos	Forestry / Forest Preservation	The Programme for Forest Information Management	0961950
G	2009	Ex-post Evaluation	Tonga	New / Renewable Energy	The Project for Introduction of Clean Energy by Solar Home System	0962080
G	2009	Ex-post Evaluation	Laos	New / Renewable Energy	The Project for Introduction of Clean Energy by Solar Electricity Generation System	0962100
G	2009	Ex-post Evaluation	Ghana	New / Renewable Energy	The Project for Introduction of Clean Energy by Solar Electricity Generation System	0962130
T	2011	Ex-post Evaluation	Republic of North Macedonia	Forestry / Forest Preservation	Project on Development of Integrated System for Prevention and Early Warning of Forest Fires	201000100
T	2011	Ex-post Evaluation	Indonesia	Higher Education	Project for Research and Education Development on ICT in ITS （PREDICT-ITS） Phase 2	201000125
T	2011	Ex-post Evaluation	Cambodia	Urban Transport	Project for Comprehensive Urban Transport Planning in Phnom Penh Capital City	201000212
T	2010	Ex-post Evaluation	Cambodia	Agriculture / General	Agricultural Productivity Promotion Project in West Tonle Sap	201000226
T	2011	Ex-post Evaluation	China	Environment Issue	The Project for Development of the Capacity on Water Environmental Management in Heihejinpen Dam River Basin	201000293
T	2011	Ex-post Evaluation	Turkey	Transportation / Traffic / General	The Project for Traffic Demand Management of Historical Area in Istanbul	201000572
T	2011	Ex-post Evaluation	Kenya	Basic Healthcare	Project for Strengthening Community Health Strategy	201000607
T	2011	Ex-post Evaluation	Nigeria	Water Resources Development	Project for Review and Update of Nigeria National Water Resources Master Plan	201000631
T	2011	Ex-post Evaluation	Djibouti	Agricultural Engineering	The Master Plan Study Project for Sustainable Irrigation and Farming in Southern Djibouti	201000711
T	2010	Ex-post Evaluation	Comoros	Fisheries	Project for Capacity Development of the National School of Fisheries	201000740
T	2011	Ex-post Evaluation	Kenya	New / Renewable Energy	Establishment of Rural Electrification Model Using Renewable Energy	201003119
G	2011	Ex-post Evaluation	Lesotho	Electrical Power	The Project for Introduction of Clean Energy by Solar Electricity Generation System	1061050
G	2010	Ex-post Evaluation	Morocco	Rivers / Erosion Control	The Project for Flood Forecasting and Warning System in High Atlas Region	1061320
T	2011	Ex-post Evaluation	Viet Nam	Health / Health Care	Project for Strengthening Capacity of Inspection System for Ensuring Safety of Agro-Fishery Foods	201100223
T	2012	Ex-post Evaluation	Ghana	Industry / General	Project for Formulating a Strategic Model for Quality/Productivity Improvement through Strengthening BDS for MSEs	201100490
T	2012	Ex-post Evaluation	Kenya	Urban Planning / Land Development	Project on Integrated Urban Development Master Plan for the City of Nairobi	201100511
T	2011	Ex-post Evaluation	Uganda	Roads	District and Urban Roads （DUR） Mapping and Roads Database Project	201100536
T	2011	Ex-post Evaluation	Mozambique	Transportation / Traffic / General	The Project for the Comprehensive Urban Transport Master Plan for the Greater Maputo	201100602
T	2011	Ex-post Evaluation	Zimbabwe	Urban Sanitation	Project for the Improvement of Water Supply, Sewage and Solid Waste Management in Chitungwiza	201102132
T	2011	Ex-post Evaluation	Philippines	Rail Transport	Study on the Strategic Railways Networks for the Greater Capital Region	201102789
T	2011	Ex-post Evaluation	Tajikistan	Regional Development Planning	Rural Development Project in Tajik-Afghan Border Area of Gorno-Badakhshan Autonomous Oblast	201102908
T	2011	Ex-post Evaluation	Brazil	Agriculture / General	Project for Capacity Development of Post-harvest and Marketing Practices in Jaiba Region	201103260
T	2011	Ex-post Evaluation	Philippines	Business Management	National Industry Cluster Capacity Enhancement Project （NICCEP）	201103274
T	2011	Ex-post Evaluation	Ethiopia	Water Resources Development	Jarar valley and Shebele Sub-basin Water Supply Development Plan, and Emergency Water Supply	201103599
T	2011	Ex-post Evaluation	Thailand	Agriculture / General	Project for flood countermeasures for Thailand agricultural sector	201103822
G	2011	Ex-post Evaluation	Laos	Others	The Project for Supporting Unexploded Ordnance Clearance in Surrounding Areas of Main Roads	1161540
T	2012	Ex-post Evaluation	Bangladesh	Social Infrastructure / General	The Project for Developing Inclusive City Governance for City Corporation	201200030
G	2012	Ex-post Evaluation	Nepal	Roads	The Project for Countermeasure Construction for the Landslides on Sindhuli Road Section II	1260020

Type of Assistance	Project Start Year*	Type of Evaluation	Country	Sector/Theme	Project Name	Project Number
G	2012	Ex-post Evaluation	Pakistan	Sewerage	The Project for Upgrading of Mechanical System for Sewerage and Drainage Service in Faisalabad	1260260
G	2012	Ex-post Evaluation	Cameroon	Water Resources Development	The Project for Rural Water Supply （Phase V）	1260270
G	2012	Ex-post Evaluation	Papua New Guinea	Roads	The Project for Improvement of Road Maintenance Equipment	1260490
G	2012	Ex-post Evaluation	Cambodia	Higher Education	The Project for Improvement of Facility and Laboratory Equipment in the Institute of Technology of Cambodia	1260720
G	2012	Ex-post Evaluation	Sri Lanka	Water Transport / Ships	The Project for Construction of a Dredger	1260750
G	2013	Ex-post Evaluation	Honduras	Roads	The Project for Restoration of the Democracia Bridge	1260880
G	2012	Ex-post Evaluation	Myanmar	Roads	The Project For Provision of Road Construction And Maintenance Equipment In Kayin State	1261050
G	2013	Ex-post Evaluation	Azerbaijan	Agricultural Engineering	The Project for Improvement of Equipment for Amelioration and Irrigation （Phase 2）	1261230
T	2013	Ex-post Evaluation	Kenya	Industry / General	Project on Master Plan for Development of Dongo Kundu, Mombasa Special Economic Zone	201300661

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Indonesia Office: February 2019

Country Name	Project for Research and Education Development on ICT in ITS (PREDICT-ITS) Phase 1 and 2
Republic of Indonesia	

I. Project Outline

Background	There were disparities of growth between the Western and the Eastern Part of Indonesia (EPI), and development of industries and communities in EPI was one of the most important issues for the sustainable economic growth. The Government of Indonesia has prioritized development of Information and Communication Technology (ICT)-related industries, and the Institut Teknologi Sepuluh Nopember (ITS) is recognized as a leading institute which contributes to stable socio-economic development of EPI. JICA implemented the "Project for Research and Education Development on Information and Communication Technology in ITS (Phase 1)" (2006-2010). ITS strengthened research and educational capacity of ICT related engineering departments through Labo-based Education (LBE) and joint researches. The request for the succeeding project (Phase 2) was made to further strengthen international level researches and LBE as well as expanding them to EPI universities.		
Objectives of the Project	Through introduction of LBE and joint research activities, the project aimed at strengthening ITS' education and research capabilities in the ICT-related engineering fields as a resource university in EPI, thereby contributing to capacity building of the industries, other universities and government institutes in EPI. 1. Overall Goal: 1) ITS will provide industries, other universities and government institutes in EPI with human resources having the state-of-the-art technologies and skills in the fields of ICT; 2) Universities in EPI will enhance their education and research capabilities. 2. Project Purpose: ITS strengthens its education and research capabilities in the ICT-related engineering fields as a resource university in EPI. (Project Purpose of PREDICT-ITS 1 and 2). Note: The objectives of the two projects restructured for the ex-post evaluation as explained in the "Special Perspectives Considered in the Ex-post Evaluation."		
Activities of the project	Project site: ITS 1. Main activities: Introduction of LBE, implementation of joint researches with Japanese and other EPI universities, joint activities with private companies and government institution, application of patents, training of the academic staff of other EPI universities, etc. 2. Inputs (to carry out above activities) Japanese Side Phase 1: 1) Experts from Japan: 15 persons 2) Training in Japan: 33 persons 3) Equipment: office equipment, etc. 4) Operation cost. Phase 2: 1) Experts from Japan: 10 persons 2) Training in Japan: 21 persons 3) Equipment: network server, software, etc. 4) Operation cost. Indonesian Side Phase 1: 1) Staff allocated: 22 persons 2) Land and facilities: Office space, laboratory, etc. 3) Operation cost for participation fees for the conferences and seminar, application of patents, scholarship for the researchers, etc. Phase 2: 1) Staff allocated: 65 persons 2) Land and facilities: Office space, etc. 3) Equipment for exploration and analysis 4) Operation cost.		
Project Period	Phase 1: April 2006 to March 2010 Phase 2: January 2012 to December 2014	Project Cost	Phase 1: (ex-ante) 330 million yen, (actual) 354 million yen Phase 2: (ex-ante) 199 million yen, (actual) 251 million yen
Implementing Agency	Directorate General of Higher Education, Ministry of Education & Culture (Restructured to the Ministry of Research Technology and Higher Education (RISTEKDIKTI) in 2014), Institut Teknologi Sepuluh Nopember (ITS).		
Cooperation Agency in Japan	Kumamoto University		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-post Evaluation >

- In the ex-post evaluation, the two projects were considered as one intervention since they shared the direction, and the Project Purpose and Overall Goal were restructured to verify achievement of the two projects as one intervention, as follows. Development of industries and communities in EPI was verified as a supposed impact. Efficiency was judged on the total project cost and period of the two projects, not by calculating the cost and period of each project separately.

1 Relevance

<Consistency with the Development Policy of Indonesia at the time of ex-ante evaluation and project completion>

The project was consistent with Indonesia's development policies from the time of the ex-ante evaluation of the Phase 1 to the project completion of the Phase 2, as capacity development of tertiary level educational institutions in the science and engineering fields was prioritized in the "National Mid-term Development Plans (RPJMN)" (2004-2009) (2010-2014).

<Consistency with the Development Needs of Indonesia at the time of ex-ante evaluation and project completion>

Although technical innovation in ICT was critical for sustainable development of the island-studded country, there were not sufficient number of technicians and researchers in EPI. Even after the Phase 1, there were still needs for further strengthening of international level researches and LBE in ITS as well as expanding them to other EPI universities. Thus, the project was consistent with the development needs of Indonesia from the time of the ex-ante evaluation of the Phase 1 to the project completion of the Phase 2.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

In "the Country Assistance Program for the Republic of Indonesia" (2004), one of the priority areas was set as "assistance to realize sustainable growth driven by private sector." Also, one of the focuses of human resource training is the personnel in industry and regional positions. In particular, development of human resources for the industry is considered necessary to achieve economic growth.

<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 mostly achieved. Among 24 joint research teams, six papers co-authored by researchers of ITS and EPI who belonged to the JICA joint research teams were posted in international journals. It is possible that more than six were submitted (Indicator 1). It was pointed out by the terminal evaluation team that contribution of EPI researchers was small due to insufficient research equipment. As well, ITS strengthened its educational functions, as many S2[1] students participated in regular laboratory meetings and answered that LBE would bring good future careers (Indicator 2). The average number of semesters needed to complete the master's thesis in the certified LBE laboratories decreased from 4.21 (2009) to 4.06 (2013) (Indicator 3), while it increased in all laboratories from 4.41 (2009) to 4.56 (2013).

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

The project effects have continued. Since the project completion, the number of joint researches and the number of the papers co-authored by researchers of ITS and EPI both increased (Indicator 1). Joint researches have been uploaded on the website[2]. As an output of the Phase 1, ITS exchanged agreements with four EPI universities for joint researches, which has been extended to the network with 23 EPI universities (EPI-UNET). Regarding ITS' educational functions, any students' satisfaction survey has not been conducted. However, based on the facts of the increase in the number of LBE certified laboratories, it can be assumed that quality LBE has been sustained in ITS (Indicator 2). In 2017, 75% of S2 students graduated within four semesters (Indicator 3).

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

The Overall Goal has been achieved. The number of academic staff who had gained degrees from ITS has been on an increasing trend ~~increased~~ (Indicator 1). In 2015, S2 degree and S3 degree holders were 99 and 42 in EPI universities, respectively, and it is presumed that the number has been increasing. According to the survey in the ex-port evaluation, the number of papers which are produced by the four EPI universities posted in academic journals increased from 79 in 2015 to 172 in 2017 (Indicator 2). Regarding the academic collaboration with the industry sector, among the four EPI universities, one has conducted 7 joint researches with private companies and the other, 2 joint activities, which have been increased compared to before the project (Indicator 3). For capacity building of EPI universities, ITS has annually conducted seminars, through EPI-UNET, particularly in the areas of joint research, quality assurance and internationalization. EPI-UNET has organized annual meetings with participation of the Directorate General of Institutional Affairs for Science Technology and Higher Education of RISTEKDIKTI.

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

First, ITS has applied more and more patents (22 in 2015, 38 in 2016 and 52 in 2017), and some have been commercialized as innovate products including one related to CAD (computer-aided design). Second, through intervention in EPI-UNTE, the Directorate General of Institutional Affairs for Science Technology and Higher Education of RISTEKDIKTI has improved performance in processing publication and patent, according to observation of ITS. Third, though no exact data was available, according to ITS, the number of female lectures increased as LBE leaders at ITS. Female researchers trained in the Phase 1 were encouraged to take responsible positions, and nine of them were appointed as LBE leaders in the Phase 2.

<Evaluation Result>

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

Achievement of the Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td rowspan="2">(Project Purpose)
ITS strengthens it education and research capabilities in the ICT-related engineering fields as a resource university in EPI.</td><td>1. At least one research paper, co-authored by researchers of ITS and EPI universities, is submitted to an international journal by each JICA joint research team. (Indicator 1 of the Project Purpose of PREDICT-ITS 2)</td><td><u>Status of achievement: Partially achieved (Continued).</u>
(Project Completion)
- Among 24 JICA joint research teams, six papers co-authored by researchers of ITS and EPI universities were "posted" in international journal, though it is possible that more papers would have been "submitted".
(Ex-post Evaluation)
- ITS has conducted researches and submitted papers to international journals, co-authored with researches of EPI universities.
<table>
<tr><td></td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>No. of joint researches</td><td>9</td><td>12</td><td>19</td></tr>
<tr><td>No. of the submitted papers</td><td>9</td><td>12</td><td>19</td></tr>
</table></td></tr>
<tr><td>2. More than 60% of students are satisfied with LBE of ITS. (Indicator 2 of the Project Purpose of PREDICT-ITS 2)</td><td><u>Status of achievement: Achieved (Partially continued).</u>
(Project Completion)
- 73% of S2 students considered that their participation in LBE would bring them good future careers in 2013.
- 90% of S2 students participated in more than 80% of the regular laboratory</td></tr>
</table>

[1] S2 (Sarjana 2) is equivalent to the master's degree. S3 is the doctor's degree.

[2] http://monitoring.epiunet.its.ac.id/ (Information is available in Indonesian only.)

<table>
<tr><td></td><td></td><td>meetings in 2013.
- 65% of S2 students conducted research activities for more than 30 hours per week in 2013.
(Ex-post Evaluation)
- Since the project completion, no survey on students' satisfaction has been implemented.
<Supplemental information>
- The percentage of the LBE-certified laboratories has increased: 28% (2015), 30 (2016) and 36% (2017), based on which it is presumed that LBE has been accepted by more students</td></tr>
<tr><td></td><td>3. The percentage of S2 students who complete his/her master's thesis at the end of 4th semester increases. (Indicator 3 of the Project Purpose of PREDICT-ITS 2)</td><td><u>Status of achievement: Achieved (Continued).</u>
(Project Completion)
- The average semester number needed to complete the master's thesis decreased from 4.21 (2009) to 3.66 (2012), 4.06 (2013).
(Ex-post Evaluation)
- The ratio of S2 students who complete his/her S2 course in 4 semesters has been increasing, according to ITS. In 2017, 75% of S2 students graduated within 4 semesters.</td></tr>
<tr><td rowspan="3">(Overall goal)
1. ITS will provide industries, other universities and government institutes in EPI with human resources having the state-of-the-art technologies and skills in the fields of ICT.
2. Universities in EPI will enhance their education and research capabilities.</td><td>1 The number of academic staff of universities in EPI in ICT-related engineering fields graduated from ITS with master's and/or doctoral degrees increases. (Indicator 1 of the Overall Goal of PREDICT-ITS 1 and 2)</td><td><u>Status of achievement: Mostly achieved</u>
(Ex-post Evaluation)
- The number of academic staff who gained S2 and S3 degree in ICT-related engineering fields from ITS has been on an increasing trend.
- Data of academic staff who gained S2 and S3 in EPI universities in 2016 and 2017 were not available. However, it is presumed that the number has been increasing, since their staff continued studies for S2 and S3 in 2016 and 2017.
<table>
<tr><td></td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>Academic staff with S2 degree in ITS</td><td>33</td><td>18</td><td>36</td></tr>
<tr><td>Academic staff with S3 degree in ITS</td><td>14</td><td>9</td><td>17</td></tr>
<tr><td>Academic staff with S2 degree in EPI universities</td><td>99</td><td>NA</td><td>NA</td></tr>
<tr><td>Academic staff with S3 degree in EPI universities</td><td>42</td><td>NA</td><td>NA</td></tr>
</table></td></tr>
<tr><td>2 The number of research papers produced by academic staff of EPI universities and published in journals increases. (Indicator 2 of the Overall Goal of PREDICT-ITS 2)</td><td><u>Status of achievement: Achieved.</u>
(Ex-post Evaluation)
- The number of research papers produced by researchers of ITS and EPI universities and published in journals has increased.
<table>
<tr><td></td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>Published papers by EPI university staff</td><td>79</td><td>167</td><td>172</td></tr>
</table>
Note: Data were collected from the University of Mataram, University of Nusa Cendana, Sam Ratulangi University and University of Cendrawasih.</td></tr>
<tr><td>3. The number of joint researches with industries conducted by EPI universities increases. (Indicator 3 of the Overall Goal of PREDICT-ITS 2)</td><td><u>Status of achievement: Partially achieved.</u>
(Ex-post Evaluation)
- Among the four surveyed universities, two (University of Nusa Cendana, Sam Ratulangi University) have newly conducted joint researches with industries.</td></tr>
</table>

Source: Terminal Evaluation Report, ITS Website, and information provided by ITS.

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: 114%). The outputs were produced as planned. Therefore, the project efficiency is fair.

4 Sustainability

<Policy Aspect>

Development of education and research at ITS and EPI universities in ICT-related fields is prioritized in RPJMN (2015-2019), and ICT is described as a strategic research field in "ITS Master Development Plan" (RENIP) (2016-2040) and "ITS Strategic Plan" (RENSTRA) (2016-2020).

<Institutional Aspect>

ITS has sustained an appropriate organizational structure to promote LBE and joint research. ITS Research Institute (LPPM) set under the rector is responsible for LBE at ITS. Every August, LPPM receives application for LBE certification from laboratories and selects those which meet qualifications, to which funds are granted. In 2018, 63 laboratories (35% of the total) were LBE-certified. LBE performance is monitored by LPPM. There has been a sufficient number of staff to support LBE, such as laboratory heads and PhD holder lecturers, according to ITS. Besides EPI-UNET, ITS has kept the network with Japanese universities[3] for joint researches, double degree program, student/staff exchange

<Technical Aspect>

LBE leaders and academic staff of ITS have sustained sufficient knowledge for promoting LBE and joint researches, as more S2 and S3 graduates have joined and published more research papers. For laboratories which are not yet LBE-certified, LPPM annually conducts trainings and share best practices of LBE laboratories. Guidelines for Defining LBE and its Criteria and Guidelines for

[3] ICT has kept the network with Kumamoto University, Kobe University, Osaka University, Hiroshima University, Kyushu University, Tohoku University, Tokyo Institute of Technology, Tokyo University, Saga University, Soka University, Wakayama University, and so on.

Monitoring and Evaluating LBE have been utilized by LPPM.

<Financial Aspect>

ITS has secured sufficient budgets for development of ICT infrastructure and promotion of LBE and joint researches with EPI universities: 250 million Indonesian Rupiahs (IDR) each year since 2015. Besides, since 2016, ITS has annually provided EPI-UNET with research funds for its collaborative research activities (300 million IDR). Although there has been no budget allocation from RISTEKDIKTI to EPI-UNET, research activities have been successfully conducted among ITS and EPI universities, as mentioned earlier.

<Evaluation Result>

Therefore, the sustainability of the effects is high.

5 Summary of the Evaluation

The Project Purpose was mostly partially achieved, and the project effects have continued. ITS strengthened its education and research capabilities, as indicated in the increase in the number of the produced academic papers and LBE-certified laboratories and decrease in the duration of S2 and S3 students to complete the program. Also, ITS has continued academic exchanges with EPI universities through the officially established network. Regarding sustainability, ITS has sustained an appropriate organizational structure and technical level to support LBE and joint researches. As for the project efficiency, the project cost exceeded the plan.

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

III. Recommendations & Lessons Learned

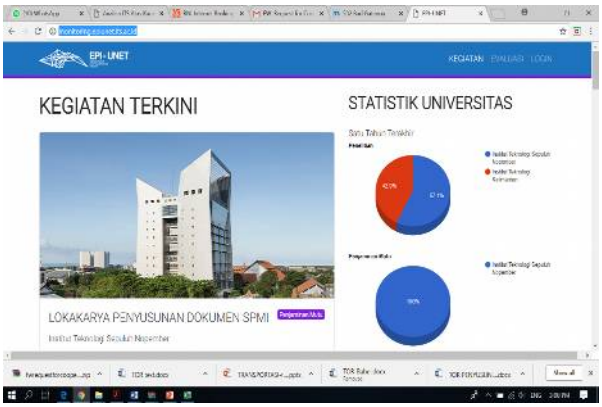
Recommendations for Implementing agency:

- It is recommended to the Directorate General of Institutional Affairs for Science Technology and Higher Education of RISTEKDIKTI to share the project experience with EPI universities in other fields than ICT, so that they could learn about joint researches and networking in the region. It is important to monitor progresses of collaboration of ITS and EPI-UNET on the degree programs for lecturers, LBE and joint researches.
- It is recommended to ITS to establish the database on successful cases of LBE and joint researches, including data such as the number of female researchers, students' satisfaction, and so on, and then to share the data within ITS and also with other EPI universities in order to further encourage LBE and joint researches. With regard to this, it is also recommended to ITS to organize a monitoring team which would coordinate with EPI universities to measure the progress of EPI-UNET and collect such data including the number of published research papers, workshop results, applied patents, and so on.
- It is recommended to EPI-UNET to strengthen further collaboration with ITS for utilizing LBE for joint research and involve other EPI universities in EPI-UNET so that their lecturers would participate in S2 and S3 programs at EPI universities.

Lessons learned for JICA:

- Through the activities of the Phase 1 and Phase 2, ITS strengthened its education and research capabilities and extended its experience with EPI universities through EPI-UNET. Official establishment of EPI-UNET has been attributed to the project efforts for involving EPI universities from the Phase 1, though the project mainly targeted at capacity development of ITS. Joint researches among ITS and EPI universities have been based on ITS experiences in joint researches with Japanese universities during the project period. Thus, in the projects, which aim at strengthening a certain institution as a center for capacity development of nearby institutions after the project completion, it is important to involve those nearby institutions and promote their networking during the project period, so that the target institution could learn how to disseminate the experience after the project completion. (either for Degree program for lecturer and or LBE utilization and or Research)
- Indicators for projects which are implemented in the remote areas shall be set carefully so as to avoid inefficient data collection for verification of target achievement after project is completed. In case sufficient data is not collected, project achievement cannot be verified or judged appropriately. Sending a team of monitoring after the project completion is one of the ways to update information on the project effects. Or, JICA offices should contact the implementing agency and make sure that it is monitoring the project effects based on set indicators.

EPI UNET workshop on outcome-based education in Surabaya in February 2018



Website of EPI-UNET

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Cambodia Office: March, 2019

Country Name	Battambang Rural Area Nurturing and Development (BRAND)
Kingdom of Cambodia	

I. Project Outline

Background	Agriculture is an important sector in Cambodia, but agricultural production is still low due to a number of factors, and one major factor is extension service delivery. Against such background, a JICA technical cooperation project, namely, "Battambang Agricultural Productivity Enhancement Project (BAPEP)" (2003-2006) was implemented. BAPEP aimed at establishing a rice-based farming system centered on the production of high quality rice seeds and strengthening of farmers organizations with Battambang Provincial Department of Agriculture (PDA), and successfully enhanced agricultural productivity in Kamping Puoy Area. This project was implemented to expand the outcome of BAPEP to other selected major rice-producing areas in Battambang.		
Objectives of the Project	Through improving agricultural techniques and methods for extension, implementing extension activities and collaborating other related parties, the project aimed at enhancing agricultural service delivery in the target communes[1] in Battambang Province, thereby improving the farming system in the target districts of the province. 1. Overall Goal: Farming system of farmers in the target districts in Battambang Province is improved. 2. Project Purpose: Agricultural service delivery to farmers is enhanced in the target communes.		
Activities of the Project	1. Project Site: Four communes selected from Battambang, Sangker, Ek Phnum and Thmarkol Districts in Battambang Province[2] 2. Main Activities: Training for extension workers and farmers; development of extension plans; experiment and demonstration on rice and non-rice crop cultivation; development of guidelines and extension materials; establishment of the systems of rice grading, certification, and monitoring for branding and marketing of rice; exchange of information with other projects; etc. 3. Inputs (to carry out above activities) Japanese Side 1. Experts: 12 persons 2. Trainees received: 5 persons 3. Equipment: office equipment, laboratory equipment (microscope, cabinet, etc.), agricultural equipment (threshers, rain gauge, etc.) 4. Local cost Cambodia Side 1. Staff allocated: 17 persons 2. Project office 3. Utility cost for the project office		
Project Period	November 2006 - March 2010	Project Cost	(ex-ante) 300 million yen, (actual) 316 million yen
Implementing Agency	Ministry of Agriculture, Forestry and Fisheries (MAFF) and Battambang Provincial Department of Agriculture, Forestry and Fisheries (PDAFF) * Provincial Department of Agriculture (PDA) was renamed as PDAFF in 2016 by Prakas (Ministerial Ordinance) No. 609 dated on September 27, 2016 of MAFF.		
Cooperation Agency in Japan	None		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

Alternative indicator for the Overall Goal Indicator 1 ("Average rice yield per unit area increases."): This indicator does not specify whose yield should increase. The most direct logical consequence of the achievement the Project Purpose is an increase in yield of farmers who adopted the project's techniques in the target communes. However, since such specific data and commune-level data was not available, we used the district-level data as an alternative.

1 Relevance

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

Agricultural and rural development is positioned as an important area for poverty reduction in Cambodia's development policies such as the "Rectangular Strategy" (2004), and the "National Strategic Development Plan (NSDP)" (2006-2010) as well as the "Rectangular Strategy" (2009-2013).

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

There were needs for improvement of agricultural productivity through enhancement of the extension service delivery as mentioned in "Background" above. Throughout the project implementation period, rice-based farming continued to be an indispensable part of rural people's livelihoods, and their demands for improvement of the farming system remained high in Battambang, which was the largest rice-based farming area.

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

Japan's Country Assistance Program for the Kingdom of Cambodia (2002) held a theme, "sustainable economic growth and poverty reduction," under which agricultural and rural development and improvement in productivity were aimed. This project is a measure to attain this end.

<Evaluation Result>

[1] A commune is an administration unit under a district.

[2] Voat Kor (Wat Kor) Commune in Battambang District, Kampong Preah Commune in Sangker District, Preaek Luong in Ek Phnum District, and Boeng Pring Commune in Thmarkol District.

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. More than 50% of the farmers participating in Farmers' Field Days (FFDs) applied salt water seed selection and hot water disinfection, a technique introduced under this project, and the seed rate was reduced in the targeted areas (Indicator 1). Regarding the marketing of the Battambang Brand Rice (Battambang Aromatic Rice), more than 50% of farmers joining in FFDs were aware of the brand (Indicator 2a). Although the number of rice millers certified as the brand rice suppliers did not reach the target, the quality of rice of uncertified rice millers satisfied the standard set in the rice grading and certification system established by the project involving the Battambang Rice Promotion Committee (BRPC), and they became capable of producing the Battambang Aromatic Rice (Indicator 2b).

<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. Several techniques introduced under the project are still extended to the farmers in the targeted areas and those techniques have been applied in other projects such as "Agricultural Productivity Promotion Project in West Tonle Sap (APPP)" (JICA technical cooperation, 2010-2015) and "Agriculture Service Program for Innovation, Resilience and Extension (ASPIRE)" (IFAD, 2014-2021). However, the degree of publicity of the Battambang Aromatic Rice among farmers is limited after project completion due to the budget shortage and no function of BRPC (see below), according to PDAFF (while the rice is still marketed to other provinces). Furthermore, there is only one rice miller currently supplying the Battambang Aromatic Rice. The other rice millers have already shut down the business for unknown reasons.

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

The Overall Goal was partially achieved by the time of ex-post evaluation. The average rice yield increased as the farmers have used the quality seeds, followed the recommended techniques, and diversified the agricultural production (Indicators 1 and 3). The Battambang Aromatic Rice has been marketed to Phnom Penh and other provinces (Indicator 2). However, PDAFF and BRPC are no longer in charge of the grading, certification, and monitoring system for the brand rice as the reform in 5th mandate of government in 2013 by transferring such tasks to the newly-established Ministry/Provincial Department of Industry and Handicraft (PDIH). According to PDAFF, Ministry/PDIH may be still using at least some ideas of the grading and certification system developed by the project, although which ideas or principles that are used was not clearly demonstrated. It should be nevertheless noted that the idea of brand rice was taken over to the Ministry of Commerce (MOC) and the same species of the Battambang Aromatic Rice have been selected by the Cambodia Rice Federation together with the MOC as two of the four branded rice as the Cambodian Aromatic Rice (premium rice) for export.

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

No negative impacts of the project were observed. The above-mentioned development of the concept and export of the Cambodian Aromatic Rice could be pointed out as a significant positive impact of the project. Regarding a positive impact on gender, the project promoted women participation, for example, the training of trainers and chief extension officers, resulted in the percentage of women participants being at least 50% (According to the law, a third is supposed to be women in the community leader).

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td rowspan="2">(Project Purpose)
Agricultural service delivery to farmers is enhanced in the target communes.</td><td>Indicator 1: More than 50% of the farmers who participate in the workshops, seminars, and Farmers' Field Days (FFDs) organized by the project adopt at least one of the improved techniques listed below.
(i) Salt water seed selection
(ii) Reduced seed rate
(iii) Vegetable seedling
(iv) Other techniques introduced by the project</td><td>Status of the Achievement: achieved (continued)
(Project Completion) According to a survey, 53% of the farmers who participated in FFDs had applied "salt water seed selection and hot water selection." They reduced seed rate from 90kg/ha in 2007 to 66kg/ha in 2009. 42% of farmers who joined FFDs followed BRAND-recommended fertilizer application.
(Ex-post Evaluation)
Status of extension activities in the target communes
<table>
<tr><th>District/ Commune</th><th>Techniques/ methods introduced by the project and still extended to farmers</th><th>% of farmers reached per year for extension</th><th>% of farmers who actually adopted the techniques</th></tr>
<tr><td>Battambang/Wat Kor
Sangkae/Kampong Preah</td><td>Salt water seed selection, reduced seed rate, vegetable seedling, appropriate fertilizer usage techniques</td><td rowspan="3">Around 70%</td><td>Around 60%</td></tr>
<tr><td>Ek Phnom/Praek Luong</td><td>Salt water and hot water, reduced seed rate, vegetable seedling, appropriate fertilizer usage, and line-transplanting techniques</td><td>Around 70%</td></tr>
<tr><td>Thmor Kol/Boeung Pring</td><td>Salt water seed selection, reduced seed rate, vegetable seedling, appropriate fertilizer usage, land levelling, water supply, and rice disease techniques</td><td>Around 50%</td></tr>
</table></td></tr>
<tr><td>Indicator 2: Marketing environment of rice has improved.
(a) At least 50% of the participants of the final Farmers' Field Day session recognize Battambang Brand Rice.
(b) At least five (5) rice</td><td>Status of the Achievement: mostly achieved (not continued)
(Project Completion)
(a) The survey in July 2009 showed that 56% of the farmers (182 participants) who participated in FFDs were aware of Battambang Aromatic Rice.
(b) Three rice millers were certified as Brand Rice suppliers by BRPC. Three more millers were not certified due to lack of rice polishing machines. The expert examined the quality of rice sampled from those rice millers, and it was found that the quality of their rice satisfied the standard and the rice millers had the capacity to produce Battambang Aromatic Rice.
(Ex-post Evaluation)</td></tr>
</table>

<table>
<tr><td></td><td>millers are certified as Battambang Brand Rice suppliers.</td><td>(a) The degree of publicity of Battambang Aromatic Rice among participating farmers is limited after project completion.
(b) There is only one rice miller currently supplying Battambang Aromatic Rice.</td></tr>
<tr><td rowspan="3">(Overall Goal)
Farming system of farmers in the target districts in Battambang Province is improved.</td><td>Indicator 1: Average rice yield per unit area increases.</td><td>(Ex-post Evaluation) achieved
Average yield of rice (unit: ton/ha)
<table>
<tr><th>District</th><th>Type</th><th>2009</th><th>2013</th><th>2014</th><th>2015</th><th>2016</th><th>2017</th></tr>
<tr><td rowspan="2">Battambang District</td><td>Dry</td><td>4.0</td><td>3.4</td><td>3.9</td><td>4.0</td><td>4.5</td><td>4.6</td></tr>
<tr><td>Wet</td><td>3.0</td><td>2.8</td><td>2.7</td><td>3.1</td><td>3.2</td><td>3.4</td></tr>
<tr><td rowspan="2">Sangker District</td><td>Dry</td><td>2.0</td><td>3.5</td><td>3.7</td><td>3.9</td><td>4.0</td><td>4.1</td></tr>
<tr><td>Wet</td><td>2.0</td><td>2.7</td><td>2.6</td><td>2.6</td><td>3.2</td><td>3.5</td></tr>
<tr><td rowspan="2">Ek Phnum District</td><td>Dry</td><td>4.0</td><td>0.0</td><td>3.6</td><td>3.7</td><td>3.8</td><td>3.8</td></tr>
<tr><td>Wet</td><td>2.0</td><td>2.7</td><td>2.5</td><td>2.8</td><td>3.0</td><td>2.9</td></tr>
<tr><td rowspan="2">Thmarkol District</td><td>Dry</td><td>3.0</td><td>3.9</td><td>4.0</td><td>4.0</td><td>4.1</td><td>4.2</td></tr>
<tr><td>Wet</td><td>2.0</td><td>2.9</td><td>2.7</td><td>3.2</td><td>3.5</td><td>3.6</td></tr>
</table></td></tr>
<tr><td>Indicator 2: Battambang rice is marketed as Battambang Brand Rice.</td><td>(Ex-post Evaluation) partially achieved
The Battambang Aromatic Rice is graded, certified, and marketed to Phnom Penh and other provinces although PDAFF and BRPC are no longer in charge of them after 2013.</td></tr>
<tr><td>Indicator 3: Agricultural production is diversified.</td><td>(Ex-post Evaluation) achieved
Agriculture production has been diversified since project completion. The farmers have continued growing rice and vegetables, and the yield has increased. PDAFF has actively promoted the agriculture diversification. The promoting factors are soil quality, size of the land plot, and different types of vegetable usage. The extension activities introduced by this project have contributed around 70% to the agriculture diversification such as through capacity building of the officers, quality seed usage, and the provision of good techniques.</td></tr>
</table>

Source: Terminal Evaluation Report; interview with PDAFF and former extension officers

3 Efficiency

The project cost slightly exceeded the plan, while the project period was as planned (ratio against the plan: 105% and 100%, respectively). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

There is an emphasis in the "Agriculture Extension Policy" (2015) that Agricultural Extension programs and activities are to be developed to address national, provincial, and district agricultural development needs and priorities. Also, the "Agricultural Extension Strategic Action Plan and Implementation Guideline for Policy on Agricultural Extension in Cambodia" (2018), which is to be aligned with the goals of the "Agriculture Master Plan 2030," have relevant components related to human resource development, extension materials development, and extension services delivery.

<Institutional Aspect>

PDAFF continues to be responsible for agricultural extension. According to PDAFF, the number of staff (ten officers at the agriculture extension office and ten at the District Agricultural Office for extension activities) are insufficient to conduct the extension activities fully. However, there are Commune Extension Workers (36 persons) who can support the extension service. On the other hand, BRPC, which had been established by a Governors' decree in 2008, stopped functioning after project completion when the Ministry/PDIH took over the function of rice grading and certification system and monitoring of that system as mentioned above.

<Technical Aspect>

Most of the extension officers who received technical transfer under this project and APPP still work on extension activities. With the support from other project activities such as ASPIRE (which has supported nine training courses so far), PDAFF has provided trainings on rice cultivation, vegetable, livestock to the extension officers and farmers, and on financial planning to extension officers. According to PDAFF, all the manuals developed under the project are being used by extension workers and farmers, and some of them have been updated.

<Financial Aspect>

At PDAFF, there is a fixed budget allocation from MAFF around 15 million Riel annually, and sometimes other project budgets are allocated for extension activities too. However, the amount is insufficient, and consequently, the extension activities are limited. In response to this issue, PDAFF will ask for more budgets from MAFF on extension activities and try to find the partnership with NGOs through Public-Private Partnership principles. BRPC has no functionality, thus no budget, either, after project completion. Regarding the Ministry/PDIH, although specific data is not available, it seems from the interviews with PDAFF that it has the budget for its operation including grading/certification work not focused only on rice.

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved the Project Purpose of enhancing agricultural service delivery by the time of project completion. The Overall Goal of improving the farming system has been partially achieved: rice productivity has improved through the continued extension services and application of the improved farming techniques, while the brand rice promotion as the Battambang Aromatic Rice has continued but attracted less recognition than during the project implementation period and BRPC stopped functioning for grading and certification of the brand rice. Nevertheless, there has been a significant positive impact that the brand rice concept introduced by the project has spread to nationwide and led to the export of the branded rice. Regarding the sustainability, problems were observed in the institutional and financial aspects mainly due to insufficient staffing and budget for extension activities. 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:

- To further promote the Battambang Brand Rice, reactivation of BRPC in any form should be considered by joint working effort among PDIH, PDAFF, Battambang Provincial hall, BRPC's existing members and maintain representatives of farmers. In doing so, since PDAFF alone cannot monitor effectively as it specializes on the (rice) production, PDAFF and PDIH should work cooperatively to monitor the quality of the Battambang Brand Rice.
- PDAFF should request more budget from the government and mobilize support from other development partners to strengthen extension activities.
- PDAFF should keep updating the manuals developed by the project to fit the current situation of rice cultivation.

Lessons Learned for JICA:

- For future project design and implementation, JICA should take into consideration of securing the human resources and continued budget allocation to sustain project effects (extension activities in case of this project) through mutual discussion and agreement with government. The terminal evaluation of this project acknowledged that there should have been more intensive dialogue between stakeholders on how to reach the development goal. In the post project implementation, JICA should keep in touch with the implementing agency so that it can do an appropriate intervention when necessary (discussion for reactivation of BRPC in case of this project).

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Myanmar Office: February, 2019

Country Name	**Strengthening Capacity of Training Teams for Basic Health Staff**
Republic of the Union of Myanmar	

I. Project Outline

Background	Reducing the high morbidity of infectious diseases and high maternal, infant and child mortality was a great challenge in Myanmar. To improve health service coverage and health outcomes, it was essential to ensure a sufficient number of health workers capable of meeting the needs of the population. However, a severe shortage of health workers was a major challenge. Especially Basic Health Staff (BHS), who had worked in the vanguard of delivering basic health services to the community, were not only scarce but also their capacity and performance were limited. Regarding the development of BHS, the lack of capacity development and management system was a serious issue at central (ministerial), state/region (S/R), and township levels. * BHS provides the basic health services under township or lower levels. In the broadest sense, BHS includes all job categories for medical and health services at the township level such as Township Medical Officer (TMO) who supervises the health administration, Midwife (MW) who practices the midwifery as well as disease control, etc.		
Objectives of the Project	Through development of organizational function for the Central Training Team (CTT), establishment of the Training Information System (TIS), strengthening of training management and teaching methodology and strengthening of Supportive Supervision, the project aimed to strengthening the capacity of Training Teams (TTs) of different levels of in-service training for BHS in the targeted S/Rs, thereby providing high quality and coordinated in-service training to contribute to strengthening of the capacity of BHS. 1. Overall Goal: The quality and coordinated in-service trainings are provided according to the needs of different levels. 2. Project Purpose: The capacity of training teams at different levels in the in-service training for the BHS is strengthened.		
Activities of the Project	1. Project Site: 177 townships (all 168 townships in "the 8 S/Rs" and nine pilot townships in "the 9 S/Rs") [1] 2. Main Activities: (i) Development of CTT's organizational function, (ii) Establishment of the TIS, (iii) Strengthening of training management and teaching methodology by introduction of a handbook and training plan, (iv) Strengthening of Supportive Supervision of TTs based on the handbook. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 5 persons for long-term and 22 persons for short-term 2) Trainees received: 16 persons 3) Equipment: Audio-visual equipment, computers, etc. 4) Local expenses Myanmar Side 1) Staff allocated: 20 persons at the central level and 83 persons at the S/R and township levels 2) Facilities: Project Office 3) Local expenses		
Project Period	May 2009 – May 2014	Project Cost	(ex-ante) 290 million yen, (actual) 250 million yen
Implementing Agency	Department of Public Health (DoPH), Ministry of Health and Sports (MoHS) * Department of Health, Ministry of Health (MOH) during the project implementation period		
Cooperation Agency in Japan	National Center for Global Health and Medicine		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

Evaluating Continuation Status of Effectiveness (Continuation status of achievement for Project Purpose): In order to verify the continuation status of achievement for Project Purpose "The capacity of training teams at different levels in the in-service training for the BHS is strengthened.", we examined whether key training activities to maintain their capacity have been continued, such as on Training Information System and Supportive Supervision as supplementary information.

1 Relevance

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

This project was consistent with the development policies such as: (i) "Myanmar Health Vision 2030," which prioritized securing health human resources; (ii) "The National Health Plan" (2006-2011), which described the necessity for additional 3,900 BHS for Rural Health Centers (RHCs) to be newly established in five years and an aim to conduct refresher training for BHS and Voluntary Health Workers (VHWs) in all townships; and (iii) "The National Health Plan" (2011-2016), which set priorities on strengthening capacity of BHS and included training activities for BHS in six out of its eleven program areas.

[1] "The 8 S/Rs" were the S/Rs in which all townships were included in the project site: Mon (as the model state), Sagaing, Mandalay, Magway, Shan (South), Bago (East), Ayeyarwaddy, and Kyin.

"The 9 S/Rs" were the rest of S/Rs in which one township per S/R was included in the project site as the pilot township: Kachin, Chin, Shan (North), Shan (East), Rakhine, Kayar, Bago (West), Yangon, and Taninthary.

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

This project was consistent with the needs for increasing the number and establishing the system of capacity development and management of BHS nationwide as mentioned in "Background" above (No information sources report drastic changes in project context that would have declined the needs for the project during the implementation period).

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

The basic Japanese ODA policy for Myanmar was to implement projects for emergency and humanitarian aid, human resource development for democratization and economic reform, and projects as a part of assistance for CLMV (Cambodia, Laos, Myanmar, and Viet Nam) and ASEAN countries.[2]

<Appropriateness of Project Design/Approach>

As described later, the sustainability of effects of this project was significantly affected by the suspension of the CTT in April 2015. However, the project design/approach had been appropriate at the time of project formulation and implementation, and it could not expect the organization changes of the MoHS.

<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 CTT developed the "HANDBOOK for TRAINING TEAMS" (the HANDBOOK) as a national guideline for TTs containing the essence of training management, TIS, Supportive Supervision, etc., and introduced the HANDBOOK to 177 Township TTs (T/S TTs) through introductory training workshops (Indicator 1). The TIS functioned with reporting from S/R TTs to the CTT and feedback from S/R TTs to T/S TTs (Indicator 2). With support from the project and guidance given from S/Rs through Supportive Supervision, T/S TTs became more capable of conducting Continuing Medical Education (CME) that they had conducted since before the commencement of this project by aligning it with the HANDBOOK (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. At the central level, the CTT was suspended in April 2015 in the organizational changes of the MoHS. Since then, the Basic Health Division under the DoPH has conducted the BHS-related training to S/Rs as well as post-training assessment and supervision. At the S/R level, S/R TTs conduct Supportive Supervision including feedback on it either regularly or occasionally when they conduct training to T/S TTs as part of other projects. Regarding reporting, however, while a few S/R TTs still regularly report to the central level, others do not for the reason that there is no request from the central level. At the township level, all T/S TTs conduct CME usually focusing on the practical and actual ground situations such as breaking emergency epidemic disease and new emerging issues of health problem from the community. However, the HANDBOOK is no longer used in these activities - training management in line with the HANDBOOK is difficult since the organization structure has totally changed, the duties and responsibilities stated in the HANDBOOK are also different from realities, and the CTT is not running to revise it. For the same reason, the TIS is no longer used at the central and S/R levels. At the township level, one township was found to be still using the reporting format of the HANDBOOK, while most others prefer their own formats.

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

The status of achievement of the Overall Goal by the time of ex-post evaluation could not be verified. No information was available to verify the indicator as the CTT is not functioning

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

No negative impacts of the project were observed. Regarding the Super Goal, "Capacity of BHS is strengthened (Knowledge & skill of BHS is updated systematically)," no information for verification of the achievement status was available.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td rowspan="3">(Project Purpose)
The capacity of training teams at different levels in the in-service training for the BHS is strengthened.</td><td>Indicator 1
CTT creates training guidelines and revises as necessary.</td><td>Status of the Achievement: achieved (not continued)
(Project Completion) The CTT developed the HANDBOOK and introduced it to all S/R TTs. CTT revised the HANDBOOK in October 2011.
(Ex-post Evaluation) The HANDBOOK is not revised after project completion as the CTT was suspended in 2015 and there is no training team under the DoPH.</td></tr>
<tr><td>Indicator 2
8 S/R TTs report to CTT and feedback to T/S TTs on Supportive Supervision and Training Information System.</td><td>Status of the Achievement: achieved (partially continued)
(Project Completion) (Ex-post Evaluation)
<table>
<tr><th></th><th>Project completion</th><th>Ex-post evaluation</th></tr>
<tr><td>Report from 8 S/R TTs to CTT</td><td>All 8 S/R TTs</td><td>3-4 S/R TTs till 2017; 1-2 S/R TTs in 2018</td></tr>
<tr><td>Feedback from 8 S/R TTs to T/S TTs</td><td>All 8 S/R TTs</td><td>7 S/R TTs: No exact and specific data are recorded, but they provide some feedback as part of other projects. (No information from one state)</td></tr>
</table></td></tr>
<tr><td>Indicator 3
T/S TTs under 8 S/R TTs conduct CME in line with HANDBOOK</td><td>Status of the Achievement: achieved (not continued)
(Project Completion) About 90% of T/S TTs under the 8 S/R TTs conducted CME, and these T/S TTs submitted the TIS report to S/R TTs using forms offered by the HANDBOOK. The pilot T/S TTs under the 9 S/R TTs also conducted CME in line with the HANDBOOK through Supportive</td></tr>
</table>

[2] Ministry of Foreign Affairs, ODA Data book (2008).

	for Training Teams as training guideline.	Supervision. (Ex-post Evaluation) All T/S TTs conduct CME but not in line with the HANDBOOK.
(Overall Goal) The quality and coordinated in-service trainings are provided according to the needs of different levels.	Indicator 75% of T/S TT receive training for training management from S/R TT and CTT.	(Ex-post Evaluation) unverifiable No specific data was available.

Source: Terminal Evaluation Report; questionnaire and interview with MoHS and the S/R Health Departments

3 Efficiency

Both the project cost and the project period were within the plan (ratio against the plan: 86% 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 National Health Plan (NHP)" (2017-2021) upholds the goal of extending access to a Basic Essential Package of Health Services (EPHS) and recognizes the importance of health system strengthening from all perspectives including human resources. According to that plan, in-service training is to be fully institutionalized and better integrated: it is to be tailored to the different cadres' needs in term of skills and competencies to deliver the Basic EPHS according to their respective roles and responsibilities. Also, in 2018, the MoHS has taken an initiative to start to distribute mobile tablet to each township and RHC for the purpose of supporting to systematically and efficiently developing the capacity of BHS in some part. Those mobile tablet include public health and medical guide book, reference books, research papers, health related applications (safe delivery application for maternal and child care, standardized health messages for general health awareness.) and document for administration and internal process.

<Institutional Aspect>

The DoPH of the MoHS is in charge of in-service training of the BHS at the time of ex-post evaluation, while pre-service training of all health cadres is the responsibility of the Department of Human Resources for Health (HRH). Currently, in-service training tends to be project-oriented, and there is limited continuous professional development. As mentioned above, the CTT has been suspended, and there has been no training team to replace it. The person in charge of the respective disease takes care of training and Supportive Supervision, and such a multiple burden is causing insufficiency of workforce for training for BHS (i.e., they have to be in a shift as supervisors of the training teams at the lower levels based on the title of training but they have to deal with not only training but also other health care services and other office work). S/R TTs and T/S TTs are still in charge of training. No information was available on the number of staff assigned to the BHS-related training at each organization.

<Technical Aspect>

At S/R TTs and T/S TTs, some counterpart personnel of this project is still working for the BHS training at the time of ex-post evaluation. Other information on the technical skills to sustain the project effects was not available.

<Financial Aspect>

While the MoHS seems to be allocating a certain budget for human resource development including the BHS training (i.e., CME) as well as obtaining project-based funding, there is no budget for the central training unit as the CTT has been suspended. No further information was available.

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved the Project Purpose of strengthening the capacity of TTs at different levels in the in-service training for the BHS by the time of project completion. The effects of the project have partially continued mainly due to the suspension of the function of the CTT, and the Overall Goal of providing the needs-based quality and coordinated in-service trainings is unverifiable. Regarding the sustainability, there are concerns on the institutional aspect due to the change in the government organizations, and sufficient information was not available on the technical and financial aspects.

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 develop a well-designed Human Resources Health Units (HRH units) under the MoHS to conduct not only the capacity building for the BHS but also for the Health Information System Units for training teams.
- It is recommended to integrate into HRH plans for necessary oversight and retaining system (transfer and promotion system) of BHS by defining roles and responsibilities of BHS job categories, determining quantity and distribution for recruitment, standardizing training in line with national policies, ensuring continuous supervision, support and performance management of BHS by Ministry of Health and Sports and recognizing and motivating them through standardized incentives are needed to be advanced.
- The monitoring and evaluation system on the trainings for BHS at all levels is essential for the sustainability in capacity building of BHS.

Lessons Learned for JICA:

- The implementing agency has a responsibility to ensure the continuation of project effects after project completion, and such responsibility includes any measures to facilitate continued activities for project effects even in the event of changes in policies and organizational structures in the future. JICA should get the agreement on responsibility of the implementing agency for substantiality of project as their future leadership after project completion.

Photo 1: BHS Training at Myothit Township, Magway Region

Photo 2: Supervision Tour to SRHC by Chauk Township, Magway Region

Photo 3: BHS Training at Magway Township, Magway Region

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Vanuatu Office: January, 2019

Country Name	The Project for Promotion of the Grace of the Sea in Coastal Villages (Phase 1 & 2)
The Republic of Vanuatu	

I. Project Outline

Background	Vanuatu is a small island country in the South Pacific with 80% of its population in rural areas or on remote islands. Most communities are scattered along coastal areas, and communities heavily depend on coastal resources such as fish and shellfish for their livelihoods including foods and income. However, in recent years, coastal resources have undergone a marked decrease because of overfishing, environmental degradation caused by development, and ecological changes under the global climate change. With this background, Phase 1 of the project was implemented in order to practice community-based coastal resource management (CBCRM) in the model sites. However, since CBCRM activities were not firmly established and limitedly implemented while aquaculture technologies for seed production and intermediate breeding of shellfish were established, Phase 2 of the project was implemented to establish an applicable model of sustainable CBCRM and to practice the model through enhancement of technical capacity of the Vanuatu Fisheries Department (VFD).		
Objectives of the Project	[Phase 1] Through transferring appropriate techniques of propagation and culture of the targeted coastal resource species to communities, the project aimed at practicing CBCRM at the model sites, thereby contributing to improvement of the livelihoods of communities in and around the model sites. [Phase 2] Through strengthening the capacity of VFD, the project aimed at practicing CBCRM in the target areas including remote islands, thereby contributing to enhancement of coastal environment conservation and sustainable utilization of coastal resources in and around the target areas.		
	[Phase 1] 1. Overall Goal: Livelihood of coastal communities are improved through CBCRM at the model sites and the resource propagation effect of the target species infects around the model sites. 2. Project Purpose: CBCRM is practiced at the model site in the target area. [Phase 2] 1. Overall Goal: 1) Conservation of coastal environment and sustainable utilization of coastal resources are enhanced in target areas. 2) CBCRM are promoted in other rural coastal areas. 2. Project Purpose: CBCRM is effectively practiced at target areas through adequate technical assistance from the Vanuatu Fisheries Department (VFD).		
Activities of the Project	[Phase 1] 1. Project Site: 3 target areas[1] (3 provinces of Shefa, Malampa, and Tafea) and 2 model sites[2] (Mangaliliu and Lelepa in Shefa Province) 2. Main Activities: 1) transfer of techniques of seed production and intermediate breeding of the target species, 2) promotion of extensive culture and propagation of the target species by the communities, 3) suggestion of livelihood improvement methods of communities. [Phase 2] 1. Project Site: 1) Mangaliliu, Lelepa, Moso in Efate Island, Shefa Province, 2) Uri, Uripiv, Amal-Crab Bay in Malakula Island, Malampa Province, 3) Analkauhat, Mystery Island in Aneityum Island, Tafea Province 2. Main Activities: 1) strengthening of capacity of VFD to support CBCRM, 2) acquisition of skills and knowledge of CBCRM by communities, 3) compilation of experiences and lessons learned from CBCRM activities. Inputs for Phase 1 and Phase 2 (to carry out above activities) Japanese Side 1) Experts: 2 persons (Phase 1), 7 persons (Phase 2) 2) Trainees received: 6 persons (Phase 1), none (Phase 2) 3) Equipment: vehicle, equipment for seed production, coastal resource survey and others (Phase 1), fish aggregating devices, portable GPSs, data loggers, electric charts and others (Phase 2) Vanuatuan Side 1) Staff allocated: 16 persons (Phase 1), 12 persons (Phase 2) 2) Land and facilities: office space, facilities for hatchery and nursery, equipment for seed production, coastal resource survey and others (Phase 1&2) 3) Local cost: field trip cost (fuel), cost for electricity, water, telephone, internet, and others (Phase 1&2)		
Project Period	[Phase 1] March 2006 - March 2009 [Phase 2] December 2011 - November 2014	Project Cost	[Phase 1] (ex-ante) 280 million yen, (actual) 274 million yen [Phase 2] (ex-ante) 220 million yen, (actual) 261 million yen

[1] Target areas were areas from which the project invited participants to training and workshops organized by the project in the model sites.

[2] Model sites were communities in which the project implemented its activities directly to formulate the model of CBCRM.

Implementing Agency	[Phase 1] Department of Fisheries (DF), Ministry of Agriculture, Quarantine, Forestry and Fisheries (MAQFF) [Phase 2] Vanuatu Fisheries Department (VFD[3]), Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity (MALFFB[3])
Cooperation Agency in Japan	[Phase 1] Fisheries Research Agency, Okinawa Prefectural Fisheries and Ocean Research Center [Phase 2] IC Net Limited

II. Result of the Evaluation

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

Phase 1 and Phase 2 of the project were evaluated in a unified manner in this ex-post evaluation in order to capture the outcome brought about by the project and its sustainability as a whole.

1 Relevance

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

The project was consistent with the development policy of Vanuatu. At the time of ex-ante evaluation of Phase 1, the "Priority and Action Agenda" (2003) prioritized the marine resources management by coastal communities for fisheries development. At the time of project completion of Phase 2, based on the Agenda, MALFFB formulated the ministerial "Corporate Plan" (2014-2018) and developed some specific plans for improving co-management of coastal and inshore resources with local communities.

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

The project was consistent with the development needs of Vanuatu for the coastal resource management. At the time of ex-ante evaluation of Phase 1, while the improvement and dissemination of CBCRM was highly required because communities had traditionally owned properties of coast sea areas and its resources to some extent, sufficient efforts have not been made by VFD due to personnel, technical and budgetary constraints. At the time of project completion of Phase 2, the CBCRM system developed by the project was highly evaluated not only in the country but also in the Pacific region, and expected to be disseminated to the entire country and to the Oceanian small island states such as Solomon Islands and Tonga.

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

Based on the "Okinawa Initiative" (2003) announced at the 3rd Pacific Islands Leaders Meeting (PALM3), the Japan's ODA policy for Vanuatu at the time of ex-ante evaluation of Phase 1 designated rural development as four priority areas including livelihood improvement in rural areas, support for infrastructure development, and strengthening the capacity of maintenance and management. At the time of ex-ante evaluation of Phase 2, under the prioritized areas of environment/climate change, it was targeted to promote adequate conservation and utilization of coastal resources through the cooperation of the government and communities[4].

<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 of Phase 1 was achieved by the time of project completion. Over 230 villagers participated in the workshops conducted by the project (Indicator 1), the resource management system developed by the project was applied to five target species including 3 species of giant clam, trochus and green snail (Indicator 2), and according to the observation by VFD, the communities in the model sites practiced periodical monitoring on the target species (Indicator 3).

The Project Purpose of Phase 2 was achieved by the time of project completion. The communities in the target areas started more than one management and supporting measures including the meetings for formulating and updating their CBCRM plans and the announcement of CBCRM regulations to community members (Indicator 1), and the self-evaluation of community members conducted in the pilot projects showed scores increased in seven out of eight assessment areas including community awareness, status of coastal resources, and economic stability of fishing households (Indicator 2).

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

The project effects have been continued after the completion of Phase 2 of the project. While not in the all target areas, but in some areas including Mangaliliu, Lelepa and Moso, broodstock restocking has been continuously conducted by VFD and resulted in the increase of the number of broodstocks of four target species except giant clam (T. gigas). As for community activities, out of seven communities involved in the project in the target areas, six communities continue their CBCRM activities in one form or another. In Mangaliliu, Lelepa and Moso, communities are practicing periodical monitoring on the growth of giant clam (T. gigas), and in Uri, Uripiv and Amal-Crab Bay, communities are conducting monitoring on resources on ad-hoc basis. According to the interviews with community members, they keep conducting community meetings and monitoring with the awareness on the necessity of resource management and compliance on regulations, and they are aware of the increase in coastal resources and their income as a result of these CBCRM activities. Knowing the recruitment[5] patterns of the target species identified by the project, communities in the target areas continue the reseeding and translocation by themselves with their own initiative. According to the community members, this has never happened before the project.

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

The Overall Goal of Phase 1 has been partially achieved at the time of ex-post evaluation. The volume of the target species has been increased according to the visual judgement of VFD and the Japanese experts (Indicator 1), the income of households in communities has increased along with the increase of coastal resources (Indicator 2). The number of broodstocks of the target species has been increasing except giant clam (T. gigas) (Indicator 3). Nevertheless, giant clam (T. gigas) transplanted by the project keep growing and its survival rate of 60% to 75% is notably high. The propagation techniques introduced by the project have not been applied to other species other than the target species of the project (Indicator 4)

The Overall Goal of the Phase 2 has been achieved at the time of ex-post evaluation. Amal-Crab Bay, one of the target areas of the project, has been authorized by the government as a Marine Protected Area (MPA) and the increase in the population of trochus, dugongs,

[3] DF and MAQFF have been renamed to VFD and MALFFB in 2013 with some institutional and functional changes while keeping their major responsibilities and mandates unchanged. The abbreviations of VFD and MALFFB are used in this report regardless of the phases.

[4] Source: Japan's ODA Databook (2005, p.964; 2011, p.981)

[5] Recruitment refers to a life history stage of a fish surviving to enter the fishery or to be caught.

turtles and others has been observed in and around MPAs (Indicator 1), and the CBCRM activities has been extended to other provinces through the activities of the project of the Secretariat of the Pacific Community (SPC) and Phase 3 of the project (Indicator 2).

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

There are some positive impacts confirmed at the time of ex-post evaluation. Some community chiefs involved in the project has designated some new taboo areas[6] and banned night diving on their own initiatives based on the knowledge they earned in the project. According to the interviews with community members, because the amount of coastal resources has been increased, not only the community members directly involved in the project but also other local people in and around the target areas of the project are enjoying the increase in income from coastal resources. The increased income has enabled them to afford to pay children's school expenses, household appliances, electric appliances and new fishing gears. More women become involved not only in family budget but also in village economy and resource management such as data collection through the women's participation in tourism activities such as seashell handicrafts and fish café[7]. No resettlement and land acquisition, and no other negative impact has been caused by the project.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td colspan="3">[Phase 1]</td></tr>
<tr><td rowspan="3">Project Purpose:
Community-based coastal resources management is practiced at the model site in the target area.</td><td>Indicator 1
150 villagers participate in workshop of resource management.</td><td>Status of the Achievement: achieved (continued)
(Project Completion)
239 villagers in total participated in various workshops on resource management.
(Ex-post Evaluation)
Villagers participated in the workshops are involved in the community activities such as the community meetings and the monitoring of resources.</td></tr>
<tr><td>Indicator 2
Resource management system is applied for 5 species.</td><td>Status of the Achievement: achieved (partially continued)
(Project Completion)
Resource management system has been applied to 5 target species including 3 species of giant clam (T. gigas, T. squamosa and T. maxima), trochus and green snail.
(Ex-post Evaluation)
Broodstock restocking of 5 species has been continued and resulted in the increase in the number of individuals as shown below in the table for the Overall Goal. Seed production of trochus and green snail has been terminated because it was found to be less efficient than broodstock restocking.
Breeding of giant clam has been continued in the hatchery but terminated in 2015 due to the damage of facilities caused by Tropical Cyclone Pam.</td></tr>
<tr><td>Indicator 3
Periodical Monitoring.</td><td>Status of the Achievement: achieved (continued)
(Project Completion)
The project completed seed production of the two species except giant clam (T. gigas), trochus and green snail, and the communities in the model sites started weekly monitoring on those species in their respective reef with the assistance of VFD.
(Ex-post Evaluation)
Communities in Mangaliliu, Lelepa and Moso keep periodical monitoring of the growth of giant clam (T. gigas) with the leadership of communities' Resource Management Committees organized by the project. All other communities in the target areas continue their monitoring in one form or another.</td></tr>
<tr><td rowspan="3">Overall Goal:
Livelihood of coastal communities are improved through the community-based resources management at the model sites and the resource propagation effect of the target species infects around the model sites.</td><td>Indicator 1
Increasing the volume of the target species.</td><td>(Ex-post Evaluation) achieved
It was confirmed by the visual inspection done by VFD and the Japanese experts in Phase 3 of the project that the volume of the target species except giant clam (T. gigas) has been reproduced and increased. Giant clam (T. gigas) transplanted by the project[8] has been growing but not increased yet since it takes time to propagate themselves.</td></tr>
<tr><td>Indicator 2
The number of households whose livelihood have improved at the model sites.</td><td>(Ex-post Evaluation) achieved
According to the interviews with community members, their livelihoods have been improved through the increase of fisheries products selling to hotels and restaurants, establishing new market channels to urban areas, tourism business such as handicrafts sales, snorkeling and fish café.</td></tr>
<tr><td>Indicator 3
The number of broodstock of the shellfish at the model sites.</td><td>(Ex-post Evaluation) achieved
The number of broodstock of shellfish at the model sites
(Unit: T. gigas: the number of individuals, others: the number of individuals in a hectare)
Mangaliliu
<table>
<tr><th>Year</th><th>2009</th><th>2013</th><th>2014</th><th>2017</th></tr>
<tr><td>Giant Clam (T. gigas)</td><td>33</td><td>26</td><td>NA</td><td>20</td></tr>
</table>
</td></tr>
</table>

[6] No-fishing areas designated by communities initiated mainly by the village chiefs.

[7] Restaurants for tourists run by fishermen's families managing catching, cooking and serving by family members.

[8] Giant clam (T. gigas) became extinct in Vanuatu, and the project has transplanted them from Tonga.

		Giant Clam (T. squamosa) 75/ha NA NA 125/ha Giant Clam (T. maxima) 100/ha NA 121.4/ha 141.2/ha 150/ha Trochus 75/ha NA 90.0/ha 22.5/ha 150/ha Green Snail < 5.0/ha < 5.0/ha NA NA 170/ha 130/ha Note 1: NA: no data available Note 2: The number in upper line indicates the number inside of taboo areas, in lower line indicates the number outside of taboo areas Lelepa Year 2009 2013 2014 2017 Giant Clam (T. gigas) 97 88 NA 73 Giant Clam (T. squamosa) 50/ha NA NA 100/ha Giant Clam (T. maxima) 125/ha NA NA 150/ha Trochus 75/ha NA NA 150/ha Green Snail < 5.0/ha NA NA 90.0/ha Source: Project Completion Report (2015), VFD Although the number of broodstock of giant clam (T. gigas) has been decreasing, its survival rate for 8 years is about 60% in Mangaliliu and 75% in Lelepa which are notably high.
	Indicator 4 The improvement of implementation capacity in the propagation of the new target species.	(Ex-post Evaluation) not achieved The propagation techniques introduced by the project have not been applied to any other new species due to VFD's insufficient technical capacity and resources.
[Phase 2]		
Project Purpose: CBCRM is effectively practiced at target areas through adequate technical assistance from the VFD.	Indicator 1 More than one management as well as supporting measure(s) are implemented by communities in accordance with the CBCRM plan at each target area.	Status of the Achievement: achieved (continued) (Project Completion) The communities in the target areas have started a variety of CBCRM activities including voluntary meetings to formulate and update their CBCRM plans, and announced CBCRM regulations to the community members in these meetings. In Efate and Aneityum, the communities recognized the potential of off reef fishery and introduced Fish Aggregating Device (FAD)[9] developed by the project. (Ex-post Evaluation) Most of communities in the target areas are conducting monitoring of their coastal resources on ad-hoc basis, while some communities are conducting on regular basis. The project identified the recruitment patterns of the target species, and some communities in the target areas are continuing the reseeding and translocation of these species.
	Indicator 2 The results of CBCRM evaluation at each target area show increased scores gained in at least six out of eight assessment areas.	Status of the Achievement: achieved (continued) (Project Completion) Self-evaluation of CBCRM conducted by the members of Resource Management Committees and community group members involved in the pilot project showed increased scores in seven areas in 1) community awareness, 2) management plan, 3) compliance and enforcement of CBCRM regulations, 4) monitoring and evaluation of CBCRM activities, 5) status of coastal resources, 6) impact of fishing activities on the resources, and 7) economic stability of the households. (Ex-post Evaluation) Community members keep conducting some CBCRM activities such as community meetings and monitoring on resources.
Overall Goal: 1) Conservation of coastal environment and sustainable utilization of coastal resources are enhanced in target areas. 2) CBCRM are promoted in other rural coastal	Indicator 1 More than one environmental and/or resource indicators showed positive changes.	(Ex-post Evaluation) achieved Amal-Crab Bay has been authorized by the government as a Marine Protected Area (MPA), and Northwest Efate is currently preparing for applying for the authorization. The increase of the population of trochus, dugongs, turtles and others has been observed in and around MPAs.
	Indicator 2 CBCRM activities are extended to more than one province(s) outside of target areas.	(Ex-post Evaluation) achieved The "SPC/WORLDFISH Project" (2014-2017)[10] has been implemented in 3 provinces of Malampa, Tafea and Sanma applying the concept of the "Grace of the Sea" and some management tools developed by the project. Phase 3 of

[9] FAD has been introduced to disperse the fishing grounds to outer reef areas to compensate the limitations of the fishing grounds in inner reef areas.

[10] A project jointly conducted by the WorldFish and the Secretariat of the Pacific Community (SPC) to restore the breeding populations of sea cucumber to its productive level.

areas.		the project (2017-2021) is in progress in 3 provinces of Shefa, Tafea and Sanma.

Source: questionnaire to and interviews with VFD, Provincial Offices and community members in Lelepa, Mangaliliu, Malakula and Tanna.

3 Efficiency

[Phase 1] Both the project cost and the project period were within the plan (ratio against the plan: 98%, 100%). The outputs were produced as planned.

[Phase 2] Although the project period was within the plan, the project cost exceeded the plan (the ratio against the plan: 100%, 119%). The outputs were produced as planned.

Therefore, efficiency of the project was fair.

4 Sustainability

<Policy Aspect>

The latest government policies continuously emphasis the importance and necessity of co-management of coastal resources by the government and communies. The "Vanuatu National Fisheries Sector Policy" (2016-2031) annouced by MALFFB in 2017 placed the high priority on the need for fisheries management, advancing small-scale sustainable domestic fisheries, and aquaculture developments using local operations around its provinces.

<Institutional Aspect>

The organizational structure and responsibilities and mandates of VFD have been expanding coping with the expansion of its functions incorporating aquaculture, laboratory works, and others. Along with the expansion of functions, the number of VFD's staff has been increased during and after Phase 1, which is currently sufficient to carry out its core mandates. The organizational structure and functions of the Provincial Offices have also been expanding, though the number of staff has not been increased accordingly and has been insufficient for their increasing works. One officer in a Provincial Office is responsible for two to three islands in average, which are 15 to 20 km apart from each other. As for CBCRM, there is only one officer in charge in one Provincial Office, and he/she is responsible for CBCRM activities in the entire area of the Province. Retention rate of officers in VFD and the Provincial Offices has been very high. Only one out of eight officials in VFD involved in the project has left his position to be promoted, while the rest including ones in the Provincial Offices have been in their job positions during and after the project.

<Technical Aspect>

Technical and social management level of the staff of VFD and the Provincial Offices is high enough to continue the CBCRM activities introduced by the project. Project management techniques including the project site selection, project formulation, management planning, and problem analysis learned from the project are currently applied by the staff of VFD and the Provincial Offices to their projects. The fishery development officers (former extension officers) and community members keep applying techniques such as fishing methods, fish size limits, taboo areas management, watching on banned species including green snail and trochus. Besides a variety of training on CBCRM provided by Phase 3 of the project, the Secretariat of the Pacific Community (SPC) periodically conducts training programs on fishing methods and fishing technologies including the construction and deployment of Fish Aggregating Devices (FAD). Nearly 30 kinds of manuals, textbooks and guidelines prepared by the project, and they have been continuously utilized by the fishery development officers and community members, because the information introduced in those manuals are easy to understand and apply at site by community members.

<Financial Aspect>

Although the budget for VFD is on a rising trend (Table 1), the amount has been insufficient for its activities according to the questionnaires to and interviews with the staffs of VFD and the Provincial Offices. Large portion of the investment budget for fisheries development including CBCRM activities has been supported by the development partners such as JICA, SPC, the United Nations Development Programme (UNDP), the Asian Development Bank (ADB), and NGOs.

Table 1. Annual Budget for VFD

Unit: million vatu

Year	2012	2014	2015	2017	2018
Amount	92	111	151	147	159

Source: VFD

<Evaluation Result>

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

5 Summary of the Evaluation

Each of the Project Purpose of Phase 1 and Phase 2 was achieved at the respective time of project completion by formulating CBCRM methods in the model sites in Phase 1 and by verifying the effectiveness of the CBCRM methods in the target areas in Phase 2. The Overall Goals have been mostly achieved by increasing the volume of the coastal resources in and around the project target areas, and by contributing to the improvement of livelihoods of local people. As for sustainability, while VFD has improved its institutional and technical capacities for CBCRM, the Provincial Offices have been suffering from the manpower shortage. The budget for CBCRM activities has been insufficient and covered by the support from the development partners. As for efficiency, the project cost of Phase 2 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 tourism using giant clam shell has a potential to be an alternative income source for community members, which could be a compensation for the control and conservation of coastal resources. While the project has introduced some tools and ideas for tourism activities, the tourism promotion depends on the self-help endeavors of communities. Therefore, for encouraging their efforts, it is recommended for VFD to provide communities with any technical and financial assistance.
- Through Phase 1 and Phase 2, the project has developed a wide variety of combinations of CBCRM tools and their application methods. Therefore, it is recommended for VFD and the Provincial Offices to widen their application to other areas by adjusting them to local contexts through Phase 3 of the project.
- In order to firmly fix the co-management of coastal resources with communities, it is recommended for VFD and the Provincial Offices to follow-up and provide aftercare for the target areas of Phase 1 and Phase 2.

Lessons Learned for JICA:

- In this project, while quantitative indicators were set for the Overall Goal such as the increasing volume of the target species and the number of households whose livelihood have been improved, quantitative data have not necessarily been collected by the project. If an indicator is appropriate, the data should be collected; if an indicator is not appropriate, the indicator should be changed to be an appropriate one.
- The target of a coastal resource management project is the recovery and increase of coastal resources, which takes long time longer than the 3 to 5 years typical JICA's technical cooperation project. It took about 6 years to see the growth and increase in giant clams and green snails transplanted by Phase 1. Therefore, it is recommended to design a multi-phase project under a long term program considering the reproduction spiral of natural resources.

Fish café serving fish for protecting lobster
Mystery Island in Aneityum Island, Tafea Province

Transplanting of giant clam

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Guatemala Office: October 2018

Country Name	Project for Child Health in Department of Quetzaltenango
Republic of Guatemala	

I. Project Outline

Background	Indicators related to mother and child health of Guatemala were low compared to the ones of other Central American countries: the infant mortality ratio: 35 per 1,000 live births and maternal mortality ratio: 240 per 100,000 live births (2005). The Department of Quetzaltenango is located in highlands in the western part of Guatemala at 2,300-2,700m above the sea level. Most population belongs to indigenous ethnics who speak Quiché or Mam Language. One of the most serious health problems for the inhabitants was high infant mortality rate, and the majority of the deaths were caused by respiratory infection and diarrhea.		
Objectives of the Project	Through strengthened health services and management at the health facilities and upgraded parents' knowledge and skills in the target municipalities, the project aimed at decreasing the number of children who get critically ill due to respiratory infection and diarrhea, thereby contributing to decrease in child mortality. Overall Goal: The child mortality (under the age five) decreases in the target municipalities in the Health Area of Quetzaltenango. Project Purpose: The infants under a year do not get critically ill due to respiratory infection and diarrhea.		
Activities of the project	Project site: 6 municipalities (Cabricán, Huitán, Palestina de los Altos, Cajolá, San Miguel Siguilá and Cantel) in Department of Quetzaltenango 1. Main activities: training of the health personnel on respiratory diseases, diarrhea and under-nutrition and communication with patients, development of the infants' medical examination, provision of health education to parents, training of health volunteers, etc. 2. Inputs (to carry out above activities) Japanese Side 1) Experts from Japan: 12 persons 2) Experts from the third countries: 11 persons 3) Training in the third countries: 43 persons 4) Equipment: Vehicles, office equipment, medical equipment, etc. 5) Operation cost for travel expenses, preparation of training materials, etc.. Guatemalan Side 1) Staff allocated: 24 persons 2) Land and facilities: Office space, etc. 3) Operation cost for establishment of new Health Posts, maintenance of vehicle, employment of the project staff, etc.		
Project Period	October 2005 to September 2009	Project Cost	(ex-ante) 190 million yen, (actual) 205 million yen
Implementing Agency	Ministry of Public Health and Social Assistance (MSPAS), Health Area Office (Dirección de Area de Salud) of Quetzaltenango		
Cooperation Agency in Japan	None.		

II. Result of the Evaluation

[Special Perspectives Considered in the Ex-post Evaluation]

- The project aimed at decreasing the number of infants who get critically ill due to respiratory infection and diarrhea (Project Purpose), in order to decrease in the child mortality rate (Overall Goal). In the Project Design Matrix (PDM), the number of mortality was used as an indicator of both objectives. However, it is considered more suitable to verify achievement of the Project Purpose (expected outcome at the project completion as provision of improved services) with the following data: a) consultation cases of the infants (Indicator 1 of the Output 1), b) medical examination for the infants (Indicator 5 of the Output 1), c) mothers' knowledge on the treatment of the infant's respiratory diseases and diarrhea (Indicator 4 of the Output 2), and d) follow-up of low-weight infants (Indicator 3 of the Output 5). At the ex-post evaluation, these data were used as supplemental information.

1 Relevance

<Consistency with the Development Policy of Guatemala at the time of ex-ante evaluation and project completion>

The project was consistent with Guatemala's development policies on decrease in the maternal and child mortality as set forth in "Health Policy 2004-2008" and "Health Policy 2008-2012."

<Consistency with the Development Needs of Guatemala at the time of ex-ante evaluation and project completion >

The project was consistent with Guatemala's development needs for tackling with respiratory diseases and diarrhea which would result in infants death, especially in the western region, at the times of both the ex-ante evaluation and project completion

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

Based on the policy dialogue between the Government of Guatemala and the ODA Task Force in July 2004, one of the priority areas for assistance was confirmed as "improvement of the livelihood in the rural areas (with consideration for the indigenous people) which included expansion of the health services[1].

<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>

It is judged that the Project Purpose was achieved. Although the number of infant mortality decreased (Indicator 1), the project contribution to decrease in respiratory infection and diarrhea could not be confirmed. On the other hand, as supplemental information,

[1] Ministry of Foreign Affairs (2006) "ODA Databook 2005."

services for mothers and children were strengthened, as there was improvement in data such as consultation and medical examination for the infants and mothers' knowledge on treatment of the infant's respiratory diseases and diarrhea.

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

The project effects have partially continued. The number of the infant mortality has decreased (Indicator 1). As death causes, diarrhea decreased from 6.4% (2010) to 0.0% (2017), while respiratory disease increased from 35.1% to 60.0%. As supplemental information, most services strengthened by the project have been sustained (e.g.: antenatal consultation, follow-up of the low-weight infants, case conferences, referral/counter-referral[2], and so on.), which have contributed to the decrease in the infant mortality, according to the Health Area Office of Quetzaltenango. Medical examination is monthly conducted, but the number has been increasing and decreasing. However, considering the recent decrease in the birth rate and increase in the migration number in the target municipalities, the coverage of medical examination itself has been increasing, according to the Health Area Office of Quetzaltenango. On the other hand, "peer leader" mothers have not been functional, due to limited financial and technical support from the Health Area Office.

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

It is judged that the Overall Goal has been achieved. First, the number of the under-five child mortality has much decreased (by 91%) in the target six municipalities from 2004 to 2017, regardless increases in respiratory disease and diarrhea as death cases. Exact reasons for these increases could not be confirmed at the ex-post evaluation survey, as there might be differences among municipalities and years. However, as mentioned above, it can be concluded that improved services of the Health Area Office of Quetzaltenango would contributed to the decrease in the child mortality rate as well as the infant mortality rate. Second, there has been a decrease in the under-five mortality also in other municipalities. The overall improvement in the Department of Quetzaltenango has been attributed to strategies and programs of the Health Area Office including training of the personnel at drug stores and traditional midwives who receive sick infants, improved triage, and strategic assignment of JICA volunteers (nurses, nutritionists and midwives) in each municipality who supported the project activities.

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

First, personnel at most health facilities visited during the survey answered that more mothers have come to the health facilities to bring sick children, receive medical examination or vaccination than before, though the exact data was not available at the ex-post evaluation survey. It can be said that this is a big change, as women were hesitate or not permitted by their husbands to go out for receiving health services by tradition. According to the interviewed personnel, improved health services have won women's trust in health facilities, and mothers have become more conscious about their children's health. Second, the project experience has been utilized in the Project for Maternal and Child Health in Quetzaltenango, Totonicapán and Sololá in the Republic of Guatemala (2011-2015), such as organization of pregnant women's club, referral/counter-referral sheets, and so on.

<Evaluation Result>

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

Achievement of the Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td rowspan="3">(Project Purpose)
The infants under a year do not get critically ill due to respiratory infection and diarrhea.</td><td>1. The number of the infant mortality (28-day old and up, under 1-year) decreases by 25% in five years in six municipalities.</td><td>Status of achievement: <u>Achieved (Continued).</u>
(Project Completion)
- The number of the infant mortality (28-day old and up, under 1-year) decreased by 51%, but the Terminal Evaluation team judged that it was difficult to verify how the achievement was attributed to decrease in mortality because of respiratory infection and diarrhea.
(Ex-post Evaluation)
-The infant mortality has been on a decreasing trend in the target six municipalities. In two municipalities, the number has decreased by more than 30%, while in other municipalities the number has slightly decreased.
<table>
<tr><th></th><th>2004</th><th>2008</th><th>2010</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th><th>2016</th><th>2017</th></tr>
<tr><td>No. of the infant mortality</td><td>145</td><td>72</td><td>62</td><td>74</td><td>82</td><td>55</td><td>46</td><td>46</td><td>60</td><td>37</td></tr>
</table></td></tr>
<tr><td><Supplemental information>
a) consultation cases of the infants</td><td>Status of achievement: <u>Achieved (Partially continued).</u>
(Project Completion)
- The consultation cases of the infants (28 days under a year) tripled.
<table>
<tr><th></th><th>2004</th><th>2005</th><th>2006</th><th>2007</th><th>2008</th></tr>
<tr><td>No. of the consultation cases</td><td>3,527</td><td>7,118</td><td>10,231</td><td>12,127</td><td>11,799</td></tr>
</table>(Ex-post Evaluation)
- The consultation cases of the infants (28 days under a year) has been slightly on a decreasing trend
<table>
<tr><th></th><th>2010</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th><th>2016</th><th>2017</th></tr>
<tr><td>No. of the consultation cases</td><td>9,492</td><td>5,696</td><td>8,586</td><td>8,908</td><td>8,554</td><td>8,103</td><td>8,996</td><td>8,836</td></tr>
</table></td></tr>
<tr><td>b) number of medical examinations for the infants</td><td>Status of achievement: <u>Achieved (Partially continued).</u>
(Project Completion)
- The number of the medical examinations for the infants conducted at the health facilities increased by more than 25% annually in all of the municipalities except one where the project activities started only in 2008.
(Ex-post Evaluation)
- The number of medical examinations for the infants (28 days under a year) has been</td></tr>
</table>

[2] Referral: Referral and transfer from the lower health facilities to the higher health facilities; Counter-referral: Referral and transfer from the higher health facilities to the lower health facilities.

		increasing and decreasing. 2010: No. of medical examination for infants: 20,356 2011: 25,689 2012: 14,331 2013: 19,770 2014: 9,646 2015: 17,255 2016: 10,357 2017: 15,490
	c) mothers' knowledge on the treatment of the infant's respiratory diseases and diarrhea	Status of achievement: Achieved (Mostly continued). (Project Completion) - Mothers who participated in trainings improved their score at the post-test from the pre-test on the use of medical herbs for treatment of respiratory diseases and diarrhea (38% to 88% in 2007, 49% to 72% in 2008). (Ex-post Evaluation) - Nine and four out of the 14 mothers interviewed during the ex-post evaluation survey answered that they understand well and partially, respectively.
	d) follow-up of low-weight infants	Status of achievement: Achieved after the project completion (Continued). (Project Completion) - Follow-up activities were just started. (Ex-post Evaluation) - Follow-up of low-weight infants have been conducted as planned.
(Overall goal) The child mortality (under the age five) decreases in the target municipalities in the Health Area of Quetzaltenango.	1. The number of the under-five mortality decreases by 25% in six municipalities.	Status of achievement: Achieved. (Ex-post Evaluation) - The number of the under-five mortality decreased by 32% from 2013 to 2017. 2004: No. of the child mortality in the six target municipalities: 145 2013: 19 2014: 20 2015: 11 2016: 28 2017: 13 Note: At the Terminal Evaluation in 2009, the number of the child mortality in 2004 was 231. However, a different figure (145) was provided by the Health Area Office of Quetzaltenango at the ex-post evaluation. The latter is used in this report.

Source: JICA documents, data provided by MSPAS and Health Area Office of Quetzaltenango.

3 Efficiency

Although the project period was as planned (ratio against the plan: 100%), the project cost exceeded the plan (ratio against the plan: 108%). Outputs were produced as planned. Therefore, the project efficiency is fair.

4 Sustainability

<Policy Aspect>

The "National Plan for the Reduction of Maternal and Neonatal Mortality 2015-2020" and "Institutional Strategic Plan 2016-2020" of MSPAS hold policies and programs for reproductive health, strengthening of the health service networks, and so on. Services strengthened by the project are backed up by these policies at least until 2020.

<Institutional Aspect>

The organizational structure for providing health services for mothers and children is appropriate, but some of the Health Centers and Posts do not have a sufficient number of the health personnel. At the Health Area Office of Quetzaltenango, 20 staff are assigned: 3 epidemiologists, 4 staff in charge reproductive health, 2 staff in health promotion, 4 nurses, 2 nutritionists, and 5 administrative and other staff, but the number is not sufficient to cover the extensive territory. At the ex-post evaluation survey, 2 Health Centers were visited. One center says the number of health personnel (1 doctor, 1 nurse, 3 auxiliary nurses, 1 rural health worker and 1 environmental inspector) is sufficient to provide maternal and infant services, while the other has a difficulty in covering all the needs of the increasing population. Also, three Health Posts[3] were visited and all of them answered that the personnel number (4 for each post) is sufficient to perform their duties. Services of the Health Centers and Posts are monitored by the Health Area Office every two months. At the community level, Medical Herb Volunteers and Health Volunteers trained by the project have been active in the 3 surveyed communities in the Municipality of Cajolá. The municipality plans to recruit 33 new volunteers for 2018.

<Technical Aspect>

The personnel of the Health Centers and Posts in the target six municipalities answered that they have sufficient skills for providing services for the infants' infectious disease and diarrhea, since they are given training opportunities by MSPAS, Health Area Office or other institutions on the related topics. Materials developed by the project such as explanatory flipcharts on "Five Basic Cares[4]" and medical herbs, referral/counter-referral sheet and DVD on nutrition for mothers, while others including manuals on sick children evaluation and medicine for pediatrics are not referred to any longer due to the frequent personnel change.

<Financial Aspect>

Budgets of the Health Area Office of Quetzaltenango have increased for the last four years (56 million Guatemala Quetzals (GTQ) (2015) to 65 million GTQ (planned, 2018)), but according to the office, they have not been sufficient to cover all necessary programs. Some Health Centers and Posts answered that budget have not been sufficient for necessary clinical laboratories, preventive maintenance of the medical equipment, etc. No prospect for increase in budget distribution was confirmed by MSPAS and no particular solutions were showed by the Health Area Office at the time ex-post evaluation survey.

<Evaluation Result>

Therefore, the sustainability of the effects is fair.

5 Summary of the Evaluation

It is judged that the project partially achieved the Project Purpose and Overall Goal. The number of both infant mortality and under-five mortality decreased. Services strengthened by the project themselves have been mostly sustained, and the Health Area Office

[3] Health Posts are the first level facility which provide basic services including maternal and infant care. As the second level facility, Health Centers which have more assigned staff deal with delivery and receive inpatients.

[4] Five Basic Cares are nutrition, hydration, adjustment of body temperature, keeping clean and rest.

of Quetzaltenango considers the improved services have contributed to the decrease in infant and under-five mortality, though it could not be exactly verified with data. Regarding the sustainability, while the number of the personnel at the Health Centers and budgets are not sufficient to cover all of the health needs of the increasing population, the organizational structure of the Health Area Office itself has been appropriate and volunteers trained by the project have been active. As for the 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:

- It is recommended to the Health Area Office of Quetzaltenango to give directions to the Health Centers and Posts so that each facility let its new personnel to know materials which were developed by the project and not used any longer and promote their use. In the situation where the personnel turnover cannot be evitable, it is necessary to make sure the project outputs be taken over to the new personnel, by having an opportunity for familiarization.

Lessons learned for JICA:

- It was pointed out by the Health Area Office that one of the promoting factors for achieving the Project Purpose and continuing the effects was JICA volunteers' efforts. Volunteer nurses, midwives and nutritionists were dispatched in each of the six target municipalities to support the project activities such as preparation of training materials, motivation of the health personnel by accompanying them at the facilities and communities, diffusion of the Five Basic Cares to the communities, and so on. Thus, appropriate professionals were strategically assigned in each target municipalities, and this was possible due to clear job description in the recruitment documents. In projects which intend to involve volunteers in the activity implementation, it is important to plan the timely recruitment, clearly explain what kind of professions are needed, and strategically assign them in the target sites.

Medical herb garden at the Health Center

Mother and her child visiting the Health Center

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Ethiopia Office: February, 2019

Country Name	**Strengthening Infectious Disease Prevention, Control and Response in Amhara National Regional State**
Federal Democratic Republic of Ethiopia	

I. Project Outline

Background	Ethiopia faced frequent outbreaks of infectious diseases. The Amhara national regional state was known as an epidemic area of malaria and meningitis causing 14,000 death cases annually. In order to timely respond to the outbreak of infectious diseases, it was necessary to develop a system for having proper information of when, where and what of epidemic diseases occurs. In 1999, the government of Ethiopia introduced a strategy of the Integrated Disease Surveillance and Response (IDSR), which aimed at infectious disease control through the strengthening of disease surveillance and data analysis to identify causes of outbreaks. According to the evaluation made by the World Health Organization (WHO) in 2005, while IDSR in Ethiopia had been well implemented at national and regional level, activities at woreda (district) and community level have not been satisfactory conducted. Since the government had introduced IDSR, Amhara region has also actively been engaged in it. However, woreda level activities were not progressed sufficiently as in other regions.		
Objectives of the Project	Through establishing systems and developing operational capacities of facility-based and community-based infectious disease surveillance[1], strengthening data-based public health and medical responding capacity, and establishing a model of facility-based and community-based surveillance and response in pilot areas, the project aimed at functional effective facility-based and community-based surveillance/response in target areas, thereby contributing to functional effective facility-based and community-based surveillance/response in Amhara region. 1. Overall Goal: Effective facility-based and community-based surveillance/response system is functioning in Amhara region. 2. Project Purpose: Effective facility-based and community-based surveillance/response system is functioning in target area.		
Activities of the Project	1. Project Site: 22 woredas for facility-based surveillance (6 woredas as pilot) and 3 woredas for community-based surveillance (2 woredas as pilot) in 3 zones (North Gondar, South Gondar, West Gojjam) in Amhara Regional State 2. Main Activities: 1) establishment of effective facility-based surveillance system, 2) development of operational capacity of facility-based surveillance system, 3) establishment of effective community-based surveillance system, 4) development of operational capacity of community-based surveillance system, 5) strengthening of public health and medical responding capacity of infectious diseases based on surveillance data, and 6) establishment of a model of facility-based and community-based surveillance and response (activity 5) and 6) were added for the extension period of the project) 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 32 persons 2) Trainees Received: 25 persons 3) Equipment: vehicles, laboratory equipment, office supplies, etc. Ethiopian Side 1) Staff Allocated: 15 persons 2) Land and Facilities: Land for and facilities of project offices 3) Local Cost: Cost for utility of offices (electricity, water and telephone) and operational cost		
Project Period	January 2008 – January 2015 (Extension: January 2013 – January 2015)	Project Cost	(ex-ante) 360 million yen, (actual) 672 million yen
Implementing Agency	Amhara National Regional State Health Bureau (ARHB)		
Cooperation Agency in Japan	Japan Anti-Tuberculosis Association		

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 has been consistent with the development policies of Ethiopia at the time of ex-ante evaluation and project completion. At the time of ex-ante evaluation, the "Health Sector Development Programme III" (2005/6-2009/10) placed high priority on infectious disease control in line with IDSR by strengthening field level government facilities such as Woreda Health Offices and health centers. In 2009, along with the updating of the "Health Sector Development Programme" from III to IV (2010/11-2014/15), the Federal Ministry of Health changed its surveillance scheme from IDSR to the Public Health Emergency Management (PHEM) and widened the policy scope

[1] Infectious disease surveillance system is an integrated system consists of an upward reporting flow and a downward responding flow for controlling the outbreaks of infectious diseases; starting from the filed level facilities of health posts to health centers, Woreda Health Offices, Zonal Health Departments, the Regional Health Bureau, to the Federal Ministry of Health and the feedback from the Federal Ministry of Health to the lower facilities providing necessary information and activities for controlling the outbreak.

by including community health facilities such as health posts in infectious diseases surveillance system. In order to cope with this policy change, the project was extended for two years by adding outputs and activities for community health facilities in line with PHEM.

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

The project was consistent with the needs of Ethiopia. In the Amhara region, infectious disease patients at the time of ex-ante evaluation accounted for 42% of all kinds of patients, and malaria patients accounted for 29% which was significantly higher than the national average of 16%. Due to the update of the national strategy from IDSR to PHEM in 2009, the needs for functional operations of infectious disease surveyrance system involving zones, woredas and communities further increased.

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

The project was consistent with the Japan's ODA policy for Ethiopia at the time of ex-ante evaluation. One of the five priority areas of the ODA policy for Ethiopia was the health sector focusing on the prevention of spread of infectious diseases including creation of an administrative framework to cope effectively with infectious diseases and enhancing its functions[2].

<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. Timeliness and completeness of PHEM reports from health centers was over 90% on average in targeted facilities (Indicator 1), and timeliness and completeness of PHEM reports from health posts was over 90% in all project woredas (Indicator 2).

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

The project effects have continued. Referring to the weekly report of the Zonal Health Departments, the Woreda Health Offices, health centers and health posts visited by the ex-post evaluation survey, it was confirmed that the timeliness and completeness of weekly report had reached 95% to 98% in all targeted facilities (Indicator 1 and 2). One of the reasons which keeps high performance of reporting is improvement of communications by using mobile phones, which are used for reminding the submission of reports and for sending the summary of reports followed by sending of hard copy reports. As for health facilities' responses to infectious disease epidemic, according to the interviews with officials in health facilities visited, proper actions have been taken by heath centers and health posts in the model clusters[3] on outbreaks of health issues particularly of malaria, acute watery diarrhea and scabies (Indicator 2). At the higher level facilities of ARHB, the Zonal Health Department and the Woreda Health Offices, PHEM data have been properly collected and analyzed, and the regional weekly PHEM bulletin has been published and distributed to related organizations including the development partners.

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

The Overall Goal has been mostly achieved at the time of ex-post evaluation. Although no quantitative data are available, according to the interviews with officials of ARHB including the PHEM Directorate Director, the reporting and response system introduced by the project has been applied in almost all woredas with the policy backup by PHEM which directs all woredas to adopt the reporting and response system developed by the project.

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

Many of the community health volunteers trained by the project have been involved in other health activities such as the promotion of Open Defecation Free (ODF) kebeles (villages), full immunization coverage, and others. They keep practicing the skills they learned in the project, educate other volunteers and villagers, and report when they see or hear any diseases under surveillance or any unknown diseases. No negative impact on natural, social and economic environment has 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: Effective facility-based and community-based surveillance/ response system is functioning in target area.	Indicator 1 Disease data collection system from woreda to the region is functioning in more than 80% of target 3 Zonal Health Departments (ZHDs) and 22 woreda Health Offices (WorHOs).	Status of the Achievement: Achieved (Continued) (Project Completion) Timeliness and completeness of PHEM reports from health centers was over 90% on average in 3 Zonal Health Departments and 22 Woreda Health Offices. (Ex-post Evaluation) Timeliness and completeness of weekly surveillance report reached 95% to 98% in 3 Zonal Health Departments and 22 Woreda Health Offices.
	Indicator 2 Disease data collection system from health posts (community) to the region and infectious disease control mechanism is functioning in more than 70% of model cluster health centres and model health posts	Status of the Achievement: Achieved (Continued) (Project Completion) Timeliness and completeness of PHEM reports from health posts was over 90% in all project woredas. Response and action mechanism was functioning in cluster health centers and health posts in all target woredas. As for health facilities' responses to infectious disease epidemic such as malaria or measles, according to the observation of Japanese experts of the project, response and action mechanism was functioning in cluster health centers and health posts in all target woredas. (Ex-post Evaluation)

[2] Source: Japan's ODA Databook (2007)

[3] Cluster was a unit of community-based surveillance system or area the system applied designated by the project to which the project made direct interventions. A cluster consisted of 4 to 5 villages and one health center. The project initially conducted its activities in some 'model clusters' as show-cases, and extended its activities to other clusters. (Source: Mid-term Review Report, 2011)

		Timeliness and completeness of weekly surveillance report reached 95% to 98% in 3 Zonal Health Departments and 22 Woreda Health Offices. Proper actions have been taken by model cluster heath centers and health posts on the outbreaks of infectious diseases.
Overall Goal: Effective facility-based and community-based surveillance/ response system is functioning in Amhara region.	Number of woredas applied project's pilot model.	(Ex-post Evaluation) achieved The surveillance and response system introduced by the project has been applied in almost all woredas.

Source: questionnaires to and interviews with ARHB, 3 Zonal Health Departments, 10 Woreda Health Offices, 2 health centers and 2 health posts.

3 Efficiency

The project cost and the project period were exceeded the plan (the ratio against the plan: 187%, 140%). In order to cope with the change of the national health policy from IDSR to PHEM, the project was extended for 2 years with the increase in the Main Activities 5) and 6) (the ratio against the plan: 150%). Since the cost ratio was 187% and the period ratio was 140% against the activity ratio of 150%, the additional project cost and period was fairly consistent with the additional activities only with cost overrun. Therefore, efficiency of the project was fair.

4 Sustainability

<Policy Aspect>

The "Health Sector Transformation Plan" (2015/16-2019/20), the updated version of the "Health Sector Development Programme IV" (2010/11-2014/15), designates the improvement of health emergency risk management as one of the strategic objectives. This is meant to improve the prevention, mitigation, early detection and rapid response to any crises through organizing and strengthening community empowerment, health professional's engagement in healthcare reforms. Therefore, the project effects are expected to be sustainable from the perspective of policy aspect.

<Institutional Aspect>

The institutional setup formulated by the project for infectious disease surveillance has not been significantly changed. Community level activities have been sustained and expanded by adding some new functions such as maternal and prenatal death surveillance. However, the number of staff and volunteers engaged in the infectious disease surveillance has been insufficient. As for governmental facilities, while each of all health centers is supposed to be assigned with one PHEM focal person, half of the centers visited by the ex-post evaluation survey were not been assigned with any PHEM staff. Manpower shortage in governmental facilities is mainly due to turnover and budget deficiency. As for community health facilities and volunteers, the number of health posts and Health Extension Workers has not met the number required. The number of members of Health Development Army is sufficient but they are not well functioning because they are volunteers without any compensations. It was recommended by the Terminal Evaluation Report (2012) and the Project Completion Report (2015) for the Federal Ministry of Health and ARHB to finalize and operationalize the response protocols for anthrax and rabies prepared by the project. However, the finalization and operationalization has not been progressed due to high staff turnover and poor documentation which has no proper sharing and storing system. Adding to the manpower shortage, the workload on Health Extension Workers are becoming heavier because they are burdened not only with health issues but also with agricultural and educational responsibilities.

<Technical Aspect>

The technical capacities of higher level facilities including ARHB, the Zonal Health Departments and the Woreda Health Offices have been maintained at high level with the continuous technical supports from development partners such as WHO, the United Nations Children's Fund (UNICEF) and others. Most of Woreda Health Offices and health centers visited by the ex-post evaluation keep conducting the follow up, supervision, feedback and training for health officers, PHEM focal persons and Health Extension Workers, and they keep using reporting sheets introduced by the project.

<Financial Aspect>

Although it is hard to find the financial trends and foresee the financial sustainability with the data available (Table 1), the budget for infectious disease surveillance has been insufficient at all levels according to the interviews with the staff of ARHB and the Woreda Health Offices. In order to make up for budget deficiencies, the Zonal Health Departments and the Woreda Health Offices redirect other budget lines such as the budget for nutrition and Maternal, Newborn and Child Health (MNCH) activities to PHEM. The health centers also utilize their internal revenue and budgets for other lines for infectious disease surveillance activities.

Table 1. Amhara Regional Health Bureau Budget

Unit: million Birr

Year	2015	2016	2017
Budget	917	1,350	1,130

Source: Amhara Region Health Bureau

<Evaluation Result>

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

5 Summary of the Evaluation

The Project Purpose was achieved by making the facility-based and community-based infectious disease surveillance/response system functional in the target areas in Amhara Regional State, and the reporting and response system introduced by the project has been applied in almost all woredas. As for sustainability, while the community level health centers and health posts have been suffering from the manpower shortage, regional, zonal and woreda level facilities have improved their institutional and technical capacities for the infectious diseases surveillance by adding new activities such as the maternal and prenatal death surveillance. As for efficiency, the project cost and the project period exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

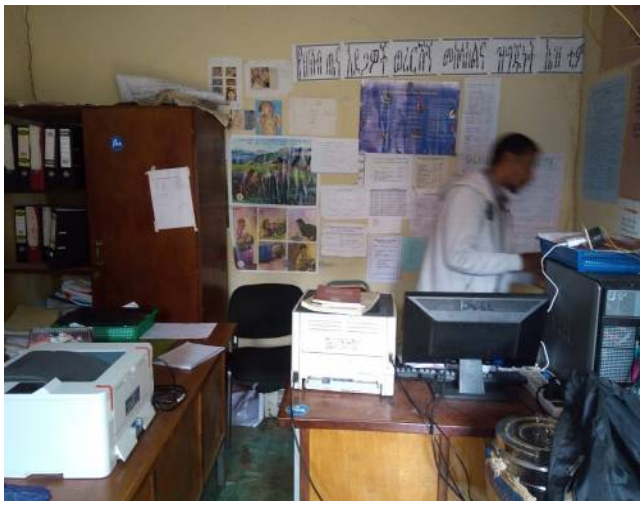
III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- In order to increase the institutional aspect of sustainability at the governmental facilities levels, it is recommended for ARHB to take initiative for improving documentation system including escalating, sharing and storing. Document sharing through the improvement of documentation system, with small additional investments, could improve the share of technical knowledge and know-how under the condition of manpower shortage. It is also expected ARHB to finalize and operationalize the response protocols for anthrax and rabies prepared by the project by improving the documentation system.
- For institutional sustainability at health center and health post level, it is recommended for ARHB to provide refreshers training for the staff of health centers and equip them with necessary equipment such as PCs, to streamline the responsibilities of Health Extension Workers to make them concentrate on health issues, and to increase the motivations of Health Development Army members by providing any compensations including training programs. In order to carry out them with the limited budget, it is expected ARHB to prioritize a variety of equipment and parties provide to, and try some creative measures, for instance, to repeat small scale training programs at site.

Lessons Learned for JICA:

- Communication by using mobile phones has played a significant role in this project particularly on requesting and sending the report of infectious disease surveillance. For projects establishing or improving reporting system involving hierarchical and geographical wide range of actors, identification and utilization of common communication tools including mobile phones and integrated operation of them as a system can be expected to be a success factor of the project.
- In this project, Health Extension Workers are burdened not only with health issues but also with agricultural and educational responsibilities. The higher the capacity and commitment of community members, the more projects and activities they tend to be involved in and burdened with several different roles and responsibilities. Therefore, when a project expects community members to play a part in it, careful and cautious supervision on them is expected to be conducted.



Public Health Emergency Case Team compiling data

Surveillance guide for Health Extension Workers and community health workers

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Kenya Office: May, 2018

Country Name	**Smallholder Horticulture Empowerment Project**
Republic of Kenya	

I. Project Outline

Background	In Kenya, most of the population living below the poverty line were small farmer households in rural areas who derived their livelihoods from agriculture and its related activities. Under this situation, horticulture was the fastest growing sub-sector but predominantly small-scale farming. Smallholder horticulture farmers suffered low income despite their relatively large production volume. Empowerment of smallholder horticulture was the key to redress the existing disparity as well as to reduce rural poverty.		
Objectives of the Project	The Project aimed at developing capacity of the smallholder horticulture farmer groups in the target districts in Kenya through increasing bargaining power of the target groups[1] in marketing their produce, increasing the production of better quality crops of the target groups, and developing capacity of the target groups to improve rural infrastructure for production and transportation, thereby improving livelihoods of smallholder horticulture farmers in the target districts. 1. Overall Goal: Improved livelihoods of smallholder horticulture farmers in the target districts 2. Project Purpose: Developed capacity of the smallholder horticulture farmer groups supported by the project		
Activities of the Project	1. Project Site[2]: Bungoma East, West, North, South Districts (Formerly Bungoma District), Western Province; Trans-Nzoia East, West and Kwanza Districts (Formerly Trans-Nzoia District), Rift Valley Province; Kisii Central, South and Masaba Districts (Formerly Kisii District), Nyanza Province; Nyandarua North and South District (Formerly Nyandarua District), Central Province. *Names as of Terminal Evaluation in July 2009. 2. Main activities: sensitization workshop, selection of model groups, baseline survey, stakeholder forum, training (development of training materials; residential training and in-field training for the direct supported farmer groups; residential training, training of trainers, and in-field training by extension staff for the indirect supported farmer groups), follow-up support, development of manuals 3. Inputs (to carry out above activities) *As of Terminal Evaluation in July 2009 Japanese Side 1) Experts: (Long-term) 3 persons; (Short-term) 2 persons 2) Trainees Received: 9 persons 3) Equipment: vehicles, office equipment, etc. 4) Local Costs Kenyan Side 1) Staff Allocated: 7 persons (3 from Ministry of Agriculture (MOA)[3], 4 from Horticultural Crops Development Agency (HCDA))[4] 2) Building and Facilities 3) Counterpart Budget		
Project Period	November 2006 to November 2009	Project Cost	(ex-ante) 295 million yen, (actual) 317 million yen
Implementing Agency	Ministry of Agriculture (MOA) and Horticultural Crops Development Agency (HCDA)		
Cooperation Agency in Japan	None		

II. Result of the Evaluation

<Constraints on Evaluation>

(i) The primary source of information on the post-project situation is the questionnaire survey and interviews with related county or sub-county (former district) agriculture officers and farmer groups (one or two per former district) in the former Bungoma District, Trans-Nzoia District, and Nyandarua District, three out of the four original target districts. The evaluator did not collect information from the former Kisii District due to the limited evaluation resources.

(ii) Quantitative data was not available to verify the indicators for Project Purpose and the Overall Goal, mainly because the said agriculture officers do not monitor the data for the indicators, and the available statistical information is either limited or not up to date. Therefore, the evaluator used qualitative information collected in the way mentioned in (i) above.

< Special Perspectives Considered in the Ex-Post Evaluation >

(i) Contribution of succeeding technical cooperation of JICA: Continuation status of project effects, achievement of Overall Goal, and institutional,

[1] Target groups consisted of direct supported farmer groups (42 groups in total, around 1,000 farmers) and indirect supported farmer groups (80 groups in total (around 1,600 farmers).

[2] See (i) of "Special Perspective Considered in the Ex-Post Evaluation".

[3] Presently known as Ministry of Agriculture Livestock and Fisheries (MOALF).

[4] Presently known as Horticultural Crops Directorate (HCD), Agriculture and Food Authority (AFA).

technical and financial aspects of Sustainability include both outcomes/impacts of this project and the succeeding technical cooperation of JICA, namely, the follow-up cooperation (December 2009- March 2010)[5], "Smallholder Horticulture Empowerment and Promotion Unit Project (SHEP UP)" (2010-2015), and ongoing "Smallholder Horticulture Empowerment and Promotion Project for Local and Up-scaling (SHEP PLUS)" (2015-2020). It is difficult to separate outcomes/impacts of this project from those of the succeeding technical cooperation at central level and to a lesser degree at local level because some of the project sites (original target districts) of this project overlap with the succeeding ones (among the original target districts surveyed for this ex-post evaluation, only the former Trans-Nzoia District is not covered by the succeeding projects).

(ii) Names of project sites: The project sites originally consisted of four target districts (i.e. Bungoma District (Western Province), Trans-Nzoia District (Rift Valley Province), Kisii District (Nyanza Province) and Nyandarua District (Central Province)), but they had been divided into 12 by the time of terminal evaluation in 2009 as shown in the "Project Site". It is noted that the data in the Terminal Evaluation Report was presented and analyzed by the original four target districts instead of the divided 12. Further, after completion of the project, provinces and districts were replaced by counties due to change in the local administrative system in 2013. To maintain consistency with the terminal evaluation, names of the original target districts shall be used to refer to the project sites and data shall be presented by these four target districts.

(iii) Overall Goal: Target year and target number for the Indicator are not specified in the existing documents. For the ex-post evaluation, the target year shall be set to 2012 based on the normal timing of JICA's ex-post evaluation (i.e. three years after completion of the project). As for the Indicator ("Reduced poverty rate in the target districts"), it is difficult to clarify the target number at the time of ex-post evaluation so that the exact level of achievement cannot be assessed. As an alternative, whether or not the degree of poverty reduction is considered to be large enough on reasonable grounds in light of "improved livelihoods of the smallholder horticulture farmers" as stated in Overall Goal shall be checked. The highest possible level of achievement of Overall Goal shall be "mostly achieved" for the same reason. In addition, the number of groups which practice market-oriented farming promoted by the project and the household in the groups as well as the total number of households in the target districts shall be confirmed as supplementary information in-order to estimate the degree of contribution of the project.

1 Relevance

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

At the time of ex-ante evaluation, the project was consistent with the development policy of promotion of poverty reduction and creation of employment as set forth in Economic Recovery Strategy for Wealth and Employment Creation (2002-2007) and Strategy for Revitalizing Agriculture (2004-2014). At the time of project completion, the project was also consistent with government policy of transforming the agricultural sector into a profitable, commercially oriented activity that also sustains use of natural resources as set forth in the Ministry of Agriculture Strategic Plan (2008-2012), which was in line with the national development plan i.e., Vision 2030 (2008-2030) and the Agricultural Sector Development Strategy (ASDS) (2009-2020).

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

At the time of ex-ante evaluation, the project was consistent with the development needs of Kenya. Smallholders who practiced horticultural production in the target districts had difficulty in marketing their produce mainly derived from remoteness from both local and urban major markets, limited marketing channels except for local traders, underdeveloped rural roads which easily become impassable during rainy seasons. Also, the high cost of farm inputs, lack of access to information on technology and marketing, and fluctuation of producer prices together constrained smallholders to benefit from horticulture. At the time of project completion, government's supporting system for small-scale farmers through strengthening existing extension system was still weak.

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

The project was consistent with Japan's Country Assistance Program for Republic of Kenya (2000), which set agriculture development, including promotion of small-scale agriculture, 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 Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. The targeted smallholder horticulture farmer groups more or less gained bargaining power in marketing their produce according to the measurement by the project team, and average net production per unit of land increased in all the original four target districts where the project was implemented. Net-income benefit of individual members of the smallholder horticulture groups and groups supported by the project increased by 67.4-195.2% (as compared with the target 14.7-20.2 %) between April 2007 and October 2009[6] (Indicator). The approach introduced by this project was called the "SHEP approach" to an improvement of livelihood of smallholder farmers by developing both the technical and managerial capacity of the farmers to practice market-oriented horticultural farming[7].

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

Continuation status of the project effects could be verified only qualitatively while the indicator is quantitative; however, it is judged to be "mostly continued" considering the information collected. While the quantitative data on net-income of individual members of the

[5] Follow-up activities with SHEP farmers' groups, setting up office for SHEP UP and identifying personnel for SHEP UP.

[6] Based on the baseline survey to 154 farmer groups in April 2007 and the end line survey to122 farmer groups in May 2009, both in the original four target districts.

[7] The SHEP approach offers farmers a series of trainings and a range of activities with a clear focus on market-oriented farming. Source: JICA (2014), "Introduction to the SHEP Approach"

groups supported by the project is not available, the questionnaire survey and interviews with former district agriculture officers and farmer groups revealed that the level of net-income has been maintained and in many cases improved.

Most of the farmers interviewed during the field survey in the former districts of Trans Nzoia, Nyandarua and Bungoma confirmed the continuation of the project effects. During the field survey, out of the 86 (eighty-six) of farmers interviewed by focus group discussions, 80 farmers were satisfied by the performance and effect of the project indicating an improvement in their net income. The other 6 (six) were not sure of the effects of the project. They further indicated their interest to continue using the skills and technology acquired from this project. For example, Perkerra farmer group in the former Trans Nzoia District said it has incomes of members improved evidenced by the acquisition of assets like a generator, a water borehole etc. Other groups visited like Namilama in the former Bungoma District show significant improvement of incomes from various streams including bananas, ground nuts, avocados, training activities etc. Promoting factors include continued training by the SHEP team (through the succeeding projects) and extension officers on better crop husbandry practices, reduced cost of production due to reduced input costs, and targeted/better market practices of horticulture produce. In the former Nyandarua District, the Kitogo Self Help Group (SHG) members continue to use the training materials supplied by this project to train new members and other groups. The Mwendi Kurima SHG continue to utilize the skills acquired from the training under this project to conduct market survey with the latest exercise resulting in new market opportunities for their produce in Kisumu city. Through interactions with other stakeholders using the Farm Business Linkage Stakeholder (FABLIST) approach introduced by this project, the Namirama SHG are sourcing Banana seedlings from Jomo Kenyatta University of Agriculture and Technology and VI-Agroforestry (a NGO) in Maseno.

Farmers satisfaction with project effects, continued effects of project, and the improved livelihoods were acknowledged by the results of questionnaire filled by the sub-county officers (formerly district agriculture officers) for the respective target areas. .

It should be noted that the former Trans Nzoia District is not covered by the succeeding projects but continues training and extension activities for farmer groups with the SHEP approach and using and further updating the training materials developed under the project.

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

The achievement of the Overall Goal was partially confirmed in the target year (2012). The livelihoods of smallholder horticulture farmers are assumed to have been improved to a certain extent in the target districts because an increasing number of households in the groups have practiced market-oriented farming promoted by the SHEP approach and, as mentioned above, many groups have increased their net-income after project completion. Also, according to the latest available county statistics, the net income from horticulture at former district level has shown significant improvement (i.e., increase by 15% in Trans Nzoia, 30% in Bungoma between 2013 and 2014; no data available for other original target districts; the data includes the income of large-scale farmer households). However, the contribution of the project on the poverty reduction could not be confirmed at the former district level since the ratio of the households which participate in the groups practicing market-oriented farming promoted by SHEP approach in the original target districts to smallholder horticulture farmers is unavailable (Supplementary information). The status of achievement at the time of ex-post evaluation could not be verified as relevant data is not available

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

The project has not had negative impacts on the natural and social environments. Regarding impacts on gender[8], the survey conducted by the project found that the difference in the average net-income between male and female farmers was reduced from 31.1% in April 2007 to 14.88% in October 2009 (no data available on the gender gap after project completion).

<Evaluation Result>

In light of the above, through the project, the Project Purpose was achieved at the time of project completion, and the project effect was mostly continued. The Overall Goal was partially achieved (achievement was partially confirmed due to limited data availability) in the target year and achievement status at the time of ex-post evaluation could not be confirmed. Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td>(Project Purpose)
Developed capacity of the smallholder horticulture farmer groups supported by the project</td><td>(Indicator) By the end of the project net-income benefit of individual members (men and women) of the smallholder horticulture groups and the groups supported by the project increased by 14.7 – 20.2 %.
(Note: “smallholder</td><td>Status of the Achievement: achieved (mostly continued)
(Project Completion)
<Increase of average net-income benefit of individual farmers of small holder horticulture groups and the groups supported by the project>
<table><tr><th>Original Target District</th><th>Target</th><th>At the time of project completion (Apr. 2007 - Oct. 2009)</th></tr><tr><td>Bungoma</td><td>20.2%</td><td>195.2%</td></tr><tr><td>Trans-Nzoia</td><td>16.2%</td><td>120.7%</td></tr></table></td></tr>
</table>

[8] Under this project, emphasis was made on gender mainstreaming as a means to enhance project effectiveness/impact through measures such as short-term expert on gender issues and ensuring a 50:50 ratio of male and female during training (what was known as the Joint Extension Staff & Farmers Dual Gender (JEF2G) Training). Also, during the evaluation, we established that some activities related to gender mainstreaming being conducted by the farmers include establishment of woodlots for firewood, installation of improved stoves and active role of women in leadership.

	horticulture groups" and "groups" are interpreted as indirect and direct model groups, respectively.)	Kisii 18.0% 161.8% Nyandarua 14.7% 67.4% (Ex-post Evaluation) -Quantitative data is not available. - Eighty out of the 86 interviewed farmers (53 male and 33 female) said they were satisfied with the performance and effect of the project indicating an improvement in their net income. -Former district agriculture officers confirmed that the level of net-income has been maintained and in many cases improved.
(Overall Goal) Improved livelihoods of the smallholder horticulture farmers	(Indicator) Reduced poverty rate in the target district (Supplementary information to estimate the degree of the contribution of the project) Ratio of the households which participate in the groups practicing market-oriented farming promoted by SHEP approach in the original target districts.	(Target Year) partially achieved (Ex-post Evaluation) unable to verify as relevant data is not available <Groups practicing market-oriented farming promoted by SHEP approach in the target districts as of 2012 (Target Year)>

Original Target District	Number of groups which were practicing market-oriented farming promoted by SHEP approach and HH in the groups (1)			
	Unit	Groups supported by this project (2)	Additional groups supported by SHEP UP	Additional groups supported without JICA assistance(3)
Bungoma	Group	10 or more	15	n/a
	HH	372 or more	419	n/a
Trans-Nzoia	Group	10 or more	0	n/a
	HH	403 or more	0	n/a
Kisii	Group	n/a	15	n/a
	HH	n/a	295	n/a
Nyandarua	Group	11 or more	17	n/a
	HH	416 or more	380	n/a
Total	Group	31or more	47	n/a
	HH	1,191 or more	1,094	n/a

Note: (1) The data on the total number of households in the target districts is not available. For reference, at the time of ex-ante evaluation, the number of farmers in the target groups had accounted for about 1% of the smallholder horticulture farmers in the target districts (262,650 people). (2) The figures are for the direct supported farmer groups as of project completion in 2009. Interviews with agriculture officers in the three original target districts visited confirmed that almost all groups have continued market-oriented farming after project completion. The groups (11 groups with 345 households) supported in the former Kisii District are not counted in the table since the post-project information was not collected. (3) Interviews with agriculture officers in the three original target districts visited confirmed that some groups started market-oriented farming after project completion.

Source: Report on the last survey conducted by the project in October 2009; Final Report on implementation of devolved government of Kenya (April 2011), interview to 86 farmers and questionnaire survey and interview to sub-county agriculture officers in Bungoma, Trans-Nzoia, and Nyandarua.

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: 107%). Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

Promotion of agriculture development, including smallholder agriculture and horticulture, is an important issue in Vision 2030 (2008-2030), ASDS (2010-2020), and National Agricultural Extension Service Policy (2012).

<Institutional Aspect>

Institutional set-up for the promotion of the SHEP approach has been strengthened at the central level. SHEP Unit has been established in MOA (presently MOALF) with the assistance of JICA through the follow-up cooperation of the project and SHEP UP to take charge of information management to further utilize and share information on the SHEP approach. In the meantime, the role of MOALF at the local level, i.e. delivery of extension services, has been transferred to the local administration (i.e. county agriculture departments), which makes independent decisions and prioritizations, since the devolution of the government system in 2013. Accordingly, former district agriculture offices of MOALF have been transferred to under county governments (i.e. county agriculture departments). In the period between July 2013 to October 2014 staff headcount at National level in the Ministry has reduced from 7,493 to 1,178 due to deployment to County level as a result of transfer of functions according to "Joint Capacity Assessment and Rationalisation Report" published in 2015 by MOALF.

While the county agriculture offices do not have written mandate to promote the SHEP approach, the approach seems to have taken root in activities by extension officers as continuous use of it is observed. HCDA was restructured into AFA in 2014 and renamed as HCD. The crops development division of AFA has been revamped focusing more on policy development/review, development of standards, development and promotion of research technologies. HCD keeps its offices at the local level but the responsibility to provide extension

services has gradually shifted to county agriculture offices. The merger of ministries of agriculture, livestock and fisheries into MOALF has created a unified extension. Since the departments are interrelated, service delivery has become more effective because of interdepartmental cooperation[9]. It is noted that the current policy direction is to restructure and reform public extension systems to facilitate multi-stakeholder participation i.e. pluralism involving many players including private sector, NGOs etc. Accordingly, the SHEP approach is being adapted to the devolved government system through SHEP PLUS so that issues associated with the devolution are expected to be addressed by the completion of SHEP PLUS.

As for staffing, 20 officers (10 at National and 10 at County level) are assigned to SHEP Unit of MOALF. It considers that the number of staff of SHEP Unit is sufficient in view of their focused roles after the devolution. With respect to the county agriculture departments responsible for the target districts (former district agriculture offices), information on the number of extension officers and of staff engaged in the SHEP approach is not available as the offices are in the transition process as mentioned above. Some sub-county agriculture officers consider the number of extension officers is not sufficient to promote the SHEP approach beyond the level that has been attained so far.

A project monitoring system is currently being developed. The recommendation is that the monitoring & evaluation function will reside in the Department of Strategy & Information Management of MOALF[10].

The training institutions in the State Department of Agriculture have been grouped together under the Kenya School of Agriculture, the institutions in the State Department of Livestock have been grouped under the Kenya School of Animal Sciences and the institutions in Fisheries have been grouped under the Kenya School of Fisheries. These institutions will be managed under the Technical and Vocational Education and Training (TVET) Act[11].

<Technical Aspect>

At the central level, the former C/Ps continue to work in MOALF and HCD and engage in promotion of the SHEP approach. They consider that their skill level is sufficient, and the materials developed by the project are utilized to promote the SHEP approach. At the local level, the staff trained by the project continue to work in the respective county agriculture departments or sub-county agriculture offices and local offices of HCD. Those offices visited confirmed that the knowledge and techniques transferred through the project have been shared and utilized by the staff and extension officers, which has ensured and is likely to ensure technical sustainability at least for the time being. In the long term, however, the skill level is not sufficient especially for the new staff, and they feel the need for additional training by MOALF. The groups supported by the project in the three original target districts the ex-post evaluator visited continuously practice market-oriented farming, utilizing the skills and materials developed by the project, including market surveys, crop planting calendars, etc. However, interviews with some county/sub-county agriculture officers revealed that there are emerging problems especially post-harvest among farmers, including storage losses, short shelf-lives, diseases and pests, low/or fluctuating prices, packaging, collective marketing etc., which could be better covered if the SHEP approach is to be further improved.

With devolution also, most services are now offered closer to the people without reference to the national office. There is also better representation of communities in decision making process as provided for in the constitution[12].

<Financial Aspect>

MOALF has secured the funds for promotion of the SHEP approach as the C/P budget of SHEP UP and SHEP PLUS, including the funds for the target counties. An annual budget of 22.5 million Ksh was approved and allocated in 2014 and 2015, and 25 million in 2016. The budget is considered sufficient for the central level and the project sites of those projects, and the similar level of budget is likely to be allocated until the completion of SHEP PLUS in 2020 from the past record. Regarding the budget for field activities in the target areas of this project including those not covered by SHEP UP or SHEP PLUS, it is expected to be secured by the counties, which are responsible for planning and allocation of budget for extension services based on their own priorities under the devolved government system. Budget data of the county agriculture offices in charge of the original target districts is not available since they are still building a system to budget/allocate and disburse funds for extension services efficiently. It is expected that such a system will be in place shortly (although the concrete schedule could not be obtained). As for HCD, information of the amount and sufficiency of the budget was not available. Nevertheless, the following information shows a positive trend in financial conditions of counties in the field of agriculture. According to the "Analysis of public expenditures in support of food and agriculture in Kenya, 2006–2012", published by FAO on October 2014, there is a higher allocation of funds in the sector from the national treasury to the county governments. This has given the county governments an opportunity to implement its county specific programs that factors in its unique development needs[13].

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[9] Analysis of public expenditures in support of food and agriculture in Kenya, 2006–2012, FAO published on October 2014.

[10] Joint Capacity Assessment and Rationalisation Report, published in 2015 by MOALF.

[11] Joint Capacity Assessment and Rationalisation Report, published in 2015 by MOALF.

[12] Analysis of public expenditures in support of food and agriculture in Kenya, 2006–2012, FAO published on October 2014.

[13] Analysis of public expenditure in support of food and agriculture in Kenya, 2006–2012 conducted by FAO makes the following observations:

•The development policies for the agriculture sector in Kenya are giving a strong emphasize to public private partnership.

•There is a high investment in research, extension services and training. This can bring benefits via improved agricultural productivity and in longer-term contribute significantly to poverty reduction.

•External resources constitute a fairly large proportion of development funds for the Ministry of Agriculture at an average of 65 percent for the whole period of analysis.

•The approved budget for all expenditure in support of food and agriculture sector development grew by 111 percent in nominal terms from 2006 /2007 to 2011/2012 but a decline was registered in relative terms within the same period, from an average of 6 percent to 5 percent. This can be attributed to the high decline of agricultural added growth in 2008 and 2011 which also corresponds to a decrease in the country's GDP.

<Evaluation Result>

In view of the above, no major problems have been observed in each of the policy, institutional, technical and financial aspects. Therefore, the sustainability of the effectiveness through the project can be judged as high.

5 Summary of the Evaluation

The project achieved the Project Purpose (i.e. developed the capacity of the smallholder horticulture farmer groups supported by the project.) and the effect of the project is mostly continued, which was however verified only in qualitative terms. The achievement of the Overall Goal (i.e. improved livelihoods of the smallholder horticulture farmers) was partially confirmed in the target year, and its achievement status at the time of ex-post evaluation could not be verified due to lack of information. Regarding the sustainability, no major problems have been observed. 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:

1. Necessary data to verify the effectiveness of using the SHEP approach was not available from county agriculture departments/sub-county agriculture offices. County agriculture departments are recommended to create a feedback mechanism in the extension service that will allow interaction and information flow between farmers and officers. It is desirable for such a mechanism to be in place during the period covered by the next Medium Term Plan and the County Integrated Development Plans (2018-2022).
2. Providing continuous training is recommended to improve skills/knowledge among staff, especially to newly recruited officers, in view of high staff turnover (as a result of retirement and natural attrition), in the next fiscal year (2018/19).
3. There are emerging challenges especially post-harvest. To address them to improve the SHEP approach, it is recommended that MOALF (national level) and county agriculture departments should take the initiative to create a mechanism for collaborative extension service involving all stakeholders (i.e. policy makers, agriculture officers, the private sector, research institutions, and producers) as soon as possible.

Lessons learned for JICA:

1. Future interventions on market-oriented smallholder agriculture need to address emerging challenges especially on post-harvest. In case of projects in Kenya, county agriculture departments should take the initiative.
2. Incorporate explicit market objectives and indicators (e.g., market penetration, product development such as innovative products and value addition, diversification, and market development-new market segments) into the design of future cooperation on market-oriented smallholder agriculture. In this project, the levels or extent of market participation or penetration could not be measured although the ex-post interviews in the former project areas found the active market participation by farmer groups.
3. At the advent of devolution system in Kenya, not only central MOALF, many institutions continued/took up the extension service delivery of the SHEP approach, e.g. county agriculture departments, HCD, civil society and the private sector. In future cooperation in agriculture extension service, support to strengthen coordination mechanism, i.e., support the establishment of a body like SHEP Unit at the local level as a central point to coordinate extension activities by all partners, is necessary. This would include setting up of a monitoring and evaluation mechanism and training of new staff.

An extension officer (trained by the project) assessing the beans farm of a member of a self-help group (farmer group) in the former Bungoma District.

A member of a self-help group (farmer group) in the Banana Ripening Chamber in the former Bungoma District.

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Uganda Office: October, 2018

Country Name	Secondary Science and Mathematics Teacher's Project (SESEMAT)[1]
Republic of Uganda	

I. Project Outline

Background	Secondary school students' performance in mathematics and science were at a very low level in Uganda. Many of the problems in secondary-level math and science education were resulting from the poor quality of teachers, many of whom were taking teacher-centered and theory-centered approaches without sufficient knowledge of the subjects. Also, secondary level teachers were given no opportunities to enhance their teaching skills and knowledge on a continuous basis due to the absence of in-service training designed for them.		
Objectives of the Project	Through establishment of a system of in-service education and training (INSET) for math and science teachers at the secondary level in the pilot districts, the project aimed at improving teaching ability of those teachers, and thereby improving the secondary student performance in math and science subjects in the pilot districts. 1. Overall Goal: To improve secondary student performance in Mathematics, Physics, Chemistry and Biology in the pilot districts. 2. Project Purpose: To improve teaching ability of Mathematics and Science teachers at secondary level in the pilot districts.		
Activities of the Project	1. Project Site: Kampala; Tororo District, Butaleja District and Masaka District as the pilot districts 2. Main Activities: (1) Training for secondary math and science teachers in the pilot districts: training for National Trainers (NTs), national training for District Trainers (DTs), district training, etc. on the approach called ALEI-PIEI (Activity/Experiments, Learner-centered, Encouragement, and Improvisation - Plan, Implementation, Evaluation and Improvement); (2) Sensitization for parents and schools in the pilot districts: workshops for head teachers and District Education Officers (DEOs), lesson demonstration competitions, etc.; (3) Institutionalization of the INSET system: establishment of National INSET Centre in Kampala and District Training Centres in the pilot districts, development of pedagogical working documents and an INSET concept paper for secondary math and science teachers, etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 30 persons (Japanese and Kenyan) 2) Trainees received: 66 persons (Japan, Kenya, and Malaysia) 3) Local expenses: project activities, equipment, training, etc. Uganda Side 1) Staff allocated: 10 persons 2) Local expenses: lodging and transportation costs of INSET participants, allowances for DTs, facilities for National and District INSET Centres, utility, etc.		
Project Period	August 2005 - August 2008	Project Cost	(ex-ante) 210 million yen, (actual) 202 million yen
Implementing Agency	Ministry of Education and Sports (MoES)		
Cooperation Agency in Japan	-		

II. Result of the Evaluation

<Constraints on Evaluation>

- Alternative Indicator and supplemental information for Project Purpose to assess continuation status of project effects: The measurement of the Project Purpose Indicators needs technical knowledge and experience as well as a large size of samples to get reliable figures, which cannot be implemented only by JICA Office. Therefore, this ex-post evaluation used the degree of teachers' practicing ALEI-PIEI that they learned from INSET as the alternative indicator. Also, the data to show the status of continuation of INSET was used as supplemental information.
- Alternative Indicator for Overall Goal: Since the status of achievement of the Overall Goal Indicators could not be verified, this ex-post evaluation used teachers' perception on changes of students' interests in and level of understanding of math and science subjects as an alternative indicator

< Special Perspectives Considered in the Ex-Post Evaluation >

- Pilot districts: After this project (SESEMAT Phase 1), SESEMAT activities have been conducted not on district basis but regional basis. In the process of dividing regions, Tororo District and Butaleja District were integrated as SESEMAT Tororo Region, and INSET has been conducted as Regional INSET. Therefore, post-project data on Tororo Region includes data on the mentioned two pilot districts. Similarly, Masaka Region's data includes data on Masaka District and Lwengo District, which were integrated to one region. Also, District Trainers (DTs) are called Regional Trainers (RTs) when discussing the post-project situation.

1 Relevance

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

The project was consistent with Uganda's development policies such as "Poverty Eradication Action Plan" (2004/5-2007/8) which regards the improvement of math and science education at the secondary level as an urgent issue for industrial development, "Education Sector Strategic Plan" (2004-2015) which sets out institutionalized INSET.

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

The project was consistent with Uganda's development needs for improvement of quality of math and science teachers at the times of both ex-ante evaluation and project completion.

[1] Although the official project title does not include the abbreviation "SESEMAT", we put it as part of the project title for convenience.

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

The project was consistent with Japan's ODA policy for Uganda as agreed in the economic cooperation policy dialogue in 2006 (which included human resource development focusing on education and training).

<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 project carried out training for NTs and cascaded INSET (i.e., National INSET from NTs to DTs in Kampala and Regional INSET from DTs to math and science teachers in the pilot districts) mostly as scheduled. The scores for all three indicators (i.e., indices to measure teaching ability of math and science teachers) obtained in the terminal evaluation almost reached or more than targeted scores as shown in the table below.

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

The project effects have mostly continued by the time of ex-post evaluation, although the quality aspect could not be fully verified by objective means. The continuation of INSET has been on going in the pilot districts while no mop up trainings for those who missed due to limited funds. Since we are looking at two regions, Masaka and Tororo this is evidenced by the data obtained from the survey where in most cases the number of participant's attending INSET at the regions have been increasing. Moreover, both INSET Centres at the regional level (Tororo and Masaka) were operational for Regional INSET, RTs meetings, SARB activities[2], etc. and the training equipment and facilities developed under this project were found in good condition. The National INSET Centre is fully operational, too, for National INSET, RTs meetings, Sensitization Workshops, etc.

The practice of ALEI-PIEI in the classroom is observed in the pilot districts through inspection/monitoring by NTs and RTs to some extent according to RT's and teachers, hence the ability has been maintained. As for the quality/ level of ability, however, it is difficult to fully evaluate it without the scores of the three Project Purpose Indicators as objective evidence. In a survey of 31 math and science teachers including RTs in the pilot districts, 30 of 31 (96.8%) answered that they practice ALEI-PIEI either always, often, or sometimes. According to RTs and teachers, the reasons for not practicing of ALEI-PIEI frequently are mainly three points: (1) the large volume of curriculum cannot be completed with practice of ALEI-PIEI which usually take much time; (2) time for preparation and practice is insufficient in the environment where there are huge number of students to limited number of teachers; and (3) negative attitude of teachers.

<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 designated indicators could not be verified since the scores of the Achievement Test as well as UCE failure rate do not show consistent tendency through years and cannot represent the status of achievement. Therefore, the judgement was made relying on the qualitative information as follows.

From the perception by RTs and teachers, we can give a positive evaluation that students' performance has been improved since all respondents gave positive comments and supportive evidence on changes of students' interests in and level of understanding of math and science subjects after the teachers attended INSET. Comments that show a connection to INSET include: "Students get practical aspects of the science"; and "Students understand more when the techniques from INSET are used." "Teachers prepare for a lesson well, and such prepared lessons attract students and help them to understand the contents taught in lessons better, especially in a practical way (not as theory)". On the other hand, there were suggestions for improvement such as "There is a need for further training since the interest is not yet there, some students still biased that sciences are very difficult and then INSETs have not yet made a big impact."

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

No negative impacts of the project were observed. For the positive impacts, the INSET introduced by this project was institutionalized nationwide as the SESEMAT Programme, in which all math and science teachers are expected to attend the Regional INSET during school holidays. Also, MoES observes the networking as well as the higher motivation by teachers to use the methodologies on how to conduct the lessons better. These are combined effects of this project as well as "SESEMAT National Expansion Plan" (SESEMAT Phase 2, 2008-2012) and "Secondary Science and Mathematics Teachers' Project Phase III" (SESEMAT Phase 3, 2013-2017).

<Evaluation Result>

In light of the above, through the project, the Project Purpose was achieved by the time of project completion, project effects have been mostly continued, and the Overall Goal has been partially achieved at the time of ex-post evaluation. Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) To improve teaching ability of Mathematics and Science teachers at secondary level in the pilot districts.	1: The Lesson Observation Index obtained more than 2.3 on the 0-4 scale.	Status of the Achievement: achieved (Project Completion) The obtained score was 2.46 as of October 2007. (Ex-post Evaluation) Data is not available.
	2: The Student Participation Index (student self-evaluation) obtained more than 2.1 on the 0-4 scale.	Status of the Achievement: achieved (Project Completion) The obtained score was 1.8 as of October 2007. (Ex-post Evaluation) Data is not available.
	3: The Student Participation Index (observer evaluation) obtained more than 1.8 on the 0-4 scale.	Status of the Achievement: achieved (Project Completion) The obtained score was 2.1 as of October 2007. (Ex-post Evaluation) Data is not available.

[2] SARB stands for "SESEMAT Activities Regional Based," which is introduced and promoted under phase 2 and 3 to enhance SESEMAT approach at school level.

(Alternative Indicator for Project Purpose)
Degree of teachers' practicing the ALEI-PIEI approach.

(Ex-post Evaluation)
NTs' observation on teachers' practice of ALEI-PIEI in the classroom: mixed answers with "Yes," "Yes/No" and "No" (frequency not mentioned).

RTs' and teachers observation on teachers' practice of ALEI-PIEI in the classroom

	Yes	No
Tororo Region (17 teachers)	17	0
Masaka Region (14 teachers)	12	2

RTs' and teachers' answer to "How often do you practice ALEI-PIEI in the classroom?"

	Always	Often	Sometimes	Rarely	Never
Tororo Region (17 teachers)	3	8	6	0	0
Masaka Region (14 teachers)	2	6	5	1	0

(Supplemental Information)
Continuation status of INSET.

(Ex-post Evaluation)
Number of INSET attendants in Tororo Region

	2009	2010	2011	2012	2013	2014	2015	2016	2017
National INSET for RTs	21	17	17	16	13	13	13	13	13
Regional INSET for teachers	127	92	111	139	151	170	173	179	206
Workshops for head teachers	n/a	n/a	n/a	n/a	n/a	n/a	64	57	36

Note: Reasons for decrease in National INSET attendants: Tororo Region had two former districts INSET Centres that is Nagongera and Kachonga, and when they were merged to two centres, the number had to be reduced drastically up to when they reached the required level.

Number of INSET attendants in Masaka Region

	2009	2010	2011	2012	2013	2014	2015	2016	2017
National INSET for RTs	20	20	20	20	20	20	20	20	20
Regional INSET for teachers	95	85	103	135	92	134	108	139	143
Workshops for head teachers	n/a	n/a	n/a	75	n/a	51	n/a	60	n/a

(Overall Goal)
To improve secondary student performance in Mathematics, Physics, Chemistry and Biology in the pilot districts.

1: Student performance on achievement tests set by SESEMAT improved in the pilot districts.

(Ex-post Evaluation) The degree of achievement could not be assessed.
Mean scores of SESEMAT Assessment Test in Tororo Region (For reference purpose only; not used as evidence)

	2013	2014	2015	2016	2017
Physics					
Pre-test	19.4	17.0	17.5	18.5	-
Post-test	-	-	17.0	17.4	-
Chemistry					
Pre-test	19.0	19.0	19.5	23.7	-
Post-test	-	-	20.0	25.0	-
Math					
Pre-test	18.0	21.3	24.0	26.7	-
Post-test	-	18.0	18.5	18.8	-
Biology					
Pre-test	25.3	26.2	30.4	24.3	-
Post-test	-	-	26.3	23.1	-

Note: The SESEMAT Assessment tests was introduced under SESEMAT Phase 2 as one of the SARB activities. But currently in the pilot regions of SESEMAT phase 1, it's only Tororo Region that is implementing the Assessment tests, while Masaka is implementing Lesson Observation, another SARB activity. Though SESEMAT National Centre used to develop Achievement tests under Phase 1 (that is why this indicator reads "tests set by SESEMAT"), currently the SESEMAT Assessment test is developed by each regional centre which chose (among the SARB activities) to implement the test. As for the record from 2008 to 2012, the INSET Centre lost it during shifting the location of the Centre. As for the year 2017 and post-test in 2013 and 2014, the tests were not implemented due to the insufficient budget.

2: The UCE performance in Mathematics and Sciences improved in the pilot districts.

* UCE: Uganda National Examination (O-level)

(Ex-post Evaluation) The degree of achievement could not be assessed.
Failure rate of UCE in the whole country (For reference purpose only; not used as evidence)

	2014	2015	2016
Math	34%	21%	39%
Physics	65%	58%	68%
Chemistry	66%	57%	60%
Biology	33%	59%	55%

Note: The exact figures of UCE failure rates require processing whole raw data from Uganda National Examination Board, which is not possible during the period of this ex-post evaluation.

(Alternative Indicator for Overall Goal) Teachers' perception on changes of students' interests in and level of understanding of math and science subjects after the teachers attended INSET

(Ex-post Evaluation) Status of achievement: partially achieved
RTs', head teachers' and teachers' answer to "Did students' (i) interests in math and science subjects and (ii) level of understanding of those subjects improve after teachers attended INSET?"

	Yes, very much	Yes	Yes, to some extent	Not much	Not at all
(i) Students' interest	2	13	14	2	0
(ii) Students' level of understanding	3	10	16	2	0

Source: Terminal Evaluation Report; JICA documents; questionnaire and interview to NTs, RTs, head teachers and teachers; Uganda National Examination Board, MoES –Secondary department

3 Efficiency

Both the project cost and project period were within the plan (ratio against the plan: 91% and 100%, respectively). Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

Though the word INSET is not mentioned in the current policy document, the word SESEMAT and its training (indicating INSET) are mentioned in the "Education and Sports Sector Strategic Plan 2017/18-2019/20" as the opportunity of in-service training for teachers. As a positive prospect, currently, MoES is drafting "Science Policy" with support by SESEMAT National Office, which clearly mentions "upgrading SESEMAT Regional Centres to science resource centres" as a strategy for strengthening the capacity of schools to teach functional science.

<Institutional Aspect>

The organizational structure for INSET is systematically established. At each level (Ministry, SESEMAT National Office at SESEMAT National Centre, SESEMAT Regional Centres / Regional Management Committee (RMC)) in the structure, there are the designated number of staff and roles which are commonly recognized by all the stakeholders. As the evidence of functionality of the structure, the INSETs have been institutionalized nationwide, maintained by this structure, and MoES is even trying to improve it by adding new role such as, "District Focal Officers," which were introduced in 2017 to strengthen the communication between the central and regional levels. MoES is a key player to maintain/ improve the structure as MoES have the power to authorize each role and its responsibilities.

However, according to MoES, NTs and RTs interviewed, there is still need for improvement: the necessity of more number of trainers as well as math and science teachers, a higher level of commitment and functionality of some stakeholders, etc. Also, the fact that SESEMAT office has not been institutionalized in the organizational structure of MoES brings a budgetary issue (see below).

<Technical Aspect>

Almost all respondents answer that all stakeholders have required technical skills which are maintained by the designated trainings. The number of counterparts is also maintained as usually there are replacements of counterparts under this project (Phase 1) who retired or transferred. Ministry officials have obligated trainings in policy formulation, management, coordination, etc., national INSET is annual training for RTs to maintain and improve the skills, and NTs had continuously been trained till 2017 under the successor JICA projects (Phase 2 and 3) even after the end of Phase 1. While the system to train RTs has already been institutionalized as described in "Effectiveness/Impact" above, a training mechanism for NTs, which has relied on the JICA projects[3], is required to maintain and improve skills.

<Financial Aspect>

MoES through the Secondary Education department has been budgeting and allocating funds for SESEMAT office. And for FY 2017/2018 a budget of UGX 175 million was allocated for running the SESEMAT office including the budget for national INSET activities, NT's allowances and other expenses. For the regional INSET activities, funds are all collected as SESEMAT Fund from students in each region (e.g., UGX 174 million in Tororo Region and UGX 45 million in Masaka Region in 2017, both increasing from the the previous year). Almost all respondents answer that it is not sufficient. It was a great achievement to establish the mechanism to collect the fund for Regional INSET from each student via schools as SESEMAT Fund involving parents who are paying the UGX 1,000 for the fund; however, the fund has not been fully collected and remitted due to some Head teachers' negative attitude in collection and remittance caused by less understanding/ respecting of SESEMAT.

As for Regional INSET supported by SESEMAT Fund, the enforcement by MoES to Head-teachers/ schools may work for more remittance; however, it is not certain about the budget for National INSET. Even though MoES requests more budget for INSET and the budget be secured, disbursement from the Ministry of Finance is always limited and much less than the budgeted amount, and MoES has difficulties on how to prioritize programs and allocate the limited disbursement to each program including SESEMAT/ INSET. Moreover, the fact that SESEMAT office has not been institutionalized in the organizational structure of MoES makes it difficult for the Ministry to regularly allocate budget for INSET.

<Evaluation Result>

In light of the above, Some challenges 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 of improving teaching ability of math and science teachers at the secondary level in the pilot districts through INSET. The effects of the project (continued training and practice of the ALEI-PIEI approach) have been partially continued, and the Overall Goal of improving students' performance has been partially achieved by the time of ex-post evaluation. For the sustainability, some problems were found such as future concerns on training for NTs and insufficient budget, while the national INSET system including the funding mechanism in each region has been established.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

<For improvement on the environment for teachers to practice the ALEI-PIEI approach>

The following are recommended to take place in three years (1st for planning, 2nd for implementation and 3rd for monitoring).

(1) Discussion based on the revised curriculum to realistically incorporate ALEI-PIEI Approach (recommended to MoES and National Curriculum Development Centre (NCDC))

Due to the huge volume of the curriculum, some teachers tend not to practice ALEI-PIEI techniques which take time for practice. If

[3] Besides the SESEMAT projects, JICA-supported Third Country Training provided in Kenya and Zambia.

MoES insists and promotes attendance of INSET and usage of the techniques learned there, MoES should adjust the environment which teachers can practice ALEI-PIEI through coordination with NCDC on how teachers can manage completion of the syllabus with ALEI-PIEI approach at the policy level. Fortunately with the introduction of the revised lower secondary curriculum, teachers have extra time for two hours for planning and preparation. Therefore, we recommend that MoES and NCDC discuss lesson preparation and implementation based on the revised curriculum together and find out a realistic way to incorporate ALEI-PIEI approach utilizing extra 2 hours, so the teachers will not feel overloaded in implementing this approach.

(2) Enhancing stakeholders involvement in supervision (recommended to NTs, RTs, head teachers and inspectors on teaching, MoES)

Besides, proper supervision and encouragement to teachers by stakeholders (especially MoES officials and DEOs) are more necessary. Negative attitude of teachers can be improved by encouragement and positive evaluation. Monitoring system by NTs and RTs has been established, but officials should be involved more in feedback and coaching of NTs as head teachers and teachers regard officers' perception more important. Monitoring and reporting mechanism among MoES, NTs, and RTs should be strengthened so that teachers can have more opportunity to be recognized in regard to their attitude and commitment to SESEMAT.

(3) Utilization of human resource in schools (recommended to Secondary Education Department and Education Service Commission of MoES, and schools)

Increasing the number of math and science teachers is also needed. Many teachers and RTs mentioned lack of time for preparation for and practice of ALEI-PIEI, especially as teachers teaching in different schools due to lack of teachers. The large number of students cannot be reduced, so MoES and Education Service Commission are required to flexibly think of countermeasures, i.e. not only hiring qualified teachers but also utilizing existing resource i.e. secondary 5th and 6th (S5 – 6) students and university students who are good at math and science to assist with the tutoring (teacher assistants) to leave enough time with teachers to prepare for the lessons adequately as suggested by RMC in the survey result. With this measure, it is necessary for Secondary Department and Education Service Commission of MoES to cooperate with each other to set qualifications and criteria for selecting the tutors (teacher assistants) and clarify the roles of assistant teachers not to compromise the quality of service.

(4) Review of contents and target of INSET as well as integration of INSET training content to pre-service training (recommended to Secondary Education Department and Teachers and Instructors Education and Training (TIET) Department of MoES and SESEMAT Office)

While all science and mathematics teachers are obligated to attend INSET every year, the whole program is not systematically developed yet. This causes some challenges such as some teachers complaining about lack of diversified training contents and NTs tending to set training theme which is attractive to teachers' interests rather than a theme that will enhance learners-centered approach. To review training contents for a teacher that is relevant to ALEI-PIEI approach, we suggest developing INSET program which offers different training contents / themes that is in accordance with the level of teaching experience of participants.

Besides integration of contents of INSET to pre-service training is important. New teachers gained skill for ALEI-PIEI approach in pre service training can utilize it in classroom and further develop their teaching skills and learner-centered approach during the in-service training to further enhance level of understanding of students.

<For securing funds for INSET>

The following are recommended to take place in two years.

(1) Enforcement of Remittance of SESEMAT Fund (recommended to MoES and head teachers)

The financial resource for Regional INSETs is only SESEMAT Fund. MoES circulated the letter among schools as of September 2017 which enforces all schools to collect and remit SESEMAT Fund; however, in the survey for this ex-post evaluation, respondents answer was, that the enforcement is not sufficient. To ensure enforcement, investigation and clarification on which regions/schools do not work for the fund for what kinds of reasons, and the results may help to have more feasible ways for schools to be convinced and follow the instruction from MoES.

(2) Inclusion of cost management mechanism in the new science policy and institutionalization of SESEMAT office in MoES (recommended to MoES)

Every year, around April, Ministries finalize their budget plan for the next financial year. MoES can utilize the result of this ex-post evaluation of this project (SESEMAT Phase 1) to secure budget, ensure its disbursement and allocate the limited disbursed money to INSET for the FY 2019/2020 hence it should make the system more functional. The fact that INSET have been continuously conducted by the Ugandan government and that teachers have utilized skills from INSET in classrooms proves that the training is worthwhile for Science and Mathematics Education in Uganda. "Science Policy" now being drafted by MoES should reflect these facts and include cost management mechanism and estimation to be officially approved by the Government of Uganda. Moreover, as the organizer and the implementer of SESEMAT activities set in the Science Policy, SESEMAT office should be institutionalized in the organizational arrangement of the Ministry; so that the costs for the necessary activities like INSETs are recognized as those to be supported responsibly by the Ministry and MoES's procedures for releasing the budget can be ~~are~~ timely and effective. Therefore, MoES should make a clear roadmap on the procedure and timeline to incorporate the SESEMAT office in the Ministry's organizational structure.

Lessons Learned for JICA:

(1) Formulation of clear plan by both the implementing agency and JICA on institutionalization of SESEMAT office within MoES and regular allocation of necessary budget/funds. (Countermeasures)

Under the project, national trainers were hired, and their salary and allowances for SESEMAT activities were also covered by the Ugandan government, and this huge financial input from Uganda has been recognized as a positive commitment from the counterpart. However, the survey for the evaluation shows that when the government has not secured budget and the disbursement delays, it can easily hamper the implementation of the activities. One of the main reasons of this challenge on the budget is caused by the fact that SESEMAT office is not properly institutionalized in MoES and the necessary budget for SESEMAT is not regularly allocated from MoES and yet it's the Ministry's responsibility. At the stage of project formulation, technicalities of how the organization to establish under the project (SESEMAT office, in case of this project) was going to be institutionalized and the cost for implementation plus sustainability of its activities should have been carefully assessed and well planned by JICA as well as the implementing agency (MoES in case of this project),

in order for the counterpart to see whether this approach is realistic within the government budget.

(2) Involvement of stakeholders (Good practice)

The project made sure that all stakeholders such as Parents, NTs, RTs Teachers, Head teachers, etc understand the concept of SESEMAT which made it easier to institutionalize the approach as "SESEMAT program." Adapting "Cascade approach," INSET mechanism was formulated well from the central to regions, and regions to students, and through the introduction of SESEMAT fund, parents have been involved and which gave all stakeholders an opportunity to understand SESEMAT, its value, and the necessity.

(3) Articulation of ALEI-PIEI with the curriculum (Countermeasures)

It is shown that some teachers are not using ALEI-PIEI because it is time consuming while they have a lot of work. Therefore at the beginning of the Project, there should have been a study/review of the curriculum and lesson content/volume of work for teachers and how to formulate the ALEI-PIEI approach to be more realistic to fit the syllabuses into the given time of lessons. Therefore, there should be a trade-off between the time allocated and time consumed without compromising the quality of education being provided.

Some Teachers from Lubongi Army S.S.S[4] (L.A.S.S.S)

Students in Math class being guided by a fellow student at L.A.S.S.S

Teachers and some RT's at Masaka S.S.S SESEMAT Centre during the Ex-post evaluation of SESEMAT Phase 1

The sign post of Masaka SESEMAT regional office

[4] S.S.S stands for Senior Secondary School.

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Sierra Leone Field Office: March, 2019

Country Name	**Project for Integrated Rural Health Improvement**
Republic of Sierra Leone	

I. Project Outline

Background	Sierra Leone was in the process of restoration from a decade of the Civil War which had destructed the most infrastructures and deprived its workforce that had been daunting in the health sector. Infant mortality ratio and under-five mortality ratio were 165 and 283 per 1,000 live births, respectively, and ranked as the worst in the world in 2004. Having gradually recovered from emergencies to the reconstruction period, the government committed to strengthening the delivery of public health services to mitigate the plight. As such, the Ministry of Health and Sanitation and JICA jointly conducted a study on the health situation in 2006-2007. As a result, it identified that strengthening of the management capacity of district health management team was an important agenda in order to increase the efficiency and effectiveness in both the delivery of health services as well as the governance of the health sector on the whole.		
Objectives of the Project	Through development of management capacities of the District Health Management Team (DHMT), the Peripheral Health Units (PHUs) and the District Council in Kambia District, the project aimed at strengthening the capacity to ensure the quality and equitable health service delivery, and thereby better responding to the health needs of communities in the target district. 1. Overall Goal: The health status of people in Kambia is improved. Project Purpose: Quality and equitable health service delivery is strengthened by the management capacities of DHMT, PHUs and District Council in Kambia District to better address the health needs of the community		
Activities of the Project	1. Project Site: Kambia District 2. Main Activities: (1) Management capacity training for DHMT, (2) Improvement and rehabilitation of office environment for DHMT and PHUs, (3) Strengthening comprehensive supportive supervision, (4) Strengthening PHU reporting system, (5) Strengthening comprehensive District Health Planning system, (6) Improvement in coordinating function of DHMT with stakeholders. 3. Inputs (to carry out above activities)		
	Japanese Side 1) Experts: 9 persons 2) Trainees received: 4 persons 3) Equipment: PCs, Printers, Medical equipment, Motorbikes, Spare parts for Solar Fridge, Three Vehicles etc.		Sierra Leonean Side 1) Staff allocated: 23 persons 2) Provision of space (Project office, Resource Center for training venue)
Project Period	May 2008 – May 2011	Project Cost	(ex-ante) 176million yen, (actual) 291million yen
Implementing Agency	District Health Management Team of Kambia District (DHMT), Ministry of Health and Sanitation (MOHS)		
Cooperation Agency in Japan	-		

II. Result of the Evaluation

<Constraints on Evaluation>

[Limited availability of comparable data/information]

High-ranking officials of the MOHS were arrested on a charge of misuse of funds in 2012. Under investigation, official documents including the database of the District Health Information System (DHIS) –a linchpin to verify the achievement of the Overall Goal in the context of the ex-post evaluation-- were confiscated and they have never been available ever since.

[Shuffled health system after going through the large-scale intervention on the Ebola pandemic][1]

After the containment of the Ebola pandemic, large-scale external support was vested to reform the health sector as the Ebola Recovery Program. Under the newly introduced system, the District Health Planning in the project scope has been obsolete as the official planning mechanism was changed to rather centralized planning in terms of the health sector.

< Special Perspectives Considered in the Ex-Post Evaluation >

[Limited causal relation between the Project Purpose and the Overall Goal as well as the verifiable indicators]

There are logical problems between the narrative summaries of the Project Purpose and the Overall Goals as well as their verifiable indicators in the original Project Design Matrix (PDM) as follows.

- Logical inconsistency between the Project Purpose and its verifiable indicators

  While the Project Purpose is "Improvement in quality and equity of the services delivered by DHMT", the verifiable indicator for the Project Purpose is "Quality of Comprehensive District Health Plan (CDHP) is improved", which cannot directly verify whether the quality of health services delivered by DHMT is improved or not. On the other hand, the project mainly addressed the enhancement of management capacity of DMHT. Therefore, it can be logically considered that the Project Purpose should have been conversely "the improvement of CDHP". In effect, this ex-post evaluation thus examined how the supportive supervision by the DHMT has been improved in terms of quality and equity after the project completion and also how the DHMT utilized PHUs report/proposal to have it reflected in drafting CDHP in order to assess management capacity of DHMT which is the main project effect.

- Misplaced indicators and the alternatives for the Overall Goal

  As mentioned above, the project mainly addressed the enhancement of management capacity of DMHT while the Overall Goal is

[1] However, the management tools introduced by the project, such as the supervision checklist and PHU report, have been revised to adjust a new policy environment by ongoing JICA project for Strengthening Supportive Supervision System (ISSV Project) targeting the country-wide dissemination.

"improvement of health status of the people in the target district", which cannot be attained by the contribution of the project without substantial improvement of health service delivery the supported by other projects. At the same time, there is no available data on the verifiable indicator of health status of the people in the target district as mentioned above. As an alternative, having assumed that the Project admittedly set up the reporting system at the PHUs, other indicators for Reproductive Child Health coverage were used to assess the achievement, as they are feasible to measure the consequences of the intended service deliveries of the PHUs serving to improve local child and maternal health status of the Project.

1 Relevance

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

The project was consistent with the development policies of Sierra Leone; "the Poverty Reduction Strategy Paper II", "National Health Sector Strategic Plan" (NHSSP, 2010-2015) as well as the Local Councils Act of 2004. The national health policy was based on the primary health care to be pragmatized through the delivery of quality health services as stated in "the Basic Package of Essential Health Services for Sierra Leone" (BPEHS, 2010 and BPEHS, 2015-2020). The Government of Sierra Leone had addressed the fundamental importance of the well-functioning health sector in achieving its development objectives.

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

The project was consistent with Sierra Leone's development needs. A set of those critical indicators for measuring infant, under-five children, and maternal mortality was ranked as one of the worst ones in the world. The poor health status was attributed to the prevailing heavy burden of unsolved public health issues in the country. There was no change in the needs for improving the basic health care and service delivery 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 ODA Charter of Japan and the priority area announced in the course of the TICAD process. Based on the concept of human security and humanitarian support, it was to assist the socially vulnerable in the framework of rural community development. In its priority areas, to improve the basic needs and well-being of the rural community, a range of infrastructures was planned to be provided including education, public health, water, roads, and electricity etc. To ensure the sustainability, it was intended to be combined with technical cooperation for capacity building of local people[2].

<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. According to the terminal evaluation report and the survey results of the ex-post evaluation, as per a sole indicator of "quality of Comprehensive District Health Plan (CDHP) /Local Council Health Plan (LCHP) is improved", it was partially achieved, although it was pointed out that the definition of management capacities was too ambiguous and thus the causality was quite inexplicit between project outputs. Therefore, from perspectives of the original meaning of the Project Purpose, it was confirmed that the project virtually enabled Kambia DHMT to improve relevant management capacities to some extent in a process of implementing "Integrated Supportive Supervision (ISSV)" where synergetic cooperation of the PHUs was predicated. As a result, the Annual District Health Plan formulated at the time of project completion had been considered well-organized in terms of the health needs of local communities although considerable challenge remained in terms of the health service delivery at the PHUs.

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

The project effects have been partially continued after the project completion. According to the survey results of the ex-post evaluation, the management capacities enhanced by the project have been maintained, as confirmed that the Kambia DHMT kept utilizing data/information obtained through the ISSV and Health Facility (HF) Reporting practice in hope of serving the health needs of the district. In the course of operations, they became more capable to coordinate with other stakeholders to take necessary actions. However, there is still room for improvement of health service delivery as identified issues and challenges at the level of PHUs remained unsolved. Regarding "quality and equitable health service delivery", especially equitable distribution of health services was not evidently confirmed in terms of the comparison of the population per clinical staff across seven Chiefdom in Kambia District.

<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 survey results for the ex-post evaluation, the predetermined indicators of three mortality rates (Infant, under five-year Children, Maternal) of Kambia District were not available. Moreover, due to the large-scale external support for the Ebola pandemic, a comparison of time-series data in the renewed health statistics (2012-2017) made virtually impossible and inadequate because of enhanced accuracy in surveillance and improved health facilities. Instead, although data are limited, the number of recipients of several Reproductive Child Health (RCH) services and the number of maternal deaths in Kambia District may well explicate some aspect of health situation as an alternative. The data show a steady improvement in service delivery as the number of the recipients has notably increased. It may have affected RCH positively as the number of maternal deaths has inversely decreased over the years.

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

No negative impact was confirmed.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Quality and equitable health service delivery is strengthened by the	Quality of CDHP /LCHP is improved	Status of the Achievement: partially achieved (partially continued) (Project Completion) ● Comprehensive management capacities of DHMT were improved by the Project.

[2] MOFA, ODA Databook (JP) 2007, p.531

management capacities of DHMT, PHUs and District Council in Kambia District to better address the health needs of the communities.		(Ex-post Evaluation) ● Kambia DHMT has continued using the ISSV checklist developed by the project and has tried to identify issues and challenges at the PHUs. And yet, they could not follow through the given Guideline to carry out all the ISSV activities. ● Each of the seven chiefdoms in Kambia District showed improvement in terms of the work burden of health worker over the years. However, equitable health service delivery has remained a considerable challenge.
(Overall Goal) The health status of people in Kambia is improved.	(1) Infant mortality ratio, (2) under 5 mortality ratio, (3) maternal mortality ratio	(Ex-post Evaluation) Not verified[3] ● No data available.
	Supplementary data/information	(Ex-post Evaluation) Judging from the trend of the number of maternal deaths below, the general status of maternal mortality has been improved. And the trends of the number of recipients of RCH services also suggested that the child health may be affected positively. Table 1: The number of recipients of Reproductive Child Health (RCH) services and the number of maternal deaths in Kambia District

	2012	2013	2014	2015	2016	2017
Fully Immunized children*	6,517	7,109	7,309	7,679	9,148	10,073
Vitamin A Supplementation	4,432	6,802	8,223	8,706	12,553	11,088
Antenatal Care (ANC) coverage (4 visits)	6,598	7,820	7,946	8,048	8,350	8,126
Delivery at Health Facility	6,289	8,004	8,850	9,974	11,236	11,052
Maternal Deaths	--	197	285	117	63	44

Note: the fully immunized child in Sierra Leone receives BCG, OPV (4doses), DPT-HepB-Hib (3doses), Pneumococcal (3doses) Rota (2doses), IPTi (3doses), Measles, and Yellow Fever.

Source：Sierra Leone Health Information Management System (HIMS)

3 Efficiency

Although the project period was as planned, the project cost exceeded the plan (ratio against the plan: 167%) due to the inappropriate projection of required resources for the initial project scope. The outputs were produced as planned.

The efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

Promotion of the management capacity of the DHMT has remained fundamentally important in the national policy of the Government of Sierra Leone. Going through the Ebola pandemic, a major public health crisis in recent year, it has very much reinforced the notion as the "Health Sector Recovery Plan" (2015-2020) and "Human Resources for Health Strategy" (2017-2021) have emphasized the capacity to effectively mobilize the national health workforce through the integrated planning, management, and monitoring as the ISSV both at the central and district level. At the district level, in particular, all the capacity building efforts have been to be prioritized in order to facilitate the implementation of the BPEHS (2015-2020) to promote the health service delivery for local communities.

<Institutional Aspect>

The roles and responsibility of MOHS, Kambia DHMT have not been changed. Although limited and insufficient in manpower, MOHS has been responsible for the formulation of health policies and advisory function for policy-makers on the health sector. The Kambia DHMT has had a substantial role to play in the context of the ISSV to work with hands-on service providers, PHUs and secondary hospitals. The number of Kambia DHMT staff has been increased from 20 to 33, in line with the new sectoral direction as above. However, according to the survey results, only one focal person has been assigned to each specific area of public health that does not suffice to cover all. Thus, it was deemed that it remained insufficient in terms of manpower at the DHMT. For 67PHUs in Kambia District, it has been seriously understaffed in order to provide quality health services for local people. Under a severe budgetary constraint, there were more volunteers (254) than staff on the payroll (179).

Moreover JICA has been implementing the ISSV Project since 2013, through this project MOHS formulated ISSV implementation systematic structure both central and district levels in order to support and effectively implement ISSV at district at District Level. This help Kambia DHMT to have proper support from MOHS and District Council for ISSV.

<Technical Aspect>

According to the survey results, they perceived that all the required skills at each level were considered insufficient, although various training and technical assistance have been provided by development partners that have enabled to improve the capacities more than ever. The management tools by the project were still used and modified by the DHMT. However, there was a concern in the DHMT that any training mechanism such as periodic refresher training, has not been established to retain the necessary skills to conduct the ISSV. And all the training has not been systemically programmed to build a career path to be incentivized and conducted only on an ad-hoc basis.

But in terms of ISSV aspect MOHS National Facilitators providing technical training to improve the capacity of DHMT on Project Cycle Management (PCM), utilization of Action Plan Management Matrix (APMM), supervision communication skills and technical knowledge of

3 Demographic Health Survey (DHS) conducted by the WHO in 2008 and 2013. The data are considered relatively reliable, but inadequate to measure the achievement status of the project.

health issues.

<Financial Aspect>

As the Government of Sierra Leone has highly depended on the external support to implement health promotion related activities, it has been vulnerable in terms of own funding mechanism. MOHS has had to manage to confine the scope of the actual implementation to be disbursed only 30-40% of the given budgetary ceiling as anticipated the lesser amount of revenue, although the annual budget has been allocated for health service delivery as 97,686 million Sierra Leonean Leon (SLL) (the fiscal year of 2015), 88,215 million SLL (FY2016), 89,572 mil SLL (FY2017), 116,522 mil SLL (FY2018). Despite that the need of healthcare service delivery has been reinforced more than ever, under the current public finance, MOHS has difficulty in funding any ISSV training programs for the DHMT to retain the capacity and skills even though they have been fully aware of the necessity, and therefore MOHS negotiated World Bank to utilize WB Health System Strengthening Project budget to conduct ISSV cycle and capacity building training. So meanwhile MOHS can continue conduct ISSV cycle. It is not ideal solution to sustain activities by external budget, but considering about the country financial situation, we should appreciate the best efforts of MOHS to solve financial aspect.

<Evaluation Result>

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

5 Summary of the Evaluation

The project partially achieved regarding the Project Purpose and the Overall Goal as the capacities being enhanced may have positively affected RCH in Kambia District. As for sustainability, institutionally understaffed to perform each duty and technically challenging to retain the skillset. Also, the necessary budget has not been sufficiently secured for training to conduct the ISSV. As for 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

Recommendations for Implementing Agency:

(1) To maintain the project effect to the extent to ensure the improvement of health status of Kambia population, MOHS, as well as Kambia DHMT, should independently seek financial support from interested Development Partners (DPs) as the Government of Sierra Leone has been suffering from a chronical budget deficit. However, while DPs incline to design and implement their project on their own firsthand investigation and framework, to convince such partners to constructively collaborate on a basis of a competitive advantage, MOHS and Kambia DHMT need to approach DPs with their project proposal and implementation framework based on empirical data and evidence compiled by the regular ISSV cycle established in the ongoing technical assistance project.

(2) For the next step, inasmuch as MOHS is supposed to implement and operationalize their own proposed activities for public health promotion by using external finance and/or any donor funding instruments (e.g. general budget support), it must be accompanied by thorough accountability. So far, MOHS has established the Integrated Health Partners Account Unit (IHPAU) for the very purpose on the use of funds, yet, it has not been fully functional and streamlined to fund priority projects on a timely basis as mandated. MOHS should identify the institutional bottleneck together with the Ministry of Finance and prepare countermeasures in mobilizing and incentivizing staff to satisfy requirements for receiving external funds.

Lessons Learned for JICA:

Although the introduced approach was much needed and pertinent, the project design was not appropriate particularly on the expected outcome of the project that may have devalued the contribution of the project. The management capacity of the DHMT should have been merely one factor to improve health service readiness in part among all other factors in the health system. Further, it should be noted that the health service readiness alone cannot improve the health status of the population without overall improvement of accessibility to qualified health facilities by other interventions. In order to avoid such misconception and logical failure, a project formulation team should have conducted a detailed study and thoroughly communicated with the stakeholders to agree on what they all can realistically expect from the project activities as objectives. Also, it should strengthen the document review process and internal evaluation exercises preferably with the third-party experts. In the case that logic of the project and/or indicator(s) is found inappropriate in a given recipient country, such as this project, it should expedite to remediate the project design during the project period at the earliest possible occasion of the Joint Coordination Committee (JCC).

Kamgbew Maternal and Child Health Post (MCHP)

Filed Integrated Supportive Supervision (ISSV) documents at the Monitoring &Evaluation office, Kambia District Health Management Team (DHMT)

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Niger Office: August, 2018

Country Name	**Support to the Improvement of School Management through Community Participation ("School for All") Phase II (Appui à L'Amelioration de la Gestion des Etablissements Scolaires à travers la Participation Communautaire (Ecole Pour Tous) Phase II)**
Republic of Niger	

I. Project Outline

Background	Niger aimed at improvement of the gross enrollment rate of primary education from 41.7% in 2002 to 94% in 2012 under "the 10-year Educational Development Plan (Plan Décennal de Développement de l'Education: PDDE)" (2003-2012). The one of the pillars of PDDE was a decentralization policy which main framework was transfer of school management to the School Management Committee (Comité de Gestion des Etablissements Scolaires: COGES), which is composed of the school principal, a representative of teachers, a representative of parents and a representative of mothers. The policy places local people and communities as key actors in school management and delegates them responsibilities of school management including planning, operation, management of teachers as well as awareness rising of parents. However, at the beginning, COGES was not functioning due to the lack of implementation plan for embodying the policy. Under such situation, since 2004, JICA implemented "the Project on Support to the Improvement of School Management through Community Participation ("School for All") Phase I" (hereafter referred to as Phase I) in the country, in particular in Tahoua region. Although the school management model to promote the community participation was established by the Phase I, there were remaining issues, such as capacity enhancement of education officers at local level and establishment of more efficient monitoring system to be implemented by the Ministry of National Education sustainably, in order to disseminate the model nationwide. On the other hand, among the school improvement activities conducted by community residents simultaneously in the Phase I, some cases of the school improvement activities towards attaining the educational development goals by the Ministry of National Education were observed and their effects were verified. Therefore, in the Phase II, it was expected to compile good practices of educational development by community participation using functional COGES and to establish a model of education improvement activities by community.
Objectives of the Project	Through trainings on COGES for officers at national level and local level as well as school officials, establishment of monitoring system on COGESs organized, implementation of monitoring, holding of workshops for experience sharing on the monitoring, and sharing experiences for establishing a model of education improvement activities by COGES in the pilot areas (Tahoua region and Zinder region), the project aimed at reinforcing capacity of government officers, school directors, teachers and local people for dissemination of functional COGES nationwide, thereby contributing to improvement of quality and access to basic education by the COGES model. *By the Ministry Order dated February 22, 2012, COGES was renamed as the Decentralized School Management Committee (Comité de Gestion Décentralisée des Etablissements Scolaires : CGDES), this ex-post evaluation uses CGDES for descriptions about situations since 2012. 1. Overall Goal: The quality of and the access to basic education are improved by school management through community participation. 2. Project Purpose: Structure to establish and sustain COGES is reinforced to make COGES effective nationwide.
Activities of the Project	1. Project Site: 8 regions in Niger (Niamey, Tillaberi, Dosso, Maradi, Agadez, Diffa, Tahoua, Zinder) 2. Main Activities: 1) Trainings for COGES supervisors and officers on trainers' training, COGES establishment and training planning, 2) Establishment of monitoring system on COGES and conducting monitoring, 3) Implementation of school improvement activities at pilot schools in the target regions and organizing of seminars for sharing experiences 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 13 persons 2) Trainees Received: 4 persons 3) Equipment: vehicles, motorbikes, etc. 4) Local cost: cost for training and manual development Niger Side 1. Staff Allocated: 12 persons 2. Land and facility: project office in the Ministry of National Education 3. Local cost: cost for trainings
Project Period	August 2007 – January 2012 (Extension: August 2010 – January 2012) / Project Cost: (ex-ante) 360 million yen, (actual) 553 million yen
Implementing Agency	Ministry of National Education (MEN)
Cooperation Agency in Japan	None

II. Result of the Evaluation

1 Relevance

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

The project was consistent with Niger's development policies of "PDDE" (2003-2012) prioritizing to improve the gross enrollment rate of primary education from 41.7% in 2002 to 94% in 2012 and the enrollment rate of preschool education to 5% by 2013 through decentralization to delegate responsibility of school management to COGES. The policy priorities were confirmed at the time of ex-ante evaluation and at the time of project completion.

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

The project was consistent with the Niger development needs to establish sustainable and efficient monitoring system in MEN and capacity building of local educational officers for disseminating COGES nationwide, improvement of school management based on local needs, implementation of pre-school education through establishment and operation of kindergartens.

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

The project was consistent with Japan's ODA policy for Niger[1] focusing on assistance to contribute to improvement of poverty status of the people in Niger through supports including "Basic Human Needs" along with the implementation process in the "Poverty Reduction Strategy Paper" (2002), and prioritizing education, health care, water supply and community development.

<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. As of February 2009, 97.1% of the total number of primary schools in Agadez, Diffa, Dosso, Maradi, Niamey, Tillaberi, Tahoua and Zinder regions (6,577 schools) established their COGES through democratic elections and submitted the minutes on the establishment (Indicator 1). In terms of school action plans, 93.2% (11,175 COGES) of the total number of COGES in 2009/10 submitted the plans to their respective communal federations of COGES (FCC), and 89% (11,795 COGES) of them in 2010/11 did (Indicator 2). For the annual reports, 82.8% (9,930 COGES) of all COGES in 2009/10 submitted the reports to their FCC, and 93.5% (12,426 COGES) of them in 2010/11 did (Indicator 3).

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

The project effects have been continued since the project completion. As of 2015/16 after the project completion, in all the target regions, CGDES was established through democratic elections in each primary school in all the target regions except Diffa region while the total number of primary schools has increased by increase in the number of newly constructed primary schools. It was confirmed by the fact that 23 CGDES surveyed by the ex-post evaluation were established through democratic elections and sustained. As of 2016/17, 89.8% (16,758 CGDES) of all the CGDES submitted their school action plans to their FCC. Also, the annual reports were submitted by 89.1% of the total CGDES in 2012/13 and 82.9% in 2016/17 to FCC. In addition, since the project completion, the monitoring system established by the project has been continuously functioning from the central level to the commune level. Furthermore, in Tahoua and Zinder regions, the community pre-schools have been continued by CDGES as a model case to meet the needs of pre-school education including increase in primary enrollment. In other regions, the community pre-schools have been sustained by CGDES. As the government has integrated the community pre-schools into public pre-schools, the number of the existing community pre-schools in the 2 pilot regions surveyed by the ex-post evaluation has been decreasing. On the other hand, the proportion of the community pre-schools in the total number of pre-schools in Niger has sustained at more than 20% since the project completion in despite of a decrease to 19.2% in 2016 because the number of public pre-school has not increased.

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

The Overall Goal was mostly achieved at the time of ex-post evaluation. The enrollment rate and the completion rate of 2015/16 in all regions in the country increased from the ones in the year of project completion. Also, all the regions except Diffa region have lower repetition rate in 2015/16 compared to the ones in 2013/14. It can be reasonably assumed that CGDES activities, including newly construction of thatch-roofed classrooms, monitoring of attendance of teachers and students, and introduction of remedial classes and night studies, have contributed to these improvements. However, while the dropout rate decreased in 4 out of the 8 regions, it increased on the 4 regions of Diffa, Dosso, Niamey and Tahoua because the students faced difficulties to continue their school attendance due to security deterioration, migration of local residents, and unsolved poverty issues.

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

Some positive impacts were observed at the time of ex-post evaluation. Since the representatives of mothers' association have been always affiliated with CGDES, women enable to participate in decision making on school management. Also, educational environment for girls have been established because of campaign activities for promoting girls' enrollment sponsored by CGDES. As a result, the gross entering rate for girls[2] increased from 62.3% in 2012 to 70.2% in 2016. Apart from this impact, the following other positive impacts were observed: establishment of steering committee for daily life areas including health, water and environment, establishment of CGDESs at a secondary school level and dissemination of the community pre-school in all the regions except Tahoua and Zinder. There was no negative impact observed at the time of ex-post evaluation.

<Evaluation Result>

In light of the above, through the project, the Project Purpose was achieved, the project effects have been continued, and the Overall Goal was mostly achieved by 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) Structure to establish and	(Indicator 1) 80% of the COGES have been established	Status of the Achievement: Achieved (continued) (Project Completion)

[1] This is based on the statement in Ministry of Foreign Affairs "Japan's ODA Data (2007)"

[2] Gross entering rate: the proportion of the number of children entering in primary school out of the total number of children of official age for entering primary school (6-7 years of age)

sustain COGES is reinforced to make COGES effective nationwide.	through democratic elections.	• February of 2009: 97.1% of the total number of primary schools in Agadez, Diffa, Dosso, Maradi, Niamey Tillaberi, Tahoua and Zinder regions, established their COGES through democratic elections and submitted the minutes on the establishment. (Ex-post Evaluation) • The 23 CGDES, which were surveyed by the ex-post evaluation, were sustained.
	(Indicator 2) 90% of the COGES have submitted school action plans to their respective communal federations of COGES	Status of the Achievement: Achieved (continued) (Project Completion) The proportion of COGESs, which submitted their school actions plans to their FCC, was as follow: • 2009/10: 93.2% of COGESs submitted. • 2010/11: 89% of COGESs submitted. (Ex-post Evaluation) • 2016/17: 89.8% of CGDESs submitted their school action plans to their respective communal federations of CGDES.
	(Indicator 3) 80% of the COGES have submitted annual reports to their respective communal federations of COGES	Status of the Achievement: Achieved (continued) (Project Completion) The proportion of COGES which submitted the annual reports to the FCC was as follow: • 2009/10: 82.8% submitted. • 2010/11: 93.5% submitted (Ex-post Evaluation) • 2016/17: 82.9% of the CGDESs submitted annual reports to their respective communal federations of CGDES.
(Overall Goal) The quality of and the access to basic education are improved by school management through community participation.	(Indicator 1) Changes in enrollment rate[3]	(Ex-post Evaluation) Achieved • In all the regions, the enrollment rate was higher in 2015/16 than in the project completion year 2011/12.

Region＼Year	2011/12	2012/13	2013/14	2014/15	2015/16
Agadez	81.1	83.6	77.9	88.5	99.2
Diffa	46.2	50.6	49.3	48.5	62.3
Disso	80	83.2	84.1	86.5	85.1
Maradi	71.2	74.7	75.4	78.5	80
Niamey	122.5	126.7	132.9	136.5	139.4
Tillaberi	69.4	72.8	73.2	75.2	76.7
Tahoua	62.2	63.3	63.8	67.4	68.1
Zinder	54.4	55.5	56.2	56.3	59.1

	(Indicator 2) Changes in completion rate[4]	(Ex-post Evaluation) Achieved • In all the regions, the completion rate regions was higher in 2015/16 than in the project completion year (2011/12).

Region＼Year	2011/12	2012/13	2013/14	2014/15	2015/16
Agadez	52.2	62.1	58.2	68.1	91.3
Diffa	29.9	37.4	40.2	47.6	57.6
Disso	66.5	61.2	73.9	89.9	92.3
Maradi	54.3	54.5	71.4	88.5	97
Niamey	94.4	93.6	97.9	110.3	115.6
Tillaberi	43.2	43.7	52.3	68.3	71.1
Tahoua	40.1	50.7	66.6	70.4	73.2
Zinder	37.1	38	45.5	52.9	54.3

	(Indicator 3) Changes in repetition rate[5]	(Ex-post Evaluation) Achieved • In 7 regions except Diffa region, the repetition rate was lower in 2015/16 than in 2013/14.

Region＼Year	2011/12	2012/13	2013/14	2014/15	2015/16
Agadez	N/A	N/A	7.8	N/A	4
Diffa	N/A	N/A	1.9	N/A	2.2
Disso	N/A	N/A	2.9	N/A	2.2
Maradi	N/A	N/A	3.9	N/A	2.3
Niamey	N/A	N/A	7.5	N/A	3.9
Tillaberi	N/A	N/A	3.1	N/A	2.7
Tahoua	3.53	2.33	3.2	2.35	2.1
Zinder	N/A	N/A	4.9	N/A	3.3

Note: The repetition rates are not available in educational statistical yearbook but are available in booklets of "Focus of Primary Education and Literacy Education" which has been published on ad hoc basis. Therefore, the data are available for the limited school years. For Tahoua, the data were provided by

[3] Gross enrollment rate (the proportion of the number of children enrolled in primary school out of the total number of children of official primary school age). The rate can be more than 100% because of the children over official primary school age enrolled in primary school.
[4] The proportion of the number of children completing primary school out of the total number of children to be expected to complete primary school in the relevant school year (who will graduate from primary school after six years since entering). The rate can be more than 100% because of the children enrolled in primary school for more than 6 years for reasons such as repetition.
[5] The proportion of the number of children repeating the same grade out of the total number of children to advance the next grade in the relevant school years.

		the provincial office.
	(Indicator 4) Changes in dropout rate[6]	(Ex-post Evaluation) Partially achieved • The dropout rate in the 4 regions out of all 8 regions was lower in 2015/16 than that of 2013/14.

Region＼Year	2013/14	2015/16
Agadez	18.3	8
Diffa	17.6	19.8
Disso	11.1	13.9
Maradi	13.5	11.1
Niamey	4.1	5.1
Tillaberi	13.4	13.1
Tahoua	13.8	15.4
Zinder	16.4	9.6

Note: The dropout rates are not available in educational statistical yearbook but are available in booklets of "Focus of Primary Education and Literacy Education" which has been published on ad hoc basis. Therefore, the data are available for the limited school years.

Source : Terminal Evaluation Report, Internal documents of JICA, Report of National Workshop for Monitoring FCC and CGDES (2013-2017), Questionnaire and Interview with the stakeholders, Statistical Yearbook for Basic Education (2010-2016), Focus of Primary Education and Literacy Education (2012, 2014, 2016)

3 Efficiency

The project cost and period considerably exceeded the plan (ratio against the plan: 154% and 150%, respectively). That was because the completion of nationwide dissemination of FCC model had been the final year of the original project period but the additional activities and activities for trial of new framework for activity plan had been needed to functionalize FCC and to ensure a sustainable monitoring system. In addition, it was necessary to change some sites for the project activities where the Japanese experts had been able to travel due to the travel limits in a part of the project sites in accordance with the risk level in the overseas travel information issued by the Ministry of Foreign Affairs due to the deteriorated security status by more terrorist activities by the Islamic extremist groups since February, 2010. Furthermore, the Nigerien side appreciated the results of this project and unofficially requested to continue the support by JICA. Although the establishment of new democratic administration was under preparation as a result of the presidential election in March, 2011. Therefore, since the transition to civilian control and approval of the new administration were not completed and that was not a situation where the Nigerien side as the government of Niger can make an official request of a new project to the government of Japan. As a result, it was necessary to continue the support by the re-extension of the project period. However, there was no change in the outputs of the project from the original plan. Therefore, the efficiency of the project is low.

4 Sustainability

<Policy Aspect>

In the "Education and Training Sector Programme (Programme Sectoriel de l'Education et de la Formation: PSEF)" (2014-2024), CGDES is approved as an official organization to be supported by MEN. Also, since MEN assigned CGDES supervisors to regions and departments to monitoring operation of CGDESs and stipulated the Ministry Order on establishment of monitoring for CGDES and FCC (Supplement No. 000031/MEP/A/PLN/EC/SG/DL on January 29, 2016) and the Ministry Order on structure and methodologies of monitoring (No. 00003/MEP/EC/SG/DL on January 29, 2016), the organizational activities by CGDESs have been ensured by the central government and the monitoring by the central government have been required. By these policies and legislations, the dissemination and sustainability of the model of school management by CGDES introduced by the project have been endorsed.

<Institutional Aspect>

There have not been any major changes in the institutional structure for the nationwide dissemination of CGDES. Even at the time of ex-post evaluation, the relevant organizations involving the project at the time of project completion has been functional with the same roles and responsibilities during the project implementation.

[MEN]

The unit of MEN for CGDES has been responsible for budgeting operation of the monitoring system, coordination among the related organizations for activities at a regional level, implementation of nationwide workshops for monitoring the activities by CGDES and FFC, and preparation of data for annual reports of MEN. For monitoring of CGDES and FCC, 1 staff member has been deployed to the Survey Planning Division and 12 staff members have been deployed to the CGDES Promotion Office. The number of staff members for the monitoring activities have been considered as sufficient since the necessary activities have been sustained.

[Regional Directorate of National Education]

The responsibilities for the Regional Directorates of National Education have been guidance and evaluation of monitoring activities conducted by the department CGDES supervisors, summary of activities by CGDES and FCC at the department level, preparation and submission of regular and annual reports, awareness activities aiming at management of fund to be allocated, participation into the national workshops organized by MEN. One regional supervisor has been assigned to each region, namely eight regional supervisors in total have been deployed nationwide. As they have been continuously engaged in the activities without problem, including monitoring, guidance and activity evaluation for the departmental school inspectors as well as implementation of the GDGES supervisor meeting in each province three times a year, the number of supervisor has been sufficient for conducting these activities.

[Departmental Office of School Inspector]

Departmental Office of School Inspector has taken responsibilities for monitoring, advising and supervision for activities and meetings of CGDES and FCC, cooperation and supports for FCC's activity plans, preparation of regular and annual reports, and so on. One departmental CGDES officer has been deployed for each department and 75 CGDES departmental officers in total have been assigned nationwide. As they have continued activities of guidance and monitoring for CGDES, the number of CGDES departmental officers is sufficient.

[FCC]

[6] The proportion of the number of children dropping out of primary school out of the total number of children enrolled in primary school.

FCC has been responsible for advising and supervision for CGDES's activities, monitoring of activities and general assemblies implemented by CGDES, cooperation and supports for FCC's activity plans, preparation of regular and annual reports, sharing of related information on CGDES with the related organizations. Each CGDES has 5 staff members and their activities for supporting CGDES have been sustained. Thus, the number of the staff members are sufficient for their activities.

[Commune]

Commune is an administrative division under department, and there are 266 communes across the country. Commune has taken responsibilities to cooperate FCC's activity plans and activities, financial supports to CGDES, participation in the general assembly of FCC. 1 staff is deployed to each commune, and the number of the staff is adequate.

[Primary school/CGDES]

Primary school and CGDES have implemented annual school activity plans and monitored the attendances of students and teachers.

<Technical Aspect>

The 12 manuals and guidelines of CGDES developed by the project have been utilized at the time of ex-post evaluation. Also, all the staffs of the related organizations mentioned above have sustained the necessary knowledge and skills for establishment, action plans, operation and monitoring of CGDES though the manuals and trainings.

<Financial Aspect>

The budget for the Unit of CGDES Promotion in MEN has fluctuated year by year since the project completion. The budget amounted 270 million FCFA in 2012/13 and increased to 507 million FCFA in 2015/16, but it was declined to 189 million FCFA in 2016/17 and 151 million FCFA in 2017/18. It was because the total budge of MEN had been decreased while the budget for security had been prioritized in the national budget allocation due to the current security situation. The budget for CGDES's operation and maintenance as well as monitoring has been secured due to the Minister Order as mentioned above. However, the budget execution has been persistently delayed because of the delays of approval for expenditure from the Ministry of Finance to MEN and the time consuming process for internal approval on the budget execution within MEN. Therefore, there have been cases where some activities have not been implemented timely and there is a slight concern about sustainable CGDES activities. The budget sources of the CGDES's activities have been membership fees and the budget from commune in addition to the government budget. Also, the activities related to CGDES have been financially supported by international organizations and non-governmental organizations in supporting decentralized school management. In addition, the counterpart fund for reinforcement of CGDESs' function has been utilized for monitoring of their activities, trainings at regional and department levels, and implementation of monthly meetings, which has contributed to the nationwide dissemination of CGDES. For the recent years, the fund was spent on the purchase of 83 motorbikes for the monitoring and supervising activities by the CGDES supervisors.

<Evaluation Result>

In light of the above, slight problems have been observed in terms of the 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 for establishment of functional CGDES at primary school nationwide and structural reinforcement to sustain CGDES and the Overall Goal for improvement of the enrollment rate of primary education though school management by CGDES. As for sustainability, there has remained a challenge that some of the related activities to CGDES have not been implemented in appropriate ways because of the constant delays of the budgetary execution. As for efficiency, the 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 Implementing Agency:

- MEN is required to develop human resources, to strengthen organizational cooperation, to secure budget continuously including financial supports from donors, and to timely allocate the budget execution in order to sustain the outputs produced by the Phase II and to contribute to improvement of quality and access to the basic education.

Lessons Learned for JICA:

- Through the project, the Ministry of National Education issued the Ministry Order to ensure budget for secured implementation of monitoring activities by the CDGES supervisors at provincial and school inspectors at department level. In the background, there is a fact that the project has been implemented with the units of the Ministry of National Education under the Secretary General as a counterpart and with sufficient understanding on the project concept among the stakeholders as well as the clear chain of command. The clear-cut institutional framework has made the monitoring system functioning and contributed to ensuring continuation of the project effects as well as their sustainability. In case where JICA considers a similar type of project in other Francophone African countries, it is important to incorporate project components to promote dissemination of the model activities at policy level, to establish monitoring system for the activities, and to endorse budget for them. Also, in order to facilitate those efforts at policy level, it is essential to involve stakeholders, in particular, the key decision makers, and to make them understanding on the project from the stage of project formation. .
- The project focused on transparency for the selection of CGDES members by introducing the democratic local elections which have enabled women to participate into decision making on school management. Therefore, it can be considered that the significant contribution of the project is the establishment of mutual trust with the local people and the promotion of establishment of CGDES and the model of school management by CGDES through facilitation of participation of the communities which is the key for democratic community activities based on women's needs and viewpoints, such as the community based pre-school. For the technical cooperation project focusing the activities based on community participation, it is essential how to establish mutual trust between the local communities and the related organization. Also, it is necessary to consider project design and actions to be taken during the project implementation.

Interviews with the CGDES members

Classroom constructed by CGDES

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Bolivia Office: December 2018

Country Name	Project for Strengthening Health Network in Rural Region Focusing on Mother and Child Health
Plurinational State of Bolivia	

I. Project Outline

Background	In the Department of La Paz, the access to health facilities is relatively easy in urban areas, while in rural areas, the utilization rate of health services is low and maternal and infant health status are poorer than other departments. The neonatal mortality ratio was 34 per 1,000 live births in 2008, which was higher than the national average. The rate of delivery at health facilities was only 58%. In the Health Network No.4 where many indigenous people live, they are not very motivated to visit because of their limited knowledge on maternal and child health services, low trust in health services, poor access to health facilities, etc.		
Objectives of the Project	Through capacity building of health facilities and personnel, community participation in decision making related to health issues and networking of the Health Network and municipalities, the project aimed at improving services and management with community participation for maternal and child health in the Rural Health Network No.4 of the Department of La Paz, thereby contributing to better maternal and child health. Overall Goal: Maternal and child health is improved in the Rural Health Network No.4 of the Department of La Paz. Project Purpose: Health services and management with community participation for mother and child health are improved in the Health Network No.4 of the Department of La Paz.		
Activities of the project	Project site: 10 Municipalities in theNo.4 Health Network (Achacachi, Ancoraimes, Huarina, Quiabaya, Combaya, Santiago de Huata, Sorata, Tacacoma, Chua Cocani and Huatajata). 1. Main activities: training of health personnel on maternal and infant health, organizing health committees in the community, training of community health facilitators, training of community people on maternal health, support for committees for information analysis, etc. 2. Inputs (to carry out above activities) Japanese Side 1) Experts from Japan: 4 persons 2) Training in Japan: 4 persons 3) Equipment: office equipment, medical equipment, etc. 4) Operational cost for hiring local experts, travel expenses, etc. Bolivian Side 1) Staff allocated: Health Network Coordinator, Supervising Nurse and statistician. Municipal heads of 8 municipalities. 2) Land and facilities: Office space, etc.		
Project Period	August 2010 to August 2014	Project Cost	(ex-ante) 260 million yen, (actual) 207 million yen
Implementing Agency	Ministry of Health and Sports (Restructured as the Ministry of Health (MOH) in 2014), Autonomous Department Government of La Paz, Department Health Service (SEDES) of La Paz, Health Network Coordination No.4		
Cooperation Agency in Japan	None.		

II. Result of the Evaluation

[Special Perspectives Considered in the Ex-post evaluation]

- In the Project Design Matrix (PDM), the Indicator 2 of the Project Purpose was set as the percentage of number of patients referred to a higher health facility (referral cases) of diarrheal diseases (EDAs) and acute respiratory infections (IRAs). However, it was considered appropriate to verify the number itself of referral cases, rather than the ratio against the total number of referral cases, because decrease in the number of unnecessary referral cases was attributed to improved maternal health services (improved diagnosis and care provided by lower-level facilities). Therefore, at the ex-post evaluation, the number of referral cases was used as an indicator for verification of the achievement level of the Project Purpose.
- The Indicator 3 of the Project Purpose was added after the Mid-term Review. However, it was not verified at the Terminal Evaluation, and no related information was mentioned. At the ex-post evaluation, the data for the Indicator 3 was collected to verify continuation status of the effects after the project completion was verified.
- In PDM, all indicators of the Project Purpose and Overall Goal did not have target values. At the ex-post evaluation, if improvement compared to before the project (or beginning of the project) is confirmed, it was judged as achieved.

1 Relevance

<Consistency with the Development Policy of Bolivia at the time of ex-ante evaluation and project completion>

The project was consistent with Bolivia's development policy on improving maternal and child health situations and promoting social mobilization and community health, as set forth in the "National Development Plan 2006-2010," "Social Development Plan 2011-2015," "National Strategy for Improvement of Maternal and Child Health" (2009-2015) and "Intercultural Community Family Health Policy" (2008).

<Consistency with the Development Needs of Bolivia at the time of ex-ante evaluation and project completion >

The maternal and infant mortality ratios (222/100,000 births and 63/1,000 births, respectively, in 2008) were the second highest in the Central and South America, and the situation in the Department of La Paz was worse than the national average. These needs for improving maternal and child health in La Paz remained same at the time of the project completion. Thus, the project was consistent with Bolivia's such development needs.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

In the Country Assistance Program for Bolivia (2009), one of the priority areas was social development which includes health.

<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. The percentage of facility-based delivery increased in six out of the surveyed eight municipalities (Indicator 1), and in the other two the percentage decreased by one percent and remained stable. The number of unnecessary referral cases of under-five children of EDA and IRA decreased (Indicator 2), due to capacity development of the health personnel of appropriate diagnosis and care and also establishment of the Committee of Referral/Counter-referral. This improvement can be confirmed by the increase in the percentage of health facilities which met quality standards with regard to maternal and child health (Indicator 4). Information on preparation of Information Analysis Committees' (CAI's) action plan was not confirmed (Indicator 3), as sufficient data had not been accumulated after this indicator was added after the Mid-term Review.

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

The project effects have continued. The percentage of facility-based delivery has increased in all of the target municipalities (Indicator 1). The percentage surpasses 80% in seven municipalities. Data on referral cases of under-five children of EDA and IRA were not available, but there have been few cases since the project completion (Indicator 2). Concretely, the increase in the percentage of health facilities which meet quality standards with regard to maternal and child health (Indicator 4) has led to more appropriate diagnosis and care, and as a result, it is considered that the number of referral cases to higher level facilities has reduced. CAIs of most health facilities have prepared the action plan which reflects behaviors prioritized by the community (Indicator 3). Thus, it can be said that community participation has been sustained for solving health issues in collaboration with health facilities. As supplemental information, other services strengthened by the project have been sustained as well. For example, health facilities have followed compliance with care protocols for partogram[1], active delivery[2], episiotomy, delivery position and delivery accompanying. They have also continuously provided postnatal checkups for mothers and newborn babies.

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

The Overall Goal has been partially achieved. Since the project completion, there were maternal mortality cases only in two municipalities in 2015 (Indicator 1). Although the reason for the high mortality ratio in Quiabaya in 2015 could not be confirmed at the ex-post evaluation survey, there was no case in 2016, the following year. The infant mortality ratio was marginally low at around 1/1,000 from 2015 to 2017 (Indicator 2), and it considerably improved from 63/1000 in 2008. On the other hand, the ratio or under-two children with chronic malnutrition has increased (Indicator 3), like in other Health Networks in La Paz According to the Coordination Office of the Health Network Office No.4, it was probably because of the change of the denominator calculated with the new information system (Primary Health Care Software: SOAPS), though it was still analyzing its causes at the time of the ex-post evaluation.

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

First, according to MOH and the Coordination Office of the Health Network No.4, men have shown more attention to women's health and the importance of the pregnant women' organization (pregnant women' club) to analyze health issues. Operation of the clubs was technically supported by the project in accordance with the Intercultural Community Family Health Policy (SAFCI)[3]. The club also functions as an opportunity for prenatal checkups and other health activities of the health facilities. Second, the project experience, including operation of the pregnant women's clubs, was incorporated in the "Local Guideline of Education on Healthy Life" It was approved as the national guideline before the project completion and has been referred to in JICA's following projects, "Maternal and Child Health Network Improvement Project in Potosi" (2013-2017) and "Mother and Child Health Network Improvement Project in Oruro" (2016-2020). Third, the 18 best practices and techniques on care for mothers and newborn babies which were introduced by the project have been widely applied in various trainings for the health personnel in the country, as they are based on WHO/PAHO's principles on perinatal health.

<Evaluation Result>

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

Achievement of the Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td rowspan="2">(Project Purpose)
Health services and management with community participation for mother and child health are improved in the Health Network No.4 of the Department of La Paz.</td><td>1 The percentage of facility-based delivery in the Health Network increases.</td><td><u>Status of achievement: Achieved (Continued).</u>
(Project Completion)
- The percentage of facility-based delivery increased from 46.7% in 2010 to 47.1% in 2013.
(Ex-post Evaluation)
- The percentage of the health facility-based delivery has increased (in the Health Network No. 4) 36.9% in 2014, 83.0% in 2015, 81.5% in 2016 and 81.9% in 2017.</td></tr>
<tr><td>2 The number of referral cases of under-five children of EDAs and IRAs at the health facilities of the Health Network decreases.</td><td><u>Status of achievement: Achieved (Continued).</u>
(Project Completion)
- The number of the referred cases of EDAs and IRAs from Achacachi Hospital, Sorata Hospital and Ancoraimes Health Center were 7 in 2013 and 5 in 2014.
(Ex-post Evaluation)
- The exact number of referred cases were not available at the time of the ex-post evaluation, but according to the Health Network, there have been very few referred cases to hospitals outside the network.
- Cases of under-five children suffering from EDAs and IRAs have decreased in the Health Network No.4.
<table>
<tr><th></th><th>2014</th><th>2015</th><th>2016</th><th>2017</th></tr>
<tr><td>Cases of EDAs</td><td>3,058</td><td>2,599</td><td>2,580</td><td>2,552</td></tr>
</table>
</td></tr>
</table>

[1] Graphical record of key data during delivery.

[2] Active delivery is supported under management of uterotonic agents after the birth of the child and cord treatment.

[3] SAFCI is a policy which respects a cultural diversity and prevention rather than treatment and sets out the concept of a multicultural integrated care model that incorporates values of indigenous peoples based on individuals, families and communities.

<table>
<tr><td></td><td></td><td>
<table>
<tr><td>Cases of IRAs</td><td>10,290</td><td>10,028</td><td>9,881</td><td>9,749</td></tr>
</table>
</td></tr>
<tr><td></td><td>3 The percentage of action plans of CAI of health facilities which include behaviors prioritized by the "Community Health Team" increases.</td><td>Status of achievement: Not verified at the project completion (Partially achieved at the time of the ex-post evaluation).
(Ex-post Evaluation)
- The percentage of action plans prepared by CAI of health facilities which included behaviors prioritized by the "Community Health Team" has increased in two out of the four surveyed municipalities.
<table>
<tr><td></td><td>2014</td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>Achacachi</td><td>78.6%</td><td>80.0%</td><td>82.1%</td><td>94.6%</td></tr>
<tr><td>Ancoraimes</td><td>68.8%</td><td>74.2%</td><td>89.5%</td><td>85.2%</td></tr>
<tr><td>Huarina</td><td>80.0%</td><td>75.0%</td><td>80.0%</td><td>75.0%</td></tr>
<tr><td>Sorata</td><td>92.6%</td><td>89.5%</td><td>83.3%</td><td>88.6%</td></tr>
</table>
</td></tr>
<tr><td></td><td>4 The percentage of health facilities which meet quality standards of selected cares related to maternal and child health increases.</td><td>Status of achievement: Achieved (Continued).
(Project Completion)
- Appropriate use of the instruments: 40% in 2013 to 80% in 2014.
- Following norms and protocols: 50% in 2013 to 80% in 2014.
- Coherence between diagnosis and attention: 70% in 2013 to 80% in 2014.
(Ex-post Evaluation)
- Three clinical files for each year were observed in the surveyed eight health facilities. The percentage of health facilities which met quality standards of selected cares related to maternal and child health has been on an increasing trend.
<table>
<tr><td></td><td>2014</td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>Appropriate use of the instruments</td><td>50%</td><td>33%</td><td>38%</td><td>71%</td></tr>
<tr><td>Following norms and protocols</td><td>58%</td><td>38%</td><td>50%</td><td>63%</td></tr>
<tr><td>Coherence between diagnosis and attention</td><td>88%</td><td>79%</td><td>88%</td><td>96%</td></tr>
</table>
</td></tr>
<tr><td>(Overall goal)
Maternal and child health is improved in the Rural Health Network No.4 of the Department of La Paz.</td><td>In the Health Network No.4;
1. The maternal mortality ratio per 100,000 births is reduced.</td><td>Status of achievement: Mostly achieved.
(Ex-post Evaluation)
- Since 2014, there have been maternal mortality cases only in 2015 in Achacachi and Quiabaya among the 10 target municipalities. The maternal mortality ratio per 100,000 birth was 176 and 2,000, respectively. The ratio in Quiabaya was much more than the national average (222) in 2008.</td></tr>
<tr><td></td><td>2. The infant mortality ratio per 1,000 live births is reduced.</td><td>Status of achievement: Mostly achieved.
(Ex-post Evaluation)
- The infant mortality ratio per 1,000 live births has been at marginally a low level.
<table>
<tr><td></td><td>2014</td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>Neonatal mortality ratio</td><td>n.a.</td><td>2</td><td>0</td><td>0</td></tr>
<tr><td>Infant mortality ratio</td><td>n.a.</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Under-five mortality ratio</td><td>n.a.</td><td>2</td><td>2</td><td>4</td></tr>
</table>
</td></tr>
<tr><td></td><td>3. The ratio of under-2 children with chronic malnutrition is reduced.</td><td>Status of achievement: Not achieved.
(Ex-post Evaluation)
- The ratio of under-2 children with chronic malnutrition has been an increasing trend in the Health Network No.4--10.7% in 2014, 14.2% in 2015, 27.9% in 2016 and 23.0% in 2017.</td></tr>
</table>

Source: Terminal Evaluation Report, data provided by SEDES La Paz, and observation at the field survey.

3 Efficiency

Both the project cost and period were within the plan (ratio against the plan: 80% and 100%, respectively). Outputs were produced as planned. Therefore, the project efficiency is high.

4 Sustainability

<Policy Aspect>

The “Social Economic Development Plan 2016-2020,” “Institutional Strategic Plan 2016-2020” of MOH and “Territorial Plan for Integral Development (La Paz) 2016-2020” hold policies and programs for maternal and child health. Also, community-based health is based on the concept of SAFCI. Thus, services strengthened by the project are backed up by these policies at least until 2020.

<Institutional Aspect>

Personnel turnover and shortage have been issues. One technician for health promotion has been assigned at each of the Coordination Office of the Health Network No.4and SEDES La Paz. At the time of ex-post evaluation, each office considered that the two technicians were not sufficient, as they have not been full-time engaged in maternal and health child health but have needed to cover all health issues. In the health facilities in the Network No.4, 58 qualified health personnel (physicians, licensed nurses and assistant nurses) have been assigned for providing maternal and child health services. However, the number has not been sufficient to attend all referred patients, due to the budget shortage. Regarding biosecurity and waste management, all of the health facilities have been equipped with necessary supplies. There was no problem for initial and intermediate storage at the eight visited health facilities, but only half complied with protocol of final storage, because it requires much investment for necessary facility and equipment including incinerators. All of the health facilities have conducted monthly CAI meetings with the community health team and the mayor’s representative. Services of the health facilities have been supervised by SEDES La Paz twice a year. All of the surveyed municipal governments have held meetings once or twice a year to understand health issues and reflect them in their annual plan and budget plan.

<Technical Aspect>

Health personnel mostly have sustained sufficient knowledge and skills for promotion of FORSA methodology introduced by the project. The personnel of the Coordination Office of Health Network No.4 have sustained sufficient skills on supervision of health facilities, according to the Coordination Office itself and SEDES La Paz, though some new personnel needed training. Regarding the health facility

level, the personnel have sustained sufficient knowledge and skills on maternal child health and community health promotion, as confirmed as a result of the regular monitoring of SEDES La Paz. Though both the Coordination Office and municipalities have provided training for the health personnel, but the training plan has not been based on their needs. As mentioned earlier, the "Local Guideline of Education on Healthy Life" has been utilized in other department but not much diffused in La Paz. Among the eight visited health facilities, only two knew it and none had the document, since copies were not distributed by SEDES La Paz due to the frequent change of the responsible staff.

<Financial Aspect>

Budgets of the Coordination Office of Health Network No.4 have remained mostly stable since the project completion (16,860 Bolivianos planned for 2018). These have not been specific for maternal and child health or community health. These were not for service operation but office supplies.

<Evaluation Result>

Therefore, the sustainability of the effects is fair.

5 Summary of the Evaluation

The Project Purpose was achieved, and the effects have continued. Health services including facility-base delivery, referral/counter-referral and information analysis in collaboration with the community which were strengthened by the project have been sustained. As a result, maternal and infant mortality cases have decreased much, though children's chronic malnutrition has been on an increasing trend. And, the project experience was accumulated as guidelines which was officially approved. Regarding sustainability, although issues including personnel turnover, limited diffusion of the guideline and budget shortages have been identified, health personnel mostly have sustained sufficient knowledge and skills for promotion of the methodology introduced by the project.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing agency:

- When the Coordination Office of Health Network No.4 cannot conduct any FORSA-related activity due to the budget shortage, it is recommended that SEDES La Paz should bear necessary expenses by conducting joint activities.
- It is recommended that the Coordination Office of Health Network No.4 would give instructions to the municipal governments where health facilities are not equipped with materials to complete medical waste management so that they construct necessary facility and equipment for waste classification and disposal, in order not to produce negative impacts nearby.

Lessons learned for JICA:

- The project supported operation of the pregnant women's club and it has caused positive changes including more positive male attitudes towards maternal health. The club also functions as an opportunity for prenatal checkups and other health activities of the health facilities. It does not require much cost to establish and operate this kind of club. In maternal health projects, this kind of non-costly but effective organization are much recommended for awareness raising of pregnant women and men, as long as such an organization is functions and receives a good reputation from the community. It is important to consider dynamics of the community at the entry point of the activities at the project design phase. It is necessary to identify a community organization which may function and involve it in the project activities, in order to ensure sustainability. In addition, much impact can be expected by including component of making policy recommendation to institutionalize such organization.

Infant medical examination conducted with the equipment procured by the project at the Ancoraimes Health Center

Training on delivery care for nurses at the Huarina Health Center

Classification of waste at the Sorata Health Center

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Bangladesh Office: May, 2018

Country Name	Bangladesh Digital Mapping Assistance Project
People's Republic of Bangladesh	

I. Project Outline

Background	The 1:50,000 scale national base maps covering the entire territory of Bangladesh were prepared in 1940s, and the limited parts of them had been updated since then. Addressing a growing demand for new maps in recent years, the government of Bangladesh decided to implement the project of "Improvement of Digital Mapping System of Survey of Bangladesh (IDMS)" using the Debt Relief Grant Assistance from the Japanese government. The purpose of IDMS project was to prepare 1:25,000 scale digital topographic maps covering entire area of the country and 1:5,000 scale digital topographic maps of five major cities including Sylhet, Rajshahi, Chittagong, Khulna and Barisal. Through the Japan's cooperation such as dispatch of long-term experts (1999-2007) and a development study (2002-2004), the knowledge and skills of geodetic survey has been transferred to staff of the Survey of Bangladesh (SOB), and the fundamental digital topographic data of 1:5,000 scale has been prepared. However, SOB has been required to play a role of an agency responsible for the implementation of IDMS project, and to improve technical and managerial knowledge and skills which had not been acquired yet. Therefore, the government of Bangladesh requested the government of Japan a technical cooperation project for improving the capacity of the staff of SOB.		
Objectives of the Project	Through the transfer of essential technologies and management skills of digital mapping including development of products specifications in SOB in Dhaka, the Project aimed at the improvement of SOB technical staff's capabilities to implement digital mapping in the scale of 1:5,000 and 1:25,000, thereby contributing to the proper implementation of IDMS project. 1. Overall Goal: SOB implements the project of "Improvement of Digital Mapping System of Survey of Bangladesh (IDMS)." 2. Project Purpose: Technical staff of SOB will develop their skills enough to implement the digital mapping in the scale of 1:5,000 and 1:25,000, and actual work of IDMS is implemented correctly and smoothly.		
Activities of the Project	1. Project Site: Dhaka 2. Main Activities: 1) development of work procedures and specifications of digital mapping products, 2) improvement of the capabilities of SOB's technical staff of planning, management and troubleshooting of digital mapping, and 3) acquisition of essential theories, technics and skills of digital mapping. 3. Inputs (to carry out above activities) Japanese Side 1. Experts: 11 persons 2. Trainees Received: 7 persons 3. Equipment: PCs, printers, graphic software, etc. 4. Operation cost Bangladeshi Side 1. Staff Allocated: 16 persons 2. Land and Facilities: Office space 3. Cost for IDMS project 4. Operation cost: cost for utilities (electricity, telephone and water) of Japanese experts' office and transportation cost for Bangladeshi counterparts, etc.		
Project Period	July 2009 – September 2013	Project Cost	(ex-ante) 304 million yen, (actual) 399 million yen
Implementing Agency	Survey of Bangladesh (SOB), Ministry of Defense		
Cooperation Agency in Japan	Geospatial Information Authority of Japan (GSI), Ministry of Land, Infrastructure and Transport		

II. Result of the Evaluation

1 Relevance

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

The Project was consistent with the development policies of Bangladesh stated in the "National Strategy for Accelerated Poverty Reduction" (2005-2008) at the time of ex-ante evaluation and the "Sixth Five Year Plan (2011-2015)" at the time of project completion aiming at the improvement of land administration and land use applying the "Digital Bangladesh" initiative (2008)[1].

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

Although highly accurate and the latest topographic maps have been constantly required as the most fundamental data for all kinds of land development and land conservation activities of the country, the maps have been ill-prepared and not updated since 1940s in Bangladesh. Through the Japanese assistance in a development study of the "Study on Urban Information Management for Greater Dhaka City" (2002-2004), basic skills and knowledge were transferred to SOB for making maps of 1:5,000 scale. But further skills and knowledge were required for the mapping of 1:25,000 scale which was one of the major components of IDMS project. Thus, the Project was consistent with the development needs of Bangladesh.

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

The "Japan's Country Assistance Program for Bangladesh" (May 2006) raised priority areas and sectors including 1) economic

[1] The national ICT (information and communication technology) initiative which promises a prosperous and equitable education, health, employment and solution of poverty issues by utilizing ICTs.

infrastructure improvement for private sector development, 2) agricultural and rural development, 3) social development (basic living conditions, human resource development), and 4) disaster management. In order to realize these assistances efficiently, accurate maps and utilization of Geographic Information System (GIS) data and other mapping technologies were indispensable. Therefore, the Project was consistent with 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 for the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. Nearly 300 staff members of SOB participated in a variety of training programs implemented by the Project, and on-the-job-training (OJT) was conducted on at least 70% of them as targeted by the Project. Out of theses staff trained, a project team of nearly 200 members was organized in SOB for the IDMS project. While the progress is behind the schedule, the IDMS project has been implemented by them and advancing to its completion.

<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. Although it is delayed, the IDMS project has been continuously implemented by the team trained by the Project, with the technical and managerial knowledge and skills, and with the equipment provided by the Project. For newcomers to the IDMS project, the knowledge and skills has been transferred through OJT.

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

The Overall Goal was partially achieved by the time of ex-post evaluation. The main activities of the final year of the Project were to support the planning, execution management, accuracy and quality control of maps produced, and technical troubleshooting during the implementation of the IDMS project. According to the interviews with the staff of the Digital Mapping Unit of SOB, while all the maps of 1:5,000 scale of Sylhet city was completed, another 4 to 5 months are required to complete producing maps of other four cities. Regarding 1:25,000 scale maps, 100% of photography and field verification and 75% of GIS and cartography has been done, but not yet completed. All of these maps are available for government and private organizations and individuals with a proper application and reproduction cost. SOB is currently preparing a web-based portal for online sales of maps.

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

Since the outputs (maps) of the IDMS project have just started to be released, few specific impact has been identified yet. No negative impact on natural environment has been observed.

<Evaluation Result>

In light of the above, through the Project, the Project Purpose was achieved at the time of project completion, positive effects by the Project have continued, and the Overall Goal was partially achieved at the time of the ex-post evaluation. Therefore, the effectiveness/impact of the Project is high.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Technical staff of SOB will develop their skills enough to implement the digital mapping in the scale of 1:5,000 and 1:25,000, and actual work of IDMS is implemented correctly and smoothly.	Indicator 1: The organization for IDMS is organized in SOB and an appropriate amount of staff are allocated for IDMS.	Status of the Achievement: Achieved. (Continued.) (Project Completion) SOB has organized a project team of an appropriated number of members for IDMS project. (Ex-post Evaluation) The project team of IDMS has the digital plotting section, the GIS section, the cartography section, the printing section, and the administration section with more than 200 members.
	Indicator 2: Technical staff of SOB acquires the essential technology of digital mapping in order to implement IDMS.	Status of the Achievement: Achieved. (Continued.) (Project Completion) The IDMS project has been implemented by the project team members of technical staff of SOB who acquired the essential technology of digital mapping through the training programs and OJT provided by the Project. (Ex-post Evaluation) Although it was delayed, the IDMS project has been continuously implemented by the team trained by the Project, and their knowledge and skills has been transferred to the newcomers through OJT.
	Indicator 3: Technical staff of SOB acquires the planning, management and troubleshooting capabilities for IDMS.	Status of the Achievement: Achieved. (Continued.) (Project Completion) The project team of the staff of SOB who have trained by the training programs and OJT by the Project have been in charge of planning and management of the IDMS project. (Ex-post Evaluation) Management and troubleshooting of the IDMS project has been continuously done by the SOB's team trained by the Project, and their knowledge and skills has been transferred to the newcomers through OJT.
	Indicator 4: IDMS is implemented according to the schedule.	Status of the Achievement: Partially achieved. (Continued.) (Project Completion) IDMS project has started with one year delay due to the delay of the procurement of equipment and aerial photo taking. (Ex-post Evaluation) While it is delayed, the IDMS project is advancing to its completion.

		Although the maps of 1:5,000 scale has been completed for one of the targeted cities, another 4 to 5 months are required to complete the mapping of other four cities. For 1:25,000 scale national maps, GIS and cartography has not been completed with the progress of about 75%.
(Overall Goal) SOB implements the project of "Improvement of Digital Mapping System of Survey of Bangladesh (IDMS)."	SOB will provides 1:25,000 and 1:5,000 scale topographic maps and database to government and private users.	(Ex-post Evaluation) Partially achieved. While the targeted mapping of 1:25,000 and 1:5,000 scales has not been completed yet, all the maps produced are available for government and private users. SOB has prepared a database of topographic maps and is currently preparing a web-based portal for online sales of them.

Source: Terminal Evaluation Report (2011), Final Report (2013), BDMAP Supplemental Terminal Evaluation Result Report (Draft) (2013), questionnaire survey to and interviews with SOB (2017)

3 Efficiency

The project cost exceeded the plan (the ratio against the plan was 131%) due to the increase in manpower cost and fluctuation of the exchange rate of taka to the dollar, and the project period exceeded the plan (the ratio against the plan was 139%) due to the delay of the procurement of equipment and aerial photo taking of the IDMS project. Therefore, efficiency of the Project was fair.

4 Sustainability

<Policy Aspect>

The "Seventh Five Year Plan" (2016-2020) proposes activities for the establishment of digital land management system in one of the 26 key areas. It is expected by the Plan to make land administration and management transparent and accountable by making land records available online, through conducting satellite technology based digital survey, preparation of digital maps and ledgers. The Plan mentions the IDMS project as one of the key interventions for constructing the digital land management system in Bangladesh. The project effects are, thus, expected to be sustainable from the perspective of policy aspect.

<Institutional Aspect>

A 5-story Digital Mapping Centre has been constructed under the IDMS project in Mirpur, Dhaka in 2016, in which nearly 200 staff members are engaged in digital mapping business including the implementation of the IDMS project. According to the interviews with the staff of the Digital Mapping Unit of SOB, while this number of staff is adequate for completing the mapping of other four cities, it will not be sufficient to extend the mapping to other cities in the country. Also, the organizational and personnel structure of SOB is still framed on the premise of analogue topographic mapping by ground survey but not of digital photogrammetric mapping technology, and this constrains effcient operation of works.

<Technical Aspect>

Almost all the staff trained by the Project are still in the Digital Mapping Department, specifically in the Digital Mapping Centre, and the IDMS project has been implemented by them. All the manuals and textbooks prepared by the Project have been highly utilized not only in the IDMS project but also widely in SOB. While there has been a training section in SOB, its training system is not necessarily sufficient for digital mapping. Therefore, retention of the knowledge and skills of the staff trained by the Project and its transfer to newcomers is basically done by OJT in workplaces. For sustaining and extending knowledge and skills in view of further expansion of digital mapping in the coming years, it is expected SOB's training party to strengthen its training capacity.

<Financial Aspect>

The SOB's annual budget for digital mapping has been decreasing from 2015 to 2017 (Table 1). According to the interviews with the staff of the Digital Mapping Unit of SOB, this is because the mass procurement for the mapping projects was almost completed, and the budget has been allocated for current expenditure. Nonetheless, the amount of budget is not sufficient for recruiting more staff, training, and logistics for high resolution digital mapping covering the whole country in the coming years.

Table 1. SOB's Annual Budget for Digital Mapping

unit: million Taka

Year	2015	2016	2017
Budget	258	182	40

Source: Ministry Budget Framework, Ministry of Defense (2017-18)

<Evaluation Result>

In light of the above, some problems have been observed in terms of 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 Purpose was achieved at the time of project completion. The project effects have been continued while the Overall Goal was partially achieved by the time of ex-post evaluation. As for sustainability, although its staff and budget are not necessarily sufficient, the new center was established consolidating the institutional setup for digital mapping in Bangladesh. As for efficiency, both of 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:

- Although the Digital Mapping Centre has been established, the organizational and technical transition of SOB as a whole from analogue mapping to digital mapping is behind the needs of the time. This is mainly because the staff of the Digital Mapping Centre are original staff of SOB who have been engaged in analog mapping without sufficient knowledge and experience of digital mapping. Therefore, it is recommended for SOB to enhance its training system by improving OJT (on-the-job-training) and inviting lecturers from external training resources. Besides, to accelerate its mapping works, it is recommended for SOB to review, by referring to some successful cases in other countries, the possibility of outsourcing of some works.

Lessons Learned for JICA:

- The Project was planned and implemented to enhance the capacity of the staff of SOB in order to successfully implement the IDMS project. This close relationship of these two projects caused some confusions in the evaluation of the plan and implementation of the Project. In terms of the plan, production of outputs and on-schedule implementation of IDMS were indicators of the Project. Therefore, the performance of IDMS has been evaluated as the performance of the Project despite these two projects were two

different projects. In terms of the implementation, the delay of IDMS caused the delay of the Project. For proper evaluation of a project, contents of a plan are to be limited within the scope of the project, and affecting factors caused by other project are to be categorized as Important Assumptions or external factors which are out of the responsibility of the project.

Work stations in the Digital Mapping Center

Students of the Department of Geography and Environment, University of Dhaka visited the Digital Mapping Center

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Madagascar Office: March, 2019

Country Name	**Rural Development Project through the Diffusion of Aquaculture of Tilapia in the Region of Boeny, Mahajanga**
Republic of Madagascar	

I. Project Outline

Background	In Madagascar, more than 70% of the total population was engaged in agriculture and living in rural areas. According to statistics of the National Institute of Statistics (2012), the poverty ratio reached 82.2% in rural areas, while the ratio was 54.2% in urban areas in 2010. Therefore, poverty reduction in rural area was urgent issue for the country. In particular, Boeny Region, located in the northwest of the country, was facing severe poverty with the poverty ratio of 71.6% in 2010 though decreasing from 81.9% in 2009. In the region, sluggish coastal fisheries and shrimp aquaculture, which had been used to be ones of important income sources of the residents, and low agriculture productivity harmed poverty reduction in the region. On the other hand, the region had high potential for tilapia aquaculture due to mild climate, sufficient volume of rainfall (1,000-1,500mm per annum) as well as available sites for aquaculture, such as rice fields and floodplains. In response to the situation, the Government of Madagascar requested to the Government of Japan for a technical cooperation project aiming at improving livelihoods of farmers in the region through extension of tilapia aquaculture.
Objectives of the Project	Through development of seed production techniques suitable for the target areas, practice of tilapia grow-out techniques applicable to the target areas, capacity enhancement of extension staffs, development of a farmer-to-farmer extension approach, and development of a regional tilapia aquaculture development plan, the project aimed at establishing tilapia aquaculture extension system in the target areas, and thereby improving livelihoods of farmers in the target areas. 1. Overall Goal: Through the extension of tilapia aquaculture, livelihoods of farmers in the target area are improved. 2. Project Purpose: Tilapia aquaculture extension system is established in the target area.
Activities of the Project	1. Project Site: Mahajanga II, Marovoay, and Ambato Boeny Districts in Boeny Region 2. Main Activities: (1) Development of seed production techniques suitable for the target areas, (2) Practice of tilapia grow-out techniques applicable to the target areas, (3) Enhancement of capacity of extension staffs, (4) Development of a farmer-to-farmer extension approach, (5) Development of a regional tilapia aquaculture development plan. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 12 persons 2) Trainees Received: 7 persons 3) Third Country Training: 5 persons in Indonesia and 6 in Cambodia 4) Equipment: FRP water tank, FRM small boat, motorcycles, solar power system, out-boat engine, small generators, etc. 5) Local expenses: cost for rehabilitation of the Aquaculture Development Center (CDA), local consultants, consumables, etc. Madagascar Side 1. Staff Allocated: 23 persons 2. Land and facilities: Project offices in CDA (Amborovy and Antsahambingo) and Regional Direction of Fishery and Aquaculture (DRRHP) (Mahajanga)
Project Period	March 2011 – September 2014 / Project Cost: (ex-ante) 550 million yen, (actual) 552 million yen
Implementing Agency	Ministry of Fishery Resources and Fishery (MRHP)
Cooperation Agency in Japan	Ministry of Agriculture, Forestry and Fisheries

II. Result of the Evaluation

1 Relevance

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

The project was consistent with Madagascar's development policies of "Madagascar Action Plan (2007-2012)" setting eight specific goals including rural development in order to reduce poverty and attain economic development and "The Master Plan for Fisheries and Aquaculture (2004-2007)" perceiving aquaculture as one of the driving forces for rural development and poverty reduction.

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

The project was consistent with Madagascar's development needs of poverty reduction and improvement of agricultural productivity through introduction of tilapia aquaculture. The development needs were confirmed at the time of ex-ante evaluation and 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 for Madagascar prioritizing agricultural, fishery and rural development as one of the four priority areas confirmed by the economic cooperation policy dialogue between Madagascar and Japan in February 2006[1].

[1] Ministry of Foreign Affairs, Japan, "ODA Databook 2007".

<Appropriateness of Project Design/Approach>

The project approach was appropriate and quite effective in order to improve livelihood of farmers in the target areas through extension of the tilapia aquaculture because of the easy applicability of the technique which can be extended by the farmer-to-farmer training and the profitability of tilapia aquaculture. On the other hand, the unexpected external factors harmed sustainability of the project effects. One is the change of the government in 2014 which resulted changes in the policy priorities and the budget allocation. In addition, the core fish farmers and the ordinary fish farmers have suffered substantial damages by serious thefts of fish from their ponds, in particular, where have been located in the sites with good access to the markets[2]. Since there was no case of such serious thefts reported by the similar type of projects implemented in other countries, the situations have been unpredictable and it was difficult to come up with effective countermeasures against the thefts at the time of project planning 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 was achieved by the time of project completion. Through increases in income of tilapia core fish farmers (the Indicator 1) and adoption of required tilapia aquaculture techniques by farmers (the Indicator 2), it was judged that the tilapia aquaculture extension system had been established in the target area.

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

The project effects have partially continued at the time of ex-post evaluation. Although most of the core fish farmers in the target areas have continuously applied the tilapia aquaculture techniques developed by the project and continued to produce and sell tilapia seedlings, their incomes have been in a downward trend across all of the target districts since the time of project completion. It was because of deceases in production of tilapia, seedlings and broodstocks as well as sales volume of tilapia to customers and tilapia seedlings to ordinary farmers. The main reasons of the decreases in the production of tilapia, the seedlings and broodstocks were: 1) natural disasters of droughts and floods, 2) thefts of tilapia and seedlings from farmers' ponds, and 3) no policy backup to extend tilapia aquaculture. The regional tilapia aquaculture plan was developed by the Boeny Region in collaboration with the Regional Directorate of Fisheries and Aquaculture (DRRHP) but not implemented due to lack of budget from the Boeny Region and DRRHP.

On the other hand, in Mahajanga II, the core fish farmers in Antsahanitia area have been motivated to continue their tilapia production even under the severe conditions after the drought and the flood. It is because a resort hotel in the area has needed fresh tilapia for their customers and the hotel and the core fish farmers have had a verbal contract for supply tilapia fish.

In terms of extension of the tilapia aquaculture, according to the 15 core fish farmers interviewed by the survey for this ex-post evaluation, the farmer-to-farmer training by the core fish farmers have been sustained. Although the number of core fish farmers to be engaged in the farmer-to-farmer trainings decreased from 21 in 2014 to 11 in 2017, the number of the training have been sustained at 24 times in total a year for the same period and the number of participants increased from 66 in 2014 to 289 in 2016 but decreased to 138 in 2017. No data on the number of trained farmers practicing tilapia aquaculture was available because of no monitoring system.

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

The Overall Goal was partially achieved by the time of ex-post evaluation. The average revenue from tilapia sales/m^3 of the ordinary fish farmers (Indicator) reached more than or around 50% of the target value in each of the target districts. However, while the income of the ordinary fish farmers increased during the period from 2015 to 2017 in Mahajanga II, it fluctuated in Marovoay and Ambato Boeny for the same period due to the serious thefts of fish.

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

There was no negative impact by the project on environment in the target areas. However, while the profitable tilapia aquaculture introduced by the project has brought about more revenue for the core fish farmers and the ordinary fish farmers, it induced the serious thefts of fish from the ponds of the core fish farmers and the ordinary fish farmers. As mentioned above, the thefts have a disincentive for the farmers to continue or to start the tilapia aquaculture.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td>(Project Purpose)
Tilapia aquaculture extension system is established in the target area.</td><td>1. Income of tilapia core fish farmers is increased by 30%.</td><td>Status of the Achievement: Achieved (Partially continued)
(Project Completion)
● The incomes for 11 out of 26 core fish farmers, who had been trained by the project and become able to supply tilapia seeds, increased by 46%.
(Ex-post Evaluation)
[Sales revenue of tilapia and its seedling by the farmers]
(Unit: million MGA)
<table>
<tr><th>District</th><th>2014</th><th>2015</th><th>2016</th><th>2017 (as of December)</th></tr>
<tr><td>Mahajanga II</td><td>8.95</td><td>7.36</td><td>5.75</td><td>7.19</td></tr>
<tr><td>Marovoay</td><td>10.44</td><td>5.80</td><td>5.40</td><td>6.67</td></tr>
<tr><td>Ambato Boeny</td><td>19.60</td><td>16.20</td><td>9.30</td><td>9.61</td></tr>
<tr><td>Total</td><td>38.99</td><td>29.36</td><td>20.45</td><td>23.47</td></tr>
</table>
Note: The revenues of the farmers in Mahajanga II had reduced from 2014 and 2016 due to a drought in 2015 and a flood in 2016. However, they made a sale contract of tilapia with a resort hotel where they have worked, which</td></tr>
</table>

[2] For example, areas along the National Road No.4 (Route Nationale (RN) 4).

<table>
<tr><td></td><td></td><td>has boosted their aquaculture from 2016 to 2017. Marovoay and Ambato Boeny also had had a reduction in the revenues because the farmer's tilapia in both areas was stolen by thieves, and there was a case that some of the farmers there suspended their aquaculture.</td></tr>
<tr><td></td><td>2. More than 320 farmers who are trained tilapia aquaculture techniques from core fish farmers adopt required techniques.</td><td>Status of the Achievement: Achieved (Partially continued)
(Project Completion)
● The number of the ordinary fish farmers who were trained by the core fish farmers and started the tilapia aquaculture rose to 319.
(Ex-post Evaluation)
● The data of the number of fish farmers practicing the tilapia aquaculture techniques is available for only the ones in 2014
- Mahajanga II: 95
- Marovoay: 159
- Ambato Boeny: 65
- Total: 319
● According to the core fish farmers interviewed for the ex-post evaluation, half of the ordinary fish farmers who participated in the farmer-to-farmer trainings have practiced the tilapia aquaculture even though they mostly came from other Regions.</td></tr>
<tr><td>(Overall Goal)
Through the extension of tilapia aquaculture, livelihoods of farmers in the target area are improved.</td><td>Income of farmers in the target area is increased (fish farmers gain 750 MGA/m^2 per 6 months*).

*6 months is one course of tilapia aquaculture.</td><td>(Ex-post Evaluation) Partially achieved
[Income of farmers in the target areas (Unit: MGA/m^2 per 6 months)]
<table>
<tr><th>District</th><th>2015</th><th>2016</th><th>2017 (as of December)</th><th>Average</th></tr>
<tr><td>Mahajanga II</td><td>350</td><td>583</td><td>583</td><td>505</td></tr>
<tr><td>Marovoay</td><td>466</td><td>583</td><td>233</td><td>427</td></tr>
<tr><td>Ambato Boeny</td><td>350</td><td>408</td><td>350</td><td>369</td></tr>
</table>
Note: In Marovoay and Ambato Boeny, because of the flood in 2016, some of the farmers lost their broodstocks, which led to reductions in the income of the farmers in both areas from 2016 to 2017.</td></tr>
</table>

Source : Terminal Evaluation Report, Project Completion Report (JP), Questionnaire survey and interview with DRRHP, Boeny Region, and 15 core fish farmers

3 Efficiency

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

4 Sustainability

<Policy Aspect>

There are policies on the fisheries sector, including the "Sectoral Plan for Agriculture, Livestock and Fisheries (2016-2020)" to secure access to the financing necessary for the development of agriculture, livestock and fisheries sectors coming from the state contribution and the international donors contributions and the "Code for fisheries and aquaculture (2015)" to sustain governance and management of fisheries resources in order to protect the marine and freshwater biodiversity of Malagasy to increase the contribution of the fisheries sector and aquaculture to food and nutrition security, and economic and social development of Madagascar for the well-being of current and future generations. Also, the regional tilapia aquaculture development plan for 5 year (2014-2018), which had been drafted by the project, was developed and approved by Boeny Region in collaboration with DRRHP. However, it has not been implemented because of the changes in the policy priorities triggered by the changes of the Minister of MRHP and the Chief of Boeny Region.

Therefore, the extension of the tilapia aquaculture has not been sufficiently backed up by the development policies of Madagascar and the Boeny Region.

<Institutional Aspect>

[Policy planning, implementation and monitoring]

The Direction of Aquaculture (DIRAQUA) of MRHP has been in charge of preparation, implementation and monitoring of a national aquaculture development plan on tilapia in order to politically support the tilapia aquaculture introduced by the project at a national level. 9 staffs (6 technicians and 3 administrative staffs) have been sufficiently assigned to perform the tasks. At the regional level, Boeny Region should have taken responsibilities for preparation, implementation and monitoring of a regional tilapia aquaculture extension plan in order to politically support the tilapia aquaculture introduced by the project. However, no staff has been assigned for the extension of the tilapia aquaculture because of the less priority.

[Extension and monitoring]

DRRHP has played a role in promoting extension of the tilapia aquaculture introduced by the project. 2 technicians out of 11 staffs have been assigned for the role but not accomplished it due to the limited budget allocation. The District Authority of Fishery Resources (CiRRHP) has been also in charge of promoting extension of the tilapia aquaculture introduced by the project. CiRRHP has had 6 technicians (4 for the target areas and 2 for other areas), but the number of the staff has not been sufficient to cover the vast area of Boeny Region. The Agricultural Service Center (CSA) has been taken responsibilities for collecting needs of the fish farmers practicing the tilapia aquaculture introduced by the project and reflecting the needs on the aquaculture techniques. 3 staff members have been sufficiently allocated, but they have not been able to complete their tasks due to lack of budget. Although the NGO staffs that had been contracted by the project played a key role of the extension during the project implementation, in particular at the district level, they have not been engaged in the district level extension activities since the project completion. On the other hand, CDA, as a Public Entity with Commercial and Industrial Characteristics (Etablissement Public à Caractère Industriel et Commercial: EPIC) under DRRHP, has budget and capacity to play a role for extension of aquaculture techniques by their own fund since CDA is allowed to generate revenue by selling seedlings or fish.

However, divisions of responsibilities for aquaculture extension have been unclear among institutions under DRRHP and CDA has not been active in the extension activities so far.

As mentioned above, although some core fish farmers trained by the project have continued to conduct the farmer-to farmer trainings, the extension mechanism based on the core fish farmers have not been fully functioning due to the decrease in the number of the core fish farmers as mentioned above.

<Technical Aspect>

The extension team for the tilapia aquaculture has not been functioning as a technical backstop for the core fish farmers and trainings by the extension team have been limited. The staff members of MRHP, DRRHP and CiRRHP have not sustained the technical knowledge and skills to support the core fish farmers. On the other hand, the core fish farmers have sustained the necessary knowledge and skills for the tilapia and seedlings production and for the farmer-to-farmer trainings and have continued the farmer-to farmer trainings.

The technical package, training curriculum and training/extension materials on tilapia seed production and on tilapia grow-out techniques have been utilized by the core fish farmers. For this ex-post evaluation, the core fish farmers reported that the items are easy to understand and teach other fish farmers. On the other hand, according to the staffs of the government organizations abovementioned, some of them have never seen these items and not been able to make use of them due to weak knowledge on aquaculture techniques.

The technical package, training curriculum and training/extension materials on tilapia grow-out techniques have not been used by the ordinary fish farmers and the related organizations. According to the core fish farmers interviewed by the ex-post evaluation, they have not received the sufficient number of these items so that they could not supply them to the ordinary fish farmers during the farmer-to-farmer trainings. The staff members of the related organizations have not utilized the items, for the reason that they have not had the sufficient knowledge on tilapia aquaculture.

<Financial Aspect> No budget has been allocated for each related organization to promote the tilapia aquaculture developed by the project since the project completion due to the changes in the policy priorities by the changes in the central and regional administration after the project completion. DRRHP had received financial supports in 2016 and 2017 from the International Fund for Agricultural Development (IFAD) at 50 million MGA and tried to back the core fish farmers in Ambato Boeny and Marovoay by funding fish markets there. Yet, for that support, IFAD tried the core fish farmers to pay a part of some necessary materials including chopper for fish food. Because of thefts mentioned above, the core fish farmers are not willing to invest anymore as they were in about to stop aquaculture despite of the IFAD support. So IFAD stopped supporting aquaculture in the region.

Therefore, the financial supports for the farmers were not helpful to support the tilapia aquaculture. Also, there is no prospect to ensure the necessary budget to promote the tilapia aquaculture for future.

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved the Project Purpose and partially achieved the Overall Goal to increase the income of the core fish farmers as well as the ordinary fish farmers through establishment the tilapia aquaculture extension system. Although the approach based on the extension of tilapia aquaculture has been effective for improvement of the livelihood of the farmers in the target region, some of the core fish farmers and the ordinary fish farmers have been discouraged to continue the tilapia aquaculture because of the serious thefts. For the sustainability, there have been serious problems in all the aspects. The lack of policy backup for the extension of the tilapia aquaculture in the target region caused no assignment of the staff members for the extension team and the lack of budget for the extension activities. However, the part of the core fish farmers trained by the project has continued the farmer-to farmer trainings for the ordinary fish farmers.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

[MRHP, Boeny Region, DRRHP]

- It is recommended to consider countermeasures against the serious thefts of fish from the core fish farmers and the ordinary fish farmers and to collaborate with other ministries/entities for implementation of the effective countermeasures in order to motivate the core fish farmers and the ordinary fish farmers who have stopped the tilapia and the tilapia seedling production restart their production.

[MRHP, DRRHP]

- MRHP and DRRHP have to continue to strengthen the capacity of the CiRRHP even there is no budget for the extension of tilapia aquaculture from the government (internal capacity building). In order to sustain the project effect, DRRHP should reinforce the collaboration with other projects (funded by other development partners) to relaunch activity in tilapia aquaculture.
- CiRRHP has not sustained the sufficient knowledge and skills to disseminate the tilapia aquaculture. Therefore, DRRHP and MRHP should conduct capacity building for them to reinforce their capacity to support fish farmers by using pedagogic materials developed under the project.

[DRRHP]

- It is recommended for DRRHP to clarify the role and responsibilities of CDA. Since CDA they have technical and financial capacity to conduct the aquaculture extension activities, Since CDA is able to conduct the extension activities by using their own fund, CDA can contribute to restart the extension of tilapia aquaculture.

Lessons Learned for JICA:

- While all productions of the core fish farmers along National Road 4 (RN4) have been stolen, that of those who are not close to RN4 have been secured. On the other hand, in general, it is necessary to consider accessibility for the ordinary fish farmers because the core fish farmers play a role as a demonstration farm. Therefore, during the detailed design study and implementation of a project, it is essential to consider appropriate location of demonstration site in order to sustain the activities after project completion by conducting a risk analysis for the demonstration site.
- The project recruited NGO to accelerate the diffusion of the tilapia aquaculture techniques in the target areas so that once the project ended; the NGO did not have their field based extension workers there. To avoid such issue, a project has to strengthen the capacity of

field based technician who worked for DRRHP in order to enhance the sustainability of the project.

Pond for Tilapia aquaculture

Pond for Tilapia aquaculture

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Senegal Office: January, 2019

Country Name	Project on Improvement of Rice Productivity for Irrigation Schemes in the Valley of Senegal
Republic of Senegal	

I. Project Outline

Background	Senegal was one of the largest rice consumers in West Africa with an annual rice consumption of 74kg per capita in 2003. On the other hand, the domestic rice production in the country only covered 20% of the domestic demand and more than 800,000 tons of rice per year had been imported because of the liberalization of rice imports and the growing demand on rice by the growing population. Therefore, an increase in the self-sufficiency of rice was a strategic priority issue for food security policy in Senegal. Under those situations, the government of Senegal requested the government of Japan to support preparation of a national development plan for the rice sector and JICA carried out "the Study on the Reorganization of the Production of Rice in Senegal" (2004-2006). Based on the results of the study, the government of Senegal requested the government of Japan a technical cooperation project to improve the productivity and quality of local rice through integrated approach from rice production to marketing in the Senegal River Valley, the largest rice production area of the country.
Objectives of the Project	Through provision of trainings for agriculture advisors of the National Corporation of Development and Operation of Delta and Valley of Senegal River and Falémé River (SAED), dissemination of the rice farming model in the pilot scheme by the SAED agriculture advisors and establishment and dissemination of a model of management and maintenance for the small-scale irrigation schemes, the project aimed at improvement of the rice farming productivity and profitability in the Dagana and Podor Departments, thereby contributing to improvement of the rice farming productivity and profitability in the Senegal River Valley. 1. Overall Goal: Improvement of the rice farming productivity and profitability in the Senegal River Valley. 2. Project Purpose: Improvement of the rice farming productivity and profitability in the Dagana and Podor Departments.
Activities of the Project	1. Project Site: Dagana and Podor Departments in Saint-Louis Region (Pilot sites: Débi Tiguette, Podor 1 and Podor 2) 2. Main Activities: 1) Trainings for the SAED agriculture advisors to improve farm advisory for farmers, 2) Trainings for farmers to practice a rice farming improvement plan, 3) Dissemination of the rice farming model in the pilot scheme by the SAED agriculture advisors, 4) Implementing rehabilitation works of small-scale schemes in the pilot sites, 5) Establishing and disseminating a model of management and maintenance for the small-scale irrigation schemes, etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 11 persons 2) Trainees Received: 8 persons 3) Equipment: vehicle, PCs, rice mills, rotary shifter, length sorter, lift, etc. Senegalese Side 1. Staff Allocated: 19 persons 2. Land and facilities: Project office, accommodation in Podor, etc.
Project Period	February, 2010 – March 2014 / Project Cost: (ex-ante) 490 million yen, (actual) 781 million yen
Implementing Agency	National Corporation of Development and Operation of Delta and Valley of Senegal River and Falémé River (SAED: Société Nationale d'Aménagement et d'Exploitation des Terres du Delta du Fleuve Sénégal et des Vallées du Fleuve Sénégal et de la Falémé)
Cooperation Agency in Japan	Nippon Koei CO., LTD.

II. Result of the Evaluation

<Special perspectives considered in the ex-post evaluation>

[The target areas for the Project Purpose]

- Although the narrative summary of the Project Purpose is "Improvement of rice farming productivity and profitability in Dagana and Podor Departments, the achievement level of the Project Purpose was verified by the data in the pilot sites because the verifiable indicators indicated only pilot sites as the target areas to be verified.
- Because of the security reasons (the terrorist attack in Algeria and the conflict in northern Mali in January, 2013), the project activities, including the rehabilitation works for the irrigation schemes in the pilot site of Podor 2 and technical guidance for rice cultivation, had been limited until July, 2013 when the security precaution was partially relaxed. Although the rehabilitation works in Podor 2 was completed in December, 2013, rice cultivation after the rehabilitation of the irrigation scheme did not start before the project completion and the expected improvement of rice production in Podor 2 by the project was not able to be verified. Therefore, the achievement levels of the indicator 1, 2 and 3 were verified the results in the two pilot sites of Podor 1 with the rehabilitation works of the irrigation schemes and Debi-Tiguette without the rehabilitation works.

[The target year of the Overall Goal]

In PDM, the target year for achieving the Overall Goal is 2018 but this ex-post evaluation was conducted in 2017. Therefore, the achievement level of the Overall Goal was verified with the data for the post project period from 2014 to 2016.

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 Senegal's development policy of "The National Program for Self Sufficiency in Rice (NPSR) 2005", "Poverty Reduction Strategy Paper II 2006-2010" and "The National Rice Development Strategy 2009-2012", aiming at enhancing the productivity and quality of rice for strengthening the agricultural sector and reducing poverty. The policy priorities were

confirmed at both the time of ex-ante evaluation and the time of 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 Senegal's development needs of the small rice farmers in the irrigated areas in the Senegal River Valley to stabilize rice production and to improve profitability of rice production since they faced unstable and low quality of rice production, high production cost and unstable and inappropriate profits from rice production. The development needs were confirmed at both the time of ex-ante evaluation and the time of 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 Senegal, which was started to prepare in 2006, prioritizing to support "establishment of base for sustainable economic growth", including promotion of local industries and infrastructure development as one of the two priority areas 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 partially achieved by the project completion. The average paddy production per ha (Indicator 1) of the in Podor 1 increased by 30% for the rainy season but fluctuated in the dry season for the period from 2009 to 2013. In Debi-Tiguette, the data was very limited since the farmers had difficulties to use corps credit and suspended cultivation for the three seasons from the rainy season in 2011 to the rainy season in 2012 due to the dissolution of the union in May 2011. Although only 9 cooperation producers for the project cultivated in the dry season in 2010 and 2013, the average paddy production per ha increased by 21% from 2010 to 2013. The income of rice farmers (Indicator 2) was able to be verified in only Podor 1 because of no or limited cultivation in Podor 2 and Debi-Tiguette. 25 producers of 5 Economic Interest Groups (GIEs)[1] increased their net income from rice farming 79% from 2009 to 2013. The paddy production (Indicator 3) of the benchmark producers in Podor 1 increased by 13% from 645 tons in 2010 to 728 tons in 2013. Although 0 ton in the dry season in 2011, it was because of repair and improvement works implemented in 2011. Also, the production for the rainy season decreased from 381 ton in 2010 to 338 ton in 2012 due to damages by inundation. The number of distributors purchasing from the 10 rice millers targeted by the project (Indicator 4) increased from 11 in 2011 to 18 in 2013 but no data of distribution volume of local quality milled rice in the main sale area (mainly in Dakar) was available while the processed rice volume by the 10 rice millers increased from 5,591 tons in 2011 to 7,892 tons in 2013. Although the data of sales volume of rice by the 10 rice millers (Indicator 5) was not available, it can be reasonably assumed that it may have increased because of the increase in the processed volume by the 10 rice millers and the number of distributors purchasing from them increased.

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

The project effects have been partially continued since the project completion. As for the rice farming model introduced by the project, all the 6 GIEs in Podor 1 which had participated in the project activities have still practiced the techniques and farming practices, such as pre-germination techniques, management of nurseries, recommended utilization of fertilizer, recommended management of irrigation and so on and the model has been disseminated to other GIEs by the agricultural advisors trained by the project. The number of GIEs practicing the model increased from 2 in 2013 to 39 in 2017 at the time of ex-post evaluation. On the other hand, 6 GIE in Podor 2 have practiced though they had no training on the rice farming model by the project due to the delay of the rehabilitation works of the irrigation schemes. As for the model of management and maintenance of small-scale irrigation schemes introduced by the project, all the 12 GIEs in both of Podor 1 and Podor 2 have continuously practiced but the model has not been disseminated to other areas in the departments of Dagana and Podor since the model was based on the participatory approach to directly train the users of the irrigation schemes and the SAED engineers had not been technically trained to disseminate the model. In Podor, the credit system introduced by the project is no longer functional and has not been disseminated due to cultural behaviors and customs that do not encourage the use of conventional credit system. In Podor area, most of the population is Muslim and comes from Puular ethnic group. Puular are known as conservative people, strongly attached to religions and customs. One of the principles of the Islamic religion is the opposition to the remuneration of the money lent and the interdiction of interest rate as practiced in conventional financial system. At the end of the project, it has been observed a lack of interest among the producers for the use of credit. However, the credit system introduced by the project has been continuously used by all the 9 GIEs in Debi-Tiguette which had participated in the project activities because they were used to use bank credit. The financial system introduced by the project is still functioning there. Some of producers have now more financial resources to support maintenance and functioning fees, such as water user fees and taxes, occasionally. But in general, till now, there is no a consistent fund for irrigation schemes management.

The paddy production and land productivity (ton/ha) in the pilot sites have been fluctuated year by year though the level of production volume differed by the sites. In terms of annual revenue from rice, the producers of Podor 1 have relatively stable revenue of around 20 million FCFA but the producers of Podor 2 faced much fluctuated revenue which increased to 42 million FCFA in 2014 and to decrease to 18 million FCFA in 2015. In Debi-Tiguette, revenues of producers have constantly increased from 222 million FCFA in 2013 to 556 million FCFA in 2016 because they had larger production volume by the large scale irrigation.

As for the distribution channel, all the 10 rice millers have continued their operation with the grading machine introduced by the project. The volume of milled rice by the 5 rice millers surveyed by the ex-post evaluation has increased to more than 12,000 tons after the project completion. While the number of distributors purchasing from the 10 rice millers increased from 18 in 2013 to 55 in 2016. The volume of rice distributed by them purchasing from the 4 rice millers surveyed by the ex-post evaluation also increased to 10,987 tons from 8,023 tons for the same period. As a result, the volume of rice from the 10 rice millers sold by retailers also increased to 3,804 tons in 2016 from 938 tons in 2013 but no data of the number of retailers selling the rice from them was available. The promotion activities for the improved rice produced in the pilot sites and the target departments have been continuously conducted in Dakar and Ross Bethio in the country and in Paris, France.

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

The Overall Goal has been achieved. The paddy production in the both departments of Podor and (Indicator 1) increased by 22% and

[1] GIE (Groupement d'Interêt Économique) is a union of rice produces, and there are 7 GIEs in Podor 1, 6 GIEs in Podor 2 and 9 GIEs in Débi Tiguette.

44% in 2016, respectively, compared to the baseline in 2008. Also, the annual revenue from rice increased by 53% in Podor Department and 50% in Dagana Departments in 2016 from the baseline in 2008.

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

Some positive impacts were observed at the time of ex-post evaluation. According to SAED, because of the sorting machines installed by the project, the women engaged in rice mill have been able to reduce the volume of manual works and to use their time for other commercial activities. Also, rice processing has lead increases in their income due to diversified and more value added activities practiced by women. . In addition, the increase in the number of rice millers brought about less needs of paddy storage and less losses of paddy because the producers are able to directly bring paddy to the rice millers and to avoid risks of damages on paddy by insects and rain and degradation of quality during the storage. No negative impacts on natural environment by the project was observed at the time of ex-post evaluation and no land acquisition and resettlement occurred by the project.

<Evaluation Result>

In light of the above, the Project Purpose was partially achieved and the project effects have been partially continued. The Overall Goal has been achieved by the time of ex-post evaluation. Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td>(Project Purpose)
Improvement of rice farming productivity and profitability in the pilot sites.</td><td>(Indicator 1)
15% increase in the paddy production per ha in the pilot sites.</td><td>
Status of the Achievement: Partially achieved (Continued)
(Project Completion)
● Podor 1: increase by 30% for the rainy season and fluctuated in the dry season from 2009 to 2013 after completion of the rehabilitation works in January 2013.
● Podor 2: not verified because of the completion of the rehabilitation works in December 2013.
● Debi-Tiguette (without rehabilitation works): increase by 21% for the dry season from 2010 to 2013.
[Paddy Production in Podor 1 (ton/ha)]
<table>
<tr><th colspan="2">2009</th><th colspan="2">2010</th><th>2011</th><th colspan="2">2012</th><th colspan="2">2013</th></tr>
<tr><th>dry</th><th>rainy</th><th>dry</th><th>rainy</th><th>rainy</th><th>dry</th><th>rainy</th><th>dry</th><th>rainy</th></tr>
<tr><td>5.4</td><td>5.0</td><td>4.7</td><td>4.4</td><td>4.2</td><td>5.8</td><td>4.9</td><td>5.4</td><td>6.5</td></tr>
</table>
*No cultivation for the dry season in 2011 due to the repair and improvement works
**123 producers were sampled for the data in 2009. For the period from 2010 to 2013, the figures are based on the data from the benchmark producers in the Podor 1(20 producers from each GIE x 7 GIEs)
[Paddy Production in Debi-Tiguette (ton/ha)]
<table>
<tr><th colspan="2">2009</th><th colspan="2">2010</th><th colspan="2">2012</th><th colspan="2">2013</th></tr>
<tr><th>dry</th><th>rainy</th><th>dry</th><th>rainy</th><th>dry</th><th>rainy</th><th>dry</th><th>rainy</th></tr>
<tr><td>N.A.</td><td>5.9</td><td>5.7</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>6.9</td><td>N.A.</td></tr>
</table>
*90 producers were sampled for the data in 2009. For the period from 2010 to 2013, the figures are based on the data from the cooperation producers in Debi-Tiguette (1 producer from each SV/GIE x 9 SV/GIEs)
(Ex-post Evaluation)
[Rice Production in Podor 1]
<table>
<tr><th></th><th>2014</th><th>2015</th><th>2016</th></tr>
<tr><td>Cultivated area (ha)</td><td>165</td><td>162</td><td>163</td></tr>
<tr><td>Production (ton)</td><td>989.25</td><td>847.26</td><td>971.13</td></tr>
<tr><td>Land productivity(ton/ha)</td><td>6</td><td>5.23</td><td>5.96</td></tr>
</table>
Source: The data provided by SAED Delegation, Podor
[Rice Production in Podor 2]
<table>
<tr><th></th><th>2014</th><th>2015</th><th>2016</th></tr>
<tr><td>Cultivated area (ha)</td><td>323</td><td>251</td><td>274.3</td></tr>
<tr><td>Production (ton)</td><td>1,968</td><td>1,312.73</td><td>1,658.76</td></tr>
<tr><td>Land productivity(ton/ha)</td><td>6.09</td><td>5.23</td><td>6.05</td></tr>
</table>
Source : SAED Delegation, Podor
[Rice Production in Debi-Tiguette]
<table>
<tr><th></th><th>Rainy 2014</th><th>Dry 2014</th><th>Rainy 2015</th><th>Dry 2015</th><th>Rainy 2016</th><th>Dry 2016</th></tr>
<tr><td>Total Cultivated area (ha)</td><td>235</td><td>1,201</td><td>1,015.43</td><td>1,976.43</td><td>410</td><td>1,564.32</td></tr>
<tr><td>Production (ton)</td><td>1,351.25</td><td>8,479.06</td><td>5,046.69</td><td>12,056.22</td><td>2,029.50</td><td>12,451.99</td></tr>
<tr><td>Land Productivity (ton/ha)</td><td>5.75</td><td>7.06</td><td>4.97</td><td>6.1</td><td>4.95</td><td>7.96</td></tr>
</table>
Source: SAED Delegation, Dagana
</td></tr>
<tr><td></td><td>(Indicator 2)
20% increase in the income of rice farmers of the pilot sites.</td><td>
Status of the Achievement: Partially achieved (Continued)
(Project Completion)
● 25 producers of 5 GIEs in Podor 1: net income from rice farming increased from 160,000FCFA (unit benefit: 32 FCFA/kg) in 2009 to 286,000 FCFA (49 FCFA/kg) in 2013 by 79%.
</td></tr>
</table>

		● Not verified in Podor 2 and Debi-Tiguette because of no cultivation or limited cultivation. (Ex-post Evaluation) [Annual Revenue from Rice (million FCFA)]

	2008	2013	2014	2015	2016
Podor 1	20	20	21	18	23
Podor 2	33	29	42	18	23
Debi-Tiguette	432	222	468	525	556

	(Indicator 3) 15% increase in the paddy production in the pilot sites.	Status of the Achievement: Partially achieved (Continued) (Project Completion) ● Podor 1: Increased by 13% from 2010 to 2013 ● Not verified in Podor 2 and Debi-Tiguette due to no cultivation or limited cultivation

	2010	2011	2012	2013
Podor 1 (ton)	645	466	661	728

Source: The data collected by the project team.

(Ex-post Evaluation)

[Paddy Production]

	2014	2015	2016
Podor 1 (ton)	989.25	847.26	971.13
Podor 2 (ton)	1,968	1,312.73	1,658.76
Debi-Tiguette (ton)	9,830.56	17,103.69	14,480.56

(Indicator 4)
The number of distributor and distribution volume of local quality milled rice in the main sales area (20% increase in distribution volumes of sorted local rice milled by beneficiary rice millers)

Status of the Achievement: Partially achieved (Continued)
(Project Completion)
● Distribution volume purchased by the distributors from the 10 rice millers targeted: No data available.

	2011	2012	2013
No. of distributors purchasing from the 10 rice millers targeted	11	11	18

(Ex-post Evaluation)

	2013	2014	2015	2016
Processed volume by the 5 rice millers (tons)*	7,892	12,946	12,016.24	12,600.52
No. of distributors purchasing from the 10 rice millers targeted	18	26	37	55
Distribution volume purchased by the distributors from the 4 rice millers targeted (ton)	8,023	8,343	9,106	10,987

Note 1*: The data from the 5 rice millers but there are missing data because of the personnel move and the change in the owner.

(Indicator 5)
Quantity of milled rice sold and number of shops selling local quality milled rice (20% increase in quantity of local rice milled by beneficiary rice millers)

Status of the Achievement: Partially achieved (Continued)
(Project Completion)
● Volume of rice sold from the 10 rice millers target: The number of retailers selling the rice from the 10 rice millers: increased from 8 in 2010 to 11 in 2013.
(Ex-post Evaluation)
● The number of retailers selling the rice from the 10 rice millers: No data available

	2013	2014	2015	2016
Volume of rice from the 10 rice millers sold by retailers	938.1	3,219.5	2,980.75	3,804.42

(Overall Goal) Improvement of the rice farming productivity and profitability in the Senegal River Valley.	(Indicator 1) 15% increase in the paddy production in 2018 compare to 2008, in the Senegal River Valley.	(Ex-post Evaluation) Achieved [Paddy Production in the target departments (ton/year)]

	2008 (Baseline)	2013	2014	2015	2016
Podor Department	73,104	62,868	81,039	84,901	89,264
Dagana Department	224,296	228,740	308,639	306,686	322,794

	(Indicator 2) 20% increase in the income of producers in 2018 compared to 2008 in the Senegal River Valley.	(Ex-post Evaluation) Achieved [Annual Revenue from Rice (million FCFA)]

	2008	2013	2014	2015	2016
Podor Department	1,949	1,927	2,701	3,113	2,977
Dagana Department	26,915	27,448	37,036	38,335	40,349

Source：Project Completion Report (EN), Site Visit (Podor), the ex-post evaluation interviews with staffs of SAED, farmers, rice millers and distributors

3 Efficiency

The project cost and period exceeded the plan (ratio against the plan: 159%, 104%, respectively) because of the additional inputs for establishment of value chain and for the response to the new request identified as necessary by SAED and the Ministry of Agriculture during the project period, such as dispatch of additional experts and procurement of vehicles. Therefore, the efficient of the project is

low.

4 Sustainability

<Policy Aspect>

"The Acceleration Program of Cadence of Agriculture in Senegal (PRACAS) (2014-2017)" aims at expansion of paddy production to 1.5 million tons in 2017 through the five pillars including realization of new irrigation schemes, reinforcement of machinery and equipment and creation of commercialization fund. At the time of ex-post evaluation, PRACAS is in the final stage and is going to be evaluated in 2018. The Government of Senegal has been working on a new 5 year action plan to maintain the dynamics to achieve rice self-sufficiency in the coming program since the goal will not be achieved in 2017 as planned.

SAED incorporated the model in its 12th Mission Letter (2018-2020), which is currently being developed. In addition to this, the manuals prepared by the project are being integrated into the national strategy (PNAR).

<Institutional Aspect>

[SAED]

Although there has been no organizational change in SAED, a huge number of the staffs resigned and retired so that SAED has been recruiting new staffs. SAED takes responsibilities for disseminating the project effects across five areas (Podor, Dagana, Matam, Bakel and Lac de Guiers). The agricultural advisors have been deployed to each area is 25 for Podor, 26 for Dagana, 16 for Matam, 5 for Bakel and 4 for Lac de Guiers, but the number of them has not been sufficient to cover the areas. According to the staffs of SAED, the additional staffs are needed: 7 for Podor, 9 for Dagana, 4 for Matam, 1 for Bakel and 1 for Lac de Guiers. Although the engineers have been deployed 10 for Podor, 11 for Dagana, 6 for Matam, 3 for Bakel and 3 for Lac de Guiers, the number of them has not been sufficient to cover the areas as well. These problems are being caused by many resignation and retirements as well as lack of its budget and prospected to be solved with a wealthy recruitment plan of agricultural advisors and engineers being under preparation. However, despite of the limitation of budget, SAED was able to strengthen its system by recruiting 2 engineers for design and 2 engineers for construction. Recruitment of technical staff will continue with the 12th Mission Letter.

[ARN]

There was an institutional change in ARN. In March of 2017, ARN had organized elections, and the management staffs were completely changed. The new management staffs have the vision of ARN to be a central leader in rice transformation and processing and are going to provide ARN's members subvention for purchasing equipment and rice paddy. These changes might positively affect the rice value chain for rice producers.

<Technical Aspect>

[SAED Agricultural Advisor]

They have sustained the knowledge and skills to continue and disseminate the rice farming model introduced by the project. Some training related to their knowledge and skills were held by multiple donors such as NGO, JICA and AfricaRice so that the agricultural advisors had regular opportunities to update their knowledge and skills. Concerning the model of management and maintenance for the small-scale irrigation schemes, the project has changed the target of the training; the target has been shifted from the agricultural advisors to engineers by taking into account that hydraulic engineers at SAED were in a better position to get full knowledge in this field Their mission is, among other things, to ensure the dissemination of it for agricultural advisors with the help of a more digestible illustrated manual... As for the advisors, although, they have not received any formal training during the project period to practice and disseminate the irrigation model, they have followed all the process of maintenance and management and have acquired the basic knowledge in this field. .

They continuously utilize the irrigated farming manual revised by the project as it provides not only pedagogical supports in the trainings for rice producers but also advices regarding rice fields and is recognized as a useful tool.

[SAED Engineers]

They have sustained the knowledge and skills related to the model of management and maintenance for the small-scale irrigation schemes by practicing the knowledge and skills to train the producers of their GIEs and areas on regular basis. However, because of the insufficient number of engineers, they are not able to widely disseminate the model. Also, the manual of repair and improvement of the irrigation schemes was invented by this project After receiving from the project the 12 documents of Manual on Repair and Improvement of the Irrigation System, SAED sent them to the various SAED Delegations and DAIH in both paper and electronic formats. It was subsequently proposed to synthesize them in a more didactic format for the distribution to agricultural advisor and producers. This concern will be taken into account in the 12th Mission Letter or the focus will be put on strengthening knowledge in this field.

[GIEs]

GIEs in Podor 1, Podor 2 and Debi Tiguette have sustained the knowledge and skills to practice the rice farming model and the model of management and maintenance for the small-scale irrigation schemes at a high level. They have some regular opportunities such as theoretical and practical trainings, participatory maintenance works, and sites visits which are organized by the SEAD agriculture advisors and others.

[Rice Millers]

The 10 rice millers trained by the project have sustained the knowledge and skills for the operation using the grading machine supplied by the project. In particular, the key rice millers trained by the project have supported other rice millers for the maintenance issues which had not been covered by the project.

<Financial Aspect>

[SAED]

SAED has had the total budget of 3.5 billion FCFA from 2013 to 2017, except for 4.1 billion FCFA in 2015. The data about the specific amount of the budget for sustaining the project effects is not available because no specific budget has been allocated for the activities related to the project and SAED has integrated those activities into their daily work which has been covered by the general budget. The budget for recruitment of new staffs is being considered. Despite these budgetary constraints, SAED was able to strengthen its system by recruiting 4 Engineers in 2017 at the Directorate-General level (3 DAIH and 1 DDAC) and 2 Agricultural Advisers for the Delegation of Podor.

[GIEs]

There is no available data on the balance of payments of GIEs. According to farmers of GIEs, they are able to cover only the cost for small repair works but they have limited access to the credit system to procure necessary inputs for the irrigated rice farming.

[Rice Millers]

There is no available data on the balance of payments for rice millers. According to them, they have a certain amount of revenues which can cover the cost for small repair and maintenance works but cannot renew their equipment. With the support of AFD, a credit line of 13 billion FCFA is available at CNCAS for investment credits such as equipment renewal.

<Evaluation Result>

In light of the above, no major problem has 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 essentially achieved the Project Purpose and achieved the Overall Goal for improvement of the rice farming productivity and profitability in the Dagana and Podor Departments. As for sustainability, the SAED agriculture advisors have sustained the knowledge and skills the rice farming model and disseminated the model to other. On the other hand, the SAED engineers have necessary knowledge about the model of management and maintenance of the small irrigation schemes but have limited personnel and budget to widely. As for efficiency, the project cost and the project period exceeded the plan due to the additional inputs to establish value chain.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

[For ARN]

- It is necessary to work with functioning organization. The lending system to rice milling companies has not been functioning till now. It is required to check the functionality and dynamism of counterpart organizations and to monitor their performance. It is also necessary to keep close linkage with qualified financial services.

[For SAED]

- Awareness creation of the ownership is the key issue for sustainability of the project facilities. Therefore, SAED needs to conduct activities to motivate producers to manage and maintain their own irrigation schemes instead of waiting for the government support for maintenance of the irrigation schemes.

Lessons Learned for JICA:

- Finalization of all manual and handbooks should be included in the project timeline and completed by the end of the project, and if not, JICA should have a follow-up system in place. Since the manual for irrigation and maintenance was at the draft stage at the end of the project and was supposed to be finalized by SAED, the agricultural advisors have not had technical document in order to more effectively support dissemination of techniques they have learned even after some trained staff members resigned.
- The participatory training to farmers should be conducted along with development of the dissemination model. And it is better to introduce more demonstration plots located in several irrigation schemes so that more farmers in the target areas could easily understand the technologies. SAED agricultural advisors, who are in charge of dissemination, were not properly involved in this activity since human resources for technical dissemination were insufficient to cover vast irrigation area. PAPRIZ has decided to provide direct technical guidance to farmers. Capacitated farmers could have played as extension agents to transfer technologies to other farmers, but the lack of the dissemination model affected their performance. Involvement of all stakeholders in project activities through the model is critical for dissemination of skills and knowledge in the post-project period.
- During the implementation of the project, several rice farmers who received guidance on rice cultivation increased significantly their yield, which indicated that further yields enhancement is possible with proper cultivation management practices, such as pre-germination techniques, ideal period for urea spreading, observation techniques and so on. As technical trainings which can bring direct benefit to farmers can be effective not only to extend the farming model but also to contribute to attainment of the national goal such as food self-sufficiency, it is essential to strategically design an effective farming model to increase agricultural production in broad areas.

Guiding workers how to use the machineries at the rice miller supported by the project in Ronkh

Small irrigation schemes rehabilitated in Podor (Podor 1)

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Zambia Office: October, 2018

Country Name	**Project for Strengthening Community-based Child Health Promotion System in Urban Areas (SCHePS)**
The Republic of Zambia	

I. Project Outline

Background	.According to the Zambia Demographic Health Survey 2002 (ZDHS), the child mortality rate was reduced from 168 per 1,000 live births in 2002 to 119 in 2007. However, the level of the indicator was still quite high compared to the Millennium Development Goal (MDG) target of 63.5 by 2015. According to ZDHS, 22.9% of children died due to neonatal causes including pneumonia malaria, diarrhea, HIV/AIDS. Moreover, 52% of the child deaths were associated with malnutrition and 80% of the child deaths had occurred in communities. It was thus understood that many of them could have been avoided if the health system could effectively offer early detection, diagnosis, timely treatment and appropriate care within the communities.		
Objectives of the Project	Through training health staffs of province and district medical offices and local Health Centers (HCs) in the target sites , implementing child and environmental health promotion activities including GMP+* and PHAST** based on the Community- Integrated Management of Childhood Illnesses (C-IMCI) and the Integrated-Community Case Management (i-CCM), and income generating activities (IGA)***, the project aimed at strengthening community-based child health promotion systems in urban areas of the target sites, thereby contributing to the improvement of health services in urban areas of the target districts.. 1. Overall Goal: Preventive health services are delivered on an effective and sustainable basis by using existing national child and environmental health guidelines in urban areas of target districts. 2. Project Purpose: Health promotion system for preventive health services is strengthened on an effective and sustainable basis by using existing national child and environmental health guidelines in selected health center catchment areas. Note 1: GMP+ is a system of an integrated and comprehensive health care service at a community level of growth monitoring, health education, nutrition counselling, micronutrient supplement and immunization etc. delivered by community health volunteers as main persons. Note 2: PHAST is a system where community health volunteers as main players analyze current situations and challenges on environmental health of drinking water, hygiene and sanitation etc. within their communities and suggest and implement countermeasures against them. Note 3: IGA is a system to motivate community health volunteers in order to continuously implement GMP+ and PHAST with income generated by certain businesses run by community health volunteers.		
Activities of the Project	1. Project Site: Lusaka, Kabwe, Ndola, and Solwezi districts 2. Main Activities: 1) Implementing GMP+ and environmental health (EH) activities in two health centres catchment areas in Lusaka as model, 2) Verifying effects of the model activities and extending the model activities to the target districts, 3) Delivery of training of trainers and promoting sensitization,4) Meeting and seminars for sharing the achievements and lessons learned. 3. Inputs (to carry out above activities): Japanese Side 1. Experts: 8 persons 2. Trainees Received: 10 persons 3. Equipment: vehicles, equipment, and material to build the facilities for planned activities Zambia Side 1. Staff Allocated: staff of MOH and MCDMCH at the headquarters and at the provincial, district and health facility levels 2. Facilities and equipment: Land plots allocated for IGAs and gardening. Project office spaces in Kabwe, Ndola, and Solwezi in the Provincial Health Office (PHO)and District Health Office (DMO)		
Project Period	March 2011 – March 2014	Project Cost	(ex-ante) 390 million yen, (actual) 484 million yen
Implementing Agency	Ministry of Health (MOH) (The Ministry of Community Development, Mother and Child Health (MCDMCH) was integrated into MOH)		
Cooperation Agency in Japan	None		

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

[Limited causal relation between the Project Purpose and the Overall Goal as well as the verifiable indicators]

- There are logical failures between the narrative summary of the Project Purpose and the Overall Goals as well as their verifiable indicators in the PDM. While the Project Purpose aimed at enhancement of "the health promotion system" by providing preventive health service, and the Overall Goal aimed at provision of "the effective and sustainable preventive health services" in the target districts, the verifiable indicators set in the PDM were, however, the health indicators do not directly assess improvement of "the health promotion system" and "the preventive health service." Therefore, supplementary information was assessed to verify improvement of the health promotion system, as well as the preventive health services based on the health promotion activities introduced by the project.

1 Relevance
<Consistency with the Development Policy of Zambia at the Time of Ex-Ante Evaluation and Project Completion> The project was consistent with the Zambia's development policy of "the 6th National Development Plan" (2011-2015) and "the 4th

National Health Strategic Plan" (2011-2015), which aimed at improving the health status of Zambians and reducing the mortality rate among under-5children through the provision of comprehensive health care services by organizations at multiple levels. The development policy was confirmed both at the time of ex-ante evaluation and 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 capacity building of PHO, DMO, and HCs for promoting and maintaining the quality of comprehensive health care services and providing residents training for better health status by their own preventive efforts at a community level. The development needs were confirmed both at the time of ex-ante evaluation and 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 Japan's ODA policy against Zambia to support the health sector as one of the five priority areas, confirmed by the policy dialogue between Zambia and Japan in 2002[1].

<Appropriateness of Project Design/Approach>

The approach of the project was appropriate to address the issue of health service delivery to improve child health, in particular in urban areas in Zambia where the population and the poverty are concentrated. However, as mentioned above, the verifiable indicators set in PDM were not able to directly assess improvement of the service delivery of preventive health for children. The inappropriate indicator setting made it difficult to clearly verify whether the Project Purpose and the Overall Goal aiming at enhancement of health promotion system and service delivery of preventive health for children had been achieved or not and whether the project activities had contributed to improvement of the health promotion system and the health service delivery or not.

<Evaluation Result>

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

2 Effectiveness/Impact

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

By the project completion, the Project Purpose was considered as partially achieved. While the health promotion systems for preventive health services were strengthened in the five target HCs in total to some extent, in comparison of the baseline data and the data at the time of project completion in 2013, one (measles incidence of infants under one year of age) out of the five indicators were improved at four target HCs. Severe malnutrition of infants under one year of age decreased at three target HCs, and so did respiratory incidence, and malaria incidence of children under five years of age at two target HCs. Diarrhea incidence of children under five years of age was improved in only 1 HC.

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

Project effects have partially continued since the project completion. The measles incidence and the severe malnutrition incidence of infants have been lowered. The data for other indicators were fluctuated year by year in each target HC and it is difficult to find any tendency of improvement. Some of the HCs reported that they had been facing the following issues which equally had an effect the selected indicators and could have contributed to the fluctuations: widespread dust/air-pollution from untarred roads and mining activities for respiratory infections, inappropriate use of insecticide-treated nets for malaria, and poor hygiene and sanitation conditions for diarrhea.

Nonetheless, according to the target HCs surveyed at the ex-post evaluation, some of the preventive health services, including full immunization coverage and improvement of nutrition, have been continued. Moreover, the health promotion systems have been sustained by funding from UNICEF in Kabwe and the systems have partially continued in Ndola with support by the EU and UNICEF. In Solwezi, nonetheless, it was hardly to observe continuation of any activities which promote the systems introduced by the project.

In addition, implementations of community-based interventions in GMP+ and PHAST by community health volunteers have continued though they are at a reduced rate after the project completion. Since IGA were not completed before the project completion, the overall management, monitoring and coordination have challenges for the volunteers. The volunteers' moral and activities had reduced, but not limited to disseminate preventive measures against respiratory infection, to demonstrate appropriate use of insecticide-treated nets for malaria control as well as to operate water kiosk and clean hygiene and sanitation conditions for diarrhea prevention.

<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. Out of 5 indicators, only 2 indicators of the measles incidence and severe malnutrition incidence of infants were improved in the two target districts.

The improvement in the incidence of measles and malnutrition after the project completion can be attributed to the activities of GMP+ based on HCs, such as full immunization coverage, increasing growth monitoring, cooking demonstration and availability of nutritionists at HC level but the contribution of the project to that improvement was not be clearly verified because of the limited dissemination of the preventive health services introduced by the project in the target districts. No change or the increasing incidence of respiratory in Ndola and Solwezi may be caused by dust from unpaved roads and possible polluted air from mines. The trend for reduction of the malaria incidence may have been attributed to the improved detection of malaria cases by the introduction of the Rapid Diagnosis Tests (RDTs). The fluctuations of the diarrhea incidence may have been partly occurred because of the limited interventions for sanitation and hygiene practices introduced by the project.

The target DMOs were expected to disseminate the activities introduced by the project to non-target HCs after the project, but the dissemination activities in terms of introduction of PHAST, GMP+, IGA activities, through trainings to other health volunteers, have been quite limited due to high staff turnover and poor handover. The additional number of HCs trained by each DMO is 2 out of 38 in Kabwe, 12 out of 22 in Ndola and 5 out of 24 in Solwezi. As such, although the volunteer skills and knowledge to promote preventive health services has been sustained and the tools and manuals for the child and environmental health developed by the project are being used by some health workers and other development partners to train more volunteers in other sites beyond target facilities, continuity of the project activities was not fully realized.

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

As the positive impact in relation to gender, both male and female engaged in the community-based interventions equally through the project, this was still observed at the time of ex-post evaluation. There is no other positive and no negative impact observed at the time of this ex-post evaluation.

[1] Ministry of Foreign Affairs, "ODA Databook 2010"

<Evaluation Result>

In light of the above, there was no clear evidence to show the achievements of the Project Purpose and the Overall Goal by the improved health promotion activities introduced by the project and the project effects have been limitedly continued. Therefore, the effectiveness/impact of the project is low.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Health promotion system for preventive health services is strengthened on an effective and sustainable basis by using existing national child and environmental health guidelines in selected health center catchment areas.	The following incidence decreases in the target health centre catchment areas: (1) Measles for infants, (2) Severe malnutrition under 1, (3) Respiratory infection (pneumonia) for children under 5, (4) Malaria for children under 5, (5) Diarrhea (non-bloody) for children under 5.	Status of the Achievement: Partially Achieved (Partially continued.) (Project Completion) Out of the 5 indicators, ● Measles incidence under 1: Decreased in 4 HCs and sustained at low level in 1 HC ● Severe malnutrition under 1: Decreased in 3 HCs and sustained at low level in 1 HC. ● Respiratory incidence under 5: Decreased in 2 HCs ● Malaria incidence under 5: Decreased in 2 HCs. ● Diarrhea (non-bloody) for children under 5: Decreased in 1 HC. (Ex-post Evaluation) It is hardly to find improvement or unimprovement of the indicators. However, the measles incidence and severe malnutrition incidence of infants seem to be kept low.
(Overall Goal) Preventive health services are delivered on an effective and sustainable basis by using existing national child and environmental health guidelines in urban areas of target districts.	The following incidence decrease among children in urban areas of target districts: (1) Measles, (2) Severe malnutrition, (3) Respiratory infection (pneumonia), (4) Malaria, (5) Diarrhea (non-bloody).	(Ex-post Evaluation) Not achieved ● Out of the 5 indicators, 2 indicators (measles and malnutrition) improved in 2 target districts and 3 indicators (respiratory, malaria and diarrhea) improved in 1 target district [Measles incidence of infants under 1]

Target District	2014	2015	2016
Kabwe	15	3	0
Ndola	1	0	0
Solwezi	21	14	19

[Severe malnutrition incidence of infants under 1]

Target District	2014	2015	2016
Kabwe	27	21	37
Ndola	83	120	39
Solwezi	73	64	48

[Respiratory incidence of children under 5]

Target District	2014	2015	2016
Kabwe	3,736	3,669	2,945
Ndola	90,293	90,748	89,999
Solwezi	87,363	82,594	95,505

[Malaria incidence of children under 5]

Target District	2014	2015	2016
Kabwe	8,107	4,122	5,991
Ndola	25,578	21,760	20,397
Solwezi	150,020	112,069	121,421

[Diarrhea (non-bloody) for children under 5]

Target District	2014	2015	2016
Kabwe	22,522	22,158	23,562
Ndola	31,447	44,339	25,843
Solwezi	32,120	24,705	31,752

Source: Ex-post evaluation questionnaire response by DMO interviews with target HCs

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: 124%). Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

MOH has attempted to promote CH and EH by shaping development policies including "the National Health Strategic Plan (NHSP) 2017-2021" for primary and preventive health care, "Maternal, Infant and Young Child Nutrition Operational Framework 2014-2018" for focusing on the 1st 1,000 most critical days of children's life and "the IMCI Strategic Plan 2013-2017" for incorporating autonomy of all HCs, C-IMCI and I-CCM.

<Institutional Aspect>

There had been significant institutional changes in MOH after the project completion. In March 2013 during the project implementation, the Mother, Child Health, and Nutrition Unit was separated from MOH and transferred to MCDMCH as a part of the reorganization of the central bureaucracy. However, in March 2016, the Mother, Child Health, and Nutrition Unit was again incorporated into MOH under the Directorate of Public Health. The restructuring is still being continued. This impacted to the project sustainability positively and negatively. On the positive side, institutional movement back to MOH has improved planning and implementation of CH, EH and nutrition activities including primary health care promotion under one ministry, while negative side, the changes and transferring of the officers at MOH, PMO, and DMO could have brought about the lack of continuity and ownership of the project activities after

project completion.

In the movement of the national strategy to prioritize the primary health care in new NHSP 2017-2021, the Public Health Specialists are assigned in PMOs and each DMO has 3 staff members for CH (1 public health specialist, 1 nutritionist and 1 maternal and neonatal child health nursing officer) and 3 staff members for EH (1 public health specialist, 1 senior environmental health technologist or environmental health officer and 1 surveillance officer). Many of these positions have been filled though funding for staffing depends on the Treasury Authority and the budget comes from the Ministry of Finance. HCs are in charge of implementing the activities of the preventive health services cooperating with community health volunteers as well as managing and training the volunteers. Each HC has two staffs in charge of the preventive health services. MOH has recruited more than 15,000 health workers since 2017 as a part of implementation of NHSP 2017-2021 aiming at recruiting 30,000 health workers during the target period..

<Technical Aspect>

All the key government staff belonging to MOH, PHOs, DMOs, and HCs have sustained their skills and knowledge of CH and EH to properly deliver the preventive health services even after the project completion because they have been oriented towards their areas of job specifications. MOH holds internal training related to CH for its staffs. PHOs, DMOs, and HCs implement only certain internal training related to CH and EH for their staffs, such as C-IMCI, GMP+, PHAST and malaria prevention. However, although MOH allocates certain budget for trainings, availability of funds from donors affects training opportunities for PHOs, DMOs and HCs.. In terms of the knowledge and skills of IGA, it is unclear whether the key government staffs still have the knowledge and skills, and they have not monitored the IGA activities after the project because persons for the mandate were not clarified at the point of project handover. Training of IGA have not been conducted after the project.

DMO and HC (Chipulukusu) reported that they have used GMP+ manual including “Community IYCF Facilitators’ Guide” and “Infant and Young Child Feeding” in the training funded by USAID. Other training manuals for CHW, PHAST, and IGA developed by the project have not been utilized due to limited resources for training and extension of preventive health systems.

<Financial Aspect>

There is no available data for the community-based health promotion budgets of MOH and PHOs. According to staffs of MOH surveyed for the ex-post evaluation, the government of Zambia has more will to allocate additional budget for specific activities in the health promotion services in the future. According to the staffs of the target HCs, although they have had other competing priorities, they have attempted to secure 10% of their budgets on the health promotion system. However, it is sometimes not possible to secure the 10% and even if they secure the 10% for the health promotion system, the budget is not sufficient to cover costs for the system.

[The target DMOs]

Kabwe had the budget of 72,000 ZMK in 2014, and the budget increased to 108,000 ZMK in 2015 and sustained at the same level until 2017. The budget of 271,572 ZMK was allocated to Ndola in 2015, and then the budget surged to 677, 286 ZMK in 2016 and 518,000 ZMK in 2017. The budget of Solwezi was 1,029,490 ZMK in 2015 and to 925,167 ZMK in 2016, but considerably reduced to 223,872 ZMK in 2017 since some of the HCs under the management of Solwezi has allocated to newly created districts. According to staffs of DMO, the budget allocated from MOH and PHO to DMO have been very limited to provide the health promotion services.

[The target HCs]

There is no available data for a budget of Chipulukusu. The budget for Katondo and Makululu in 2014 was 2,400 ZMK. In 2015, the budget became 3,600 ZMK and has sustained until 2017. Kimasala had the budget of 44,480 ZMK in 2016, and it decreased to 29,664 ZMK in 2017. The budget of Solwezi was 60,212 ZMK in 2016, and it dropped to 53,500 ZMK in 2017.

<Evaluation Result>

In light of the above, serious problems have been observed in financial aspects of the implementing agency. And there are some issues in the institutional and technical aspects. Therefore, the sustainability of the effectiveness through the project is low.

5 Summary of the Evaluation

The project partially achieved the Project Purpose and not achieved the Overall Goal through delivering preventive health services on the effective and sustainable basis in urban areas of the target districts. As for sustainability, DMOs and HCs do not have the sufficient number of their staffs for the preventive health services and IGA for staffs at any organizations has been limited. Also, internal training of CH and EH are limitedly implemented. The budget for the preventive health services has not reached to the minimum level of the organizations. As for the efficiency, the project cost exceeded the plan.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- With MOH strategic direction focusing on Primary Health Care and Health Promotions for Prevention, it is recommended that MOH should print all needed tools/manuals and provide them to DMO for staffs of the HCs and community health volunteers to use them by the beginning of the next planning and budgeting cycle.
- PHAST includes various sanitation and environmental aspect and was implemented by the project. However, while very few training was undertaken to new health facilities, the indicator for diarrhea (non-bloody) had shown upward trends. Therefore, it is recommended that MOH should include refresher training in its planning and budgeting as part of the public health prevention strategies.
- MOH should take immediate actions through DMOs to revamp the IGAs in Kabwe, Ndola, and Solwezi that were established by the project and ensure that the benefits accrued are equally shared for volunteer activities in order to prevent waste of investment.

Lessons Learned for JICA

- The project attempted to simultaneously implement a number of activities related to CH, EH and IGA across target HCs in each target district. This made the project scope very large for implementation and requiring more resources and close monitoring. The project reports indicated project activities had been completed when in fact not as noted during the ex-post. At project inception, there is a need to critically ensure the scope is within manageable limits and budgets to avoid spreading resources too thinly and obtaining unsatisfying results.

- The project had parallel data collection tools and conducted a cohort survey. The tools were not used after project completion and the cohort survey could not be continued. Data collection methods for a project evaluation should be incorporated in or aligned with the implementing agency's national standards for continued collection and sustainability in terms of use.
- Indicators set for the Project Purpose and the Overall Goal should be specific, measurable, attainable/achievable, relevant/realistic and time-bound. The project indicators set could not directly be attributed to the project outcomes. For instance, in the case of this project, community health volunteers made report books showing the people in specific catchment areas whom the project reached. Thus, instead of the indicators set in the PDM of the project, the contents of the report books should be referred to verify the Project Purpose and the Overall Goal.
- As IGA component was unique and new to the health sector, more time should have been allocated to the project for the full construction of the infrastructure for the IGA, which was not fully completed, as this resulted to some of the major challenges faced. There was need to have completed the IGA's infrastructure and monitored their achievement of incomes for incentives and how the incomes were to be shared, including the anticipated benefit to accrue to each volunteer so that if there was an increase in the beneficiaries, another group would be formulated to start another IGA which would improve on management efficiencies, clear lines of staff involvement and community based participatory selection of the IGA as part of full project implementation. This project showed the difficulties of IGAs as a part of community group activities. Ownership by volunteers and adequate monitoring and supervision by the staff might be a key element for success.

Meeting with health volunteers during ex-post evaluation

IGA (piggery) not in operation

(Indicators for the Project Purpose)

Indicators	Target HCs	2010 Baseline	2013 Project Completion	Remarks	2016 Ex-post Evaluation	Remarks
Measles incidence of infants under one year of age	Katondo	1	1	Sustained	0	Sustained
	Makululu	15	1	▼	0	Sustained
	Chipulukusu*	31	1	▼	0	Sustained
	Kimasala	16	0	▼	0	Sustained
	Solwezi Urban	54	0	▼	0	Sustained
Severe malnutrition incidence of infants under one year of age	Katondo	13	2	▼	5	Sustained
	Makululu	5	1	▼	1	Sustained -
	Chipulukusu*	19	12	▼	1	▼
	Kimasala	1	2	Sustained	1	Sustained—
	Solwezi Urban	16	35	▲	3	▼
Respiratory incidence for children under five years of age	Katondo	565	316	▼	180	▼
	Makululu	907	316	▼	77	▼
	Chipulukusu*	105	7460	▲	8,395	▲
	Kimasala	55	3126	▲	5,612	▲
	Solwezi Urban	901	5311	▲	10,192	▲
Malaria incidence of children under five years of age	Katondo	1,395	214	▼	420	Unclear
	Makululu	221	534	▲	209	Unclear
	Chipulukusu*	7,545	8226	▲	2,365	▼
	Kimasala	2,810	2919	Sustained	6,616	▲

	Solwezi Urban	6,608	3021	▼	7,335	Unclear
Diarrhea (non-bloody) incidence of children under five years of age	Katondo	1,441	1783	▲	1,503	Sustained
	Makululu	1,444	NA	-	5,240	▲
	Chipulukusu*	414	4161	▲	-	-
	Kimasala	819	1249	▲	1,309	▲
	Solwezi Urban	4,626	2829	▼	4,710	Unclear

(Source) Project Completion Report and data provided by MOH for the ex-post evaluation
(Note 1) * The data for Chipulukusu are based on the dataset in the DHIS 2.

List of Abbreviations

CH	Child Health
CIYCF	the Community-Infant and Young Child Feeding
C-IMCI	the Community-Integrated Management of Childhood Illnesses
DMO	District Medical Office
EH	Environmental Health
GMP+	the Growth Monitoring and Promotion Plus
HC	Health Center
IGA	Income Generating Activity
i-CCM	the Integrated-Community Case Management
MCDMCH	the Ministry of Community Development, Mother, and Child Health
MDGs	the Millennium Development Goals
MOH	the Ministry of Health
PHAST	Participatory Hygiene and Sanitation Transformation
PHO	Provincial Health Office
UNICEF	United Nations Children's Fund
ZDHS	Zambia Demographic and Health Survey

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Ethiopia Office: August, 2018

Country Name	**Improving Maternal and Child Nutrition Status in Oromia Region (COBANA)**
Federal Democratic Republic of Ethiopia	

I. Project Outline

Background	In Ethiopia, it was estimated that 57% of the cause of death was malnutrition among under-five children. Malnutrition is also one of the major causes of infectious diseases. The Demographic and Health Survey (DHS) in 2005 estimated that 46% of under-five children were being stunted. Under those situation, the government of Ethiopia had been duly making efforts to reduce acute malnutrition which were effective in short-term but limitedly effective to establish a sustainable mechanism to reduce chronic malnutrition. Therefore, the government of Ethiopia requested the government of Japan a technical cooperation to establish a community-based nutrition (CBN) approach in Oromia Region in order to improve maternal and child nutrition.		
Objectives of the Project	Through expanding access to appropriate nutritional services for community members, the project aims at strengthening community level preventive services thereby contributing to reduction of malnutrition among under-five children and Pregnant and Lactating (PLWs) in the targeted woredas. 1. Overall Goal: Malnutrition among under-five children and PLWs are reduced in the targeted woredas. 2. Project Purpose: Community-level preventive services are strengthened to reduce malnutrition of under-five children and PLW in the targeted woredas.		
Activities of the Project	1. Project Site: 10 Woredas in the thee target zones of Arsi (Tiyo, Shirka, Dodota and Ziway Dugda), East Shewa (Lume, Bora, Boset and Adami/Tulu~~i~~) and Bale (Goba and S~~h~~inana), in Oromia Region 2. Main Activities: 1) delivery of CBN trainings on community sensitization and nutrition education for the Health Extension Workers (HEWs), the Volunteer Community Health Workers (VCHWs) and the Health Development Army (HDA), 2) promotion of referral and follow-up activities for acutely malnutrition by HEWs and health workers of Health Centers (HCs), 3) establishment of the Outpatient Therapeutic Feeding Program/Therapeutic Feeding Unit, 4) establishment of supervision mechanism at the levels of the Regional Health Bureau (RHB)/ Zonal Health Department (ZHD), and 5) establishment of a collaborative model with agriculture and education, etc. 3. Inputs (to carry out above activities) Japanese Side 1. Experts: 16 persons 2. Trainees Received: 8 persons 3. Equipment: 3 vehicles, 11 motorbikes for field activities and necessary equipment 4. Local cost: Expenses for the project activities Ethiopian Side 1. Staff Allocated: 31 persons 2. Land and facilities: Project office in ORHB 3. Local Cost: personnel cost, utility cost for the project office and operating expenses for the project activities		
Project Period	September 2008 – September 2013	Project Cost	(ex-ante) 370 million yen, (actual) 477 million yen
Implementing Agency	Oromia Regional Health Bureau (ORHB)		
Cooperation Agency in Japan	--		

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 Ethiopia's development policies of "The Health Sector Development Plan (HSDP) (2005/06-2009/10 and 2010/11-2014/15)" and "the National Nutrition Program" (2008-2013, extended to 2015) aiming at improving maternal and child nutrition and strengthening the preventive services for reduction of PLW and child malnutrition.

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

The project was consistent with the Ethiopia's development needs of reduction of PLW and child malnutrition, in particular, chronic malnutrition because the malnutrition caused under-five death in the country. 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 Plan for Ethiopia (2008), prioritizing support for the health sector, which covers upgrading measures against infectious diseases and strengthening the primary health care through community health service improvement strategy, as one of the 5 priority areas (Agricultural/rural development, Water, Socioeconomic infrastructure, Education, Health).

<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. According to the end-line survey conducted in February 2013, 5 out of 7 indicators were achieved. The proportion of under-2 children who were put breast milk within one hour of birth (Indicator 1), the proportion of infants with only breast feeding for 6 months (Indicator 2), the proportion of under-five children receiving food at least 3 types food groups (Indicator 4) and the proportion of caregivers received information child nutrition from HEWs/VCHW/HAD (Indicator 7) were achieved in the three target zones. The proportion of infant starting complementary foods on timely basis (Indicator 3) was mostly

achieved in each of the three target zones. The proportion of PLWs consuming amount of foods more than non-pregnant/ lactating period (Indicator 5) was achieved in Arsi and Bale zones but partially achieved in East Shewa zone. The proportion of pregnant women who receives iron tablets (Indicator 6) was not achieved in the three target zones. According to the terminal evaluation report, it was presumed that iron tablets had not been stably supplied.

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

The project effects have been mostly continued since the project completion. The preventive health service based on the CBN approach introduced by the project has been mostly continued except some woredas. Although there are some missing data on some indicators in some target woredas, most of the target woredas sustained the level of the indicators to monitor the maternal and child nutrition practices based on the CBN approach introduced by the project. In particular, the proportion of infants starting complementary foods on a timely basis and the proportion of PLWs consuming amount of foods more than non-pregnant/ lactating period sustained in all the 10 target woredas at the level of target value in 2016. In addition, the proportions of pregnant women receiving iron tablets have been dramatically improved in the 8 target woreda except 2 woreda without data. It is notable that 4 woredas reached the coverage of 100% for iron tablet supply for pregnant women in 2016. These sustained maternal and child nutrition practices in the target woredas have been attributed to continuous service delivery based on the CBN approach introduced by the project. In addition, concerted efforts by the government of Ethiopia and other donors to promote CBN have contributed to continuation of the project effects.

<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 survey results for the ex-post evaluation, three out of the five indicators have been achieved in the target three zones. However, for the two indicators, there was no available data of the two target zones. In terms of the prevalence of underweight for age among under-five children (Indicator 1), all the three target zones achieved the target value of less than 21% in 2016, which is less than the national average of 24% and the regional average in Oromia region of 22.5% by DHS 2016[1]. The reason why it increased in Bale from 2015 to 2016 might have been because of drought occurred in that period. Also, regarding the prevalence of underweight for height among under- children (Indicator 3), all the three target zones achieved the target value of less than 3% which is much lower than the regional average of Oromia of 10.6%. With respect to the prevalence of underweight against height among mothers with under-five children (Indicator 4), all the target zones achieved the target value of less than 19% in 2016. For the prevalence of anemia among pregnant women, Arsi zone achieved the target value of less than 12% in 2016. While the other two target zones have no proper record because of absence of laboratory blood test results, since the government through Pharmaceuticals Fund and Supply Agency (PFSA) provides free iron tablets to health facilities and the community, the proportion of pregnant women with provision of iron tablets improved to approximately 70% in East Shewa and 100% in Bale.Therefore, it can be reasonably presumed that iron tablets given to pregnant women should have improved their anemic condition in these two zones.

The prevalence of stunting for age among under-five children (Indicator 2) was not verified since, the two target zones have no available data to be verified. However, in Arsi zone, the indicator has been in downward trend from 40% in 2013 to 31% in 2016 and the level of indicator in Arsi zone is lower than the national average of 36.5% in 2016. Since the service delivery based on the CBN approach in the target woredas has been continued and the services based on the CBN approach has been extended to other woredas in the target zones after the project completion, these improvements in the nutrition status among children and PLWs in the target zones can be attributed to the project.

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

Some positive impact was confirmed at the time of ex-post evaluation. According to the interviews with the woreda Health Officers and the Health Extension Workers, PLW started to take additional food during their pregnancy and after child birth as per their economic status. No negative impact was confirmed. The project contributed to the positive behavioral change towards nutrition on women in general and PLW in particular.

<Evaluation Result>

In light of the above, the Project Purpose was partially achieved and not fully achieved at the time of the project completion; however, the indicators of the Project Purpose have improved by the time of the ex-post evaluation. The service deliveries based on the CBN approach introduced by the project have been mostly continued in the target woredas and maternal and child nutrition practices have been mostly sustained or improved in the target woredas. Namely the project effects have been mostly sustained since the project completion. The Overall Goal has been partially achieved in despite of the limited availability of data. Therefore, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td>(Project Purpose)
Community-level preventive services are strengthened to reduce malnutrition of under-five children and PLW in the targeted Woredas.</td><td>1. Under 2-year-old children who were put to breast milk within one hour of birth (Target value: more than 60%)</td><td>Status of the Achievement: Achieved (Continued)
(Project completion)
● The indicator exceeded the target value of 60% as a result of the end-line survey.
[Results of the End-line Survey in February 2013]
<table>
<tr><th>Average of the three zones</th><th>Arsi</th><th>East Shewa</th><th>Bale</th></tr>
<tr><td>70.9%</td><td>72.7%</td><td>71.4%</td><td>68.6%</td></tr>
</table>
(Ex-post Evaluation)
● 6 out of the 10 target woredas sustained more than 60% of under 2-year children who were put to breast milk within one hour of birth.
[Data in 2016]
<table>
<tr><th colspan="4">Arsi</th><th colspan="4">East Shewa</th><th colspan="2">Bale</th></tr>
<tr><th>Tiyo</th><th>Shirka</th><th>Dodota</th><th>Z/Dugda</th><th>Lume</th><th>Boset</th><th>Bora</th><th>A/Tullu</th><th>Goba</th><th>Sinana</th></tr>
</table>
</td></tr>
</table>

[1] In the main rainy season of the Oromia Regional State in 2016, the Multi Agency Food Assessment Report also reveals that poor child feeding practices and poor household food security status are mentioned as the major contributing factors for increased number of Severe Acute Malnutrition (SAM) and Moderate Acute Malnutrition (MAM) cases compared to other zones in the region.

82.0%	65.0%	93.8%	72.0%	N.A.	26.0%	97.0%	80.0%	47.0%	N.A.

2. Infants who are fed exclusively on breast milk for 6 months
(Target value: more than 50%)

Status of the Achievement: Achieved(Partially continued)
(Project completion)
- The indicator exceeded the target value of 50% as a result of the end-line survey.

[Results of the End-line Survey in February 2013]

Average of the three zones	Arsi	East Shewa	Bale
63.4%	65.7%	60.3%	64.3%

(Ex-post Evaluation)
- 6 out of the 10 target woredas sustained more than 50% of infants with only breast feeding for 6 months.

[Data in 2016]

Arsi				East Shewa				Bale	
Tiyo	Shirka	Dodota	Z/Dugda	Lume	Boset	Bora	A/Tullu	Goba	Sinana
87.0%	80.0%	55.0%	91.0%	N.A.	76.0%	89.0%	N.A.	47.0%	N.A.

3. Infants start complementary foods on a timely basis
(Target value: more than 65%)

Status of the Achievement: Achieved (Partially continued)
(Project completion)
- The indicator exceeded more than 80% of the target value of 65% as a result of the end-line survey.

[Results of the End-line Survey in February 2013]

Average of the three zones	Arsi	East Shewa	Bale
60.6%	60.0%	68.7%	53.0%

(Ex-post Evaluation)
- 6 out of the 10 target woredas sustained more than 65% of infants starting complementary foods on a timely basis.

[Data in 2016]

Arsi				East Shewa				Bale	
Tiyo	Shirka	Dodota	Z/Dugda	Lume	Boset	Bora	A/Tullu	Goba	Sinana
84%	82.0%	40.2%	56.0%	62.0%	76.0%	74.0%	68.0%	61.0%	65.0%

4. Under-five children who receive foods at least 3 types food groups
(Target value: more than 15%)

Status of the Achievement: Achieved. (Partially continued)
- The indicator exceeded the target value of 15% as a result of the end-line survey.

[Results of the End-line Survey in February 2013]

Average of the three zones	Arsi	East Shewa	Bale
50.6%	48.5%	43.0%	60.2%

(Ex-post Evaluation)
- 5 out of the 10 targeted woredas sustained more than 15% of under-five children receiving foods at least 3 types food groups.

[Data in 2016]

Arsi				East Shewa				Bale	
Tiyo	Shirka	Dodota	Z/Dugda	Lume	Boset	Bora	A/Tullu	Goba	Sinana
17.0%	60.0%	N.A.	56.0%	N.A.	N.A.	40.0%	N.A.	47.0%	N.A.

5. PLWs consuming amount of foods more than non-pregnant/lactating period
(Target value: more than 30%)

Status of the Achievement: Partially achieved (Mostly achieved)
(Project Completion)
- The indicator for the average of the three zones was 77% of the target value of 30% and for the the 2 target zones exceeded more than 80% of the target value of 30% as a result of the end-line survey.

[Results of the End-line Survey in February 2013]

Average of the three zones	Arsi	East Shewa	Bale
23%	24.0%	17.5%	27.5%

(Ex-post Evaluation)
- In 6 out of the 10 targeted Woredas, the proportion of PLWs consuming amount of foods more than non-pregnant/ lactating period exceeded 30%.

[Data in 2016]

Arsi				East Shewa				Bale	
Tiyo	Shirka	Dodota	Z/Dugda	Lume	Boset	Bora	A/Tullu	Goba	Sinana
31.0%	35.0%	19.0%	35.0%	19.0%	21.0%	35.0%	33.0%	47.0%	19.0%

6. Pregnant women receive iron tablets
(Target value: more than 60%)

Status of the Achievement: Not achieved (Achieved)
(Project Completion)
- The indicator was far below the target value of 60% as a result of the end-line survey.

[Results of the End-line Survey in February 2013]

Average of the three zones	Arsi	East Shewa	Bale
29.7%	23.6%	36.1%	29.5%

(Ex-post Evaluation)
- - 7 out of the 10 targeted Woredas improved the proportion of women receiving iron tablets and 4 Woredas reached to 100%.

[Data in 2016]

Arsi	East Shewa	Bale

Tiyo	Shirka	Dodota	Z/Dugda	Lume	Boset	Bora	A/Tullu	Goba	Sinana
87.0%	89.0%	N.A.	48.0%	100.0%	80.0%	100.0%	N.A.	100.0%	100.0%

7. Caregivers received information child nutrition from HEWs /VCHW/ HDA (Target value: more than 80%)

Status of the Achievement: Achieved (Partially continued)
(Project Completion)
- The indicator exceeded the target value of 80% as a result of the end-line survey.

[Results of the End-line Survey in February 2013]

Average of the three zones	Arsi	East Shewa	Bale
87.3%	86.0%	88.8%	87.1%

(Ex-post Evaluation)
- 5 out of the 10 targeted Woredas sustained more than 80% of caregivers received information child nutrition from HEWs/VCHW/HDA.

[Data in 2016]

Arsi				East Shewa				Bale	
Tiyo	Shirka	Dodota	Z/Dugda	Lume	Boset	Bora	A/Tullu	Goba	Sinana
88.0%	100.0%	N.A.	96.0%	100.0%	76.0%	88.0%	N.A.	47.0%	N.A.

(Overall Goal) Malnutrition among under-five children and PLWs are reduced in the targeted Woredas

1. 21% of under-five children with weight-for-age Z-score below -2.

(Ex-post Evaluation) Achieved
- All the target zones achieved the target value of less than 21% in 2016.

Target Zone	2013	2014	2015	2016
Arsi	6.7% (n=3709)	7.0% (n=3834)	7.7% (n=4041)	14.8% (n=3787)
East Shewa	6.0% (n=123)	3.0% (n=260)	2.5% (n=645)	2.0% (n=660)
Bale	NA	NA	14% (n=222)	21% (n=450)[2]

2. 30% of under-five children with height-for-age Z-score below -2.

(Ex-post Evaluation) Not verified.
- No target zone achieved the target in 2016 and no data is available in the two target zone.

Target Zone	2013	2014	2015	2016
Arsi	40% (n=51)	35% (n=39)	32% (n=27)	31% (n=115)
East Shewa	N.A.	N.A.	N.A.	N.A.
Bale	N.A	N.A	N.A.	N.A.

3. 3% of under-five children with weight-for-height Z-score below -2

(Ex-post Evaluation) Achieved.
- All the three target zones achieved the target value of less than 3% in 2016.

Target Zone	2013	2014	2015	2016
Arsi	2.0% (n=26)	1.0% (n=13)	1.5% (n=21)	1.2% (n=17)
East Shewa	2.5% (n=145)	1.7% (n=103)	3.0% (n=197)	1.5% (n=96)
Bale	N.A.	N.A.	3% (n=47)	3% (n=57)

4. 19% of mothers having children under-five with BMI<18.5[3].

(Ex-post Evaluation) Achieved
- All the three target zones achieved the target value of 19% in 2016.

Target Zone	2013	2014	2015	2016
Arsi	11.0% (n=142)	8.0% (n=106)	7.8% (n=102)	4.8% (n=66)
East Shewa	1.7% (n=24)	3.0% (n=48)	2.0% (n=32)	2.0% (n=35)
Bale	N.A.	N.A.	3.5% (n=103)	1.5% (n=79)

5. 12% of pregnant women with anemia.

(Ex-post Evaluation) Not verified.
- One target zone achieved the target value of less than 12% in 2016 and no data was available for other two target zones

Target Zone	2013	2014	2015	2016
Arsi	12.0% (n=159)	11.0% (n=167)	9.0% (n=176)	7.0% (n=186)
East Shewa	N.A.	N.A.	N.A.	N.A.
Bale	N.A.	N.A.	N.A.	N.A.

Source：Terminal Evaluation report, Key Informant interview with the Woreda Health Officers and the Health Extension Workers and the Multi Agency Food Assessment Report

3 Efficiency

Although the outputs were produced as planned, the project cost and the project period exceeded the plan (ratio against the plan: 129% and 102%, respectively) because the number of VCHWs to be trained was needed to increase because of the policy change of the government. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The CBN program remains to be one of the key components of National Nutrition Program of the country. In this regard, the government of Ethiopia together with development partners has developed and endorsed promotion of the CBN approach by the several policy documents, such as the National Nutrition Sensitive Agriculture Strategy (2017) and the National Nutrition Program (2016-2020). In particular, the Health Sector Transformation Plan 2015/16-2019/20 (HSDP V) envisions the Ethiopia's path towards the Universal Health Coverage through Strengthening Primary Health Care. Accordingly, the plan sets targets to increase the proportion of under-five children with regular growth monitoring and women having at least 4 visits of Ante Natal Care (ANC) to 95%.

<Institutional Aspect>

There was no change in organizational structure throughout the federal, regional, zonal and woreda levels after the project completion. At the federal level, the Federal Ministry of Health (FMOH) is responsible for providing strategic direction to realize predetermined

[3] BMI is an index to measure weight balance against height which is derived from the following formula: weight/(height)^2. While BMI=22 is considered as "well-balanced", BMI=less than 18.5 can be "underweight" against height.

objective for reducing child and maternal mortality caused by malnutrition. At the regional level, ORHB provides a comprehensive package of preventive, rehabilitative and curative health services. 3 officers have been assigned for the CBN activities under the Health Promotion and Disease Prevention Core Process. At the zonal level, ZHDs are responsible for technical support to improve nutritional status of people in each zone and each ZHD has the Maternal and Child Health Unit (MCH) which is in charge of nutrition program. ZHDs of Arsi and East Shewa zones deploys at least one staff for conducting nutrition related activities, in particular the CBN activities but no focal person for the CBN activities has been assigned at Bale ZHD. According to 4 out of 6 respondents from ZHD, the number of staffs assigned for the activities has been sufficient. The Primary Health Care and MCH Unit of the Woreda Health Offices (WorHOs) is in charge of technical supportive supervision and technical support for implementation of CBN with support from ZHD and RHB. On average, each WorHO deploys 46 staffs for the promotion of the CBN activities. While 6 out of 10 respondents from the target 10 woreda offices replied that the number of staffs for the activities, was sufficient, the rest of them replied insufficient because of high turnover by inadequate motivation and retention mechanism and lack of budget for additional staff deployment. At the onsite level, while HCs provide comprehensive primary health care services and each HC has one nutrition focal personnel in charge of supportive supervision for specific nutrition activities, the Health Posts (HPs) provide preventive promotive health services. According to 14 out of the 21 respondents from 10 HPs and 10 HCs, the 653 staff in toal have been sufficiently deployed for HCs and HPs in the 10 target woredas. As outlined in the CBN strategy, under each WorHO, two HEWs shall be assigned per kebele[4] to promote the CBN related activities. At the time of ex-post evaluation, 461 HEWs have been already deployed in the 10 target woredas with the total number of kebeles covered by the project of 282. In addition, community mobilization activities of CBN have been undertaken by HDA in the target woredas. Although no data was available for 5 out of the 10 target woredas, the total number of HDA in the target woredas increased from 4,878 in 2013 to 5,225 in 2016 and the coverage by HDAs for the activities have been expanded.

<Technical Aspect>

Since the key player of the CBN activities at the onsite level is HEWs, WorHO delivered trainings related to CBN activities, including the Integrated Refresher Training (IRT), for HEWs in 7 out of the 10 target woredas. In the three target woredas (Tiyo, Shirka and Dodota) in Arsi zone and the one target woreda (Sinana) in Bale zone, the coverage of the CBN activities by the trained HEWs has been more than 75% while it has been limited to less than 20% in Adami/Tullu in East Shewa. The level of HEWs' skills and knowledge in the target woredas is sufficient to conduct the CBN activities.

The guidelines and manuals developed by the project have been utilized by ORHB but partillay utilized by the lower level. Among the target zones, ZHDs of Arsi and East Shewa have continuously used all 6 materials developed by the project but ZHD Bale has not. Among the target Woredas, only three Woredas, Shika, Tiyo and Ziway Dugda have utilized 5 out of the 6 materials at the time of ex-post evaluation. "Implementation Manual on Community Based-Multi-Sector Approaches to Nutrition" have not been avaialable for them. At the community level, HCs/HPs in Shirka and Adami/Tullu have utilized 4 out of 6 materials because "Implementation Manual on Commuity Based-Mulit-Sector Approaches to Nutrition" and "Good Practices and Lessons Learned" have not been available for them. Other target woredas have been utilizing the existing guidelines and manuals prepared by NPP which is similar with the manual revised by the project.

<Financial Aspect>

Budget for the CBN activities (million USD)

	2014	2015	2016	2017
FMOH (Government Budget)	45,460	51,240	12,706	12,707
ORHB	15,456	17,421	4,320	4,320
ZHDs (3 target zones) in total	78,478	80,352	87,645	107,119
Funds from Donors	15,911	17,934	4,447	4,447

The government budget allocated to MOH for the CBN activities amounts 12,707 million USD in 2017 but it decreased from 51,240 million USD in 2015. Due to the decrease in the government budget, the budget allocated to ORHB has also decreased to 4,320 million USD in 2016 and 2017 from 17,421 million USD in 2015. On the other hand, the total budget allocated to ZHDs in the three target zones increased from 78,478 million USD in 2014 to 107,199 million USD in 2017 though the budget specifically allocated to the CBN activities at ZHD level have not been available. As mentioned above, the CBN activities have been financially supported by the donors but the funds from the donors also decreased from 17,934 million USD in 2015 to 4,447 million USD in 2016 and 2017.

The government of Ethiopia has introduced a new fund distribution regulation called "One Health Tool" to compute the allocation share of the regional governments. In this respect, the model considers important factors such as population size, disease and health profiles, clinical practices, service provision and coverage for fund distribution. Accordingly, the Ministry of Finance and Economic Cooperation will disperse the respective shares of all budget lines to their respective Bureau of Finance and Economic Development at regional level. Since the budget has not been specifically allocated to the CBN activities introduced by the project, it is considered that the budget amount has not been sufficient to conduct necessary activities. However, to meet the targets set in "the Growth and Transformation Plan II" (2015/16-2019/20) and fill the gap to some extent, there are non-budgetary supports to the sector. Through the PFSA, the government in collaboration with development partners provides free routine nutrition medications like iron, amoxicillin, zinc, "plumpy'nut"[5] and so on. to health facilities and the community. As nutrition is one of the sixteen components of the Health Extension Packages, refresher training, supportive supervision and follow up activities for CBN are conducted during the quarterly evaluation meetings, annual review meetings and other available opportunities with other Packages.

<Evaluation Result>

In light of the above, no problem was observed from the policy and organizational aspects but some problems have been observed from the 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 and partially achieved the Overall Goal by the time of ex-post evaluation, as CBN and ANC follow up at the community level have been implemented and considerable achievements have been realized in target areas of the project. Furthermore, continued improvement of health preventive services and behavioral changes observed led to the reduction of malnutrition

[4] Kebele is the smallest administrative unit in Ethiopia.

[5] It is a peanut-based paste containing high protein and high calories for nutrition improvement of children in developing countries developed by a French food company.

among under-five children and PLW. As for sustainability, although the technical supports for the CBN activities including trainings have varied by the target ZHDs and WorHOs and the budget allocated by the government for the CBN activities have been decreased, the policies focus more on reduction of malnutrition. 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:

- Despite the capacity building training on nutrition coupled with multi-sectoral linkage mechanism established by the project to set up the health promotion system, some HOs and HPs in the target woredas haven't continued to implement the CBN activities after project completion. Therefore, it is desirable from the outset of the planning stage if ORHB can thoroughly plan to maintain and utilize existing multi-sectoral platform and monitoring system in woredas so that it would integrate and mainstream CBN activities with all sectors on a sustainable basis.
- Lack of Nutrition Program staff members and budget specific to promote the CBN activities were identified in the some of target areas at the ex-post evaluation. Additionally, disseminated guidelines and manuals have been partially utilized but not at all level for the promotion of CBN activities. Therefore, ORHB and its counterparts should continue to strengthen preventive services through the assignment of staff and allocation of the required budget specifically to CBN unit/department. Moreover, ORHB should maintain the model/approach formulated by the project to disseminate and continue to utilize the guidelines and manuals in order to fully ensure the implementation of CBN activities.

Lessons Learned for JICA:

For sustainability of the project effects, it would have been more successful if more initiatives for capacity building by JICA and consolidation of achievements would have been given during middle term of the project implementation to further strengthen the partnership mechanism, which facilitate networking among local governments, communities and other stakeholders, including joint monitoring system and integrated extension system in order to ultimately ensure the sustainability and continuation of project effects to the expected level. For example, JICA could have planned to provide the necessary technical support to ORHB by co-formulating an applicable roadmap that aimed to be valid in a long run for the dissemination of the outputs and experiences of the project.

Supportive Supervision from Woreda Health Bureau to Health Post

Home to Home Visit by Health Extension Workers

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Iran Office: August, 2018

Country Name	**Establishment of participatory water management system in Golestan province**
Islamic Republic of Iran	

I. Project Outline

Background	While agriculture had been an economic key sector in Islamic Republic of Iran, annual average precipitation of the country had been approximately 250mm, and securing sufficient amount of water had been an important issue. Thus, Iranian government had promoted irrigation development in important rain-fed agricultural areas such as Golestan province, and irrigated agricultural areas in the province had increased by approximately 40% during ten years from 1996. At the time of ex-ante evaluation (2008), the rate of agricultural workforce in the province was 46%, which was the highest in the country, and the rate of agricultural land (approximately 540,000 ha) among total land area in the province was as high as 26%, and mainly feed crops, wheat and barley were cultivated. JICA conducted a technical cooperation for development planning project, "The Study of Improvement of Irrigation, Drainage and Agricultural Development for Gorgan Plain, Golestan Province" in 2002. As a result, development plans for two areas including Tazeh Abad area were formulated, which indicated directions of (1) farming, (2) irrigation drainage and (3) strengthening of agricultural production cooperatives. Iranian government installed irrigation facilities with its own funds based on the development plans, however, these facilities were not sufficiently functioning and agricultural productivity and farmers' income remained in a low level, due to insufficient farming instructions for farmers and weakness of farmers' organizations (especially on water management).
Objectives of the Project	Through preparing a water management plan, establishing the model of participatory water management in pilot sites, and developing capacities of Golestan Jihad-e-Agriculture Department (JAO) for participatory water management in Tazeh Abad area of Golestan province, the project aimed to develop the system to extend the participatory water management model to the area, thereby increasing water productivity in the area and extending participatory water management system in other parts of the province and nationwide. 1. Overall Goal: (1) Water productivity is increased by introduction of the model of participatory water management in Tazeh Abad area. (2) Experience and knowledge of Tazeh Abad area is utilized to establish participatory water management system in other parts of Golestan province and nationwide. 2. Project Purpose: The system to extend the participatory water management model to Tazeh Abad is developed within Golestan JAO.
Activities of the Project	1. Project Site: Tazeh Abad area in Golestan province 2. Main Activities: Preparation of a farming plan, an irrigation plan, a plan for operation and maintenance (O&M) of irrigation and drainage facilities and GIS database of Tazeh Abad area, establishment of water management organization, implementation of seminars and trainings for farmers in the area to share the knowledge and skills on water management and farming management, preparation and implementation of a farming plan, an irrigation and drainage plan and a plan for O&M of irrigation and drainage facilities in pilot sites for establishing the model of participatory water management system, preparation of a capacity development training plan and training materials on the participatory water management model, implementation of trainings and preparation of a provincial extension plan etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 12 persons 2) Trainees Received in Japan: 20 persons 3) Trainees Received in third country: 3 persons 4) Equipment: vehicle, irrigation measurement equipment, sprinkler, pumps etc. 5) Operational expenditure Iranian Side 1. Staff Allocated: 23 persons 2. Office space in Golestan JAO 3. Local cost
Project Period	January 2009 – January 2014 / Project Cost: (ex-ante) 500 million yen, (actual) 417 million yen		
Implementing Agency	Ministry of Jihad-e-Agriculture (MOJA), Golestan Jihad-e-Agriculture Department (JAO)		
Cooperation Agency in Japan	Rural Development Bureau, Ministry of Agriculture, Forestry and Fisheries		

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

- Target figures for Indicators 1 and 2 of the Overall Goal is stated as "increasing by --%" and numerical targets are not set in the PDM (Ver2), which was used in the terminal evaluation. In the PDM (Ver3), which was revised in the Joint Coordination Committee (January 2014) at the time of project completion, the target figure for Indicator 1 only is set as "1.2kg/m^3" and Indicator 2 is deleted (its reason is unknown). Thus, regarding Indicator 1, not a percentage but the figure "1.2kg/m^3" is used (a target crop is wheat). Regarding Indicator 2, based on the achievement level at the time of the terminal evaluation, which was 3.02t/ha (wheat, 2013), if the same level of yield (3.0t/ha) is achieved in the whole Tazeh Abad area, Indicator 2 is evaluated as "achieved", if the yield is 1.5 – 2.4t/ha (50% - 80% of 3.0t/ha), indicator 2 is evaluated as "partially achieved", and if the yield is less than 1.5t/ha (50% of 3.0t/ha), Indicator 2 is evaluated as "not achieved".

1 Relevance

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

The project was consistent with Iran's development policy on 'water management through participation of farmers' as set forth in the "the Fourth National Development Five Year Plan (2005-2010)" and "the Fifth National Development Five Year Plan (2010-2015)".

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

At the time of ex-ante evaluation, after the completion of JICA development study in 2002, the Iranian government was mainly installing irrigation facilities with its own funds, however, these facilities were not sufficiently functioning, due to insufficient farming instructions for farmers provided by officials of provincial agricultural department, weakness of farmers' organizations and lack of irrigation plan management and maintenance of canals etc. In addition, cropping plans and farming methods proposed in the development study were not adopted, there were some agricultural fields where salt damage occurred, and thus agricultural productivity in the region was low and farmers' income remained in a low level. At the time of project completion, Ministry of Jihad-e-Agriculture (MOJA) emphasized in its medium to long term policy promotion of participatory water management by farmers for relegating maintenance of irrigation facilities to agricultural cooperatives etc., and thus needs for the project were continuously confirmed.

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

At the time of ex-ante evaluation, "water resource management" was included in Japanese government's priority areas of assistance to Iran[1]. Thus, the project was consistent with Japan's ODA policy.

<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 had been mostly achieved by project completion. The Provincial Extension Plan of the participatory water management model was formulated by the Provincial Extension Team, which was comprised of Golestan JAO divisions (Agriculture Extension and Coordination, Water, Soil, Technical and Engineering Affairs, Agronomy, Flora Production and Land Affairs divisions), Golestan Rural Cooperative Organization (RCO) and project members in Gonbad and Alia-bad prefectures in the province etc. In addition, aiming at extending the model nationwide, the provisional National Extension Team was established, which was comprised of MOJA departments (Water and Soil, Agronomy Department and Agriculture Trade and Industry Development Departments), MOJA affiliated organizations (Agriculture Research, Education and Extension Organization (AREEO) and Rural Cooperative Central Organization of Iran), the Ministry of Energy (MOE) and stakeholders of Golestan JAO, and the National Extension Plan was formulated (Indicator1). Establishment of a permanent unit in Golestan JAO for the purpose of extending the model within the province, which was called the unit for extending the participatory water management model, was being considered. At the time of project completion, the head of the unit was resident, budget for extension workers within the unit in the fiscal year of project completion was secured, and these workers were rotated to duty in the unit (Indicator 2). Water management trainings were conducted for 18 times in total for farmers and staffs of the water management unit established in the Peyvand Rural Production Cooperative (PRPC), which is a famers' organization in Tazeh Abad area, and a total of 195 people participated. Trainings on farming (agronomy) for farmers were conducted for 15 times in total, and a total of 186 people participated. Training on extension of the participatory water management model for staffs of Golestan JAO (Accala, Alia-bad and Gonbad prefectures) was also conducted, and a total of 15 staffs participated (Indicator 3).

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

Project effects have mostly sustained since project completion. Regarding Indicator 1, the Provincial Extension Plan stated above has been updated twice by the Provincial Extension Team and used in provincial extension activities and trainings by concerned personnel of Golestan JAO since project completion. The National Extension Plan has also been updated twice by the National Working Group of Sustainability and Dissemination of Participatory Water Management (hereinafter called "the National Working Group", see below for organization details), and used by MOJA and MOE for establishing models of irrigation development utilizing surface water and ground water in the country since project completion. Regarding Indicator 2, the unit for extending the participatory water management model mentioned above has been operational as Golestan Participatory Water Management Office (GPWMO), and in charge of extension of the participatory water management model in the province, coordination with each relevant organization for the extension and assistance in selecting model extension areas etc. since project completion. At the time of ex-post evaluation, one head and one technician are resident in the office; however, sufficient number of staff is not assigned due to lack of budget[2], and thus, in addition to part-time technicians who support operation of GPWMO, experts from Golestan JAO divisions (Agriculture Extension and Coordination, Water, Soil and Technical and Engineering Affairs, Agronomy, Flora Production and Land Affairs) also provide technical assistance. At the time of ex-post evaluation, an approval of establishment of official Participatory Water Management Department (PWMD) was requested to MOJA, and expected to be approved by the end of fiscal year 2018. According to GPWMO, the office will be upgraded to PWMD as soon as its establishment is approved, and then necessary budget will be allocated and new hiring of permanent staff will become possible. Moreover, the Provincial Extension Team mentioned above has also been operational (the team is in charge of planning on extension of the participatory water management model in the province, and GPWMO is in charge of its implementation), and the team has nine to ten members in total from divisions of Golestan JAO (Agriculture Extension and Coordination, Water, Soil and Technical and Engineering Affairs, Agronomy, Flora Production and Land Affairs), the Director of Golestan JAO, the representative of PRPC and Golestan Regional Water Authority etc., and budget for its activities is allocated by Golestan JAO at the time of ex-post evaluation. According to the team, the number of members and budget amount are sufficient for its activities. The National Extension Team mentioned above is operational as the National Working Group at the time of ex-post evaluation, which is comprised of MOJA departments (Water and Soil and Agronomy Departments)), AREEO, RCO, Iran Water Resource Management Company, MOE (Operation and Protection Bureau of Water and

[1] Source: ODA Country Data Book (2008)

[2] The amount of budget allocation to GPWMO was 850 million Rial in 2014, 420 million Rial in 2015 and 10 billion Rial in 2016. While the budget in 2014 and 2015 was allocated by Golestan JAO, the budget was determined to be allocated by MOE according to discussions between MOJA and MOE, and as a result, the budget in 2016 was allocated by Golestan Regional Water Authority, which is under MOE, as necessary budget for introducing participatory water management in a new activity area (Zarringol-Ghare). While the budget amount in 2016 was sufficient to conduct GPWMO's activities, it is not a permanent budget allocation, and thus early approval of PWMD by MOJA is desired.

Wastewater) and Golestan JAO, and in charge of updating the National Extension Plan of the participatory water management model, formulating the national guideline, conducting surveys on irrigation conditions and potential extension sites and selecting extension areas etc. According to the group, it has eight to nine members at the time of ex-post evaluation, which is sufficient to undertake above tasks, and while the group does not have its independent budget, necessary budget is allocated for each activity from MOJA and MOE. Regarding Indicator 3, trainings on participatory water management and meta facilitation have been conducted for eleven times in total during 2015 and 2016 for working-level staffs in governmental organizations in Golestan province and other provinces (Khorasan Razavi province and Khuzestan province etc.) since project completion, and 252 people in total participated. Trainings on farming and water saving irrigation have also been conducted for 26 times in total for the water management unit in PRPC and farmers etc., and 675 people in total participated. "The Technical Guideline for Participatory Water Management Model", which was prepared under the project, is utilized in these trainings.

<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. Water productivity[3] for planting wheat in the whole Tazeh Abad area has achieved the target figure since project completion, except for 2015 when a lot of irrigation water was required due to salt damage, as shown in the table below (Indicator 1). Land productivity (average yield) for planting wheat in the area has mostly achieved the target since project completion (Indicator 2). Moreover, the number of irrigation canals maintained by farmers (participatory water management) in the country has increased since project completion as shown in the table below (Indicator 3). The number of water users associations formulated reflecting the experience in Tazeh Abad area (water users associations formulated for participatory water management) in the country has also increased, and there are five associations in Golestan province, 32 associations in Khuzestan province, 29 associations in Khorasan province, one association in East Azerbaijan province and one association in Ardabil province at the time of ex-post evaluation (Indicator 4). The number of irrigation plots where water management is conducted utilizing Tazeh Abad experience (irrigation plots where participatory water management has been adopted) in the country has also increased, and there are two plots in Golestan province, three plots in Khorasan province, more than one plot (the actual number is unknown) in East Azerbaijan province and one plot in Ardabil province at the time of ex-post evaluation (Indicator 5). Such increase has been derived from the fact that effective use of water is regarded an important issue at both national and regional levels due to a shortage of water in the country, GPWMO has introduced efforts of this project to other provinces, and trainings on the participatory water management model have been conducted in other provinces etc.

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

No negative impact on natural and social environment has occurred under the project. As other impact, in Tazeh Abad area, while land productivity (average yield) for planting barley was 2,200kg/ha in 2010 and 2,110kg/ha in 2013 during project implementation, it increased to 3,200kg/ha in 2015 and 3,300kg/ha in 2016 after project completion. According to Golestan JAO, participatory water management plan and improved farming system etc. introduced under the project are considered to have contributed to the increase.

<Evaluation Result>

In light of the above, through the project, the Project Purpose had been achieved by project completion, project effects have mostly sustained at the time of ex-post evaluation, and the Overall Goal has been achieved. Therefore, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) The system to extend the participatory water management model to Tazeh Abad is developed within Golestan JAO.	1. Establishing the action plan for extending participatory water management by Golestan JAO	Status of the Achievement: achieved (continued) (Project Completion) The Provincial Extension Plan of the participatory water management model was formulated by the Provincial Extension Team by the time of project completion. Aiming at extending the model nationwide, the National Extension Plan was also formulated. (Ex-post Evaluation) Both the Provincial Extension Plan and the National Extension Plan have been updated and utilized since project completion.
	2. Allocation of necessary budget and allocating appropriate personals in Golestan JAO	Status of the Achievement: mostly achieved (mostly continued) (Project Completion) Establishment of the unit for extending the participatory water management model within Golestan JAO was being considered, the head of the unit was resident, budget for extension workers within the unit in the fiscal year of project completion was secured, and these workers were rotated to duty in the unit. (Ex-post Evaluation) The unit stated above has been operational as GPWMO and is waiting for approval to be upgraded to PWMD. As soon as it is approved, necessary budget will be allocated and new hiring of permanent staff will become possible. The Provincial Extension Team and the National Extension Team established during project implementation have also been operational and necessary budget and staff have been allocated.
	3. Number of trained members of Peyvand RPC and staffs of Golestan JAO for the Participatory Water Management	Status of the Achievement: mostly achieved (continued) (Project Completion) A total of 195 people participated in water management trainings conducted for farmers and staffs of the water management unit established in PRPC. A total of 186 people participated in trainings on farming conducted for farmers. A total of 15 staffs participated in training on extension of the participatory water management model conducted for staffs of Golestan JAO.

[3] Water productivity = yield per unit of land in farm fields (t/ha) / (effective rainfall (m^3/ha) + irrigation water (m^3/ha))

<table>
<tr><td></td><td></td><td>(Ex-post Evaluation) A total of 252 people participated in trainings on participatory water management and meta facilitation conducted for working-level staffs in governmental organizations in Golestan province and other provinces since project completion. 675 people in total participated in trainings on farming and water saving irrigation conducted for the water management unit in PRPC and farmers etc.</td></tr>
<tr><td rowspan="2">(Overall Goal)
(1) Water productivity is increased by introduction of the model of participatory water management in Tazeh Abad area.</td><td>1. Increasing Water Productivity by -- % in Tazeh Abad area
(Increasing to 1.2kg/m^3)</td><td>(Ex-post Evaluation) achieved
Water productivity for planting wheat in the whole Tazeh Abad area since project completion is as below. It has achieved the target except for 2015.
[Average Yield of Wheat and Water Productivity]
<table>
<tr><th></th><th>Average yield of wheat (kg/ha) (1)</th><th>Irrigation water per 1ha (m^3/ha) (2)</th><th>Effective rainfall (m^3/ha) (3)</th><th>Water productivity (kg/m^3) (1)/((2)+(3))</th></tr>
<tr><td>2014</td><td>2,450</td><td>1,401</td><td>495</td><td>1.29</td></tr>
<tr><td>2015</td><td>2,480</td><td>2,434</td><td>502</td><td>0.84</td></tr>
<tr><td>2016</td><td>3,900</td><td>1,955</td><td>1,065</td><td>1.29</td></tr>
</table></td></tr>
<tr><td>2. Increasing land productivity of representative farms by -- % in Tazeh Abad area
(Achieving a yield of 3,000kg/ha)</td><td>(Ex-post Evaluation) mostly achieved
As shown in (1) in the table above, land productivity for planting wheat in the whole Tazeh Abad area has mostly achieved the target since project completion.</td></tr>
<tr><td rowspan="3">(2) Experience and knowledge of Tazeh Abad area is utilized to establish participatory water management system in other parts of Golestan province and nationwide.</td><td>3. Increasing number of irrigation canals which maintained by farmers</td><td>(Ex-post Evaluation) achieved
The number of irrigation canals maintained by farmers (participatory water management) in the country is as below.
[Number of Irrigation Canals Maintained by Farmers]
<table>
<tr><th rowspan="2">Province</th><th rowspan="2">Area</th><th colspan="2">Number of main canals maintained by farmers</th><th colspan="2">Number of secondary canals maintained by farmers</th></tr>
<tr><th>During project</th><th>Ex-post evaluation</th><th>During project</th><th>Ex-post evaluation</th></tr>
<tr><td>Golestan</td><td>Tazeh Abad</td><td>3</td><td>3</td><td>36</td><td>37</td></tr>
<tr><td>Golestan</td><td>Sari Bakhsh</td><td>0</td><td>2</td><td>0</td><td>12</td></tr>
<tr><td>Khuzestan</td><td>Behbahan</td><td>0</td><td>0</td><td>0</td><td>30</td></tr>
</table></td></tr>
<tr><td>4. Number of Water User Association which are formulated reflecting for utilization of Tazeh Abad experience</td><td>(Ex-post Evaluation) achieved
The number of water users associations formulated reflecting the experience in Tazeh Abad area has increased, and there are five associations in Golestan province, 32 associations in Khuzestan province , 29 associations in Khorasan province, one association in East Azerbaijan province and one association in Ardabil province.</td></tr>
<tr><td>5. Increase in number of irrigation plots where utilize Tazeh Abad experience</td><td>(Ex-post Evaluation) achieved
The number of irrigation plots where water management is conducted utilizing Tazeh Abad experience has increased, and there are two plots in Golestan province, three plots in Khorasan province, more than one plot (the actual number is unknown) in East Azerbaijan province and one plot in Ardabil province.</td></tr>
</table>

Source : Terminal Evaluation Report, JICA document, interviews with Golestan JAO, Zaringol Ali-Abad regional office, Laleh Kesht Rural Production Cooperative, Toosab Consulting Engineers (a company contracted with Golestan Regional Water Authority), and PRPC

3 Efficiency

Both project cost and project period were within the plan (the ratio against the plan: 83% and 100%, respectively). Therefore the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

Reinforcing water saving irrigation, efficient water use and increasing the number of water users' associations etc. are continuously targeted in "the Sixth National Development Five Year Plan (2016-2020)", which is effective at the time of ex-post evaluation.

<Institutional Aspect>

As stated above, sufficient number of staff is not assigned in GPWMO due to lack of budget at the time of ex-post evaluation, and if current staffs leave the office, it might seriously affect sustainability of the project effects. However, as soon as establishment of PWMD is approved by MOJA, necessary budget will be allocated and new hiring of permanent staff will become possible. Moreover, the Provincial Extension Team and the National Working Group have also been operational, and sufficient number of staff is assigned. In PRPC, there are five executive members, five administrative board members, 37 water user group leaders, one officer and two service staff, and according to PRPC, these are sufficient numbers for their current scale of activities.

<Technical Aspect>

Many project counterparts (C/Ps) still work in Water and Soil, Agronomy, Performance Evaluation and Accountability divisions of Golestan JAO, RCO and some prefecture offices etc., and coordinate with GPWMO appropriately. Regarding the technical level of GPWMO, as stated above, in addition to the head and the technician who are resident, GPWMO has technical support from part-time technicians (most technicians have obtained a bachelor's degree and a master's degree, and have work experience of over 20 years) and other divisions of Golestan JAO, and thus there is no major problem. As soon as establishment of PWMD is approved by MOJA, necessary budget will be allocated and new hiring of permanent staff who have appropriate level of technical skills will become possible. Regarding

the technical level of the Provincial Extension Team and the National Working Group, there is no major problem, as experts of each field from related government agencies and organizations participate in these team and group, and these team and group coordinate with each other. Cooperation from the private sector is also provided to efforts for participatory water management among GPWMO, the Provincial Extension Team and the National Working Group, and thus technical capabilities are complemented. Regarding PRPC, there are several technicians, and water management required for the water use for the scale of their agricultural production at the time of ex-post evaluation is properly conducted, and thus there is no major problem in its technical level. In addition, as stated above, trainings for working-level staffs in governmental organizations in Golestan province and other provinces, the water management unit in PRPC and farmers etc. have continuously been conducted, and "the Technical Guideline for Participatory Water Management Model", which was prepared under the project, is utilized. Equipment provided under the project such as a vehicle, irrigation measurement equipment, sprinkler, pumps etc. are still utilized, and periodical inspection and repair are conducted by Golestan JAO, GPWMO and PRPC. There is no problem in most equipment, while the rain gauge has not been usable for almost six months, as a technician who can repair the rain gauge has not been identified. While technical transfer on how to repair the rain gauge was conducted to one person in charge of maintenance during project implementation, a long time has been required for the repair and a company and/or a technician who can repair it is being searched at the time of ex-post evaluation.

<Financial Aspect>

As stated above, while GPWMO does not have sufficient budget at the time of ex-post evaluation, as soon as establishment of PWMD is approved by MOJA, necessary permanent budget will be allocated. As for the Provincial Extension Team, necessary amount of budget has been allocated from Golestan JAO, and as for the National Working Group, necessary budget has been allocated from MOJA and MOE. For income of PRPC, water use charges collected from each farmer, equipment renting fees, farm land renting fees and sales income of seedlings etc. are included, and according to PRPC, these income are sufficient to continue participatory water management at the time of ex-post evaluation.

<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 the effectiveness through the project is fair.

5 Summary of the Evaluation

Through the project, the Project Purpose had been achieved by project completion, project effects have mostly sustained at the time of ex-post evaluation, and the Overall Goal has been achieved. Regarding sustainability, some problems have been observed in terms of the institutional and financial aspects, and early approval of establishment of PWMD by MOJA is desired.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

As stated above, while GPWMO practically plays a major role in extending the participatory water management model, permanent budget and human resources cannot be sufficiently secured, as it is waiting for approval of establishment of PWMD by MOJA at the time of ex-post evaluation. If current staffs leave the office, it might seriously affect sustainability of the project effects. Thus, MOJA should approve establishment of PWMD as soon as possible.

Lessons Learned for JICA:

As stated above, the rain gauge provided under the project has not been usable for almost six months due to breakdown. When equipment is provided in a project, technical training on maintenance method should be carefully provided to people in charge in implementing agencies and related people, whether it is possible to conduct repairs and procure spare parts locally should be checked, and information on reliable agents should also be provided to implementing agencies.

Irrigation canal in the region where participatory water management is conducted

Meteorological observation facility procured under the project

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Cambodia Office: December, 2018

Country Name	The Project on Strengthening of Medical Equipment Management in Referral Hospitals
Kingdom of Cambodia	

I. Project Outline

Background	The challenge of how to ensure management and maintenance of medical equipment (ME) had been recognized by the Ministry of Health (MOH) and other donors for a long time. Under such circumstances, JICA had started the collaboration in the field of the ME management and maintenance as one of the components of technical assistance on the Phase II of the Maternal and Child Health Project (2000-2005). As a result, the ME workshop was established and the ME management and maintenance services were strengthened within the National Maternal Child Health Center (NMCHC). This served as the base to form another project, namely the Project on the Promotion of a Medical Equipment Management System (MEDEM-1) (2006-2009), which contributed to strengthen the administrative capacity for supervision of Hospital Service Department (HSD) of MOH, to enhance the cooperation between technical and management departments and introduce ME management system at target hospitals which provide Complementary Package Activities Level 3 and National Hospitals (CPA3(1)/NH)(2) . Furthermore, the ME Management Working Group (MEM-WG) consisting of management and technical staff established at the target hospitals helped those involved in the ME management to identify and solve ME problems. In order to expand the outcome of MEDEM-1 into the Complementary Package Activities Level 2 (CPA2) hospitals (3) which lacked the fundamental resources to even deliver their basic clinical services, the Project on Strengthening of Medical Equipment Management in Referral Hospitals (MEDEM-2) was formulated. (1) CPA3: Complementary Package Activities is provided by district/ provincial hospitals and CPA3 is in the tertiary level medical service. (2) NH: National Hospital (3) CPA2 is in the secondary level medical service.
Objectives of the Project	With the successful achievement made in the precedent technical cooperation project, namely MEDEM-1, this project aimed to establish a Cambodian Medical Equipment Management System at target CPA3 /NH and selected CPA2 hospitals by strengthening the capacity of L-CPA3/NH (4), establishment of ME management network and strengthening the capacity of National Workshop Team (NWT) (5), thereby expanding the ME management system to non-target CPA2. (4) L-CPA3/NH: Lead CPA3/NH provide the support on ME management directly to CPA2. (5) NWT consists of HSD and ME Maintenance and Management Dept. of NMCHC, which are to supervise the ME management system for all related health facilities.
	1. Overall Goal: Cambodia Medical Equipment (ME) Management System is institutionalized, and it is also expanded to non-target CPA2. 2. Project Purpose: Cambodia ME Management System is established, and NWT, the target CPA3 /NH and CPA2 implement medical equipment management activities in cooperation.
Activities of the Project	1. Project Site: Phnom Penh and all the 24 provinces where the target referral hospitals are located across Cambodia 2. Main Activities: (1) To institutionalize the ME management system at CPA3/NH, (2) To strengthen the ME management activities at L-CPA3/NH to instruct CPA2, (3) To form the network of ME management activities among NWT, L-CPA3/NH and CPA2, (4) To strengthen NWT capacity on supervising the ME management. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 10 persons 6 persons for Long-term experts, 4 persons for Short-term experts 2) Trainees received: 3 persons Technical Exchange Program: 40 persons 3) Equipment provision: Printer, Copier, Spare parts for ME, etc. 4) Local expenses Cambodian Side 1) Staff allocated:20 persons Management level - 6 persons NWT - 14 persons (Other C/Ps indirectly involved in the project are: 119 persons for 22 CPA3/NH and 44 persons for 22 CPA2) 2) Facilities: Project Office 3) Local expenses
Project Period	November 2009 – November 2014 / Project Cost: (ex-ante) 430 million yen, (actual) 439 million yen
Implementing Agency	Hospital Service Department (HSD) of Ministry of Health (MOH) Biomedical Engineering Unit of National Maternal and Child Health Center (NMCHC)
Cooperation Agency in Japan	For the period of Phase 1 from November 2009 to March 2012*: Japanese Organization for International Cooperation in Family Planning and Estrella Inc. *The Project was divided into two phases on the basis of project management and monitoring conditions. Phase 1 was conducted from November 2009 to March 2012 under the management of above organizations and Phase 2 from July 2012 to November 2014 under the direct management of JICA experts and concerned staff.

II. Result of the Evaluation

<Constraints on Evaluation>

・It should be well noted that the outcome of the project studied under this ex-post evaluation is the combined effects by the precedent JICA project (MEDEM-1) and assistance of other development partners such as “Second Health Sector Support Program”.

< Special Perspectives Considered in the Ex-Post Evaluation >

Assessing Achievement Status of Project Purpose

・All of 28 CPA2 were considered as the target hospitals for the Project Purpose as they received inputs by the project before the end of the Project completion. However, considering the limited inputs to those 6 out of 28 CAP2, which were included in target hospitals at later stage, their performance are not assessed as the achievement of Project Purpose, but assessed as the continuing status of Project Effects and Overall Goal.

Assessing Achievement Status of Overall Goal

(1) Target Year for Overall Goal: According to the Terminal Evaluation Report, it is stated that the Overall Goal is likely to be achieved in three to five years after the termination of the Project, therefore, the target year shall be defined to be 2017.

(2) Target hospitals for Overall Goal: The number of non-target CPA2 stated in the Overall Goal "Cambodian Medical Equipment (ME) Management System is institutionalized, and it is also expanded to non-target CPA2", should be determined based on the current number of CPA2 that were not directly involved by the project.

1 Relevance

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

At the time of ex-ante evaluation, this project was relevant to the "Health Strategic Plan 2 (HSP2) (2008-2015)" which stated the need to facilitate the investment toward the health facilities and medical equipment as one of strategies to improve health condition of those vulnerable people, women and children. At the time of project completion, HSP2 was still effective.

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

This project was consistent with Cambodia's development needs to ensure the management and maintenance of medical equipment (ME) at the time of ex-ante evaluation as described in "Background" above. At the time of project completion, no ME management system in the country and the ME management activities at hospital level was standardized. Furthermore, no other development partners had assisted to strengthen the ME management system. Therefore, the needs to maintain the ME Management System developed by the project was continued at the project completion.

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

The Country Assistance Program for the Kingdom of Cambodia as of 2002 stated its main policy of assistance on sustainable economic development as well on the poverty elimination. As for the assistance toward the socially vulnerable people, it made practical reference to the medical field and education.

<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 achieved its purpose of "Cambodia ME Management System is established, and NWT, the target CPA3/NH and CPA2 implement medical equipment management activities in cooperation". With the capacity strengthening of Lead CPA3/NH and CPA2, all target CPA3/NH hospitals achieved ME operable rate of 90%. This means that at all the target CPA3/NH, more than 90% of ME are evaluated as "GOOD" or "FAIR", the top two of four levels of categories, to provide the health services. As for CPA2, at 18 out of 22 targeted CPA2, more than 80% of ME are evaluated as "GOOD" or "FAIR" (Indicator 1). With the establishment of network among all concerned hospitals, CPA2 became more satisfied with the responses of their L-CPA3/NH to their needs. In average, the appropriateness of response from L-CPA3/NH to CPA2 improved achieving the target. In individual base, however, some CPA2 didn't receive sufficient assistance from their L-CPA3NH (Indicator 2). These achievements were supported by the systematic trainings carried out by the project as planned (Indicator 3).

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

After the project completion, the project effects have been partially continued. In average of all CPA3/NH, the ME operable rate has maintained above 90% achievement rate with monitoring visits and intervention from L-CPA3 and Provincial Health Departments (PHDs) to improve the functionality of ME system. However, in the individual base, some CPA3/NH and CPA2 did not achieve their targeted ME operable rates respectively. According to the questionnaire survey, the main reasons for some CPA3/NH not achieving the target are the lack of their technical skills for complicated machine repair and difficulties in seeking for spare parts. As for CPA2, ME technicians at target hospitals have been not good enough to manage sophisticated equipment repair and they have also found it difficult to procure the spare parts. No refresher trainings done since the project completion have adversely affected the situation. In terms of appropriate responses, only 66% of CPA2 hospitals reported that they received sufficient assistance from CPA3 hospitals' ME monitoring and consultation. According to the questionnaires, some attempts have been made to cope with these problems, such that some hospital management team pushed the MEM-WG to pay attention to regular maintenance and repair work and that some L-CPA3 and PHDs conducted the periodic monitoring visits to check whether ME system was properly managed.

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

It is observed that the Overall Goal, "Cambodia Medical Equipment (ME) Management System is institutionalized, and it is also expanded to non-target CPA2" has not been achieved. The questionnaire survey result shows that 13 out of 18 CPA2 hospitals achieved the targeted MEM-Monitoring score after project completion (Indicator 1). The ME management system is not expanded to non-target CPA2 hospitals since the number of CPA2 to be assisted by L-CPA3/NH have remained unchanged. Considering the average ME operable rate of 90.2% as of 2017, it is less likely that ME operable rate at the target CPA3/NH has exceeded 95% in individual base. As for CPA2, 13 out of 18 CPA2 as of 2017 maintained the ME operable rate of 80% (Indicator 2). The data to examine the operable mean time of essential ME could not be obtained due to the technical error of ME system during the study period (Indicator 3). It is estimated that the main reasons that the Overall Goal has not been achieved are the limitation of national budget and lack of technical skills for ME management. In addition, the number of CPA2 has gradually increased after the project completion, and thus this hinders to set a specific goal that enables to make a clear plan of what to do to achieve the goal.

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

Some ripple effects have been identified during the study. According to the interview with ME technicians at target CPA3, with better technical capacity, conditions of machine operation have been improved, contributing to better services at hospitals. It was also observed that the project contributed to facilitating the equipment management in general, such that MEM-WG staffs work in collaboration with other staffs based in other internal hospital departments through consultation and they can provide supportive monitoring of machine operable conditions, particularly the machines that are used at their respective departments.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Cambodia ME Management System is established, and NWT, the target CPA3/NH and CPA2 implement medical equipment management activities in cooperation.	Indicator 1: ME Operable rate at the all target CPA3/NH exceed 90% and target CPA2 exceeds 80%. *ME operable rate: the percentage of number of operable ME over the total number of ME in the hospital.* *Operable ME : the sum of the number of ME whose condition evaluated as "GOOD" and "FAIR", the top two of four categories.*	Status of the Achievement: Mostly achieved (partially continued) (Project Completion) All target CPA3/NH hospitals exceeded the ME operable rate of 90%. The average operable rate for all target CPA3/NH was 95.1%. Among 22 targeted CPA2 hospitals, 18 CPA2 exceeded the ME operable rate of 80%, but 4 CPA2 did not. The average operable rate for target CPA2 was 87.7%. (Ex-post Evaluation) ME operable rate at CPA3/NH has maintained above 90% in average. But in individual level, 6 out of 22 CPA3/NH did not achieve the 90% operable rate. The data of the average ME operable rate for CPA2 was not available due to the technical error. (Outdated version of MEDEM Inventory Software (MEDEMIS) (1)which was not compatible with new computer software caused the data unable to be extracted for analysis). According to the questionnaire survey, among 18 respondents, 13 CPA2 hospitals reported that they achieved the 80% of ME operable rate.
	Indicator 2: Ratio of appropriate responses by the L-CPA3/NH's to requests from the selected CPA2 for support exceeds 60%. *Ratio of appropriate responses: It is classified in two folds, 1) whether the problem has been resolved by the communication, and 2) whether CPA3 is satisfied with the contents of the communication. Each item is examined in three levels and converted into the percentage. 100% means the problem is resolved by the communication that satisfies CPA3.*	Status of the Achievement: Achieved (Partially continued) (Project Completion) Appropriate response from L-CPA3/NH to CPA2 in average improved from 50.3% (2nd semester 2013) to 71.1% (1st semester 2014), achieving the target of 60%. In individual base, 7 CPA2 did not achieve the target of 60%. (Ex-post Evaluation) Questionnaire survey shows that 12 of 18 CPA2 hospitals reported CPA3 hospitals' ME monitoring and consultation supports. Appropriate response data in average was not available due to the technical error in MEDEMIS.

Achievement Status of Operable ME and the average ME operable rates

Targeted Hospitals/ Categories of Achievement \ Year		2014 Project completion	2015	2016	2017 At the ex-post Evaluation
Targeted CPA3/NH	Number of CPA/NH Achieved 90%	*22*	19	19	16
	Number of CPA/NH Not Achieved 90%	*0*	3	3	6
	Average operable rate	*95.1%*	*92.9%*	*93.2%*	*90.2%*
Targeted CPA2*	Number of CPA2 Achieved 80%	*18*	13	13	13
	Number of CPA2 not Achieved 80%	*4*	5	5	5
	Number of CPA2 not responded to the survey	*0*	4	4	4
	Average operable rate	*87.7%*	*na*	*na*	*na*

Note:
(1)MEDEMIS contains the ME inventory of all medical equipment in the respective facility, on whether it is operable or nor and whether the functional level if good, fair or bad .
(2) Data of 2015, 2016 and 2017 on the table only includes responses from 18 target CPA2 hospitals which responded to the questionnaire survey at the time of ex-post evaluation.

Ratio of appropriate responses to the selected CPA2 by L-CPA3/NH

Targeted Hospitals/ Categories of Achievement \ Year	2013	2014 Project Completion	2015	2016	2017 At the ex-post Evaluation
Number of L-CPA3	12	12	12	12	12
Number of CPA2 to be assisted	22	22	22	22	22
Rate of appropriate responses (in average)	*50.3%*	*71.1%*	*na*	*na*	*na*
Number of CPA2* received sufficient assistance	na	15	12	12	12
Number of CPA2* not received sufficient assistance	na	7	6	6	6
Number of CPA2 not responded to the survey	na	0	4	4	4

Note: Data of 2015, 2016 and 2017 only includes responses from18 target CPA2 hospitals, which responded to the

		questionnaire survey at the time of ex-post evaluation.
	Indicator 3: Training for remained CPA3/NH to be L-CPA3/NH starts.	Status of the Achievement: Achieved (Not continued) (Project Completion) First, 6 L-CPA3/NH was selected at the onset of the project, and they started training activities. Then, another 7 CPA3 hospitals were newly selected as L-CPA3 in May 2013 to cope with the increased number of CPA2. Consequently, trainings for 12 L-CPA3 started since 3rd quarter of 2013. (Ex-post Evaluation) Due to limitation of national budget, no refresher trainings were provided since the project completion in 2014.
(Overall Goal) Cambodia ME Management System is institutionalized, and it is also expanded to non-target CPA2.	Indicator 1: MEM-monitoring score of CPA2 exceeds 60%	(Ex-post Evaluation) Partially achieved The questionnaire survey result shows that after project completion (from 2014 to date), in average, 13 of 18 CPA2 hospitals achieved MEM-Monitoring score of over 60%.
	Indicator 2: ME Operable rate at the target CPA3/NH exceeds 95% and all CPA2 exceeds 80%	(Ex-post Evaluation) Not achieved Since project completion, the number of L-CPA3 and that of CPA2 to be assisted have remained unchanged. This means that the ME management system is not expanded to non-target CPA2. Considering the average ME operable rate of 90.2% as of 2017, it is less likely that ME operable rate at the target CPA3/NH has exceeded 95% in individual base. As for CPA2, only 13 target CPA2 out of 36, the total number of CPA2 as of 2017 (36%), maintained the ME operable rate of 80% among those responded to the questionnaire.
	Indicator 3: Operable mean time of essential ME become longer.	(Ex-post Evaluation) Not verifiable Due to technical error in MEDEMIS for ME monitoring was malfunctioned that data could not be retrieved at the time of ex-post evaluation

Source : Project Completion Report, Questionnaire Survey and Interviews with NWT, ME technicians

3 Efficiency

While the project period was within the plan, the project cost slightly exceeded the plan (ratio against plan: 100%, 102%). Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The core country development plan, such as "National Strategic Development Plan (2014-2018)" highlights the essence of strengthening health system with quality and equitable services through development of health infrastructure in consistent with effective and efficient procurement and provision of medical equipment. "Health Strategic Plan (2016-2020)" also states the strategic priority for achieving health development goals by increasing investment in appropriate medical equipment and technologies for hospitals. Furthermore, the establishment of "National Policy on Medical Equipment Management" in 2015 aimed to institutionalize functioning of ME governance system for improving the function of NWT committee, provincial committee and MEM-WG at facilities level with clear term of reference of responsibilities. The project effect is still supported by all of those strategies and policy on the ME management.

<Institutional Aspect>

The structure of MEM-WG has been set up and continues to be realized at target hospitals. The ME management system has continued by NWT although the coordination is not fully functioning without continued supports from other development partners. NWT has maintained its status quo mandate to provide guidance, governance and necessary ME intervention measures to the hospitals, especially upon hospitals' request for support on ME maintenance and repair. At hospitals, MEM-WG consists of at least three members with one Manager, one Deputy Manager and one Technician. There are some concerns to sustain the ME Management System, such that the number of staffing for ME management is not enough to manage ME Management System to function well and no supports from other development partners continued after the project completion.

<Technical Aspect>

MEM-WG staffs are capable to diagnose and repair basic machine malfunctions using knowledge gained from the project. Further interventions from skillful ME technicians and equipment company are called upon to deal with sophisticated machine breakdown and spare-part replacement. New MEM-WG staffs are officially assigned following internal formality of the hospitals although at some hospitals insufficient capacity building is observed. Upon completion of the project, no sufficient trainings, or meetings were held for capacity development by NWT for MEM-WG at health facilities. The reason was due to the fact that budget was utilized for ME Management System governance and monitoring and the amount was not enough for costly refresher training purpose. Attempts have been made by HSD to propose training budget on ME alongside with annual operational budget plan.

<Financial Aspect>

Budget plan is developed and proposed within annual budget plan at respective hospital level. The extent of budget allocation from national level and financing for ME by hospitals remain limited. HSD has proposed budget and further attempts to include budget for ME alongside with annual operational budget plan. However, the amount is not enough to cover the cost for management and repair matter. Attempts to obtain the support from external donors, such as from World Bank ended in vain. According to the questionnaire survey, only 42% of CPA3 hospitals (N=20) answered that they have enough financial resources for ME, and 58% of CPA2 (N=17) thought that they did not have problem with budget. More supports are required to achieve the prioritized activities including the implementation of the "National Strategic Plan" for ME management, updating of ME standard list and continuation of strengthening the ME management at health facilities.

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved the Project Purpose for "Cambodia ME Management System is established, and NWT, the target CPA3/NH and

CPA2 implement medical equipment management activities in cooperation." The effect of the project has partially continued after the project completion and the Overall Goal has not achieved. As for sustainability, some problems have been observed in terms of institutional, technical and financial aspects. 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:
To: Hospital Service Department (HSD) of Ministry of Health (MOH)

1) To secure sufficient recurrent budget allocation on maintenance expenditure, particularly at the onset of budget planning

It was identified by the study that the financial sustainability of the project requires further attention. The extent of budget allocation from national level and financing for ME by hospitals has remained limited. Thus, the amount is not enough to cover the cost for management, repair matter and let alone for the refresher training. Under such circumstances that no supports from other development partners continued after the project completion, considerations should be given to the budget planning priority with appropriate increase in domestic resource mobilization for the ME management system on par with other prioritized health issues by central level.

2) To provide the refresher training that can be managed with the limited budget to maintain the technical sustainability.

Capacity development of CPA3 level for sophisticated machine repair and strengthen CPA2 capacity for minor maintenance and repair requires further strengthening. Also, encouragement of ME staff networking and refresher training on technical skills in medical equipment management are necessary component in order to strengthen ME governance mechanism and update technical skills to MEM-WG staffs for smooth, efficient control of equipment operation and management. With the budget limitation, the periodical OJT by the facility on its own or by the group of facilities that are under L-CPA3 regional coverage could serve as possible options if refresher training at national level is difficult. New MEM-WG staffs are officially assigned following internal formality of the hospitals although at some hospitals insufficient capacity building is observed. Under the current circumstances where no sufficient trainings, or meetings have been held for capacity development by NWT for MEM-WG at health facilities, it is difficult to sustain or improve the technical capacity of those MEM-WG staff.

Lesson learned for JICA:

In order to strengthen the ME governance mechanism, the continuity of soft component, such as technical assistance to encourage ME staff networking and to provide refresher training in ME management, should be considered.

The ME management system poses challenges in hospital management capacity to realize proper functioning of ME governance. The Project assisted to help the ME management system in place in Cambodia. However, it is still in the process of institutionalization as MEM-WG requires continuing capacity building to update their knowledge and skill for medical equipment maintenance, new staffs with lack of technical expertise knowledge needs to be trained and ME staff networking should be further encouraged.

For the purpose of disseminating outputs of the previous phase (central level) to the local level, this project set the overall goal as to expand its achievement to non-target CPA2. However, this overall goal was unclear since all the CPA2 were targeted by the time of project completion. As a result, it was found out that the ME management system is not expanded to non-target CPA2 hospitals since the number of CPA2 to be assisted by L-CPA3/NH have remained unchanged even though the total number of CPA2 has been increased (14 CPA2 were newly added). This may be due to the difficulty of specifying overall goal since the chance of increase or decrease of CPA2 was unknown at the time of project completion. As a result, the implementing agency has had a difficulty planning and implementing specific activities to achieve its goal. When implementing a succeeding project which aims at expanding its target from central level to local level, project team make an agreement with implementing agency before completion of the project regarding the specific plan they would take in order to sustainably implement the activities after the project completion.

ME Workshop Room at Preah Kossamak Hospital (CPA3)

MEM & MET Reports at Preah Sihanouk Provincial Hospital (CPA3)

conducted by Vietnam Office:February, 2019

Country Name	Electric Power Technical Standards Promotion Project in Viet Nam
Viet Nam	

I. Project Outline

Background	Since the power demand in Viet Nam has been rapidly growing, it was projected to increase by 6.6 times during the period from 2000 to 2020. In order to cope with the growing power demand, the government of Viet Nam stipulated a strategy for the power sector reform, including liberalization of the power market, and promoted construction of power facilities, including power generation plants, through encouragement of Independent Power Producers. Under these situations, it was essential for stable power supply to develop and upgrade unified and practical technical standards for construction, operation and maintenance of power facilities as well as to enforce them in the power industry of the country. JICA supported revisions of Volume 5-7 of the Electric Power Technical Regulations, which had been stipulated by support of the former Soviet Union, through the Development Study (from May, 2005 to June, 2007) by JICA. The revised technical standards were promulgated by the Ministry of Industry and Trade (MOIT) in December, 2009. However, there was no guideline to apply the technical regulations at power facilities. Also, the existing technical regulations did not include the ones for large-scale thermal power plants. Therefore, the government of Viet Nam requested the government of Japan to provide the technical guidance for adequate applications of the electric power technical regulations to the power industry of Viet Nam.
Objectives of the Project	Through drafting of the technical regulations for power facilities and drafting of guidelines for the revised technical regulations, the project aimed at authorization of the Electric Power Technical Regulations and Guidelines by the Vietnamese authorities, and thereby contributing to enforcement of the authorized Electric Power Technical Standards* and Guidelines to ensure improvement of reliability and safety of power supply in Viet Nam. 1. Overall Goal: The Electric Power Technical Standards* and Guidelines shall be enforced to ensure improvement of reliability and safety of power supply in Viet Nam. 2. Project Purpose: The Electric Power Technical Regulations and Guideline are authorized by the Vietnamese authorities. *According to "the Law on Technical Regulations and Standards" in Viet Nam, the name of technical documents to be promulgated should be "the Electric Power Technical Regulation (Quy Chuan Viet Nam: QCVN)" instead of the "Technical Standards".
Activities of the Project	1. Project Site: Whole country of Viet Nam 2. Main Activities: 1) Reviewing the existing technical regulations and related documents, 2) Elaborating the drafts of Electric Power Technical Regulations and Guidelines by the working groups of hydropower generation, thermal power generation, power networks, etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 17 persons 2) Trainees Received: 21 persons 3) Equipment: projectors and PC 4) Local expenses: costs for local consultants and general activities Vietnamese Side 1. Staff Allocated: 54 persons 2. Land and facilities: project office in MOIT 3. Local expenses: administrative costs for Working Groups activities, site surveys, workshops by Vietnam Electricity, etc.
Project Period	March 2010 – June 2013 (Extension: March 2013 – June 2013)
Project Cost	(ex-ante) 430 million yen, (actual) 485 million yen
Implementing Agency	Ministry of Industry and Trade (MOIT) Ministry of Construction (MOC) Vietnam Electricity (EVN)
Cooperation Agency in Japan	Electric Power Development Co., Ltd. Shikoku Electric Power Co, Inc. West Japan Engineering Consultants, Inc.

II. Result of the Evaluation

<Special perspective to be considered in the ex-post evaluation>

Since the Project Purpose is preparation of the drafts of technical regulations and guidelines on power network facilities and construction for promulgation, the continuation status of the project effects was verified by utilization of the drafts prepared by the project for reviewing and updating the drafted QCVN as the achievement status of the Overall Goal to enforce and disseminate QCVN.

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 policies of "The Power Master Plan VI (2006-2015)" emphasizing the necessity of increasing the electricity supply by 22% at most and "The Power Master Plan VII (2011-2020)" promoting construction of electric power facilities including power plants, transmission lines and substations in order to take measures against the growing electricity demand in the background of the consolidated economic growth.

<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 in developing the guidelines to apply technical regulations at power facilities and revision of existing technical standards to be adapted to new technologies such as large-scale thermal plants.

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

The project was consistent with Japan's ODA policy of "The Country Assistance Plan for Viet Nam (2004)" prioritizing support for economic growth acceleration as one of the three priority areas, including the power sector.

<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 final drafts of Electric Power Technical Regulations in the scope of MOIT and the Technical Guidelines in the scope of MOIT and MOC (Indicator 1, 2, and 4) were approved by the Joint Management Committee (JMC)[1] which had been established for managing the project activities and approving the outputs by the project. However, the Technical Regulations concerning civil works of hydropower plants in the scope of MOC (Indicator 3) was not promulgated because of the delay of the finalization process to reinforce the technical requirements for dams required by the government of Viet Nam.

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

The project effects have been continued since the project completion. Although the drafts of QCVN have not been promulgated yet, the draft QCVN, which has been developed based on the draft technical regulations and guidelines prepared by the project, has been in the process of reviewing and updating in accordance with the amendments of the laws on electricity and construction as well as for responding to new technologies.

<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. The drafted QCVN on power network facilities and power plants under MOIT and the drafted QCVN on civil works of hydropower plant, which was transferred from MOC to MOIT, have been in the process of promulgation. The drafts proposed by the Japanese experts are mainly based on the technical standards on power facilities in Japan which stipulates general technical requirements on each type of power facility and allows project owner to choose technical specifications to the technical requirement defined by the Guidelines on a voluntary manner. On the other hand, the Law on Standards and Technical Regulations of Viet Nam requires that QCVN provides mandatory technical requirement, covers economic factors and should be used as a management tool for investment efficiency, which had not been covered by the drafted technical regulations by the project and has required much more time to review and update than expected at the time of project completion. In addition to the amendments of the laws on electricity and construction, the change in organizational structure of MOIT also made the process for promulgation prolong. While the drafts prepared by the project are separated into the technical regulations and the technical guidelines, the drafted QCVN includes technical guidelines as annex in accordance with the Law.

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

Although the drafted QCVN on power network facilities has not been promulgated yet, some owners of the power plants have applied the drafted QCVN voluntarily since it was based on the drafts of the technical regulations and guidelines prepared by the project and had been circulated among the stakeholders in the power industry for consultations.

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

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) The Electric Power Technical Regulations and Guideline are authorized by the Vietnamese authorities.	1. The final draft of the Electric Power Technical Regulations in the scope of MOIT is approved by JMC* by June 2013. *Joint Management Committee	Status of the Achievement: Achieved (Continued) (Project Completion) • The final draft was approved as planned. (Ex-post evaluation) • The drafted QCVN on power network facilities has been based on the drafts of technical regulations and guidelines developed by the project. • Due to new technologies such as smart grid, and the promulgation of the amended Law on Electricity and its guiding decrees in 2014 as well as the organizational structure change of MOIT, the reviewing and updating of drafted QCVN have been prolonged and planned to be promulgated in the 3rd Quarter of 2018.
	2. The final draft of the Electric Power Technical Guidelines in the scope of MOIT is approved by JMC by June 2013.	Status of the Achievement: Achieved. (Continued) (Project Completion) • The final draft was approved as planned. (Ex-post evaluation) • As for the current status of the final draft of the technical guidelines, refer to the Indicator 1 for the Overall Goal.

[1] JMC was composed of MOIT, MOC, EVN and JICA.

	3. The Technical Regulations concerning civil works of hydropower plants in the scope of MOC is promulgated by the end of 2012.	Status of the Achievement: Not achieved (Continued) (Project Completion) • The promulgation of technical regulations was not achieved by the end of 2012 because incidents on the existing dams such as Song Tranh 2 Hydropower Plant Project, which attributed to design and construction of dam structure, brought about the delay of the finalization process to reinforce the technical standards for dams required by the government of Viet Nam. (Ex-post evaluation) • Due to the promulgation of the amended Law on Construction and its guiding decrees in 2017, the drafted QCVN based on the drafts prepared by the project have been still in the process of reviewing and updating and planned to be promulgated in the 2nd Quarter of 2019.
	4. The final draft of Technical Guidelines concerning civil works of hydropower plants in the scope of MOC is approved by JMC by June 2013.	Status of the Achievement: Achieved. (Continued) (Project Completion) • The final draft was approved as planned. (Ex-post evaluation) • As for the current status of the final draft of technical guidelines, refer to the Indicator 3 for the Overall Goal.
(Overall Goal) The Electric Power Technical Standards and Guidelines shall be enforced to ensure improvement of reliability and safety of power supply in Viet Nam.	1. The Electric Power Technical Regulations under MOIT are promulgated by the end of 2014.	(Ex-post Evaluation) Not achieved • QCVN on power network facilities: The draft has been appraised by MOST in November, 2017 (ref.3729/BKHCN-TDC) and the Legal Department of MOIT in May 2018 (ref.517/PC-XDPL). In addition to the amendment of the Law on Electricity in 2014, the establishment of the Electricity and Renewable Energy Authority based on the previous General Department of Energy of MOIT affected the progress of the internal appraisal by MOIT and the appraisal by MOST. • QCVN on hydro power plant: The 1st draft was developed by MOC and transferred to MOIT for promulgation after circulating among the relevant agencies for comments. It is planned to be promulgated in the 2nd quarter of 2019 after preparing the 2nd draft by MOIT and appraisal by MOST. The delay was because of the amendment of the Law on Construction in 2015 and its guiding decrees in 2017. • QCVN on thermal power plant: MOIT reviewed and re-compiled the draft of QCVN based on the drafted technical regulations and guidelines developed by the project and circulated the drafted QCVN among the relevant agencies but many controversial opinions on it were revealed. In particular, since technologies, type of equipment and facilities vary among coal-fired thermal power plants by owners, such as the Vietnam Electricity (EVN), Vinacomin (a mining company), and the Petro Vietnam (PVN), there have been difficulties to make coordination.
	2. The Electric Power Technical Guidelines under MOIT are disseminated through website, workshops, distribution of booklets, etc. by the end of 2014.	(Ex-post Evaluation) Not applicable • Although the drafted QCVN based on the drafts developed by the project has not been promulgated yet, it has been distributed by EVN to concerned agencies in the power industry for their reference and comments. • The drafted technical guidelines developed by the project have been integrated into the drafted QCVN as an annex since QCVN is solely technical regulations and no guideline following it in the Vietnamese legal system.
	3. The Technical Guidelines concerning civil works of hydropower plants under MOC are disseminated through website, workshops, distribution of booklets, etc. by the end of 2014.	(Ex-post Evaluation) Not applicable • The drafted technical guidelines developed by the project have been integrated into the drafted QCVN as an annex since QCVN is solely technical regulations and no guideline following it in the Vietnamese legal system.
	4. Compliance of the Technical	(Ex-post Evaluation) Not verified. • Since the drafted QCVN has not been promulgated yet,

	Regulations and utilization of the Technical Guidelines are checked by the following points: - No. of approved large-scale project after the promulgation of the Technical Regulations - No. of completion inspection reports to a committee concerned and no. of order for improvement - Internal operational regulations according to the Technical Regulations prepared by facilities owned by EVN and other operators.	the indicator 4 was not able to be verified.

Source：Project Completion Report, Questionnaire answers by MOIT and EVN and Interview with MOIT

3 Efficiency

The project cost and period exceeded the plan (ratio against the plan: 113% and 108%, respectively). Although there was no change in the planned outputs, the additional inputs for additional dispatch of the Japanese experts, hiring a local consultant and the extension of project period were required for finalization of the drafts of the Technical Regulations and the Guidelines including Vietnamese versions for promulgation. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

"The Power Master Plan VII (2011-2020)" with the vision to 2030 promotes construction of electric power facilities including power plants, transmission lines and substations in order to meet the growing electricity demand in Viet Nam. The promotion of construction of power facilities requires the updated and upgraded technical regulations and guidelines to standardize the power system for stable and reliable power supply in Viet Nam. The amended Law on Electricity and its guiding decrees in 2014 and the amended Law on Construction in 2015 and its guiding decrees in 2017 require to reflect the updated and new regulation stipulated in the laws into the drafted QCVN based on the drafts technical regulations and guidelines prepared by the project.

<Institutional Aspect>

The Department on Technology and Science of MOIT is mainly responsible for promulgation of QCVN on power network facilities and power plants and three officers have been sufficiently deployed for the work. They are going to be in charge of dissemination of QCVN after promulgation. Together with other members of the working group (the Electricity Regulatory Authority (2 officers), the Electricity and Renewable Energy Authority (2 officers) and the Technical Safety and Industrial Environment Authority (2 officers) under MOIT and EVN (3 officers)), they directly review and update the drafted QCVN based on their expertise. They also play a role to coordinate with concerned agencies and experts for reviewing and updating the drafted QCVN. The working group for the promulgation process has been well functioning under the involvement and cooperation of the concerned agencies and experts.

<Technical Aspect>

The officers of MOIT who are engaged in the promulgation process of the drafted QCVN attended training workshops on technical standards organized by MOIT and they have sustained and updated their knowledge on technical standards. MOIT and the Department of Industry and Trade (DOITs) at local level annually organize workshops to update knowledge of their staffs on newly promulgated legal documents and regulations including QCVN.

<Financial Aspect>

MOIT has specifically allocated 500 million Vietnamese Dong (VND) covering the operation cost of the working group for the QCVN on power network facilities, including hiring the local experts for reviewing and finalizing the drafts in 2014 and 2015 and the budget amount is considered as sufficient. As the QCVN on thermal power plants is scheduled for promulgation in the coming period 2021-2025, there is no specific budget for its working group. Although there is not yet specific budget allocation for the working group of the QCVN on hydro power plants, officials in charge in MOIT have still been working on the draft QCVN as their normal business under the general budget. Therefore, even though the budget has been partially secured, there is no serious concern on budgeting for the promulgation process in future.

<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 but not achieved the Overall Goal to promulgate the drafted QCVN on power network facilities and civil works. The process of promulgation has been still on going based on the drafted technical regulations and guidelines prepared by the project and there is a road map for promulgation in the coming years. 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

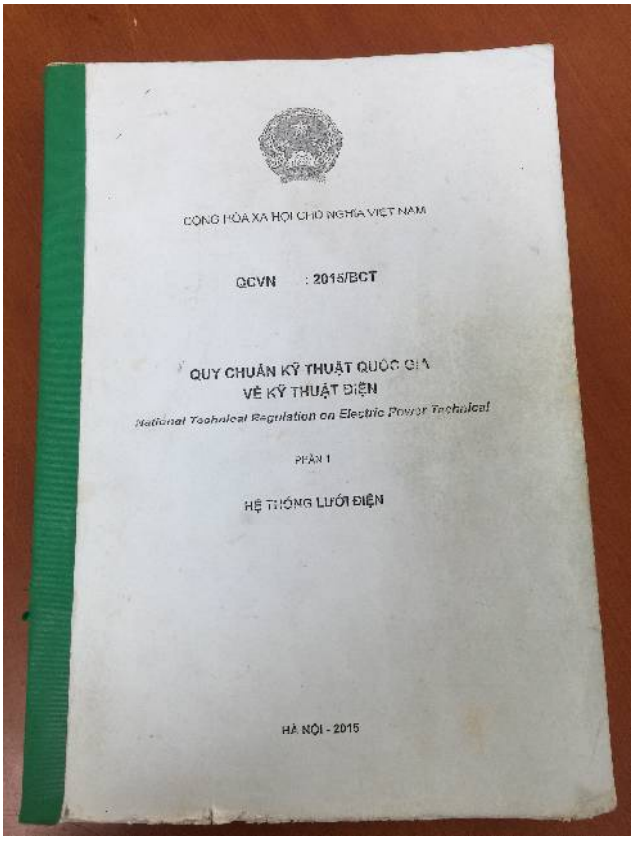
Recommendations for Implementing Agency:

[MOIT]

- It is recommended to allocate necessary resources and mobilize local experts to review and improve the thermal power technical regulations and guidelines as with the case of the finalization process for the QCVN on the power networks facilities, so that the controversial issues can be solved and the drafted QCVN for thermal power will be soon promulgated.

Lessons Learned for JICA:

- The overall goal, set during the project formulation process, is too high to be achieved. For network and hydro-power plant technical regulations, the time-consuming procedures under the Government of Vietnam to promulgate technical regulations and other inhibiting factors such as issuance of new law or organizational changes were not thoroughly examined. For thermal power plants, the various type of technologies, equipment and facilities applied in existing coal-fired thermal power plants, were not thoroughly studied. Therefore, the promulgation procedures, inhibiting factors, different characteristics applied in the power plants should have been carefully examined to set a more feasible overall goal to be achieved.
- There were gaps between the project outputs and what Vietnamese side can use to promulgate technical regulations. It seems Vietnamese side accepted the proposal on project design and approach at the project formulation stage but did not provide detailed information of what they had needed for each technical regulation and the characteristics of each energy sector. Therefore, more involvement from the recipient government right from the stage of project formulation should have been encouraged so that practical approach for promulgation of technical regulations and outputs can be identified by both sides. Even, a preparation survey, which is longer and more detailed than usual practice could have been adopted for such a project with technical complications. In addition, it is essential to consider necessary inputs including local experts on technical regulations at the time of project formulation in order to conduct necessary activities smoothly.


CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

QCVN : 2015/BCT

QUY CHUẨN KỸ THUẬT QUỐC GIA
VỀ KỸ THUẬT ĐIỆN

National Technical Regulation on Electric Power Technical

PHẦN 1

HỆ THỐNG LƯỚI ĐIỆN

HÀ NỘI - 2015

The draft QCVN on power network, that has been adopted by some project owners

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Viet Nam Office: January 2019

Country Name	**Improvement of Extension System for Applying Better Farming System and Cultivation Techniques for Poor Farmers in the Mekong Delta**
Socialist Republic of Viet Nam	

I. Project Outline

Background	The Mekong Delta region, which was famous for many tropical fruits production including citrus, was expected to produce variety of fruits. However, many farmers failed in management of citrus cultivation facing low yield and quality of fruits because of many issues such as lack of appropriate knowledge on disease control and effective cultivation techniques, lack of capital, limited market and so on. The Southern Horticultural Research Institute (SOFRI) under the Ministry of Agriculture and Rural Development (MARD) had established the technology of producing citrus disease-free seedlings and cultivation techniques. Nevertheless, efficient and effective extension system had yet to be established, due to insufficient development of effective cultivation methods for farmers and inadequate ability of extension officers including provincial administrative agencies.		
Objectives of the Project	Through enabling model citrus farmers to acquire knowledge and skills on effective cultivation techniques of King mandarin and improving ability of provincial and district Department of Agriculture and Rural Development (DARD) officials to guide farmers in acquiring effective cultivation techniques and SOFRI's ability to provide farmers and provincial and district DARD officials with effective technical support, the project aimed at improving the extension system for applying better cultivation techniques on King mandarin, thereby improving the living standard of farmers in the target area through productivity increase. 1. Overall Goal: The living standard of farmers in the target area is improved through productivity improvement of King mandarin in the area. 2. Project Purpose: Extension system for applying better cultivation techniques on King mandarin with the resources of SOFRI is improved.		
Activities of the Project	1. Project Site: Ben Tre, Soc Trang, Tien Giang, Tra Vinh and Vinh Long Provinces 2. Main Activities: (1) The project selects model farms in the target area, applies improved King mandarin cultivation techniques on the model farms, develops teaching materials and extension tools for dissemination on King mandarin cultivation, and conducts trainings, workshops and study tours for model farmers to disseminate the improved cultivation techniques; (2) SOFRI develops a manual and conducts trainings on King mandarin and guava cultivation for provincial and district DARD officials, provincial and district DARD conducts workshops and trainings for farmers in the target area, provides technical guidance and monitors the model farms, and promotes the use of disease free seedlings in the target area, and provincial DARD establishes the Plant Clinic in each province; and (3) SOFRI provides provincial and district DARD officials with trainings on King mandarin marketing and enhances necessary foundation for producing and utilizing a mother stock and disease free seedling etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 3 persons (long term) and 4 persons (short term) 2) Trainees Received: 43 persons 3) Equipment: vehicles, electrophoresis system, soil pH meters and moisture meters, thermo and hydro meters, water pH meters, microscopes, etc. 4) Local operation cost: land development of model farms, trainings and extension tools etc. Vietnamese Side 1. Staff allocated: 79 persons 2. Project office and facilities 3. Local operation cost: trainings, travel expenses, etc.		
Project Period	October 2009 – October 2014	Project Cost	(ex-ante) 380 million yen, (actual) 258 million yen
Implementing Agency	Ministry of Agriculture and Rural Development (MARD), Southern Horticultural Research Institute (SOFRI)		
Cooperation Agency in Japan	The Ministry of Agriculture, Forestry and Fisheries		

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> The project was consistent with Viet Nam's development policies such as "improvement of quality and productivity in fruit cultivation" as set forth in "National Socio-Economic Development Plan (NSEDP) (2006-2010)", "MARD Five Year Plan (2006-2010)" and "NSEDP (2011-2015)". <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 cultivation techniques of King mandarin 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 "Country Assistance Program for Viet Nam" (2004) (which included agricultural and rural development through assistance for improvement and diversification of livelihoods).

<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 partially achieved by the time of project completion. Principal technology of SOFRI method such as pruning and training trees and the Integrated Pest Management (IPM) method was adopted by ordinary farmers as expected (the percentage of King mandarin farmers who practice pruning and training was 77% on average, and the percentage of King mandarin farmers who apply the IPM method was 61% on average in five provinces, as of September 2014). However, the percentage of King mandarin farmers who plant trees with space of three to four meters were 6% only on average (widening planting distance was still being disseminated at the time of project completion).

<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 with improved extension system of better cultivation techniques. Plant Clinics, which were established during Project period, are still maintained in all 5 targeted provinces. Updated information on citrus cultivation, including countermeasures against diseases, has been transferred to farmers through SOFRI's website, plant clinics and trainings courses held by SOFRI and DARDs. Farmers who have adopted SOFRI method also contributed to extending the knowledge and experiences to other farmers.

On the other hand, the percentage of King mandarin farmers adopting SOFRI method at the time of ex-post evaluation has decreased after project completion. The percentage of King mandarin farmers who apply the IPM method at the time of ex-post evaluation is 13.6% on average in five provinces[1]. The percentage is lower than the target in Soc Trang, Tien Giang and Vinh Long provinces, as the plant disease rate is higher than other provinces and disease-free seedlings are more expensive in these provinces. The percentage of King mandarin farmers who plant trees with space of three to four meters at the time of ex-post evaluation is 2.5% on average in five provinces. The percentage is particularly low in all provinces, as (1) farmers' production scale is generally small and they tend to apply high planting density for a short life cycle of three to four years to maximize yield of King mandarin in a minimum period, and (2) many farmers use free market seedlings (cheap seedlings) which are susceptible to plant diseases, and thus they tend to apply high planting density to keep standby plants, etc. The percentage of King mandarin farmers who practice pruning and training at the time of ex-post evaluation is 6.7% on average in five provinces. The percentage is lower than the target in four provinces except for Ben Tre, as many farmers tend to apply high planting density as stated above, many of them do not practice pruning and training. Overall, the percentage of King mandarin farmers continuously adopting SOFRI method has been low after project completion, as the method requires initial investment such as fertilizer, agricultural chemicals and disease-free seedlings and farmers have to wait for a certain period of time for cost recovery. Besides, according to SOFRI, another factor that limited the continuation of the project effects is that pressure from root rot disease is too high in provinces in Mekong Delta region, while SOFRI method can only control citrus greening disease.

<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. According to data provided by provincial DARDs in five provinces, the percentage of farmers who have increased their productivity (yield) of King mandarin and income from producing King mandarin compared with their productivity and income before adopting SOFRI method is 26.5% on average in five provinces[2]. Moreover, during the field survey for this ex-post evaluation, interviews were conducted for 36 farmers in total including both model and non-model farmers who have adopted SOFRI method in five provinces[3]. Among them, the percentage of farmers who have increased their productivity and income is 44.4% on average in five provinces. While concrete data on to what extent their productivity and income have increased after adopting the method is not available, according to SOFRI, yield of King mandarin of farmers who have adopted the method has increased approximately 0.2 to 1.5 tons per hectare per year on average in these provinces. While data from interviews with 36 farmers showed that the percentage of farmers who have increased their productivity and income after adopting SOFRI method has achieved the target (40%), it is inappropriate to make an evaluation judgment based only on the interview result due to the limited number of samples (only 36 farmers in five provinces).

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

According to SOFRI, the project has contributed to an increase of women's proactive participation in King mandarin cultivation through provision of trainings on cultivation techniques.

<Evaluation Result>

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

[1] The IPM method includes (1) Application of systemic insecticides (Actara, Admire or Dantotsu) at fixed intervals (Once/1-2 months), (2) Use of disease-free seedlings, (3) Interplanting of guava and (4) Windbreaks surrounding orchard. Farmers who apply any one of these components are all counted in the above percentages.

[2] Due to limitation of data availability, the number of farmers who have adopted SOFRI method in Soc Trang, Tra Vinh and Vinh Long provinces was calculated as follows: the number of farmers who have adopted SOFRI method = the number of farmers who apply IPM + the number of farmers who plant trees with space of three to four meters + the number of farmers who practice pruning and training of trees. On the other hand, the number of farmers who have adopted SOFRI method in Ben Tre and Tien Giang provinces was provided by provincial DARDs.
Moreover, according to SOFRI and interviews with farmers, farmers who have increased their productivity have also increased their income. It should be noted that there is a possibility that the percentage of farmers who have increased their productivity and income might be higher than the above figures, as farmers who apply more than two components of SOFRI method might be double counted in the calculation in Soc Trang, Tra Vinh and Vinh Long provinces.

[3] The number of farmers interviewed was four persons in Ben Tre and eight persons each in other provinces (36 persons in total).

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td>(Project Purpose)
Extension system for applying better cultivation techniques on King mandarin with the resources of SOFRI is improved.</td><td>Proportion of farmers who adopt cultivation techniques developed by SOFRI (SOFRI method) among the farmers who newly plant King mandarin is more than 20%.
Definition of SOFRI method:
1) Apply the IPM method for citrus greening disease.
2) Plant King mandarin trees with space of 3 to 4 meters.
3) Prune and train King mandarin trees.</td><td>Status of the Achievement: partially achieved (partially continued)
(Project Completion) Two out of three components of SOFRI method had been applied by more than 20% of farmers.
(Ex-post Evaluation) The percentage of farmers who apply SOFRI method is lower than the target on average at the time of ex-post evaluation.

[Percentage of farmers who apply SOFRI method]
<table><tr><th></th><th>Ben Tre</th><th>Soc Trang</th><th>Tien Giang</th><th>Tra Vinh</th><th>Vinh Long</th><th>Total</th></tr><tr><td>Number of farmers who plant King mandarin</td><td>1,618</td><td>4,533</td><td>4,677</td><td>4,862</td><td>12,670</td><td>28,360</td></tr><tr><td>The percentage of farmers who apply IPM method (%)</td><td>22.2 (359)</td><td>12.2 (555)</td><td>18.0 (842)</td><td>25.0 (1,215)</td><td>6.9 (880)</td><td>13.6* (3,851)</td></tr><tr><td>The percentage of farmers who plant trees with space of 3 to 4 meters(%)</td><td>0.7 (12)</td><td>9.8 (444)</td><td>0</td><td>0</td><td>2.0 (250)</td><td>2.5 (706)</td></tr><tr><td>The percentage of farmers who practice pruning and training (%)</td><td>22.2 (359)</td><td>9.8 (444)</td><td>15.0 (702)</td><td>4.1 (200)</td><td>1.6 (200)</td><td>6.7 (1,905)</td></tr></table>Note: Figures in brackets show the number of farmers who apply each component of SOFRI method</td></tr>
<tr><td>(Overall Goal)
The living standard of farmers in the target area is improved through productivity improvement of King mandarin in the area.</td><td>Proportion of farmers who mention that they have increased their income from orchard among the farmers who adopt SOFRI method is more than 40%.</td><td>(Ex-post Evaluation) partially achieved
The percentage of farmers who have increased their productivity and income from orchard is 26.5% on average according to data provided by provincial DARDs and 44.4% on average according to the interviews with farmers.
[Farmers who have increased their productivity and income]
<table><tr><th></th><th>Ben Tre</th><th>Soc Trang</th><th>Tien Giang</th><th>Tra Vinh</th><th>Vinh Long</th><th>Total/Average</th></tr><tr><td>Number of farmers who adopt SOFRI method</td><td>359</td><td>1443</td><td>1169</td><td>1415</td><td>1330</td><td>5,716</td></tr><tr><td>Data provided by provincial DARDs- Percentage (number)</td><td>49.3 (177)</td><td>30.8 (444)</td><td>25.0 (292)</td><td>25.0 (354)</td><td>18.8 (250)</td><td>26.5 (1,517)</td></tr><tr><td>Data from interviews - Farmers who mentioned that they have increased their productivity of King mandarin and (net) income from the orchard – Percentage (number)</td><td>100 (4/4)</td><td>50.0 (4/8)</td><td>25 (2/8)</td><td>37.5 (3/8)</td><td>37.5 (3/8)</td><td>44.4 (16/36)</td></tr></table></td></tr>
</table>

*Note: The percentage in the “Average” column was calculated by (the number of farmers who apply IPM method in total in five provinces) / (the number of farmers who plant King mandarin in five provinces) x100. The percentages in the rest columns were also calculated in the same way.

Source：Final Report, questionnaire survey and interview with SOFRI, interview with provincial DARDs and farmers

3 Efficiency

Both the project cost and the project period were within the plan (ratio against plan: 68%, 100%, respectively). The outputs of the project were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

The needs for crop diversification from rice cultivation to other crops and improving the efficiency of agricultural production are stated in “NSEDP (2016-2020)” and “Decision No. 3367/QD-BNN-TT (signed by the Minister of Agriculture and Rural Development in 2014)”.

<Institutional Aspect>

The number of quota for staff allocation in units/departments related to this project within SOFRI is five in the Cultivation Technique

Faculty, six in the Plant Protection Faculty, four in the Technology Transfer Center and five in the Plant Clinic, all of which are filled at the time of ex-post evaluation, and according to SOFRI, the number of staff is sufficient to provide farmers and provincial and district DARD officials with effective technical support to increase production of King mandarin. In provincial and district DARDs, the number of staff in charge is five in provincial DARD and eleven on average in district DARDs in Ben Tre province, five in provincial DARD and seven on average in district DARDs in Soc Trang, Tien Giang and Tra Vinh provinces, and fifteen in provincial DARD and seven on average in district DARDs in Vinh Long province. According to these provincial DARDs, the number of staff is sufficient to guide farmers in acquiring effective cultivation techniques on King mandarin in Tien Giang and Vinh Long, while not sufficient in other provinces.

<Technical Aspect>

Most project counterparts (C/Ps) still work for SOFRI and provincial and district DARDs at the time of ex-post evaluation. According to SOFRI, it has participated in a range of research projects and its staff have been trained in and outside of the country, and thus they have sufficient expertise to perform above duties. According to provincial DARDs, the skill level of staff is generally sufficient to perform above duties in provinces except for Tra Vinh, which stated that some DARD staff need to accumulate practical experiences to support farmers more effectively. SOFRI has conducted trainings on citrus cultivation techniques for government officers and farmers in Ben Tre, Tien Giang, Tra Vinh and Vinh Long provinces since project completion, in which 917 people in total have participated. Provincial and district DARDs in five provinces have also conducted trainings on King mandarin cultivation techniques and SOFRI method for farmers since project completion, in which approximately 4,400 farmers in total have participated. Textbooks, monitoring book, and explanation video etc. produced under the project are still utilized at SOFRI and provincial and district DARDs. Most equipment procured under the project are also still utilized, except for two projectors and a notebook computer, which have reached the end of its service life.

<Financial Aspect>

Neither did SOFRI or provincial DARDs clarify whether they have sufficient amount of budget to sustain project effects, nor was their detailed financial data available. However, it is considered that SOFRI has a financial viability to a certain extent to sustain project effects, as it has been able to provide trainings for government officers and farmers, consultations in the Plant Clinic and disease free seedlings of King mandarin since project completion. Provincial DARDs are also considered to have a financial viability to a certain extent to sustain project effects, as they have allocated a certain amount of budget for provision of trainings for farmers, consultations in the Plant Clinic (approximately 20 to 60 million VND has been allocated annually for operation of the Plant Clinic in Soc Trang, Tra Vinh and Vinh Long) and monitoring of farms etc.

<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 the Overall Goal: Two out of three components of SOFRI method had been applied by more than 20% of farmers by project completion. At the time of ex-post evaluation, the proportion of farmers who have increased their income from orchard among those who adopt SOFRI method is 26.5% according to data provided by provincial DARDs and 44.4% according to the interviews with farmers. One of the factors that limited the Effectiveness/Impact of the project is that pressure from root rot disease is too high in provinces in Mekong Delta region, while SOFRI method can only control citrus greening disease. Sustainability of the project is evaluated as 'fair', since some provincial and district DARDs have self-evaluated that they do not have sufficient number of staff. Besides, detailed data on financial aspect is limited. Nonetheless, no particular problem was observed in Relevance and Efficiency of the project.

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 farmers who have continued to adopt SOFRI method has been decreased due to initial investment required in terms of cost and time. Thus, provincial DARDs should continue working with related parties to promote lending system for farmers who have financial difficulties for adopting SOFRI method.
- As stated above, many farmers tend to apply high planting density for a short life cycle to maximize yield of King mandarin in a minimum period. Therefore, SOFRI and provincial DARDs should continue explaining both advantages of low planting density in a long term and disadvantages of high planting density to farmers through workshops and trainings. In case it turns out to be no longer realistic for farmers to apply planting space of three to four meters, it is recommended that SOFRI work with stakeholders to research and propose a new spacing standard as well as a modified SOFRI method which is more adaptive to current King mandarin production environment with effects equivalent to the original one.

Lessons Learned for JICA:

- As stated above, some model farmers have stopped adopting some components of SOFRI method after project completion, as they considered that the cost of adopting the method is high. When implementing a similar project in future, economic efficiency and/or cost effectiveness of a method to be introduced should be carefully examined and sufficiently shared with beneficiaries.

Textbooks, monitoring book and explanation video etc. produced under the project are continued to be utilized at SOFRI

Staff in Plant Clinic in Tra Vinh

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Viet Nam Office: November, 2019

Country Name	**Strengthening the Capacities for the Field of Management of Vietnam's Crop Production Sector for Improving the Productivity and Quality of Crop's Products**
Socialist Republic of Viet Nam	

I. Project Outline

Background	In Viet Nam, the advances on breeding and development of new plant varieties had substantially contributed to the increased crop production at the time of ex-ante evaluation (2010). The achievements of science and technology for developing many types of agro-bio chemicals had also supported the improved yield of crops. However, the pollution of environment and unsafety of agriproducts to impact the human health had become serious for the reason of using too much agro-bio chemicals. In order to meet the increasing demand of people on the high quality products, Government of Viet Nam (GOV) had been implementing various policies and programs on improving the quality and productivity of crops. They included Plant Variety Protection (PVP) to encourage breeding and developing new plant varieties, and management and monitoring on production and distribution of Safe Crop (SC). Department of Crop Production (DCP) under Ministry of Agriculture and Rural Development (MARD) was designated for the state-level management of crop production sub-sector including functions for PVP and monitoring on SC. However, DCP did not have sufficient experience in these important areas, as it had not been long since the department was established.
Objectives of the Project	(PVP) Through establishing the Distinctness, Uniformity and Stability (DUS) testing method[1] and improving administrative procedures for examination of applied plant varieties and the awareness of breeders, seed companies and extension workers, the project aimed at improving the ability of examination for PVP system, thereby promoting registration of new varieties. (SC) Through improving the capacity of instructors to instruct techniques of producing safe crop to farmers and the awareness of the stakeholders, the project aimed at improving the awareness and production techniques on safe crop, thereby improving agricultural products in Viet Nam in terms of safety. 1. Overall Goal: (PVP) Registration of new varieties is promoted through strengthening PVP system. (SC) Agricultural products in Vietnam are improved in terms of safety through reinforcing and disseminating safe crop production practices. 2. Project Purpose: (PVP) Ability of examination for PVP system to promote breeding and introduce new varieties is improved. (SC) Awareness and production techniques on safe crop are improved.
Activities of the Project	1. Project Site: (PVP) Van Lam, Tu Liem, Quang Ngai and Baria-Vung Tau Stations of National Center for Plant and Fertilizer Testing (NCPFT)[2] (SC) Hung Yen, Ha Nam, Quang Ninh, Hai Phong, Thai Binh, and Hoa Binh Provinces 2. Main Activities: (PVP) (1) Improve administrative procedures for examination of applied plant varieties; (2) Revise and develop Test Guidelines (TGs), implement DUS tests and conduct trainings on DUS tests; and (3) Develop brochure on PVP system and hold seminars and orientation meetings to raise awareness on PVP system for stakeholders such as breeders, seed companies, government officers etc. (SC) Implement extension and promotion activities on safe crop production to officers in charge of safe crop and farmers and formulate guideline for raising awareness and supporting farmers on safe crop production etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 3 persons (long term) and 12 persons (short term) 2) Trainees Received in Japan: 38 persons 3) Trainees Received in Third Countries (Thailand, Indonesia and Korea): 47 persons 4) Equipment: vehicles, net house, cold storage room, tractors and other tools for soil preparation, camera, RHS color chart, ruler, color printer, computer etc. 5) Local operation cost Vietnamese Side 1. Staff allocated: 61 persons 2. Local operation cost: Rent for office, soil improvement, trainings, workshops etc.
Project Period	July 2010 – June 2014 (Extension Period: January 2014 – June 2014) / Project Cost: (ex-ante) 300 million yen, (actual) 272 million yen
Implementing Agency	(PVP) Department of Crop Production (DCP) (Plant Variety Protection Office (PVPO), National Center for Plant and Fertilizer Testing (NCPFT)/ National Center for Plant Testing (NCPT)), Ministry of Agriculture and Rural Development (MARD) (SC) DCP (Food Crop Division (FCD)), MARD; Department of Agriculture and Rural Development (DARD)
Cooperation Agency in Japan	The Ministry of Agriculture, Forestry and Fisheries

[1] DUS test is a test to check and confirm whether an applied variety is distinct (D) from existing varieties, sufficiently uniform (U) and stable (S).

[2] In July 2012, NCPFT was divided into two centers, namely National Center for Plant Testing (NCPT) and National Center for Fertilizer Testing. Since then, NCPT has been assigned to be involved in implementing the PVP component of the project, and Van Lam, Tu Liem, Quang Ngai and Baria-Vung Tau stations are still under the management of NCPT at the time of ex-post evaluation.

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>

The project was consistent with Viet Nam's development policies such as "promotion of new plant varieties" and "securing food safety" as set forth in "National Socio-Economic Development Plan (NSEDP) (2006-2010)", "MARD Five Year Plan (2006-2010)", "The Ordinance on Food Hygiene and Safety (2003)", "NSEDP (2011-2015)" and "MARD Five Year Plan (2011-2015)" etc.

<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 plant varieties protection and securing safety of agricultural products 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 strengthening of the plant species protection system and securing of safety of agricultural and fishery products and foods).

<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. As for PVP, a test was conducted to check the understanding level of technical knowledge on DUS test at NCPT and four test stations under NCPT (16 people in total were checked). The average score among them was 85/100 points. Evaluation by the check sheet was also conducted to check whether project counterparts (C/Ps) can undertake each task of DUS test (18 people in total were checked). The average score among them, which was 2.4/5 points before project implementation, was improved to 4.2/5 points at project completion. As for SC, while only less than 4% of model farmers (114 model farmers in total) had conducted field record keeping before project implementation, all the model farmers kept field records at the time of project completion. According to the results of the questionnaire survey, 66.7% of instructors of pilot provinces answered that 80-90% of model farmers satisfied the criteria of Basic GAP[3], 22.2% of them answered 60-70%, and 11.1% answered 100%. All three model sites of pilot provinces were certified as "safe crop production field", and one site of semi-pilot provinces was also certified.

<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 for PVP, the number of DUS test implemented annually has been approximately 200 at Van Lam station (mainly in charge of rice), approximately 100 at Tu Liem station (mainly in charge of corn), two to four at Quang Ngai station (in charge of watermelon and sugarcane only) and approximately 55 at Baria-Vung Tau station (mainly in charge of tropical vegetables) after project completion. According to NCPT, approximately 80% on average of staff in NCPT test stations who are in charge of DUS test can conduct examinations of DUS including identification/setting up of example varieties properly at the time of ex-post evaluation. As for SC, according to DCP and DARDs, all of 114 model farmers have continued to keep field records and more than 90 model farmers have continuously satisfied the criteria of Basic GAP since project completion. According to DCP, five pilot/semi-pilot areas (all three model sites of pilot provinces and two model sites of semi-pilot provinces) have continuously been certified as "safe crop production field" since 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. As for PVP, the number of plant varieties applied and granted to PVP system both domestically and abroad has continuously been increased year by year. As for SC, the number of farmers, cooperatives and companies who practice "GAP (also known as VietGAP (Vietnamese GAP); including Basic GAP)" in pilot/semi-pilot provinces has been increased since project completion.

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

According to DCP and DARDs, more than 60% of DUS testers at NCPT and its stations are women, and the project contributed to increasing the role of women in PVP system through providing technical trainings to improve their skills.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) (PVP) Ability of examination for PVP system to promote breeding and introduce new varieties is improved.	70 to 80% of Counterpart Staff in charge of DUS test can conduct examinations of DUS properly. (At least Level 3 (out of 5 levels) is achieved for all the items listed in "PVP/DUS Examination Capacity Check List")	Status of the Achievement: achieved (continued) (Project Completion) The average score of the check sheet was 2.4/5 points before project implementation, which was improved to 4.2/5 points at project completion. (Ex-post Evaluation) Approximately 80% on average of staff in NCPT test stations who are in charge of DUS test can conduct examinations of DUS properly.
(Project Purpose) (SC) Awareness and production techniques on safe crop are improved.	1. 114 number of model farmers keep records of production processes.	Status of the Achievement: achieved (continued) (Project Completion) All the model farmers kept field records. (Ex-post Evaluation) All the model farmers have kept field records.
	2. Based on the concept of "Basic GAP", 90 number of model farmers satisfied the criteria of "Basic GAP".	Status of the Achievement: achieved (continued) (Project Completion) 66.7% of instructors of pilot provinces answered that 80-90% of model farmers satisfied the criteria of Basic GAP. (Ex-post Evaluation) More than 90 model farmers have continuously satisfied

[3] Basic GAP is Good Agricultural Practice (GAP) which determined the basic matters of safety production that farmers tend to accept such as keeping records of production processes.

		the criteria of Basic GAP.
	3. More than four (4) numbers of pilot/semi-pilot areas of the Project certificated as “Safe crop production” fields.	Status of the Achievement: achieved (continued) (Project Completion) Three model sites of pilot provinces and one model site of semi-pilot provinces were certified as “safe crop production field”. (Ex-post Evaluation) Three model sites of pilot provinces and two model sites of semi-pilot provinces have been certified as “safe crop production field”.
(Overall Goal) (PVP) Registration of new varieties is promoted through strengthening PVP system.	Plant species and varieties applied and registered to PVP system continuously increases.	(Ex-post Evaluation) achieved The number of plant varieties applied and granted has continuously been increased. [Number of Varieties Applied and Granted to PVP System]

Year	No. of Varieties Applied		No. of Varieties Granted	
	Domestic	Abroad	Domestic	Abroad
2008	22	10	7	6
2009	34	10	4	7
2010	49	18	19	4
2011	27	25	33	27
2012	81	23	22	19
2013	60	32	31	35
2014	83	26	25	13
2015	107	41	34	26
2016	162	23	36	20
2017	206	60	84	25

(Overall Goal) (SC) Agricultural products in Vietnam are improved in terms of safety through reinforcing and disseminating safe crop production practices.	The number of farmers, cooperatives and companies who practice “GAP (including Basic GAP)” is increased.	(Ex-post Evaluation) achieved The number of farmers, cooperatives and companies who practice “GAP (including Basic GAP)” in pilot/semi-pilot provinces has been increased. [Number of Farmers, Cooperatives and Companies Practicing GAP at the Time of Ex-Post Evaluation][4]

Province	No. of farmers who practice GAP	No. of cooperatives that practice GAP	No. of companies that practice GAP
Hung Yen	196	6	2
Ha Nam	150	4	2
Quang Ninh	95	2	4
Hai Phong	N/A	N/A	N/A
Thai Binh	150	2	1
Hoa Binh	334	10	2

Source: Terminal Evaluation Report, Project Completion Report, questionnaire survey to DCP, PVPO, NCPT and DARDs

3 Efficiency

While the project cost was within the plan, the project period exceeded the plan (ratio against plan: 91%, 114%, respectively), as technical supports by Japanese experts were still necessary for revising TGs and preparing DUS test implementation manual for tomato, chrysanthemum and cucumber. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The needs for promotion of new plant varieties and securing food safety are stated in “NSEDP (2016-2020)”, “MARD Five Year Plan (2016-2020)” and “National Strategy for the Development of Intellectual Property including PVP until 2030” (under preparation) etc.

<Institutional Aspect>

As for PVP, PVPO is responsible for drafting and examining TGs and managing PVP application and registration, and the number of staff is four at the time of ex-post evaluation, while the required number is nine. The number of staff is not sufficient, particularly under the situation where the number of PVP application has been increasing. However, it is difficult to recruit new staff due to the tight rule on employment of officials in Vietnamese governmental organizations. Thus, PVPO has proposed a plan to become a self-financed organization, which is under consideration by MARD and is likely to be approved, so that PVPO would be able to use collected fees from PVP-related services for employing new staff. NCPT is responsible for implementing DUS tests and verifying test results, and there are 28 staff (three at the headquarters (HQ) and 25 at stations) in charge of DUS tests. According to NCPT, the number of staff is sufficient to conduct the above duties properly. As for SC, according to DCP (FCD), it has two management level staff and five experts at the time of ex-post evaluation, which is sufficient to manage safe crop production including promoting VietGAP and conducting training of trainers (TOTs) for technical officers in provincial DARDs. The number of staff in charge of crop production management is 57 in total in Hoa Binh DARD, approximately 300 in total in Hai Phong DARD, 158 in total in Thai Binh DARD, 12 in total (for management of agro-forestry-fishery food safety) in Hung Yen DARD, while the number of staff was not available in Quang Ninh DARD and Ha Nam DARD. Nonetheless, according to all of these DARDs, the number of staff is sufficient to manage crop production including providing technical instructions to farmers and monitoring farming activities at sites for safe crop production.

<Technical Aspect>

As for PVP, C/Ps still work for DCP, PVPO and NCPT at the time of ex-post evaluation. According to PVPO, its staff have sufficient skills to perform above duties. Since 2015, PVPO has drafted more than 20 TGs for new species which the International Union for the Protection of New Varieties of Plants (UPOV) has not yet issued, and the PVP system in Viet Nam has been operated well. All of three staff

[4] Data on the number of farmers, cooperatives and companies who practiced “GAP (including Basic GAP)” before project implementation was not available in existing documents.

at NCPT HQ have master's degrees and have participated in training courses on DUS test in Japan and Holland. All of them have 10 to 20 years of work experience in the relevant fields. All of 25 staff in NCPT stations have bachelor's degrees or higher degrees. Thus, the skill level of these staff is sufficient to perform above duties. While the internal training system has not been established in NCPT due to limited financial resources, NCPT has often organized on-site visit and observation of DUS growing test among DUS testers to improve their techniques on DUS test. Revised TGs, newly prepared TGs and DUS test implementation manuals which were prepared under the project are still utilized at PVPO and NCPT. The majority of equipment procured under the project are still used in a good condition except for a camera, two tractors, a net house and the database software in Van Lam station and Tu Liem station[5]. As for SC, the majority of C/Ps still work for DCP and provincial DARDs at the time of ex-post evaluation. Three out of seven staff at DCP (FCD) have master's degrees and four have doctoral degrees. Some staff have participated in overseas short-term training courses on crop production, and thus, their skills are sufficient to perform above duties. Moreover, DCP has been implementing the JICA-funded "Project for Improvement of Reliability of Safe Crop Production in the Northern Region (2016-2021)" (the Phase 2 of this project), in which its staff have more opportunities to participate in training courses to improve their skills. According to provincial DARDs, the skill level of staff is generally sufficient to perform above duties. DCP has organized three TOT courses at the central level and four TOT courses at the provincial level under the above-mentioned Phase 2 of this project, in which technical officers of Hung Yen, Ha Nam and Thai Binh DARDs have participated. Those in Quang Ninh, Hai Phong and Hoa Binh DARDs are supposed to participate in TOT courses from October 2018. The manual on the implementation of Basic GAP produced under the project is still utilized by DARDs and farmers. Most equipment procured under the project are still used in a good condition except for two cameras, which were broken and replaced by new ones.

<Financial Aspect>

As for PVP, the amount of budget allocation for PVPO has been 1.5 billion VND in 2015, 1.6 billion VND in 2016 and 2.1 billion VND in 2017. According to PVPO, the allocated amount is sufficient to perform above duties. MARD has also allocated approximately two billion VND to NCPT annually since 2015. However, because there are many staff working for NCPT not in charge of DUS test and NCPT has to secure the allocated budget to pay salaries and other expenditures for these staff as well, budget for DUS test has been rather limited. Nonetheless, according to Circular No. 207/2016/TT-BTC on collecting and utilizing fees for DUS test, NCPT is permitted to collect more fees for DUS growing test. As for SC, while DCP has received approximately 20 billion VND annually from MARD, it has to spend the amount to cover expenses of many assigned duties, and thus only limited amount (approximately 500 to 600 million VND) has been allocated for promotion of safe crop production. DCP (FCD) has been handling this difficulty by integrating activities of promoting safe crop production in some other programs and calling for supports from foreign donors and the private sector etc. Detailed information on budget allocation in provincial DARDs was not available, however, according to provincial DARDs, although they have limited budget to cover all of their duties, they have still managed and allocated necessary budget to promote safe crop production including instructing farmers and monitoring farming activities at sites.

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved the Project Purpose and the Overall Goal: As for PVP, the majority of staff in charge of DUS test have been able to conduct examinations of DUS properly, and plant varieties applied and registered to PVP system have been increased. As for SC, all the model farmers have kept field records and the majority of pilot/semi-pilot areas have been certificated as "safe crop production" fields, and the number of farmers, cooperatives and companies who practice GAP has been increased. For the sustainability, some problems were found such as insufficient number of staff in PVPO and the lack of budget allocation in NCPT, DCP (FCD) and provincial DARDs. However, no major problem was observed in terms of the policy and technical aspects. As for 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, two NCPT stations have problems with the database software developed under the project. While they have requested the software developer to fix the problem whenever it happens, the system still does not run smoothly, and there are also some functions that are not convenient for users and thus need to be upgraded. It is recommended that DCP should allocate budget to outsource the database software upgrade for all stations.

Lessons Learned for JICA:

- As stated above, two tractors at NCPT stations have not been repaired properly due to unavailability of spare parts in local markets. When procuring equipment in future projects, it should be carefully checked whether its spare parts would be available and can be easily purchased locally before purchasing such equipment.

[5] The camera in Van Lam station has been repaired several times, however, it is not in a good condition. The tractor in Van Lam station had been used in wetland for rice and was broken in 2017. As the tractor was Japanese-made and its spare parts are not available in local markets, it could not be repaired. The tractor in Tu Liem station had been used so frequently and continuously, and was broken in 2017. As spare parts are not available, Tu Liem station asked a local shop to cast the broken part and has continued to use the tractor. The roof and insect netting along sidewalls of the net house in Tu Liem station were damaged by a typhoon in 2017, however, the skeleton of the net house is still in a good condition. The database software at Van Lam and Tu Liem stations are still used, however, problems occur frequently. While they requested the software company to fix problems, the software is still operated unstably.

Staff of Baria-Vung Tau station is observing and measuring some characteristics of rice

Staff of Van Lam station is checking seed samples in cold storage room

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Bangladesh Office: September, 2018

Country Name	Project on Development of Human Capacity on Operation of Weather Analysis and Forecasting
People's Republic of Bangladesh	

I. Project Outline

Background	Bangladesh is a vulnerable country against natural disaster including floods, tropical cyclones and storm surges, in particular, in the coastal area. Also, the northeaster area of the country surrounded by mountains has been frequently damaged by flash floods. Therefore, the government of Japan supported construction of weather radar observation stations by grant aid (in Rangpur (2000), Dhaka (2000), Cox's Bazar (2007), Khepupara (2008) and Moulvibazar" (2009) in order to cover the whole territory of Bangladesh. The Bangladesh Meteorological Department (BMD) conducted weather observation based on the data from the weather radar stations in addition to surface observation, balloon observation and observation at the Radiosonde Observation Station. However, the data collected by the weather radars were not sufficiently utilized because they were not appropriately calibrated. In addition, weather forecasts were differed by the weather forecast officers. Under those situations, the Government of Bangladesh requested to the Government of Japan for a technical cooperation to development human resources for conducting rainfall volume analysis using the weather radar data as well as to enhance capacity to transmit more useful weather forecast as disaster information.
Objectives of the Project	Through the improvement of capacity of BMD for weather observation, analysis and forecast, the project aimed at the timely issue of accurate weather information to stakeholders involved in natural disaster management, thereby contributing to the reduction of natural disaster losses in Bangladesh. 1. Overall Goal: Natural disaster losses are reduced by the utilization of highly precise weather information. 2. Project Purpose: More accurate weather information is timely issued to the stakeholders of the natural disaster management*. * The stakeholders for the natural disaster management include Department of Disaster Management, Flood Forecasting and Warning Centre (FFWC), Local Government Engineering Department, Dhaka Medical College, mass media.
Activities of the Project	1. Project Site: Operation areas of BMD (39 sites including Dhaka, Chittagong, Khulna, Rangpur, Moulvibazar) 2. Main Activities: 1) Trainings for observation staff on weather observation and for inspectors on calibration of observation equipment, 2) Conducting calibration analysis for actual rainfall volumes and simulated rainfall volume, 3) development and improvement of data quality management, 4) Trainings for BMD staffs on the Numerical Weather Prediction (NWP), 5) Organizing seminars workshops for disaster management and preparation of leaflets on disaster management, 6) Trainings for maintenance staff of BMD on operation and maintenance of weather radar facilities 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 16 persons 2) Trainees Received: 6 persons 3) Equipment: PCs, visual presenters, rain gauge and data logger, automatic weather system, etc. 4) Local cost: traveling cost of experts Bangladesh Side 1. Staff Allocated: 30 persons 2. Land and facilities: Office space in BMD 3. Local cost: logistical support, supplementary budget for seminars and open-classes
Project Period	September 2009 – December 2013 / Project Cost: (ex-ante) 260 million yen, (actual) 454 million yen
Implementing Agency	Bangladesh Meteorological Department (BMD)
Cooperation Agency in Japan	Japan Meteorological Agency (JMA), Ministry of Land, Infrastructure, Transport and Tourism

II. Result of the Evaluation

1 Relevance

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

The project was consistent with Bangladesh's development policies of "Poverty Reduction Strategy Paper (2005-2008)" with high priority to establishment and improvement of disaster prevention system including early warning and forecast system and "National Development Plan of Disaster Management (2010-2015)" prioritizing the technical and technological capacity building of BMD. The policy priorities were confirmed at the time of ex-ante evaluation and the time of project completion.

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

The project was consistent with Bangladesh development needs of capacity development for BMD staffs to provide meteorological services, such as weather observation and forecast, by utilizing the data from the meteorological radar system. The development needs were confirmed at the time of ex-ante evaluation and the time of project completion.

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

The project was consistent with a Japan's ODA policy for Bangladesh, prioritizing support for 4 priority areas including social development and human security with a component of disaster management in "the Country Assistance Program for Bangladesh" (2006).

<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. The optimized radar data of rainfall was provided to FFWC by BMD during the project (Indicator 1). The program of preparing "Visualized BMD Special Weather Bulletin" for cyclone tracking, storm surge and strong wind warning was developed by the project, and, the "Visualized BMD Special Weather Bulletin" was timely issued through television and the BMD's website when the Cyclone Mahansen hit Bangladesh in May of 2013 (Indicator 2).

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

The project effects have been continued since the project completion. The optimized radar data of rainfall has been continuously provided to FFWC by BMD via the automatic data sharing link using email and website.

The rain gauges and the automatic weather systems installed by the project at the observation stations been functional and continuously collected the real-time meteorological data including rainfall. This enables BMD to generate the timely weather information in high resolution by corroborating such data with the rainfall data from the existing meteorological radar systems. The summary of the trend analysis of climate change based on the meteorological data is available on the BMD's website by a charge for general users and by free for government institutions, and the 30-year average climate data is open to the public for free.

<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 BMD staffs interviewed by the ex-post evaluation survey, the stakeholders of the natural disaster management have relied on and utilized the weather information released by BDM for emergency preparedness. In terms of a reduction in the natural disaster losses, according to an article published by the International Institute for Environment and Development[1], while more than 3,400 people and 339 people were killed by "Cyclone Sidr" in 2007 and "Aila" in 2009, respectively, the number of the fatalities for the Cyclone "Roanu" in 2016 was limited to less than 30 in Bangladesh though more than 200 people were died in Sri Lanka. Considering the danger level of cyclonical storms, the Cyclone Sidr (the peak 1minute sustained winds of 260km/h (160 mph) and the lowest pressure of 944 hPa) was the level of sever danger which damages individual buildings and the Cyclone Aila and the Cyclone Roanu were the level of significant danger which damages individual roofs. Therefore, it can be reasonably estimated that the project is able to mitigate the expected fatalities caused by the significant danger level of cyclonical storms.

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

Some positive impacts were observed at the time of ex-post evaluation. BMD makes the weather information open to the public via the BMD's website and mobile application, and not only public and private organizations but also the general citizens can access to the information. According to the UNDP's "Terminal Evaluation Report for the Comprehensive Disaster Management Report", the BMD's weather forecast helps the vulnerable groups, especially women and children, to prepare for natural disasters. According to the study[2], the cyclone in 1991, which is the deadliest cyclone in Bangladesh with the estimated fatalities between 68,000 to 138,000, killed vulnerable groups of people such as women, elder people and children at higher rate than the other groups. However, in these days, there has been a significant reduction of fatalities in vulnerable groups. In addition, the BDM weather forecasts and climatic information has been currently used by the public service agencies, such as the Department of Agriculture Extension and civil society organizations (CSOs) and non-governmental organizations (NGOs). According to a study[3] by Deltares, an independent institute for applied research in the field of water and subsurface based in Netherland, overall the community people managed to save a large amount of damages by taking protective actions after receiving early warning and the estimated average savings per household were 768 USD for fisheries, 640 USD for agriculture and 678 USD for livestocks. The Practical Action Bangladesh, an international NGO based in the United Kingdom translated the weather forecasts into understandable manner for the communities in order tor use them for activities of agriculture, fisheries and livestock production.

<Evaluation Result>

In light of the above, through the project, the Project Purpose was achieved, the project effects have been continued and the Overall Goal has been achieved by 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) More accurate weather information is timely issued to the stakeholders of the natural disaster management.	(Indicator 1) Rainfall data of the optimized radar Z-R relation parameter for rainfall calculation being provided to FFWC.	Status of the Achievement: Achieved (Continued) (Project Completion) • The rainfall data of the optimized radar ZR relation parameter for rainfall calculation was provided to FFWC by BMD. (Ex-post Evaluation) • The rainfall data has been continuously provided to FFWC by BMC via the automatic data sharing system using email and website.
	(Indicator 2) Accurate and easily-understanding forecast and warning including tropical cyclone are timely issued to the organizations related to natural disaster management and mass media.	Status of the Achievement: Achieved (Continued) (Project Completion) • When the cyclone "Mahasen" hit Bangladesh in May of 2013, the "Visualized BMD Special Weather Bulletin" was timely issued through television and the BMD's website. (Ex-post Evaluation) • According to the stakeholders for the natural disaster management

[1] International Institute for Environment and Development (2016) "Cyclone Roanu hits Bangladesh: a story of loss and damage avoided" (https://www.iied.org/cyclone-roanu-hits-bangladesh-story-loss-damage-avoided), as of April, 2018)

[2] Keiko IKEDA, "Gender Differences in Human Loss and Vulnerability in Natural Disaster: A Case Study from Bangladesh" (Indian Journal of Gender Studies, 1995)

[3] Deltares, "Mobile Services for Early Warning in Bangladesh: Final Report", (2015), https://www.deltares.nl/app/uploads/2015/11/Deltares-Mobile-Services-for-Early-Warning-in-Bangladesh-Final-Report_web.pdf, p36

		surveyed for the ex-post evaluation, BMD nowadays updates the weather information 6 times a day, and they regularly receive the accurate and timely weather information through television, radio and the BMD's website.
(Overall Goal) Natural disaster losses are reduced by the utilization of highly precise weather information.	(Indicator 1) Cases which prove that the utilization of BMD's weather information by organizations related to natural disaster management contributed to reduction of the natural disaster losses.	(Ex-post Evaluation) Achieved • The stakeholders of the natural disaster management have relied on and utilized the weather information released by BDM for emergency preparedness. • According to International Institute for Environment and Development, the number of the fatalities for the cyclone "Roanu" in 2016 was limited to 30 compared to the number of fatalities by the cyclone "Sidr" in 2007 and "Aila" in 2009.

Source：Interview and questionnaire with BMD and the stakeholders of the natural disaster management, the Project Completion Report (2014)

3 Efficiency

Although there was no change in the outputs of the project, the project cost and period exceed the plan (ratio against the plan: 175% and 144%) since the Project Purpose had not been achieved within the original project period due to the one-year delay of the procurement of the rain gauges and the automatic weather observation systems and the delay of the project activities. The delays increased the project cost because of the raised price of the equipment and the increased cost of trainings as well as the additional dispatch of the Japanese experts for the extended project period.

Therefore, the efficiency of the project is low.

4 Sustainability

<Policy Aspect>

Although "the National Plan for Disaster Management (NPDM, 2016-2021)" has not been approved yet, the draft plan was prepared following the Sendai Framework for Disaster Reduction and the Sustainable Development Goal for resilience targets in order to address issues on resilience against disaster including strengthening of disaster risk governance to manage disaster risks and investment in disaster risk reduction for resilience. Also, the Disaster Management Policy 2015 following the Disaster Management Act 2012 enhances disaster management at national level.

<Institutional Aspect>

BMD has taken responsibilities for the activities related to the weather forecast and warning for natural disasters, including operation and maintenance of the meteorological radar systems, collection and analysis of the meteorological information, and release of the weather information. The number of staffs of BMD, including directors, increased from 767 in 2008 before starting the project to 942 in 2016 at the time of ex-post evaluation. In particular, the number of technical staffs who conduct weather analysis and forecasting increased from 630 to 706 during the same period and it is sufficient to conduct the activities related to weather analysis and forecasting.

The information and forecast sharing protocol between BMD and all other relevant organizations remains the same since the project completion as mentioned above.

<Technical Aspect>

The 6 staffs of BMD trained by the project have retained in their respective sections and continued providing the services. They have sustained the necessary skills and knowledge to perform the activities related to the weather forecast and warning for natural disasters. The technologies and manuals produced by the project for weather analysis and forecasting, such as the instruction manual on radar calibration, and the PC Cluster operation manual, have been utilized by BMD. Also, the final version of the weather observation guidelines and the data input manual including software prepared by the project were handed over to BMD until the end of the project.

The Training Division of BMD continues to provide all the modules prepared by the project. The contents of those trainings, such as the Weather Forecaster Course, the Technical Staff Course, the Engineer Course, the Measuring Instruments Official Verification Course, the Weather Observer Course, and the Balloon Operator Course, were updated in 2016.

<Financial Aspect>

The budget of BMD has continuously increased from 303 million Taka in 2013/14 to 747 million Taka in 2016/17. The further increase is expected in the next three years from 2017/18 to 2019/20. It is because of the budget allocation in 2017/18 from the two development projects, such as "the Improvement of Meteorological Rader System in Dhaka and Rangpur" supported by JICA (375 million Taka) and "Strengthening of meteorological observatories located at 13 River Port Areas of Bangladesh" (294 million Taka) funded by the government budget. On the other hand, the allocation for operations and maintenance of the weather observation systems needs improvement. For example, the data capturing for 6 meteorological observatories require to operate the oil-fired power generator 6 times a day because the quality of the electricity supply is not suitable for the functioning of the equipment. Due to inadequate O&M budget allocation, the frequency of the data collection was not maintained as planned

<Evaluation Result>

In light of the above, slight 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 the Project Purpose and the Overall Goal through timely issuing more accurate weather information to the stakeholders involved in the natural disaster management. As for sustainability, the frequency of the data collection has not been maintained as planned due to insufficient operation budget. As for efficiency, the project cost and period exceed the plan because of the one-year delay of the procurement of the rain gauges and the automatic weather observation systems.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

[For BMD]

Automation of observation, monitoring, communication and data acquisition will significantly improve the precision of the forecast by the agency. In addition to the national level forecast, localized weather forecasts will be helpful to the occupational groups (e.g. farmers,

fishers, small businesses) where weather observation facilities are currently available (42 surface observatories, 10 pilot balloon observatories, 3 raidosonde observatories, 12 agromet observatories, 49 rainfall measuring stations, and 5 radar stations).

BMD Analysts preparing forecasts

Moulovibazaar Rader Station

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Nepal Office: January 2019

Country Name	**Participatory Watershed Management and Local Governance Project (PWMLGP)**
Federal Democratic Republic of Nepal	

I. Project Outline

Background	From 1994 to 2005, the Government of Nepal (GoN) and JICA jointly implemented a project "The Community Development and Forest/Watershed Conservation Project" - so called "SABIHAA (Samudayik Bikas Tatha Hariyali Ayojana)". As an output of this project, "SABIHAA model": a mechanism to mobilize local people to participate at all stages of watershed management practice which begins with planning and ends with evaluation of the activities was developed. Even after the termination of the project, the Department of Soil Conservation and Watershed Management (DSCWM)[1] had been implementing replication of SABIHAA model on their own capacity expanding the coverage area from two districts to eight districts. In 2007, GoN made an official request to the Japanese Government to support them in improving SABIHAA model so that they could scale up their watershed management activities.
Objectives of the Project	Through improving the capacity of District Soil Conservation Offices (DSCOs)[2] and community people on participatory watershed management in targeted areas and promoting the concept of local governance in participatory watershed management and internalization of SABIHAA model, the project aimed at implementation of improved participatory watershed management in better collaboration with DSCOs and local bodies in the target districts, thereby replicating the improved participatory watershed management in other districts. 1. Overall Goal: Improved participatory watershed management in better collaboration with DSCO and local bodies is applied in other districts by the initiative of Ministry of Forest and Soil Conservation (MoFSC) and Ministry of Federal Affairs and Local Development (MoFALD)[3]. 2. Project Purpose: Improved participatory watershed management in better collaboration with DSCO and local bodies is implemented in the target districts.
Activities of the Project	1. Project Site: Syangja, Myagdi, Baglung, Parbat, Kaski, Tanahun, Kavre and Sindhupalchok districts 2. Main Activities: (1) Conduct baseline survey to assess skills and expertise of DSCWM and DSCOs on participatory watershed management and identify the training needs, develop training packages, conduct trainings and implement participatory watershed management activities in the targeted areas; (2) Establish Ward Coordination Committees (WCCs)[4] and POWER (Poor people, Occupational caste and Women's Empowerment for Resource management) groups, formulate and implement Community Based Resource Management Prospect (CBRMP), Community Resource Management Plan (CRMP) and Annual Action Plan (AAP) and conduct trainings and workshops for community people; (3) Organize Village Development Committee (VDC)[5] level workshops, interaction programs with WCCs, POWER and VDCs, District Working Committee Meeting/workshop and public auditing of WCC activities and conduct training to WCCs, POWER and VDCs on local governance and (4) Establish the Exit Strategy Working Group (ESWG) and develop strategy to mainstream SABIHAA model into DSCWM and conduct fact finding and in-depth surveys and trainings to replication sites and non-SABIHAA districts etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 8 persons 2) Trainees Received in Japan: 11 persons 3) Trainees Received in Third Country (Thailand): 58 persons 4) Equipment: computers, digital cameras, scanners, printers and photocopiers etc. 5) Local operation cost: cost of hiring local staff and construction cost etc. Nepalese Side 1. Staff Allocated: 74 persons 2. Provision of office spaces and facilities 3. Local operation cost: cost of hiring motivators, travel expenses, conference fees, vehicle fuel etc.
Project Period	July 2009 – July 2014 / Project Cost: (ex-ante) 490 million yen, (actual) 572 million yen
Implementing Agency	Department of Forest and Soil Conservation (DoFSC), Ministry of Forest and Environment (MOFE), Ministry of Federal Affairs and General Administration (MOFAGA), Watershed and Management Offices/local governments in eight districts
Cooperation Agency	SANYU Consultants Inc.

[1] Nepal has started to introduce the federalism, a mode of political system in which powers are distributed (divided) among the central (federal) government, provincial governments and local governments, and restructure governmental organizations at all levels after project completion. DSCWM has been merged with the Department of Forest and became the Department of Forest and Soil Conservation (DoFSC).

[2] DSCOs have been dissolved (they existed as DSCOs until July 2018) and some of their responsibilities have been taken over by local governments (no specific name) and some of them have been taken over by the Watershed and Management Offices (WMOs) under provincial governments.

[3] MoFSC has been restructured and became the Ministry of Forest and Environment (MOFE) and MoFALD and the Ministry of General Administration have been merged and became the Ministry of Federal Affairs and General Administration (MOFAGA).

[4] WCCs also existed until July 2018 and have been restructured as Community Development Groups (CDGs).

[5] All VDCs have been dissolved and became Rural or Urban Municipalities (Previously there were 3,157 VDCs and 205 Municipalities; now they have been merged into 753 Rural and Urban Municipalities (460 Rural Municipalities and 293 Urban Municipalities including 276 Municipalities, 11 Sub-metropolitan cities and 6 Metropolitan cities)).

in Japan	

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

- The indicator for Overall Goal (Improved participatory watershed management is adopted in Soil Conservation and Watershed Management Programme.) does not specifically verify the achievement of Overall Goal (Improved participatory watershed management in better collaboration with DSCO and local bodies is applied in other districts by the initiative of MoFSC and MoFALD.). Thus, in the ex-post evaluation, whether and to what extent improved participatory watershed management in better collaboration with DSCO and local bodies is conducted in other districts at the time of ex-post evaluation was checked by visiting several WCCs (or wards of Rural or Urban Municipalities) in districts that were not targeted under the project.

1 Relevance

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

The project was consistent with Nepal's development policies such as "participatory watershed management and soil conservation" as set forth in "the National Development Plan (2007-2009)" and "Logframe Programme in MoFSC (2007-2025)" etc.

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

The project was consistent with Nepal's development needs for improved participatory watershed management and SABIHAA model replication 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 one of the three priority areas of Japan's assistance for Nepal was to support 'democratization and peace building', in which development and strengthening of the country's administrative system was emphasized[6].

<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. WCCs had tried to obtain budget from VDCs and other related line agencies and more than 100 WCCs (more than 30%) received financial support from VDCs in implementing sub-projects until project completion (Indicator 1). Joint monitoring and evaluation were implemented by DSCO and District Development Committee (DDC)[7] in all eight districts in the occasion of District Working Committee etc. (Indicator 2).

<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. Regarding the Indicator 1, among eight targeted districts, data was available in five districts (the remaining three districts do not seem to have received funding from local institutions), and it was confirmed that more than 5% of sub-projects were co-funded by local institutions in four out of these five districts after project completion until July 2018 (the end of a fiscal year in Nepal). Regarding the Indicator 2, among eight targeted districts, data was available in five districts, and it was confirmed that joint monitoring and evaluation of sub-projects were implemented by DSCO and DDC once or twice a year in four districts after project completion until July 2018.

<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. DoFSC (the former DSCWM) adopted SABIHAA model in Soil Conservation and Watershed Management Programme in 2010/11, which has continued to the time of ex-post evaluation. SABIHAA model was also adopted in 13 districts other than those targeted under the project. Most WCCs implemented DSCO programs such as water source protection, gully/landslide treatment, river bank control, degraded land rehabilitation and conservation of ponds etc. in collaboration with local institutions through jointly planning (and/or sharing planning documents) and implementing the programs in both project-targeted and replication districts. However, co-funding was observed only in project-targeted districts (including non-targeted sites in these districts).

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

According to DoFSC and DSCOs, many POWER groups' activities such as livestock husbandry and group agriculture farming have continued in most project-targeted districts and a couple of non-targeted districts since project completion. In these activities POWER group fund has been established and available for poor and marginalized women with low interest rate, which has contributed to enhancing the livelihood of poor women.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td>(Project Purpose)
Improved participatory watershed management in better collaboration with DSCO and local bodies is implemented in the target districts.</td><td>1. At least 5% of CRMP defined sub-project are co-funded/collaborated with local bodies or other institution.</td><td>Status of the Achievement: achieved (partially continued)
(Project Completion) More than 100 WCCs (more than 30%) received financial support from VDCs in implementing sub-projects.
(Ex-post Evaluation) More than 5% of sub-projects were co-funded by local bodies in four districts.
[Percentage of sub-projects co-funded by local bodies]
<table>
<tr><th></th><th>2015</th><th>2016</th><th>2017</th></tr>
<tr><td>Syangja district</td><td>33%</td><td>50%</td><td>50%</td></tr>
<tr><td>Myagdi district</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Baglung district</td><td>3%</td><td>4%</td><td>4%</td></tr>
<tr><td>Parbat district</td><td>100%</td><td>100%</td><td>100%</td></tr>
</table>
</td></tr>
</table>

[6] Source: ODA Country Data Book (2009)

[7] All the DDCs have been transformed to District Coordination Committees (DCCs) after project completion.

<table>
<tr><td></td><td></td><td>
<table>
<tr><td>Kaski district</td><td>14%</td><td>14%</td><td>14%</td></tr>
<tr><td>Tanahun district</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Kavre district</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Sindhupalchok district</td><td>33%</td><td>33%</td><td>32%</td></tr>
</table>
</td></tr>
<tr><td></td><td>2. Joint monitoring and evaluation is implemented by DSCO and DDC in all 8 districts.</td><td>Status of the Achievement: achieved (partially continued)
(Project Completion) Joint monitoring and evaluation were implemented by DSCO and DDC in all 8 districts.
(Ex-post Evaluation) Joint monitoring and evaluation of sub-projects were implemented by DSCO and DDC once or twice a year in four districts.
[Number of joint monitoring and evaluation conducted by DSCO and DDC]
<table>
<tr><td></td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>Syangja district</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Myagdi district</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Baglung district</td><td>1</td><td>1</td><td>2</td></tr>
<tr><td>Parbat district</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>Kaski district</td><td>2</td><td>2</td><td>2</td></tr>
<tr><td>Tanahun district</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Kavre district</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Sindhupalchok district</td><td>1</td><td>1</td><td>1</td></tr>
</table>
</td></tr>
<tr><td rowspan="2">(Overall Goal)
Improved participatory watershed management in better collaboration with DSCO and local bodies is applied in other districts by the initiative of MoFSC and MoFALD.</td><td>Improved participatory watershed management is adopted in Soil Conservation and Watershed Management Programme.</td><td>(Ex-post Evaluation) achieved
DoFSC adopted SABIHAA model in Soil Conservation and Watershed Management Programme in 2010/11, which has continued to the time of ex-post evaluation.</td></tr>
<tr><td>(Supplemental Information)
Whether and to what extent is improved participatory watershed management in better collaboration with DSCO and local bodies conducted in other districts?</td><td>(Ex-post Evaluation) mostly achieved
SABIHAA model was adopted in 13 additional districts, and sub-projects were collaborated with local level institutions, however, they were co-funded by local institutions only in the districts that were targeted under the project.</td></tr>
</table>

Source：Terminal Evaluation Report, questionnaire survey to DoFSC and DSCOs

3 Efficiency

The project cost exceeded the plan, while the project period was within the plan (ratio against plan: 117%, 100%, respectively). The outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

Promotion of participatory watershed management is stated in “the National Development Plan (2014-2018)”, “the Forest Policy 2017” and “Local Government Operation Act 2017” etc.

<Institutional Aspect>

As stated above, Nepal has started to introduce the federalism and restructure governmental organizations at all levels (including the central (federal), provincial and municipality levels) after project completion. The responsibility to implement SABIHAA activities has been handed over to local governments and WMOs provide technical support to local governments in implementing watershed management activities including SABIHAA activities. MOFE has also continued to allocate budget for SABIHAA model replication to local governments. According to DoFSC, MOFE and DoFSC have sufficient number of staff to plan, monitor and evaluate SABIHAA model replication nationwide[8]. However, at local levels, 17 staff (ten technical staff and seven administrative and support staff) only are supposed to be assigned in each of 14 WMOs in total (two WMOs in each province) under provincial governments at the time of ex-post evaluation[9], while it is desirable to assign an officer in each district or each local government where SABIHAA model is replicated as a field support staff to ensure smooth implementation of SABIHAA model replication.

<Technical Aspect>

Many of project counterparts (C/Ps) from MOFE and DoFSC still work at these organizations at the time of ex-post evaluation. While most technical staff trained under the project have retired, considering the fact that SABIHAA model was adopted in 13 additional districts after project completion, the skill level of staff in these organizations is considered sufficient to replicate SABIHAA model nationwide. At local levels, while staff of DSCOs were adequately capable of implementing SABIHAA model replication, DSCOs have been dissolved after July 2018. According to DoFSC, many officers who used to work for DSCOs have been assigned in WMOs. As for trainings, DoFSC has conducted trainings for staff in DoFSC and DSCOs twice since project completion (one of them was a training on landslide hazard management in 2017 and the other was a training on low cost soil conservation techniques in May 2018, in which 25 staff each participated). In addition, DoFSC has organized a national workshop for staff in DSCOs to share the best practices of programs implemented in Nepal including SABIHAA model every year since project completion. Nonetheless, more comprehensive and frequent trainings need to be conducted for newly recruited staff in MOFE, DoFSC and local level organizations. The Operational Guideline (OG) revised under the project has further been revised and treated as a rule to be implemented in SABIHAA model replication within DoFSC. Other extension materials such as DVD and resource books produced under the project have been utilized to some extent. Some equipment procured under the project such as vehicles, some computers, digital cameras and photocopiers are still utilized by C/Ps, however, some machineries and electronic equipment were damaged during the earthquake in August 2018, and others have been decrepit.

<Financial Aspect>

[8] The data on the number of staff in MOFE and DoFSC was not available.

[9] The number of staff in other local government organizations is also unknown.

The amount of budget allocated by MOFE for SABIHAA model replication in project-targeted and non-targeted districts was approximately 70 million Nepalese Rupees in 2015, approximately 80 million Nepalese Rupees in 2016 and approximately 90 million Nepalese Rupees in 2017, which has not been sufficient, particularly under the increasing demand for soil conservation activities. The annual budget amount allocated to each ward has been approximately 100,000 Nepalese Rupees only, which has not been sufficient to cover SABIHAA activities locally and has required higher cost bearing among community people. Nonetheless, certain amount of budget has been and will be continuously allocated for SABIHAA model replication.

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved the Project Purpose and the Overall Goal: many WCCs received financial support from local institutions in implementing CRMP defined sub-projects, joint monitoring/evaluation were implemented by DSCO and DDC in all target districts, and SABIHAA model was adopted in Soil Conservation and Watershed Management Programme. For the sustainability, some problems were found in terms of staff reallocation for field support, comprehensive and periodic trainings for newly recruited staff and budget scale.. 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

Lessons Learned for JICA:

- SABIHAA model is one of the successful models in Nepal and it is because C/Ps led all the process of SABIHAA activities including planning, implementing and monitoring as well as hiring local motivators and coordinating with stakeholders including DDCs and VDCs, while the consultant team worked as facilitators to implement the project. This system strengthened the ownership of the project by government institutions, which should be adopted in future projects for successful project implementation.

Gully control to protect motorable road at Dhital, Kaski district

Water pond conservation at Paralmi, Gulmi district

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Pakistan Office: December, 2018

Country Name	**The District Health Information System Project for Evidence-based Decision Making and Management**
Islamic Republic of Pakistan	

I. Project Outline

Background	Pakistan's Health Management Information System (HMIS) was developed by USAID in 1992. However, there were emerging requirements for the HMIS to make it compatible with the information needs from the provincial and district levels, particularly in the context of health systems devolution from the central government to the local government in 2001. Under this situation, the District Health Information System (DHIS) was developed as a product of the JICA-supported "Development Study on Improvement of Management Information Systems in Health Sector" (2004-2007). National Health Information Resource Center (NHIRC), the national authority on the information system, formulated a plan for nation-wide scale-up of the DHIS, which was not kept in a proper use mainly due to the prolonged mixing of the HMIS and DHIS at primary and secondary medical facilities.		
Objectives of the Project	Through the installation of DHIS software and training on the DHIS such as data collection, data input and data use, the project aimed at evidence-based routine operation and budget planning with the use of the DHIS in the project districts, thereby developing evidence-based policy and strategies for health services with the use of the DHIS nationwide in Pakistan. 1. Overall Goal: Policy and strategies for health services are developed in an evidence-based manner, through sustainable DHIS, nationwide in Pakistan. 2. Project Purpose: Routine operation and budget planning are practiced in an evidence-based manner, through newly introduced DHIS, at the selected districts in Pakistan.		
Activities of the Project	1. Project Site: Islamabad and 100 districts in Punjab, Sindh, Khyber Pakhtunkhwa, Balochistan, etc.[1] 2. Main Activities: Installation of DHIS software; training on DHIS such as data collection, data input, and data use; operation of DHIS at Provincial Health Departments (PHDs) and District Health Offices (DHOs) in the project distircts; and monitoring activities by the Japanese experts. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 9 persons 2) Operation cost (including the cost for installation and maintenance of DHIS software and training cost) Pakistan Side 1) Staff allocated: 3 persons at the federal level; 26 persons at the provincial level 2) Office space for Japanese experts 3) Local cost (including training cost and cost for replacing HMIS report forms with DHIS report forms at health facilities)		
Project Period	July 2009 – July 2012	Project Cost	(ex-ante) 320 million yen, (actual) 306 million yen
Implementing Agency	National Health Information Resource Center (NHIRC), Ministry of Health (MOH) (up to June 2011) National Institute of Health (NIH) (after July 2011)		
Cooperation Agency in Japan	System Science Consultants Inc.		

II. Result of the Evaluation

<Constraints on Evaluation>

In this ex-post evaluation, we included the four provinces (Punjab, Sindh, Khyber Pakhtunkhwa, and Balochistan) and the federal government because of the following reasons: 1) the number of the target districts among thesse 4 provinces covers 85% of all the target districts, and 2) these are low risk security areas. Further, not much information was provided from Khyber Pakhtunkhwa and Balochistan where we could not visit and thus relied on the questionnaire only.

< Special Perspectives Considered in the Ex-Post Evaluation >

The logical framework of this project does not mention the target year for the Overall Goal. Based on the Ex-Ante Evaluation Sheet that planned ex-post evaluation in around July 2015, three years after project completion, we regarded 2015 as the target year.

1 Relevance

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

"National Health Policy" (2001) holds strengthening of capacity of district-level health administration in such key areas as "to remove professional and managerial deficiencies in district health system". "Generate reliable health information to manage and evaluate health services" is included in Six Policy Objectives of "National Health Policy" of 2009 (Final Draft, July 2009). For this purpose, NHIRC was envisioned. Due to the devolution of MOH in June 2011, NHIRC was integrated into NIH. Accordingly, the implementation and scaling up DHIS were to be continued in each province based on provincial health strategy.

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

There was a need for the DHIS at the time of ex-ante evaluation as mentioned in "Background" above. At the time of project completion, PHDs and DHOs needed to use the DHIS to decide and manage public health matters based on the DHIS data as confirmed by the terminal evaluation team for this project.

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

"Program for the Improvement of Regional Community Health" in "Ensuring Human Security and Human Development" was one of the priorities of Japan's Country Assistance Program for Pakistan (2005).

<Evaluation Result>

[1] The total number of districts (including non-target districts) in the target provinces was 134 as of June 2012.

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 the indicators achieved the target: 87% of the target DHOs in all target provinces were using the DHIS introduced under this project for budget planning (Indicator 1) and routine operation (resource allocation) (Indicator 2) for district-level health services.

<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 four target provinces that we surveyed, all of the target districts continue to use the DHIS as far as the collection of information (such as disease data) is concerned. However, regarding the usage for routine operations and budget planning, the usage is limited. According to the Ministry of National Health Services Regulation and Coordination (MoNHSRC) of the federal government[2], the DHIS data is used at the health facility level for resource allocation, i.e., requests for medicines to its respective district and human resource posting. On the other hand, information provided by the DHIS offices (DHIS Cells) of the target provinces are mixed: in the two provinces we visited, districts use the DHIS data for routine operation/resource allocation (procurement of medicine) and budget planning (through district action plans), while one of the other two provinces said districts do not practice planning based on the DHIS (the reason is not provided), and the other one did not provide information.

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

The Overall Goal was partially achieved in the target year (2015) and the situation remains the same at the time of ex-post evaluation. The roles of the federal government and provincial governments have changed. Provinces are leading the DHIS, and the federal government is in a supporting role. According to MoNHSRC, the DHIS is implemented in all provinces based on the priority of the federal government on health information systems (see "Sustainability" below), and the federal government receives the DHIS data from all the provinces for the purpose of analysis and planning at their end. However, it is difficult to single out any policy and strategies made based on the DHIS exclusively, since data is used collectively from all the information systems data. In addition, MoNHSRC commented that the quality of data collected through the DHIS should be improved to provide reliable data for sound policy making.

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

No negative impacts and other positive impacts of the project have been confirmed.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td rowspan="2">(Project Purpose)
Routine operation and budget planning are practiced in an evidence-based manner, through newly introduced DHIS, at the selected districts in Pakistan.</td><td>Indicator 1: At least one item of health services budget planning at district level is supported, underpinned and justified by the DHIS in the relevant PHD and DHOs (=100%)</td><td>Status of the Achievement: mostly achieved (partially continued)
(Project Completion)
87%. DHOs in 87 out of 100 target districts were practicing routine operation (resource allocation) and budget planning based on the analysis of DHIS data collected for more than three consecutive months. Replacement of the DHIS monthly report form by the one developed under the project was delayed in the rest of the target districts.
(Ex-post Evaluation)</td></tr>
<tr><td>Indicator 2: At least one item of health services routine operation (resource allocation) at district level is supported, underpinned and justified by the DHIS in the relevant PHD and DHOs (=100%)</td><td>
<table>
<tr><th></th><th>Indicator 1: Use for budget planning</th><th>Indicator 2: Use for routine operation (resource allocation)</th></tr>
<tr><td>Punjab</td><td>n/a</td><td>Yes for all districts</td></tr>
<tr><td>Sindh</td><td>Yes for all districts (district action plans)</td><td>Yes for all districts (e.g., procurement of medicine)</td></tr>
<tr><td>Khyber Pakhtunkhwa</td><td>n/a</td><td>n/a</td></tr>
<tr><td>Balochistan</td><td>No</td><td>No</td></tr>
</table>
</td></tr>
<tr><td>(Overall Goal)
Policy and strategies for health services are developed in an evidence-based manner, through sustainable DHIS, nationwide in Pakistan.</td><td>Indicator: At least one item of the national health strategy/policy at the federal level is supported, underpinned and justified by the DHIS.</td><td>(Ex-post Evaluation) partially achieved
All the health information systems parallel running in the country (including the DHIS) sends their data to MoNHSRC. The data is compiled at the MoNHSRC. After compiling the data, the federal government uses the data for different purposes such as for analysis purposes and using it for making plans and policies (though the usage for planning and policies is limited). However, data from all the information systems are used collectively; therefore, it may not be possible to name any policy or plan that used the DHIS exclusively.</td></tr>
</table>

Source: Project Completion Report; questionnaire/interview to MoNHSRC; questionnaire to Provincial DHIS offices in the four target provinces; interviews to Provincial DHIS offices in Punjab and Sindh.

Number of districts operating DHIS

Province	Total No. of districts at project completion (No. at present in parentheses)	Total No. of project districts	No. of project districts operating DHIS at project completion	No. of districts operating DHIS at present
Punjab	36 (36)	36	36	All 36 districts
Sindh	23 (increased to 29)	11	11	All 29 districts
KPK	25 (25)	24	24	All 25 districts
Balochistan	30 (increased to 32)	14	14	14 project districts
Total	114 (increased to 122)	85	85	104 districts

Source: Project Completion Report; Provincial DHIS offices; Pakistan Bureau of Statistics

3 Efficiency

[2] In June 2011, MOH was dissolved as the healthcare service was transferred to provinces, and MoNHSRC was formed as a ministry responsible for national public health.

Both the project cost (Japanese side) and the project period were within the plan (the ratio against the plan: 96% and 100%, respectively). Regarding the Outputs, the number of target districts was reduced from all districts (i.e., entire nation as all provinces in the nation were targeted) to 100 districts as some districts had not secured sufficient budget for the project activities. Judging based on the project cost borne by the Japanese side, the efficiency of the project is high[3].

4 Sustainability

<Policy Aspect>

All provinces have the provincial health policy which outlines the priorities of the health sector in the specific province[4]. Similarly, the health policy document is also prepared at the federal level though the implementation is the domain of the provinces. These health policies emphasize the importance of the health information systems, and the government envisages revamping the DHIS.

<Institutional Aspect>

At the federal level, NHIRC / the Health Planning, System Strengthening & Information Analysis Unit (HPSIU) of MoNHSRC is responsible for all the health information systems working in the country including the DHIS. All the allocated seats for the NHIRC/HPSIU are vacant. The staff working currently in NHIRC/HPSIU is the staff hired by MoNHSRC, not for NHIRC/HPSIU (currently two persons are working in this section), which makes it difficult to disseminate and use the DHIS.

In each province, DHIS Cells of provincial and district governments, respectively, are operating for implementing the DHIS. The available information on the number of staff at DHIS Cells is fragmentary (e.g., three persons are allocated to the provincial level and two persons to the district level in both Punjab and Sindh), but many seats are vacant (e.g., 16 positions are not filled at the provincial DHIS Cell Punjab due to the ban imposed on the recruitment).

<Technical Aspect>

At the federal level, the staff mentioned above has skills to use the DHIS data along with other information system data. At the provincial/district levels, the technical level is enough to operate the DHIS. According to provincial DHIS Cells, provinces and districts can install the DHIS software and do the basic maintenance but may not have enough technical skills to design or modify the system if required. It seems that DHIS Cell staff have general skills to utilize the DHIS data for health administration since the data is utilized to analyze and report (at the provincial level) and for day to day management (at the district level). Master trainers are available at the district level, but the refresher courses are required to be provided to uplift the technical level to design or modify the system if required.

<Financial Aspect>

At the federal level, no specific budget for the DHIS is secured as there is no real activity going on (training is provided only when external support is available). At the provincial level, the available budget is mostly for salaries of the staff and can only support the basic activity to operate the DHIS. The budget is not enough for any new ideas or improvement in the system. At the district level, the budget is provided from the provincial budget. Information on a separate budget for the districts is not available.

Budget for Provincial DHIS Cell (unit: million rupees)

	2015	2016	2017
Punjab	24	45	22
Sindh	n/a	n/a	n/a
Khyber Pakhtunkhwa	63.5	50	31
Balochistan	5	15	15

Source: Provincial DHIS Cell

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved the Project Purpose of having the DHIS used for health service routine operation and budget planning in the 100 target districts. The effects of the project partially continued after project completion as the DHIS is used but often for information collection only, and the Overall Goal of having the DHIS used nationwide was partially achieved as the role of the federal government in the DHIS diminished after the devolution in 2011. As for the sustainability, some problems were found on the policy, institutional, technical and financial aspects mainly due to understaffing and lack of budget, while basic conditions for implementing the DHIS (i.e., responsible organizations with some human resources with basic skills and minimum budget allocation) are to some extent in place in the target provinces. Considering all of the above points, this project is evaluated to be satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

The implementing organizations (PHD in each province) recommended the followings. The PHDs are responsible for securing the required budget to implement the recommendations, and they need to negotiate with their respective government for securing the budget.

1. The budget needs to be enhanced so that the DHIS Cells could put new ideas or improvement into practice. The current budget is only supporting the salary of the staff and enables only basic activity to operate the DHIS.
2. Refresher training should be provided to the master trainers at the district level to uplift the technical level to design or modify the system if required.
3. Appropriate number of staff should be allocated to the DHIS Program.
4. The capacity (in terms of utilization of DHIS) of the health manager (decision makers of the health departments at the provincial and district levels) needs to be enhanced for encouraging them to use the DHIS regularly for routine operations and budget planning.
5. The facilities for the DHIS should be kept in a good condition and updated to ensure real-time data collection and processing.

MoNHSRC is recommended to encourage provinces to roll out the DHIS at the tertiary level facilities to use the data more effectively.

Lessons Learned for JICA:

1. The Overall Goal of the project was compromised after the devolution of the health sector in 2011 since there was no organization

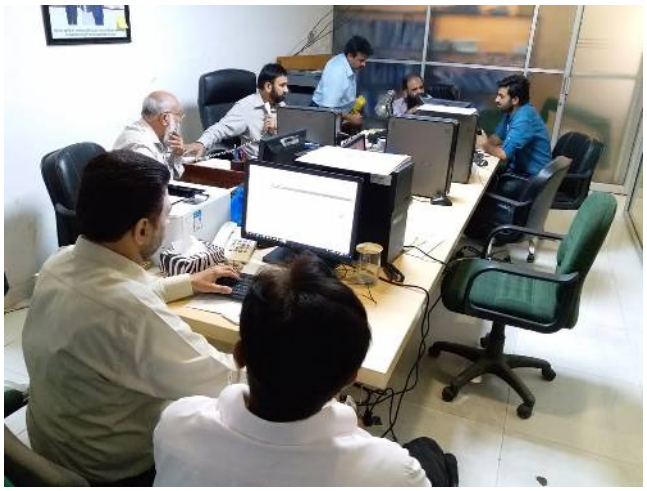
[3] According to the JICA's internal ex-post evaluation framework, efficiency of technical cooperation projects is evaluated based on the project cost borne by the Japanese side and the project period. Also, in evaluation of technical cooperation projects, verifying whether the changes of cost/period and the change of outputs (project scope) are proportionate or not is quite difficult. Therefore, simple comparison of the difference between the planned cost/period and the actual cost/period is applied in principle.

[4] Federal Level: "National Health Vision 2016-2025"; Khyber Pakhtunkhwa Province: "Health Sector Strategy 2010-2017", Sindh Province: "Sindh Health Sector Strategy 2012-2020", Punjab Province: "Health Sector Strategy 2012-2020"; Balochistan Province: "Health Sector Strategy (2013-2020)".

which could have been the focal point for implementing DHIS in whole Pakistan, therefore the unified usage of the DHIS was not as such achieved, but each province independently implemented the DHIS. This concern was acknowledged before the end of the project. Clarification of and consensus on responsible organizations after devolution should have been sought/developed with the Government of Pakistan to resolve this issue before the end of the project.

2. Issues at the government of Pakistan end such as allocation of budget, the appropriate number of staff for the DHIS, and training system after the devolution is completed should have been addressed at the project formulation stage by negotiating with the government of Pakistan side. The consensus developed through negotiation should be documented that may be referred in future. In case of this project, the project planning may have been too much focused on the system that existed at that time and lacked a longer-term perspective about such issues, which may have led to partial continuation of the project effects.

Interviewing the Provincial DHIS Focal Person



Provincial DHIS Monitoring Room

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Vanuatu Office: January, 2019

Country Name	The Project for Promotion of the Grace of the Sea in Coastal Villages (Phase 1 & 2)
The Republic of Vanuatu	

I. Project Outline

Background	Vanuatu is a small island country in the South Pacific with 80% of its population in rural areas or on remote islands. Most communities are scattered along coastal areas, and communities heavily depend on coastal resources such as fish and shellfish for their livelihoods including foods and income. However, in recent years, coastal resources have undergone a marked decrease because of overfishing, environmental degradation caused by development, and ecological changes under the global climate change. With this background, Phase 1 of the project was implemented in order to practice community-based coastal resource management (CBCRM) in the model sites. However, since CBCRM activities were not firmly established and limitedly implemented while aquaculture technologies for seed production and intermediate breeding of shellfish were established, Phase 2 of the project was implemented to establish an applicable model of sustainable CBCRM and to practice the model through enhancement of technical capacity of the Vanuatu Fisheries Department (VFD).		
Objectives of the Project	[Phase 1] Through transferring appropriate techniques of propagation and culture of the targeted coastal resource species to communities, the project aimed at practicing CBCRM at the model sites, thereby contributing to improvement of the livelihoods of communities in and around the model sites. [Phase 2] Through strengthening the capacity of VFD, the project aimed at practicing CBCRM in the target areas including remote islands, thereby contributing to enhancement of coastal environment conservation and sustainable utilization of coastal resources in and around the target areas.		
	[Phase 1] 1. Overall Goal: Livelihood of coastal communities are improved through CBCRM at the model sites and the resource propagation effect of the target species infects around the model sites. 2. Project Purpose: CBCRM is practiced at the model site in the target area. [Phase 2] 1. Overall Goal: 1) Conservation of coastal environment and sustainable utilization of coastal resources are enhanced in target areas. 2) CBCRM are promoted in other rural coastal areas. 2. Project Purpose: CBCRM is effectively practiced at target areas through adequate technical assistance from the Vanuatu Fisheries Department (VFD).		
Activities of the Project	[Phase 1] 1. Project Site: 3 target areas[1] (3 provinces of Shefa, Malampa, and Tafea) and 2 model sites[2] (Mangaliliu and Lelepa in Shefa Province) 2. Main Activities: 1) transfer of techniques of seed production and intermediate breeding of the target species, 2) promotion of extensive culture and propagation of the target species by the communities, 3) suggestion of livelihood improvement methods of communities. [Phase 2] 1. Project Site: 1) Mangaliliu, Lelepa, Moso in Efate Island, Shefa Province, 2) Uri, Uripiv, Amal-Crab Bay in Malakula Island, Malampa Province, 3) Analkauhat, Mystery Island in Aneityum Island, Tafea Province 2. Main Activities: 1) strengthening of capacity of VFD to support CBCRM, 2) acquisition of skills and knowledge of CBCRM by communities, 3) compilation of experiences and lessons learned from CBCRM activities. Inputs for Phase 1 and Phase 2 (to carry out above activities) Japanese Side 1) Experts: 2 persons (Phase 1), 7 persons (Phase 2) 2) Trainees received: 6 persons (Phase 1), none (Phase 2) 3) Equipment: vehicle, equipment for seed production, coastal resource survey and others (Phase 1), fish aggregating devices, portable GPSs, data loggers, electric charts and others (Phase 2) Vanuatuan Side 1) Staff allocated: 16 persons (Phase 1), 12 persons (Phase 2) 2) Land and facilities: office space, facilities for hatchery and nursery, equipment for seed production, coastal resource survey and others (Phase 1&2) 3) Local cost: field trip cost (fuel), cost for electricity, water, telephone, internet, and others (Phase 1&2)		
Project Period	[Phase 1] March 2006 - March 2009 [Phase 2] December 2011 - November 2014	Project Cost	[Phase 1] (ex-ante) 280 million yen, (actual) 274 million yen [Phase 2] (ex-ante) 220 million yen, (actual) 261 million yen

[1] Target areas were areas from which the project invited participants to training and workshops organized by the project in the model sites.

[2] Model sites were communities in which the project implemented its activities directly to formulate the model of CBCRM.

Implementing Agency	[Phase 1] Department of Fisheries (DF), Ministry of Agriculture, Quarantine, Forestry and Fisheries (MAQFF) [Phase 2] Vanuatu Fisheries Department (VFD[3]), Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity (MALFFB[3])
Cooperation Agency in Japan	[Phase 1] Fisheries Research Agency, Okinawa Prefectural Fisheries and Ocean Research Center [Phase 2] IC Net Limited

II. Result of the Evaluation

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

Phase 1 and Phase 2 of the project were evaluated in a unified manner in this ex-post evaluation in order to capture the outcome brought about by the project and its sustainability as a whole.

1 Relevance

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

The project was consistent with the development policy of Vanuatu. At the time of ex-ante evaluation of Phase 1, the "Priority and Action Agenda" (2003) prioritized the marine resources management by coastal communities for fisheries development. At the time of project completion of Phase 2, based on the Agenda, MALFFB formulated the ministerial "Corporate Plan" (2014-2018) and developed some specific plans for improving co-management of coastal and inshore resources with local communities.

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

The project was consistent with the development needs of Vanuatu for the coastal resource management. At the time of ex-ante evaluation of Phase 1, while the improvement and dissemination of CBCRM was highly required because communities had traditionally owned properties of coast sea areas and its resources to some extent, sufficient efforts have not been made by VFD due to personnel, technical and budgetary constraints. At the time of project completion of Phase 2, the CBCRM system developed by the project was highly evaluated not only in the country but also in the Pacific region, and expected to be disseminated to the entire country and to the Oceanian small island states such as Solomon Islands and Tonga.

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

Based on the "Okinawa Initiative" (2003) announced at the 3rd Pacific Islands Leaders Meeting (PALM3), the Japan's ODA policy for Vanuatu at the time of ex-ante evaluation of Phase 1 designated rural development as four priority areas including livelihood improvement in rural areas, support for infrastructure development, and strengthening the capacity of maintenance and management. At the time of ex-ante evaluation of Phase 2, under the prioritized areas of environment/climate change, it was targeted to promote adequate conservation and utilization of coastal resources through the cooperation of the government and communities[4].

<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 of Phase 1 was achieved by the time of project completion. Over 230 villagers participated in the workshops conducted by the project (Indicator 1), the resource management system developed by the project was applied to five target species including 3 species of giant clam, trochus and green snail (Indicator 2), and according to the observation by VFD, the communities in the model sites practiced periodical monitoring on the target species (Indicator 3).

The Project Purpose of Phase 2 was achieved by the time of project completion. The communities in the target areas started more than one management and supporting measures including the meetings for formulating and updating their CBCRM plans and the announcement of CBCRM regulations to community members (Indicator 1), and the self-evaluation of community members conducted in the pilot projects showed scores increased in seven out of eight assessment areas including community awareness, status of coastal resources, and economic stability of fishing households (Indicator 2).

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

The project effects have been continued after the completion of Phase 2 of the project. While not in the all target areas, but in some areas including Mangaliliu, Lelepa and Moso, broodstock restocking has been continuously conducted by VFD and resulted in the increase of the number of broodstocks of four target species except giant clam (T. gigas). As for community activities, out of seven communities involved in the project in the target areas, six communities continue their CBCRM activities in one form or another. In Mangaliliu, Lelepa and Moso, communities are practicing periodical monitoring on the growth of giant clam (T. gigas), and in Uri, Uripiv and Amal-Crab Bay, communities are conducting monitoring on resources on ad-hoc basis. According to the interviews with community members, they keep conducting community meetings and monitoring with the awareness on the necessity of resource management and compliance on regulations, and they are aware of the increase in coastal resources and their income as a result of these CBCRM activities. Knowing the recruitment[5] patterns of the target species identified by the project, communities in the target areas continue the reseeding and translocation by themselves with their own initiative. According to the community members, this has never happened before the project.

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

The Overall Goal of Phase 1 has been partially achieved at the time of ex-post evaluation. The volume of the target species has been increased according to the visual judgement of VFD and the Japanese experts (Indicator 1), the income of households in communities has increased along with the increase of coastal resources (Indicator 2). The number of broodstocks of the target species has been increasing except giant clam (T. gigas) (Indicator 3). Nevertheless, giant clam (T. gigas) transplanted by the project keep growing and its survival rate of 60% to 75% is notably high. The propagation techniques introduced by the project have not been applied to other species other than the target species of the project (Indicator 4)

The Overall Goal of the Phase 2 has been achieved at the time of ex-post evaluation. Amal-Crab Bay, one of the target areas of the project, has been authorized by the government as a Marine Protected Area (MPA) and the increase in the population of trochus, dugongs,

[3] DF and MAQFF have been renamed to VFD and MALFFB in 2013 with some institutional and functional changes while keeping their major responsibilities and mandates unchanged. The abbreviations of VFD and MALFFB are used in this report regardless of the phases.

[4] Source: Japan's ODA Databook (2005, p.964; 2011, p.981)

[5] Recruitment refers to a life history stage of a fish surviving to enter the fishery or to be caught.

turtles and others has been observed in and around MPAs (Indicator 1), and the CBCRM activities has been extended to other provinces through the activities of the project of the Secretariat of the Pacific Community (SPC) and Phase 3 of the project (Indicator 2).

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

There are some positive impacts confirmed at the time of ex-post evaluation. Some community chiefs involved in the project has designated some new taboo areas[6] and banned night diving on their own initiatives based on the knowledge they earned in the project. According to the interviews with community members, because the amount of coastal resources has been increased, not only the community members directly involved in the project but also other local people in and around the target areas of the project are enjoying the increase in income from coastal resources. The increased income has enabled them to afford to pay children's school expenses, household appliances, electric appliances and new fishing gears. More women become involved not only in family budget but also in village economy and resource management such as data collection through the women's participation in tourism activities such as seashell handicrafts and fish café[7]. No resettlement and land acquisition, and no other negative impact has been caused by the project.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td colspan="3">[Phase 1]</td></tr>
<tr><td rowspan="3">Project Purpose:
Community-based coastal resources management is practiced at the model site in the target area.</td><td>Indicator 1
150 villagers participate in workshop of resource management.</td><td>Status of the Achievement: achieved (continued)
(Project Completion)
239 villagers in total participated in various workshops on resource management.
(Ex-post Evaluation)
Villagers participated in the workshops are involved in the community activities such as the community meetings and the monitoring of resources.</td></tr>
<tr><td>Indicator 2
Resource management system is applied for 5 species.</td><td>Status of the Achievement: achieved (partially continued)
(Project Completion)
Resource management system has been applied to 5 target species including 3 species of giant clam (T. gigas, T. squamosa and T. maxima), trochus and green snail.
(Ex-post Evaluation)
Broodstock restocking of 5 species has been continued and resulted in the increase in the number of individuals as shown below in the table for the Overall Goal. Seed production of trochus and green snail has been terminated because it was found to be less efficient than broodstock restocking.
Breeding of giant clam has been continued in the hatchery but terminated in 2015 due to the damage of facilities caused by Tropical Cyclone Pam.</td></tr>
<tr><td>Indicator 3
Periodical Monitoring.</td><td>Status of the Achievement: achieved (continued)
(Project Completion)
The project completed seed production of the two species except giant clam (T. gigas), trochus and green snail, and the communities in the model sites started weekly monitoring on those species in their respective reef with the assistance of VFD.
(Ex-post Evaluation)
Communities in Mangaliliu, Lelepa and Moso keep periodical monitoring of the growth of giant clam (T. gigas) with the leadership of communities' Resource Management Committees organized by the project. All other communities in the target areas continue their monitoring in one form or another.</td></tr>
<tr><td rowspan="3">Overall Goal:
Livelihood of coastal communities are improved through the community-based resources management at the model sites and the resource propagation effect of the target species infects around the model sites.</td><td>Indicator 1
Increasing the volume of the target species.</td><td>(Ex-post Evaluation) achieved
It was confirmed by the visual inspection done by VFD and the Japanese experts in Phase 3 of the project that the volume of the target species except giant clam (T. gigas) has been reproduced and increased. Giant clam (T. gigas) transplanted by the project[8] has been growing but not increased yet since it takes time to propagate themselves.</td></tr>
<tr><td>Indicator 2
The number of households whose livelihood have improved at the model sites.</td><td>(Ex-post Evaluation) achieved
According to the interviews with community members, their livelihoods have been improved through the increase of fisheries products selling to hotels and restaurants, establishing new market channels to urban areas, tourism business such as handicrafts sales, snorkeling and fish café.</td></tr>
<tr><td>Indicator 3
The number of broodstock of the shellfish at the model sites.</td><td>(Ex-post Evaluation) achieved
The number of broodstock of shellfish at the model sites
(Unit: T. gigas: the number of individuals, others: the number of individuals in a hectare)
Mangaliliu
<table>
<tr><th>Year</th><th>2009</th><th>2013</th><th>2014</th><th>2017</th></tr>
<tr><td>Giant Clam (T. gigas)</td><td>33</td><td>26</td><td>NA</td><td>20</td></tr>
</table>
</td></tr>
</table>

[6] No-fishing areas designated by communities initiated mainly by the village chiefs.

[7] Restaurants for tourists run by fishermen's families managing catching, cooking and serving by family members.

[8] Giant clam (T. gigas) became extinct in Vanuatu, and the project has transplanted them from Tonga.

		Giant Clam (T. squamosa) 75/ha NA NA 125/ha Giant Clam (T. maxima) 100/ha NA 121.4/ha 141.2/ha 150/ha Trochus 75/ha NA 90.0/ha 22.5/ha 150/ha Green Snail < 5.0/ha < 5.0/ha NA NA 170/ha 130/ha Note 1: NA: no data available Note 2: The number in upper line indicates the number inside of taboo areas, in lower line indicates the number outside of taboo areas Lelepa Year 2009 2013 2014 2017 Giant Clam (T. gigas) 97 88 NA 73 Giant Clam (T. squamosa) 50/ha NA NA 100/ha Giant Clam (T. maxima) 125/ha NA NA 150/ha Trochus 75/ha NA NA 150/ha Green Snail < 5.0/ha NA NA 90.0/ha Source: Project Completion Report (2015), VFD Although the number of broodstock of giant clam (T. gigas) has been decreasing, its survival rate for 8 years is about 60% in Mangaliliu and 75% in Lelepa which are notably high.
	Indicator 4 The improvement of implementation capacity in the propagation of the new target species.	(Ex-post Evaluation) not achieved The propagation techniques introduced by the project have not been applied to any other new species due to VFD's insufficient technical capacity and resources.
[Phase 2]		
Project Purpose: CBCRM is effectively practiced at target areas through adequate technical assistance from the VFD.	Indicator 1 More than one management as well as supporting measure(s) are implemented by communities in accordance with the CBCRM plan at each target area.	Status of the Achievement: achieved (continued) (Project Completion) The communities in the target areas have started a variety of CBCRM activities including voluntary meetings to formulate and update their CBCRM plans, and announced CBCRM regulations to the community members in these meetings. In Efate and Aneityum, the communities recognized the potential of off reef fishery and introduced Fish Aggregating Device (FAD)[9] developed by the project. (Ex-post Evaluation) Most of communities in the target areas are conducting monitoring of their coastal resources on ad-hoc basis, while some communities are conducting on regular basis. The project identified the recruitment patterns of the target species, and some communities in the target areas are continuing the reseeding and translocation of these species.
	Indicator 2 The results of CBCRM evaluation at each target area show increased scores gained in at least six out of eight assessment areas.	Status of the Achievement: achieved (continued) (Project Completion) Self-evaluation of CBCRM conducted by the members of Resource Management Committees and community group members involved in the pilot project showed increased scores in seven areas in 1) community awareness, 2) management plan, 3) compliance and enforcement of CBCRM regulations, 4) monitoring and evaluation of CBCRM activities, 5) status of coastal resources, 6) impact of fishing activities on the resources, and 7) economic stability of the households. (Ex-post Evaluation) Community members keep conducting some CBCRM activities such as community meetings and monitoring on resources.
Overall Goal: 1) Conservation of coastal environment and sustainable utilization of coastal resources are enhanced in target areas. 2) CBCRM are promoted in other rural coastal	Indicator 1 More than one environmental and/or resource indicators showed positive changes.	(Ex-post Evaluation) achieved Amal-Crab Bay has been authorized by the government as a Marine Protected Area (MPA), and Northwest Efate is currently preparing for applying for the authorization. The increase of the population of trochus, dugongs, turtles and others has been observed in and around MPAs.
	Indicator 2 CBCRM activities are extended to more than one province(s) outside of target areas.	(Ex-post Evaluation) achieved The "SPC/WORLDFISH Project" (2014-2017)[10] has been implemented in 3 provinces of Malampa, Tafea and Sanma applying the concept of the "Grace of the Sea" and some management tools developed by the project. Phase 3 of

[9] FAD has been introduced to disperse the fishing grounds to outer reef areas to compensate the limitations of the fishing grounds in inner reef areas.

[10] A project jointly conducted by the WorldFish and the Secretariat of the Pacific Community (SPC) to restore the breeding populations of sea cucumber to its productive level.

areas.		the project (2017-2021) is in progress in 3 provinces of Shefa, Tafea and Sanma.

Source: questionnaire to and interviews with VFD, Provincial Offices and community members in Lelepa, Mangaliliu, Malakula and Tanna.

3 Efficiency

[Phase 1] Both the project cost and the project period were within the plan (ratio against the plan: 98%, 100%). The outputs were produced as planned.

[Phase 2] Although the project period was within the plan, the project cost exceeded the plan (the ratio against the plan: 100%, 119%). The outputs were produced as planned.

Therefore, efficiency of the project was fair.

4 Sustainability

<Policy Aspect>

The latest government policies continuously emphasis the importance and necessity of co-management of coastal resources by the government and communies. The "Vanuatu National Fisheries Sector Policy" (2016-2031) annouced by MALFFB in 2017 placed the high priority on the need for fisheries management, advancing small-scale sustainable domestic fisheries, and aquaculture developments using local operations around its provinces.

<Institutional Aspect>

The organizational structure and responsibilities and mandates of VFD have been expanding coping with the expansion of its functions incorporating aquaculture, laboratory works, and others. Along with the expansion of functions, the number of VFD's staff has been increased during and after Phase 1, which is currently sufficient to carry out its core mandates. The organizational structure and functions of the Provincial Offices have also been expanding, though the number of staff has not been increased accordingly and has been insufficient for their increasing works. One officer in a Provincial Office is responsible for two to three islands in average, which are 15 to 20 km apart from each other. As for CBCRM, there is only one officer in charge in one Provincial Office, and he/she is responsible for CBCRM activities in the entire area of the Province. Retention rate of officers in VFD and the Provincial Offices has been very high. Only one out of eight officials in VFD involved in the project has left his position to be promoted, while the rest including ones in the Provincial Offices have been in their job positions during and after the project.

<Technical Aspect>

Technical and social management level of the staff of VFD and the Provincial Offices is high enough to continue the CBCRM activities introduced by the project. Project management techniques including the project site selection, project formulation, management planning, and problem analysis learned from the project are currently applied by the staff of VFD and the Provincial Offices to their projects. The fishery development officers (former extension officers) and community members keep applying techniques such as fishing methods, fish size limits, taboo areas management, watching on banned species including green snail and trochus. Besides a variety of training on CBCRM provided by Phase 3 of the project, the Secretariat of the Pacific Community (SPC) periodically conducts training programs on fishing methods and fishing technologies including the construction and deployment of Fish Aggregating Devices (FAD). Nearly 30 kinds of manuals, textbooks and guidelines prepared by the project, and they have been continuously utilized by the fishery development officers and community members, because the information introduced in those manuals are easy to understand and apply at site by community members.

<Financial Aspect>

Although the budget for VFD is on a rising trend (Table 1), the amount has been insufficient for its activities according to the questionnaires to and interviews with the staffs of VFD and the Provincial Offices. Large portion of the investment budget for fisheries development including CBCRM activities has been supported by the development partners such as JICA, SPC, the United Nations Development Programme (UNDP), the Asian Development Bank (ADB), and NGOs.

Table 1. Annual Budget for VFD

Unit: million vatu

Year	2012	2014	2015	2017	2018
Amount	92	111	151	147	159

Source: VFD

<Evaluation Result>

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

5 Summary of the Evaluation

Each of the Project Purpose of Phase 1 and Phase 2 was achieved at the respective time of project completion by formulating CBCRM methods in the model sites in Phase 1 and by verifying the effectiveness of the CBCRM methods in the target areas in Phase 2. The Overall Goals have been mostly achieved by increasing the volume of the coastal resources in and around the project target areas, and by contributing to the improvement of livelihoods of local people. As for sustainability, while VFD has improved its institutional and technical capacities for CBCRM, the Provincial Offices have been suffering from the manpower shortage. The budget for CBCRM activities has been insufficient and covered by the support from the development partners. As for efficiency, the project cost of Phase 2 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 tourism using giant clam shell has a potential to be an alternative income source for community members, which could be a compensation for the control and conservation of coastal resources. While the project has introduced some tools and ideas for tourism activities, the tourism promotion depends on the self-help endeavors of communities. Therefore, for encouraging their efforts, it is recommended for VFD to provide communities with any technical and financial assistance.
- Through Phase 1 and Phase 2, the project has developed a wide variety of combinations of CBCRM tools and their application methods. Therefore, it is recommended for VFD and the Provincial Offices to widen their application to other areas by adjusting them to local contexts through Phase 3 of the project.
- In order to firmly fix the co-management of coastal resources with communities, it is recommended for VFD and the Provincial Offices to follow-up and provide aftercare for the target areas of Phase 1 and Phase 2.

Lessons Learned for JICA:

- In this project, while quantitative indicators were set for the Overall Goal such as the increasing volume of the target species and the number of households whose livelihood have been improved, quantitative data have not necessarily been collected by the project. If an indicator is appropriate, the data should be collected; if an indicator is not appropriate, the indicator should be changed to be an appropriate one.
- The target of a coastal resource management project is the recovery and increase of coastal resources, which takes long time longer than the 3 to 5 years typical JICA's technical cooperation project. It took about 6 years to see the growth and increase in giant clams and green snails transplanted by Phase 1. Therefore, it is recommended to design a multi-phase project under a long term program considering the reproduction spiral of natural resources.

Fish café serving fish for protecting lobster
Mystery Island in Aneityum Island, Tafea Province

Transplanting of giant clam

conducted by Guatemala Office: May, 2018

Country Name	**Strengthening of Water Associations and Community Development Project**
Republic of Guatemala	

I. Project Outline

Background	In Guatemala, approximately 1,400 water supply facilities were constructed in the rural areas from 1999 to 2003, and most of them were operated with the gravity flow system which used surface water as its source. However, owing to deforestation and agricultural development, surface water was being reduced, especially in the dry season, and it became difficult to secure a stable water source to improve water supply in the rural area. In such situations, needs for water supply facilities with groundwater as a source were increased. The Executive Unit of the Rural Aqueduct Program of the Institute of Municipal Development (Instituto de Fomento Municipal, Unidad Ejectora del Programa de Acueducto Rural, INFOM-UNEPAR) constructed 14 groundwater supply facilities by 2007. The water associations/committees which operate groundwater supply facilities needed to acquire know-how on collection of water tariff, financial management, facility maintenance, and so on, and INFOM-UNEPAR needed to strengthen its support system for these water associations/committees.		
Objectives of the Project	Through establishment of the training system on administration, operation and maintenance (AO&M) of the groundwater supply facilities and facilitation/training/assistance for water associations/committees in the pilot sites, the project aimed at improving the capacity of the 3 Regional offices of INFOM-UNEPAR (Huehuetenango Office, Central Region Office and Quetzaltenango Office) for support of the water associations/committees, thereby contributing to strengthening of their capacity for AO&M of the groundwater supply facilities. 1. Overall Goal: Strengthen the capacity of rural water associations/committees to administrate, operate and maintain groundwater supply facilities with the support of INFOM-UNEPAR. 2. Project Purpose: Improve the capacity of the 3 Regional offices of INFOM-UNEPAR (Huehuetenango Office, Central Region Office and Quetzaltenango Office) in order to support the water associations/committees that are responsible for AO&M of the groundwater supply facilities. Note: 1) Due to the restructuring within INFOM-UNEPAR in 2016, the Central Regional Office was dismissed and the Central Office is in charge of the water committees which were under jurisdiction of the Central Regional Office. 2) The community organization in AO&M of the water supply facility is named “association” or “committee” depending on its status in each municipality. Since the two have same functions related to AO&M, both are conveniently described as “committee” in this report.		
Activities of the project	1. Project site: 5 departments located in the western highland part of Guatemala (Sololá, Totonicapán, Quetzaltenango, Chimaltenango and Huehuetenango) 2. Main activities: Preparation of the training program for Central and Regional offices of INFOM-UNEPAR and training materials and manuals, conduct of the training for Central and Regional offices of INFOM-UNEPAR, On the Job Training (OJT) for the water committees in pilot sites, development of cases from the pilot sites, etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts from Japan: 12 persons 2) Training in Japan and third country: 3 persons 3) Equipment: water quality test kits, GIS servers, GPS, PC, etc. 4) Operation cost for hiring local consultants, office rental, etc. Guatemalan Side 1) Staff allocated: 75 persons 2) Land and facilities: Office space, training room, vehicles, etc. 3) Operation cost for water and electricity, daily allowance and fuel for the counterpart personnel, etc.		
Project Period	March 2010 to June 2013	Project Cost	(ex-ante) 350 million yen, (actual) 352 million yen
Implementing Agency	Institute of Municipal Development (INFOM)		
Cooperation Agency in Japan	Kokusai Kogyo Co. Ltd., Japan Techno Co. Ltd.		

II. Result of the Evaluation

<Special perspectives considered at the ex-post evaluation>

- The Overall Goal is to strengthen the capacity of water committees in the rural areas. There were 92 water committees in rural areas in the country at the time of the terminal evaluation. However, as the list of the water committees has not been revised since the project completion, the exact number of the committees could not be confirmed at the ex-post evaluation. Due to the time and resource constraints at the ex-post evaluation, 12 pilot sites and one non-pilot sites were visited. Besides, some information could be collected from four more non-pilot committees via INFORM-UNEPAR.

1 Relevance
<Consistency with the Development Policy of Guatemala at the time of ex-ante evaluation and project completion> As access to water and operation and maintenance of water facilities are prioritized in “the National Plan of the Public Services of Drinking Water and Sanitation” (2008-2011) and “the Government Plan 2012-2016,” the project was relevant with the development

policies of Guatemala at the time of the ex-ante evaluation and project completion.

<Consistency with the Development Needs of Guatemala at the time of ex-ante evaluation and project completion >

Groundwater supply facility requires maintenance which is technically more advanced and expensive compared to conventional gravity water supply system, and there were needs for capacity development of the water committees on AO&M and also of INFOM-UNEPAR on how to support these water committees at the time of the ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

Based on the policy dialogue between the Government of Guatemala and ODA Task Force, one of the priority areas for assistance was confirmed as "rural development"[1]. Thus, the project was consistent with Japan's ODA policy at the time of the 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 partially achieved by the project completion. More staff of the Central and Regional offices were trained on support for the water committees than planned, but two thirds of them left the office before the project completion due to the administrative change (Indicator 1). With support of trained staff of INFOM-UNEPAR in the pilot sites, the period of out-of-service water facility was reduced (Indicator 2). Among the 14 pilot water committees, 11 committees developed its AO&M plan of the water supply facility but none of them did not update it (Indicator 3), because they did not keep data of saving funds and quantity of pumping water, and five committees could not collect necessary AO&M fund (Indicator 4) as some members were against the increase in the fees. The average rate of report submission from the pilot 14 committees was 41% against the planned 80% (Indicator 5), because some committees did not make reports. Another reason is that the staff of the Regional Offices did not have sufficient time or transportation to collect the reports.

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

The project effects have partially continued. In the project, 17 and 16 personnel of the Central and Regional Offices, respectively, were trained, and among them, two and four personnel have remained at the time of the ex-post evaluation. Besides, one personnel of the Regional Office of Huehuetenango were trained after the project completion. Because of the administrative change in 2016, many officials were replaced. Training of new staff on supporting water committees is not prioritized by the new authority of INFOM, and therefore, only one person was newly trained in the Regional Office of Huehuetenango. Among the 14 pilot water committees, 11 have its AO&M plan and nine committees have revised it. Those which have not revised the plan have operated the water supply facility without documents but only based on the experience. Successful examples of AO&M include a committee which purchased an IT equipment to read the meter and show the charge fee on the display (Pacorral of Chimaltenango). Another committee has a space in the municipality office for collecting fees and receiving requests or complaints from the users (Los Encuentros de Sololá). On the other hand, among the 12 visited pilot water committees, two did not provide water services for more than five months because they were not able to repair the broken facility due to the budget shortage[2]. While the water supply facility was broken, these water committees bought water from other communities or got water from facilities other than that of the project in the site. Including these water committees, four water committees have faced financial difficulties: high cost of repair and insufficient fee collection.

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

The Overall Goal has been partially achieved. The Central Office has sustained the list of water committees which use groundwater facilities developed during the project period. The list has been shared with the Regional Offices but not the municipalities due to lack of the responsible personnel. The list has not been revised since the project completion because of the manpower shortage (Indicator 1), but the Central Office plans to review the list by February 2018, according to INFOM-UNEPAR. INFOM-UNEPAR did not develop any official plan to diffuse the project experience to other sites after the project completion, and therefore, training on the AO&M methodology developed by the project has been limited. Training was given to only seven personnel of the Regional Offices of Zacapa, Cobán and Petén, where the methodology has been shared with in five non-pilot sites. In those sites, no suspension for more than 60 days in provision of ground water has been reported (Indicator 2). After the list is revised, INFOM-UNEPAR plans to conduct information sharing between the pilot committees and other committees and training on AO&M for the new committees. Regarding the fund management of the non-pilot water committees, no financial data was not collected from the surveyed five non-pilot committees. In the visited non-pilot committee, the accounting book could not be directly observed, though the interviewed members answered that the fund has been increasing (Indicator 3).

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

Women's participation and empowerment have been promoted through activities of water committees. Concretely, women did not used to participate in community projects, but since the committee was organized they have come to take important positions in the committee such as vice president, secretariat and treasurer in nine of the 12 visited committees. This is considered attributed to the fact that women's participation was a requirement of organizing the water committee in the project. According to the interviewed committee members, they have realized the importance of including women as they are frequent water service users.

<Evaluation Result>

In light of the above, the Project Purpose was partially achieved and the effects have partially continued. The Overall Goal has been partially achieved, but a positive impact related to empowerment of women was confirmed. Therefore, the effectiveness/impact of the project is fair.

Achievement of the Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Improve the capacity of the	1. All staff of the INFOM-UNEPAR central office and the 3 Regional	Status of achievement: Partially achieved~~.~~ (Partially continued). (Project Completion)

[1] Ministry of Foreign Affairs (2010) "ODA Databook 2009."

[2] In the two sites, it cost 12,000 QTQ and 130,000 GTQ for the repair, respectively, and both water committee paid it with support from the municipality.

3 Regional offices of INFOM-UNEPAR (Huehuetenango Office, Central Region Office and Quetzaltenango Office) in order to support the water associations/ committees that are responsible for administration, operation and maintenance of the groundwater supply facilities.	offices in charge of supporting the water associations/ committees will receive training by the end of the project (Baseline: 0 staff, target: 10 staff in UNEPAR central office and 12 staff in the Regional offices).	- 17 staff of the Central office and 16 of the 3 Regional offices received training. However, 6 and 5 staff, respectively, remained working as of May 2013, and no training was given to the new staff. (Ex-post Evaluation) - In the Central office, among 6 staff who were at the project completion, 2 have continued working. No new staff was trained. - In the Regional offices, among 5 staff who were at the project completion, 4 have continued working. One new staff was trained.
	2. Improve performance of personnel in identifying trouble, planning for repairs and repairing defects in water supply facilities; and consequently reduce the number of consecutive days which water supply facilities—at the 14 pilot sites—are out of service in the event of a breakdown by the end of the project (Baseline: 90days, target: less than 60 days).	Status of achievement: Achieved (Continued). (Project Completion) - The largest number of the consecutive days which water supply facilities were out of service in the event of a breakdown was 216 days. In the last six months before the project completion, the number was reduced to 5 days. (Ex-post Evaluation) - Among the 12 visited target sites, there have not been breakup of the water supply facilities for the last one year at 10 sites. However, in El Sitio, the facility has been out of service for more than 5 months as of July 2017. In Chacarita, the facility was out of service from January 2014 to February 2017.
	3. Water associations/ committees of the 14 pilot sites are to update the administration, operation and maintenance plans of groundwater supply facilities with the assistance of INFOM-UNEPAR Regional offices by the end of the project (Baseline: central office 0/7, Quetzaltenango 0/4, Huehuetenango 0/3, target: central office 7/7, Quetzaltenango 4/4, Huehuetenango 3/3).	Status of achievement: Not achieved (Partially continued). (Project Completion) - 11 out of the 14 pilot water committees developed the plan of AO&M of groundwater supply facilities (4/7 under the Central office, 3/3 under Huehuetenango, 4/4 under Quetzaltenango), but they did not update the plan. (Ex-post Evaluation) - Among the 14 pilot water committees, 12 have developed AO&M plans of groundwater supply facilities and 11 have updated it.
	4. Increase the fund of water associations/ committees of 14 pilot sites to desired amount in order to achieve financial sustainability of their services by the end of the project (Baseline & target: set for each).	Status of achievement: Not achieved (Partially continued). (Project Completion) - Comparing the planned figure and achievement in April 2013, the fund of water associations/committees reached the targeted figure in 5 among the 14 sites. (Ex-post Evaluation) - Among the 12 visited water committees, 7 answered at the ex-post evaluation that they have sustained the sufficient fund to conduct their activities.
	5. Water associations/ committees in 14 pilot sites submit the record of administration, operation and maintenance in the proper format and in a timely manner prepared by INFOM-UNEPAR to Regional offices (Baseline: 0%, target: 80%).	Status of achievement: Partially achieved (Partially continued). (Project Completion) - The average rate of submission of the record during the period from May 2012 to April 2013 was 41%. (Central office: 46%, Quetzaltenango: 23%, Huehuetenango: 54%). (Ex-post Evaluation) - Among the 14 pilot water committees, 10 have submitted the record to the Regional offices in the proper format more than every two months.
(Overall goal) Strengthen the capacity of rural water associations/ committees to administer, operate and maintain groundwater supply facilities with the support of INFOM-UNEPAR.	1. Make a list of water associations/ committees using groundwater supply facilities under the jurisdiction of INFOM-UNEPAR Regional offices; the list must be shared and updated by central and Regional offices of INFOM-UNEPAR and municipalities (Baseline: non-existent, target: share and update list every month).	Status of achievement: Partially achieved. (Ex-post Evaluation) - The Central Office has a list of the committees which have groundwater service, but it has not been updated. The list has been shared with Regional offices but not municipalities.
	2. Improve the operational status of rural groundwater supply facilities throughout the country that INFOM-UNEPAR supports (Reduce the days of water supply suspension in the event of a breakdown) (Baseline: 172 days, target: 60 days).	Status of achievement: Achieved. (Ex-post Evaluation) - In five non-pilot sites visited at the ex-post evaluation, not more than 60-day suspension of the groundwater service has been reported.
	3. Increase the fund with regard to activities of water associations/ committees. (Baseline: non-existent, target: NA).	Status of achievement: Not verified. (Ex-post Evaluation) - No financial data could be confirmed from the five surveyed non-pilot committees.

Source: Project Completion Report, water committees, INFOM-UNEPAR.

3 Efficiency

The project period was as planned, but the project cost slightly exceeded the plan (ratio against the plan: 100% and 101%, respectively). Therefore, the project efficiency is fair.

4 Sustainability

<Policy Aspect>

Water provision is prioritized in the national development plans: "K'atun 2032" (2014-2032) and "Rural Agenda" (2016-2020). The "National Water Policy and its Strategy" which is still effective at the time of the ex-post evaluation, one of the development strategies related to water and sanitation is described as improvement of capacity on AO&M of drinking water and sanitation services.

<Institutional Aspect>

AO&M Unit was created in INFOM-UNEPAR during the project period. However, it is positioned as only part of a program, not institutionalized unit. The number of the staff is 2, which is not sufficient, according to the unit coordinator. In the Regional Offices of Huehuetenango and Quetzaltenango, there are 2 and 2 staff, respectively (1 social promoter and 1 engineer). The staff number is less than the ones during the project period and they have to conduct duties other than UNEPAR, and therefore it is not sufficient to conduct training, monitoring and technical support for the water committers. The Regional Offices monitor works of the water committees once or twice a year, much less than before (every month). At the community level, the number of the water committee members vary among the visited 12 committees (7-12). Each has necessary positions such as president, secretary and treasurer and the number is sufficient for AO&M of the water facility, according to the interviewed members. In some committees, positions are rotated to promote users' participation and committee's transparency.

<Technical Aspect>

The staff of the Regional Offices of Huehuetenango and Quetzaltenango who are in charge of training have sufficient knowledge on training themes, as they have 5-10 year working experience in the groundwater field and also they receive technical support from the technician of the Central Office upon necessity. According to the manager of these offices, they have sufficient knowledge also for monitoring and repair of the water supply facilities. For expansion of the project experience, INFOM trained the staff of the Regional Offices of Zacapa, Cobán and Petén on the AO&M methodology developed by the project and has a plan to restart training for the staff of Petén, Verapaces, Zacapa and Quiché in 2017. Training materials developed by the project have been utilized. At the community level, the technicians of the Regional Offices judge that the water committee members have sufficient knowledge and skills for AO&M of the water supply facility, as very few facilities have been broken up due to inappropriate AO&M so far. The committee board members are changed every two years and when new members are selected, training is given to them.

<Financial Aspect>

The budget sources of INFOM-UNEPAR are allocation from the central government via the Ministry of Public Finance and the National Fund. Every year since 2013, 987 thousand GTQ have been disbursed at INFOM-UNEPAR. Regarding the Regional Offices, for example, at the Regional Office of Quetzaltenango, the budget has increased from 627,028 GTQ in 2013 to 830,638 GTQ in 2016, but the disbursement ratio has been on a decreasing trend, because the planned activities including training and monitoring were not implemented due to the manpower shortage. At the community level, seven of the 12 visited committees answered that they have sustained sufficient budgets to conduct their activities.

<Evaluation Result>

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

5 Summary of the Evaluation

Through the project activities, the Project Purpose was partially achieved and the effects have partially continued. Concretely, INFOM-UNEPAR improved its technical capacity for training and monitoring of the water committees. With support of the Regional Offices, some pilot water committees have improved AO&M of the water supply facilities. However, since the project completion, due to the personnel and budget shortage, functions of the target Regional Offices have been limited, water services have been suspended in two pilot sites. The project experience has been shared with other Regional Offices. Regarding the sustainability, both the Central and Regional Offices lack budget and personnel to sufficiently conduct activities for monitoring and training of the water committees. 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:

- It is recommended to the Regional Offices of Huehuetenango and Quetzaltenango to coordinate duties of the social promoter in order to secure more time for monitoring of the target sites. Good practice in AO&M of the water facilities are worthy of being shared with other water committees, such as experiences of the committees of Parracol and Los Encuentros (Clearly visible display of the meter with IT equipment, space in the municipality office for collecting fees and receiving requests or complaints from the users, etc.).
- Related to monitoring of the water associations, if the number of the personnel in charge is not sufficient, it is also recommended to the Regional Offices of Huehuetenango and Quetzaltenango to understand the situation of AO&M of water supply facilities by mobile phone and to make a visit to the site where a serious problem arises.

Lessons learned for JICA:

- The project aimed at improving capacity of the three Regional Offices of INFOM-UNEPAR for supporting water committees (Project Purpose), in order to strengthening capacity of water committees in the country for AO&M of the groundwater supply facilities (Overall Goal). However, INFOM-UNEPAR has not developed any diffusion plan to other regions and capacity building of the personnel has been limited, due to the two administrative changes and personnel turnover. In the countries where administrative changes can bring personnel changes, it is difficult to expect that the project experience would be extended by a new administration. In such countries, it is necessary to prepare a feasible diffusion plan during the project period.

Groundwater supply facility of San José Chicalquix of Quetzaltenango

Interview with water committee members of El Llano of Chimaltenango

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Mexico Office: February, 2019

Country Name	Project for Human Resource Development in the Technology of Plastic Transformation
United Mexican States	

I. Project Outline

Background	In Mexico, the number of companies in the field of plastic transformation amounted to approximately 3,500, most of which were classified as small and medium-sized enterprises (2005). These companies had difficulties in recruiting qualified workers because skilled labor forces, especially supervisors, were in short supply. The Technological Industrial and Service Studies Centers (CETIS) and the Technological Industrial and Service High School Centers (CBTIS), which were expected to provide potential supervisors in the industrial sector, had neither a specific course nor qualified instructors on the plastic injection molding technology. Under these circumstances, a request by the Government of Mexico was made to the Government of Japan to establish the plastic injection molding technology course at CETIS/CBTIS.		
Objectives of the Project	Through curriculum development of the training courses on the plastic injection molding technology, capacity building of instructors, training of teachers of the model centers, the project aimed at improving capacity of the National Actualization Center for Teachers (CNAD) for training instructors of the plastic injection molding technology of CETIS/CBTIS, thereby contributing to increase in the quality labor force for the plastic industry in Mexico.		
	1. Overall Goal: CETIS/CBTIS which set up the course of the plastic transformation technology will contribute to turn out the quality labor force to the plastic industry in Mexico. 2. Project Purpose: The capacity to train the instructors of the plastic injection molding technology in CETIS/CBTIS is improved at CNAD.		
Activities of the project	Project site: Mexico City, Ciudad Victoria (Tamaulipas) and Tijuana (Baja California) 1. Main activities: training of CNAD instructors on the plastic injection molding technology, development of the training curriculum, training of CETIS/CBTIS teachers on the plastic injection molding technology, revision of the curriculum of CETIS/CBTIS for the plastic molding course, etc. 2. Inputs (to carry out above activities) Japanese Side 1) Experts from Japan: 6 persons 2) Training in Japan: 9 persons 3) Equipment: training equipment, etc. 4) Local cost: Cost for hiring local persons, travel expenses, communication, etc. Mexican Side 1) Staff allocated: 15 persons 2) Land and facilities: Office space, etc.		
Project Period	October 2010 to October 2014	Project Cost	(ex-ante) 448 million yen, (actual) 518 million yen
Implementing Agency	General Direction of Technological and Industrial Education (DGETI), National Actualization Center for Teachers (CNAD)		
Cooperation Agency in Japan	Japan Development Service Co., Ltd.		

II. Result of the Evaluation

<Special perspectives considered at the ex-post evaluation>

[Verification of project effects at the time of ex-post evaluation]

- Three indicators were established to verify achievement and continuation of the Project Purpose at the ex-ante evaluation. To verify continuity of the project effects at the time of the ex-post evaluation, the Indicator 2 (course operation based on the needs of the industry sector) and the Indicator 3 (result of the final examination of the course participants) were used, while the Indicator 1 (capacity building of the instructors) was confirmed as part of the technical aspect of sustainability.

1 Relevance

<Consistency with the Development Policy of Mexico at the time of ex-ante evaluation and project completion>

One of the five pillars in the "National Development Plan 2007-2012" was competitive economy and employment creation, and in the "National Development Plan 2013-2018," it was expected that the education sector would be linked with science technology and industry sectors. Thus, the project was consistent with Mexico's development policies, at both the ex-ante evaluation and the project completion.

<Consistency with the Development Needs of Mexico at the time of ex-ante evaluation and project completion>

The quantity and quality of produced plastic parts were not sufficient to cover their consumption in the country, and most of the parts were inevitably dependent on imports. The number of plastic molding enterprises was increasing, and supply of skilled labor forces were needed. Thus, the project was consistent with Mexico' development needs as well.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

Bilateral agreements on technical cooperation were made after 1986, and one of the priority areas was industry promotion (strengthening of competitiveness of small and medium-sized enterprises (SMEs) and supporting industries) at the time of the ex-ante evaluation[1].

<Evaluation Result>

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

2 Effectiveness/Impact

[1] Ministry of Foreign Affairs (2011). "ODA Databook 2010."

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

The Project Purpose was achieved. At CNAD, nine instructors acquired equivalent skills to the second grade of plastic injection molding technical certificate in Japan (Indicator 1), and three passed even the first grade-equivalent test. CNAD strengthened its capacity for management of the course on the plastic injection molding technology (Indicator 2); it conducted courses based on the developed curriculum which consisted of five modules, and course evaluation was feedback for the next courses. And, CNAD trained 20 teachers of the model CETIS/CBTIS (Indicator 3).

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

The project effects have continued. CNAD revised the curriculum in 2017, adding thermoforming and rot molding in the Module IV, and it has continued courses. Since 2015, a total of 85 teachers of the model CETIS/CBTIS have completed the courses. Among the three CETIS/CBTIS, all of the teacher who completed were trained at CNAD during the project period have continued working as teachers at two CETIS/CBTIS (6 teachers at each school). At one CBTIS, two out of the six trained teachers have continued teaching, while others have got managerial responsibilities, but two have been newly trained at CNAD. At two CETIS/CBTIS, they have sustained in-company training in collaboration with private enterprises. At one CBTIS, there has been no in-company training, since there is no such company in the city.

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

It is judged that the Overall Goal has been mostly achieved considering the following situations comprehensively. Less than 30% of graduates from the plastic transformation technology course has obtained Técnico with completion of in-company training (Indicator 1). However, this is because that since 2015, in-company training has not been compulsory requisite for student if they have more than 80% in their final examination. Another reason is that there are no plastic-related enterprises in the city where one of the three model CETIS/CBTIS (CBTIS 271) is located[2]. Graduates from CBTIS 271 have got employed in other cities. Less graduates from the plastic transformation technology course of the model CETIS/CBTIS got employed in the plastic industry than targeted (Indicator 3), because more graduates have preferred to proceed to the university and continued studies related to the plastic industry (Indicator 4) as they and their parents want to pursue a professional career. Thus, regardless careers after CETIS/CBTIS, all have chosen those related to the plastic industry. Regarding expansion of plastic transformation technology courses, one of the model CETIS/CBTIS have started two new courses, and six non-model CETIS have opened courses by learning the curriculum of the model CETIS/CBTIS, attributed to CNAD's efforts which trained 27 core instructors including teachers of the model CETIS/CBTIS who train other instructors and teachers on the plastic injection molding technology.

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

First, according to the teachers of the interviewed model CETIS/CBTIS, students have become more conscious about the environment by understanding plastics and practicing recycle and reuse of plastic bottles and other materials. Second, there have been more enrollment of female students, though there used to be mostly male students before the project. Female students who entered in the plastic transformation technology course shared the importance of the courses with students around themselves, since the topic is related to the environment and familiar to them. As a female student of the plastic transformation course of CBTIS 271 got a scholarship to study at a university in Guanajuato State, nowadays more female students consider that they can continue the study even in a different state, according to CBTIS 271. Third, CNAD has shared and extended the project experience by supporting SMEs in JICA "Project for Automotive Supply Chain Development" (2012-2015) and by providing technical advices for JICA "Project for Human Resource Development for the Automotive Industry in El Bajio of Mexico" (2015-2020).

<Evaluation Result>

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

Achievement of the Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) The capacity to train the instructors of the plastic injection molding technology in CETIS/CBTIS is improved at CNAD.	1. 9 instructors whose skill level is equivalent to Japanese second grade of plastic injection molding technical certificate are trained at CNAD.	Status of achievement: Achieved. (Project Completion) - Nine instructors passed the final evaluation test equivalent to the Japanese second grade of plastic injection molding technical certificate.
	2. The plastic injection molding technology course at CNAD is managed according to the needs of the plastic industry.	Status of achievement: Achieved (Continued). (Project Completion) - The curriculum with five modules was confirmed as relevant with needs of the industry sector by CVCC. Training courses were conducted based on the curriculum and each time evaluated for improvement of the next course. - Module I: Prepare materials for molding - Module II: Mold plastic by the extrusion process - Module III: Mold plastic by the injection process - Module IV: Mold plastic by the thermoset process - Module V: Prepare mold and dies for plastic transformation process (Ex-post Evaluation) - The curriculum was revised in 2017 and has been effective. The course has been evaluated each time for giving feedback to the next course. - Training courses on the molding technology for teachers of CETIS/CBTIS have been sustained.
	3. 18 teachers of the model CETIS/CBTIS are trained and pass the final evaluation at	Status of achievement: Achieved (Continued). (Project Completion) - A total of 20 teachers of the model CETIS/CBTIS completed the modules I, III

[2] Since there is a large industry of polymer in Tampico Port in Tamaulipas State, it had been expected that plastic transformation enterprises would be established. However, because of security issues, no enterprise has been established until August 2018.

<table>
<tr><td></td><td>CNAD.</td><td>and V and passed the final evaluation.
(Ex-post Evaluation)
- Out of 18 teachers of the model CETIS/CBTIS who took modules of the plastic injection molding technology course at CNAD during the project period, 14 have continued working as teachers as of May 2018. Four teachers have been newly trained at CNAD.</td></tr>
<tr><td rowspan="4">(Overall goal)
CETIS/CBTIS which set up the course of the plastic transformation technology will contribute to turn out the quality labor force to the plastic industry in Mexico.</td><td>1. 60% of the graduates from the plastic transformation technology course in CETIS/CBTIS obtain Técnico [3] with completion of in-company training.</td><td><u>Status of achievement: Unverified.</u>
(Ex-post Evaluation)
- There percentage of graduates from the plastic transformation technology course who obtained Técnico with completion of in-company training has not reached the target (60%). In-company training has not been compulsory.
<table><tr><td></td><td>2015</td><td>2016</td><td>2017</td></tr><tr><td>CBTIS 237</td><td>24%</td><td>26%</td><td>29%</td></tr><tr><td>CBTIS 271</td><td>0%</td><td>0%</td><td>0%</td></tr><tr><td>CETIS 06</td><td>14%</td><td>12%</td><td>10%</td></tr></table></td></tr>
<tr><td>2. At least 6 plastic transformation technology courses or classes in CETIS/CBTIS are increased.</td><td><u>Status of achievement: Achieved.</u>
(Ex-post Evaluation)
- Since 2015, a total of 8 classes on the plastic transformation technology has been newly started in 7 CETIS/CBTIS.</td></tr>
<tr><td>3. 25% of the graduates from the plastic transformation technology course in CETIS/CBTIS are employed in plastic industry.</td><td><u>Status of achievement: Not achieved.</u>
(Ex-post Evaluation)
- The percentage of graduates from the plastic transformation technology course who got employed in the plastic industry has not reached the target (25%).
<table><tr><td></td><td>2015</td><td>2016</td><td>2017</td></tr><tr><td>CBTIS 237</td><td>10%</td><td>10%</td><td>10%</td></tr><tr><td>CBTIS 271</td><td>5%</td><td>5%</td><td>5%</td></tr><tr><td>CETIS 06</td><td>10%</td><td>10%</td><td>10%</td></tr></table>Note: Official data were not available. Given data were based on the interview survey with graduates of each school on their desired career after graduation.</td></tr>
<tr><td>4. 50% of the students enrolling in university from the plastic transformation technology course in CETIS/CBTIS proceed to faculty/department of university related to plastic industry.</td><td><u>Status of achievement: Achieved.</u>
(Ex-post Evaluation)
- The percentage of graduates from the plastic transformation technology course who proceeded to the faculty/department of university related to the plastic industry has exceeded the target (50%).
<table><tr><td></td><td>2015</td><td>2016</td><td>2017</td></tr><tr><td>CBTIS 237</td><td>90%</td><td>90%</td><td>90%</td></tr><tr><td>CBTIS 271</td><td>95%</td><td>95%</td><td>95%</td></tr><tr><td>CETIS 06</td><td>90%</td><td>90%</td><td>90%</td></tr></table>Note: Official data were not available. Given data were based on the interview survey with each school.</td></tr>
</table>

Source: Project Completion Report and information provided by CETIS/CBTIS.

3 Efficiency

Although the project period was as planned (ratio against the plan: 100%), the project cost exceeded the plan (ratio against the plan: 116%). Outputs were produced as planned. Therefore, the project efficiency is fair.

4 Sustainability

<Policy Aspect>

Development of human resources for the plastic industry is prioritized in the "National development plan 2012-2018" and the "Educational Reform" (2013) which set quality education in which all courses are to be based on the country necessities and put emphasis on capacity development of teachers.

<Institutional Aspect>

CNAD has sustained its status as a national training institute in 40 different courses on mechatronics, mathematics, electronics, etcetera, with 18 permanent instructors including six who teach plastic injection molding technology courses. The Sectorial Coordination of Academic Development has been responsible for reviewing the curriculum. Since the project completion, CNAD has provided only one SME nearby with technical support. According to CNAD, the number of the instructors has been sufficient to manage plastic injection molding technology courses, although consultancy services for SMEs have been limited due to the personnel shortage. Development of the database for follow-up of graduates had been expected before the project completion. However, privacy protection has become stricter than that time due to the government policy, and therefore the database has not been established.

<Technical Aspect>

It has been judged that CNAD has sustained sufficient skills for training teachers on the plastic injection molding technology, as CNAD has taken responsibility for training teachers of 456 technical schools under DGETI and also 400 schools under another system, the National College of Professional and Technical Education. CONALEP has sustained the system of revision of the curriculum and evaluation of the instructors. When new instructors join CNAD, they are trained on instruction techniques.

<Financial Aspect>

Financial data of CNAD were not available at the ex-post evaluation. According to CNAD, same budgets have been allocated from DGETI since the project completion, and they have been sufficient at least for course operation. It is mentioned that more budgets would be allocated to CNAD in the new president's statement in 2018.

[3] Técnico is the degree which is obtained when completing the secondary level-technical education (professional technical bachelor)

<Evaluation Result>

Therefore, the sustainability of the effects is high.

5 Summary of the Evaluation

The Project Purpose was achieved and the effects have continued. CNAD strengthened its capacity of managing courses on the plastic injection molding technology, as it developed training modules, trained instructors and conducted course for model CETIS/CBTIS. Since the project completion, trained CETIS/CBTIS have sent most graduates to the related faculty/department of the university, which has been more favored than directly getting employed. Regarding sustainability, CNAD has sustained the organizations structure, techniques and budges for course management. 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

Recommendations for Implementing agency:

- It is recommended to CNAD to train more instructors for providing consultancy services for SMEs. Through the services, CNAD could understand latest needs of the industry sector and reflect the curriculum. Also, it could collect service fees.
- Instead of the database development, it is recommended to CNAD to conduct questionnaires for students when they graduate to ask which career they would pursue. Even though the data accuracy may not be high, it is not very difficult to understand the situation by getting answers electronically.

Lessons Learned:

- CNAD has extended the project experience with other JICA projects and other organizations, by sharing the training curriculum and techniques and by sending its instructors for providing technical advices. This has been realized mainly because JICA Mexico Office, based on the accumulated lessons from similar projects, facilitated communication among JICA projects and related organizations. In order to disseminate developed techniques and experiences of a project with another, JICA country offices should understand lessons from similar projects and share the lessons with ongoing JICA projects at the project formulation and implementation phases, so that they could contact other projects and related organizations for technical exchanges.

Students receiving the practical lesson on the plastic injection molding technology (CETIS 6, Mexico City)

Six teachers trained by CNAD instructors under the project (CBTIS 237, Tijuana)

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Ethiopia Office: October, 2018

Country Name	
Federal Democratic Republic of Ethiopia	**Project for Capacity Building in Irrigation Improvement**

I. Project Outline

Background	The Government of Ethiopia considered that low productivity of rain-fed agriculture and vulnerability of agricultural production against drought were the major reasons of food insecurity, and mentioned that irrigation development was one of the solutions. In Oromia Region, it was estimated that there existed more than 1.7 million ha of land suitable for irrigation development. However, in reality, only 23% of the suitable land was cultivated under modern irrigation technology (2005). From September 2005, JICA implemented a technical cooperation project, "the Project for Irrigation Farming Improvement" in Oromia Region with Oromia Water Resource Bureau (OWRB) as a counterpart organization. Through the project, there were achievements at on-farm level, however, it was figured out that irrigation development capacity of OWRB should have been enhanced for successful and effective irrigation development.		
Objectives of the Project	Through developing guidelines and manuals and implementing training on (1) formulating database and master plan on water resource development, (2) planning, design and construction management of irrigation development projects, and (3) irrigation facilities and water management, the project aimed at enhancing capacity of the Oromia Water, Mineral and Energy Bureau (OWMEB) for effective and efficient irrigation development and management and thereby contributing to increasing the number of irrigations functioning effectively and efficiently in Oromia Region.		
	1. Overall Goal: The number of irrigation planning functioning effectively and efficiently is increased in Oromia Region 2. Project Purpose: Capacity of OWMEB in effective and efficient irrigation development and management is enhanced		
Activities of the project	1. Project site: selected sites in food insecure woredas (districts) in West Harage, East Shewa, Arsi and West Arsi zones in Oromia Region 2. Main activities: (1) Formulating new database and master plan, developing guidelines and manuals and implementing training on water resource development, (2) Developing guidelines and manuals for planning, design and construction management and implementing training on irrigation development projects, and (3) Developing guidelines and manuals for irrigation facilities and water management and implementing training. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 23 persons 2) Trainees received (in Japan): 14 persons 3) Trainee received (in Egypt) 1 person 4) Equipment: vehicles, motor cycles, office equipment, equipment for irrigation work such as rain gauge, water level logger, concrete mixer etc. Ethiopian Side 1) Staff allocated: 31 persons 2) Provision of office space and car parking space 3) Local cost: Utility, training rooms for 2 training courses		
Project Period	June 2009 – May 2014 （Extension Period : May 2012- May 2014）	Project Cost	(ex-ante) 390 million yen, (actual) 562 million yen
Implementing Agency	Oromia Irrigation Development Authority (OIDA) (As per organizational restructuring, the implementing agency has changed from OWRB to OWMEB in October 2010 and to OIDA in July 2013.)		
Cooperation Agency in Japan	Ministry of Agriculture, Forestry and Fisheries		

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 Ethiopia's development policy. At the time of ex-ante evaluation, the Plan for Accelerated and Sustained Development to End Poverty (PASDEP)"(2006-2010), Ethiopia's five-year national development plan, mentioned that irrigation development is one of the solutions for the improvement of productivity. At the time of project completion, GTP (Growth and Transformation Plan) 2010/11 -2014/15 notes that agriculture is regarded as a major source of economic growth and improvement of water utilization and expansion of irrigation coverage will remain focus areas. <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 irrigation development, in particular, in Oromia Region, in order to stabilize agricultural production and to improve food security. 58 woredas among 133 woredas had a problem in food security. At the time of project completion, the land coverage under irrigation development was 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 Ethiopia, "the Country Assistance Program for Ethiopia" (2008) prioritizing agricultural/rural development including improvement of irrigation facilities.

<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 at the time of project completion as among the indicators set to measure the effects of the project, "Developed guidelines and manuals are recognized and disseminated within OWMEB" (Indicator 1) and "Developed training methods and experiences are recognized and utilized within OWMEB" (Indicator 3) were achieved, while "Irrigation development operations are implemented according to the developed guidelines and manuals by OWMEB" (Indicator 2) was not 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.

OIDA has been utilizing most of the guidelines and manuals developed by the project as minimum standard and continued providing the training programs for capacity building.

Although the implementation of irrigation development operation was not achieved by the end of the project period (indicator 2), this aspect has been achieved after the project completion, as the number of irrigation development operations implemented in accordance with the guidelines and the manual during the past three years showed an increasing trend across Oromia Region. As for "Planning, design and construction management on irrigation development", the number of irrigation projects that were designed, constructed and managed utilizing experiences of the project and guidelines in Oromia Region has increased. Moreover, it is confirmed that in almost all newly planned irrigation projects at OIDA office the guidelines and manuals developed by the project have been utilized in major parts of operation mainly during bidding process i.e. while preparing TOR for procurement of consultants and contractors for design and construction works.

The database development has faced some limitation: Much of collected and mapped information on water resources, scheme inventories and usage patterns (such as record of cultivated crop type, irrigated area land size, number of beneficiary farmers and others) annually remains incomplete, as the data has not been regularly updated and all the required detailed information the project envisaged has not been collected. Besides, there is considerable variation in data completeness and quality when compared with the initially developed format which has not been updated after project completion. Nonetheless, there is a plan to develop web based database management system by OIDA through support of a project called Small Scale Micro-Irrigation Support, a capacity building program supported by Government of Canada and Government of Netherlands, in which Oromia Region is one of the target regions. There is a progress on master plan development. Based on experience gained through the project as well as utilizing the manual prepared for this purpose, OIDA is developing "Irrigation Potential Water Resource Assessment" of seven river basins across the entire region.

The number of newly established Irrigation Water Users' Associations (IWUAs) and strengthened IWUA has showed an increasing trend in past three years. OIDA is implementing its operation in line with the manuals through establishing IWUA for handing over of every completed irrigation projects in order to ensure community ownership and sustainability of schemes.

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

The Overall Goal was achieved at the time of ex-post evaluation as the many irrigation development was implemented in accordance with the guidelines and manuals as described above. Besides, the number of irrigation sites in Oromia Region utilizing the project experiences showed increasing trend and functionality rate of those irrigation facilities is relatively high: According to the response from OIDA, the functionality rate of small scale irrigation schemes in Oromia Region during the past four years is 82%. Although such improvement in functionality rate at regional level can be due to the increasing regional government attention securing budget for development of small-scale irrigation in region. However, the project contributed to this improvement in functionality by addressing the necessity of "improvement of quality construction works", "improvement of skills and knowledge of woreda experts in scheme O&M", and "improvement in scheme administration and management by IWUA and others" through enhancing the capacity of OIDA staff at regional and zonal levels by developing training manuals in order to train woreda staff, who are the primary actors for supervision of quality construction works as well as O&M of irrigation schemes.

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

Although the project goal targeted only for Oromia Region, after the completion of the project the developed manuals and guidelines were distributed to other regions as well as to a national level. No land acquisition and resettlement occurred under this project, and no negative impacts on the natural environment were observed.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Capacity of OWMEB in effective and efficient irrigation development and management is enhanced	Indicator 1: Developed guidelines and manuals are recognized and disseminated within OWMEB.	Status of the Achievement: (Project Completion) achieved (Ex-post Evaluation) continued (Project Completion) 14 guidelines and manuals were prepared and disseminated in May, 2014 as the standards of the irrigation development in Oromia Region. (Ex-post Evaluation) The guidelines and manuals are available both in softcopy and print outs formats. Except one manual, all the rest guidelines and manuals have been still positioned and employed as minimum standards for irrigation development and management activities throughout the region. Manual of Runoff Analysis has not been used, as the application of models this manual were not well practiced. OIDA experts preferred to use other models which possess better computational efficiency.

	Indicator 2: Irrigation development operations are implemented according to the developed guidelines and manuals by OWMEB.	Status of the Achievement: (Project Completion) not achieved (Ex-post Evaluation) achieved (Project Completion) As the final versions of the guidelines and manuals were just distributed in all zones in May, 2014, they were not utilized in all irrigation related activities. (Ex-post Evaluation) **Number of irrigation development and operations implemented in accordance with the guidelines and manuals***

Component			2014	2015	2016	2017
Database development and master plan development on water resource development	Irrigation water resource potential assessment for both target and non-target zones (%)	Planned	NA	35	75	100
		Actual	5	35	75	87.4
Planning, design and construction management on irrigation development	Study and Design (n)	Target zones	15	25	39	48
		Non target zones	433	501	564	NA
	Construction of Small Scale Irrigation schemes (n)	Target zones	9	20	35	50
		Non target zones	499	525	550	541
Facility management and water management	Number newly established IWUAs (n)	Target zones	17	40	66	116
		Non target zones	5,183	7,618	9,631	9,942

*Note: Indicated figures in percentage (%) and number (n) are cumulative of each successive year

	Indicator 3: Developed training methods and experiences are recognized and utilized within OWMEB.	Status of the Achievement: (Project Completion) achieved (Ex-post Evaluation) continued (Project Completion) 32 training courses were conducted and 75 titles of training textbooks were prepared. More than 1,400 experts participated in the training, and utilized the training materials for their daily duties. (Ex-post Evaluation) **Number of training courses held**

Component	2014	2015	2016	2017
Database development and master plan development on water resource development	1	-	2	2
Planning, design and construction management on irrigation development	-	2	3	5
Facility management and water management	1	1	2	2

(Overall Goal) The number of irrigation planning functioning effectively and efficiently is increased in Oromia Region	Indicator 1: The number of irrigation sites in Oromia Region utilizing the Project experiences is increased.	(Ex-post Evaluation) achieved. - The number of irrigation sites in Oromia Region utilizing the project experiences in terms of constructed SSI schemes has increased by 16% in the past three years. According to OIDA, approximately 75,190 ha was developed by using the Small Scale Irrigation schemes by 2015.

Construction of Small Scale Irrigation schemes (n)*	2014	2015	2016	2017
	508	545	585	591

*Note: Number of constructed schemes in each year presents a cumulative of last year and additionally constructed schemes in the given year

- The functionality rate of Small Scale Irrigation schemes in Oromia region during the past four years is 82% as illustrated in the table below.

Status of irrigation sites' functionality	Number	Percentage
Functional	553	82%
Partially Functional	31	5%
Non Functional	91	13%
Total Constructed	675*	100%

*Note: Total Constructed number (675) indicates all constructed Small Scale Irrigation schemes in Oromia region not only by OIDA (utilizing the project experiences i.e.=591) but also through different organizations' projects i.e. NGOs in the region.

Source：JICA documents, Questionnaire and interviews with OIDA, the questionnaire survey with OIDA officials (n=20)

< Remarks >

The model irrigation schemes were constructed as a part of OJT, thus completion of construction of facility and its functionality are not included in the project scope. At the time of Ex-post Evaluation, among the five model irrigation schemes, 60% (three schemes) are either partially functional (n=2) or functional at full scale (n=1). The other two model schemes were not functional and have not operated for the

past one year. The major reasons for non-functionality of the other two model schemes are (1) The construction works is not completed at Awade spate irrigation scheme and (2) Siltation problem at Bura spate irrigation scheme stopped its service since last year. To solve the aforementioned problems, West Arsi zone in collaboration with OIDA has finalized the necessary preparation and bid advertisement made to undergo the remaining and corrective construction activities at Awade spate irrigation site.

The issues of the model irrigation schemes are attributed to a lack of clarification between the project and OIDA on necessary tasks to be done by OIDA after the project completion. There is also a technical problem that the guidelines developed by the project remain too general with weak focus on site-specific conditions, such as soil type, yet uniformly applied to all the model sites. Local contractor's technical level and capacity are also very low, which cannot be addressed by OIDA's effort only.

3 Efficiency

The project cost exceeded the plan (the ratio against the plan: 144%) and the project period significantly exceeded the plan (the ratio against the plan: 167%). The project period was extended for two years in order to complete the outputs. Activities were delayed because (1) Some equipment was stolen and consequently more time was needed to collect necessary data. (2) The number of Japanese experts were not sufficient to accomplish the activities. Therefore, the efficiency of the project is low.

4 Sustainability

<Policy Aspect>

The policy of promoting irrigation development in Ethiopia is consistent. Agriculture is regarded as a major source of economic growth and emphasis and priorities are given to 'improvement of water utilization and expansion of irrigation coverage' in both Growth and Transformation Plans of the country including Growth and Transformation (GTP-II) (2015/16-2019/20) and Ethiopia's Agricultural Sector Policy and Investment Framework (PIF) (2010-2020).

<Institutional Aspect>

OIDA, established as an independent institution on July 2013, has been mainly responsible for the works of study and design, contract administration, construction and supervision management, and irrigation scheme administration as well as community mobilization and stakeholder coordination tasks. OIDA has appropriate organizational structure and clear responsibility for the implementation of irrigation development and management activities at various levels. It is found that nearly 60% of the positions are occupied by the required number of staff (n=221 out of 367), while the remaining positions have still remained vacant. 60% of respondents (n=20) replied that the existing number of man power is sufficient to run irrigation developments and management activities compared to the actual volume of work. According to OIDA Human Resource Department this gap was due to absence of allocated budget for the fiscal year of 2017/18. However, they have started recruitment of staff to fill almost majority of the vacant positions in the fiscal year of 2018/19.

<Technical Aspect>

There are a few problems in the technical aspects. According to the results of the questionnaire survey for this ex-post evaluation, the adequate number of counterparts trained by the project is still working at OIDA and OIDA has sustained sufficient skills and knowledge in undertaking the required irrigation development activities. However, there is no established mechanism to regularly follow up the constant application and updating of guidelines and manuals where required and capacity of developing database and master plan is still limited. There is also a difficulty of documents management when officers transfer, as job handover is not commonly practiced at OIDA.

<Financial Aspect>

OIDA has secured the necessary financial resources as it is evident from the increase in the allocated budget in the last three years for irrigation development and management as shown below as well as from the results of the questionnaire survey for this ex-post evaluation.

Budget allocation for OIDA

(Unit: ETB)

	2014/15	2015/16	2016/17
Budget from Regional government	83,882,149.00	97,157,357.00	113,984,840.00
Other funding source: Agriculture Growth Program (AGP)	NA	282,119,486.00	132,815,909.00
Other funding source: International Fund for Agriculture Development (IFAD)	101,154,868.02	25,261,459.36	46,000,000.00

<Evaluation Result>

In light of the above, 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. The effects of the project have continued, as OIDA has continuously utilized the guidelines and manuals developed by the project and provided the training programs. The number of irrigation projects that were designed, constructed and managed utilizing experiences of the project and guidelines in Oromia Region has increased. As for the efficiency, both project cost and project period exceeded the plan. As for the sustainability, some problems have been observed in terms of the technical aspect.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- Although there is a practice to collect and map information on water resources, scheme inventories and usage patterns annually, much of this information remains incomplete and not easily accessible in same format as developed by the project. Therefore, it is recommended that by the time of annual planning for 2019, OIDA plans and organizes series of trainings on database development. In addition, it should also develop a regular updating system to monitor the updates and quality of data at least once in year.
- Although manuals and guidelines developed by the project has been utilized as minimum standard by respective offices at all levels, there is no established mechanism to regularly follow up their uniform application and updating where required. By the time of annual

planning time for 2019, OIDA is recommended to plan and implement a regular visit to make supportive supervision to zonal offices to ensure that the manuals and guidelines have been used at all level in a uniform manner.

- Bura Spate irrigation scheme stopped its service due to the siltation problem. OIDA is recommended to allocate the required budget and make necessary preparations works to conduct the remaining and corrective construction activities at Bura Irrigation scheme as soon as possible. Also, Awade Spate irrigation scheme, which is currently under the process of the bid advertisement for the remaining construction, needs to be completed as soon as possible. At Sogido&Saraweba irrigation scheme and Hirna irrigation scheme, which are partially functional, restoration and additional construction as well as removal of siltation should be conducted in a prompt manner.
- There is no common practice at OIDA to handover the jobs and documents from predecessor to successor. OIDA is recommended to fully enforce the smooth transition of technique and experience from predecessors to newly-employed staffs.

Lessons Learned to JICA

1. The guidelines and manuals developed by the project have been continuously utilized after the project completion. Respondents of interviews at OIDA reveal that the following interrelated factors for its success and that can be taken as lessons for others.

(1) Interactive and Participatory Approach: The project's approach during preparation of the manuals was very participatory and highly interactive as it organized a number of consultative workshops while developing each manual.

(2) Strong ownership: Due to the above-mentioned factors there is a strong ownership from the counterpart organization side, which resulted effective utilization of the guidelines and manuals.

Therefore, similar projects should (1) ensure active involvement of counterparts though organizing different consultative workshops both at the initial planning/design and implementation stages is important, (2) make sure, that before preparing manuals and guidelines, they assess actual situation, address existing problems based on the local context and needs of counterparts, plan and set the design/application standards in accordance with various site specific conditions. And thus, projects give due emphasis in creating strong ownership.

2. On the other hand, among five model irrigation schemes, two have stopped providing its intended services and the other two operates only partially. In technical point of view, this is due to uniform application of general guidelines to all the model schemes that have different cite-specific conditions. Also, a lack of clear demarcation of responsibility between the project and OIDA on construction of the model schemes caused delay of resuming the construction by OIDA after the project completion. Therefore, when constructing irrigation facilities as a part of OJT, similar projects should clearly define the scope of construction works within the project framework and present the demarcation of responsibility between counterparts and projects. If projects' input to construction of infrastructure remains partial during the implementation period, it is necessary to identify the post-project tasks to be done by counterparts so as to facilitate completion of whole facility.

Sogido Small Scale Irrigation main canal constructed by the project

Burra irrigation site (Non-Functional)

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Ghana Office: February, 2019

Country Name	**Sustainable Development of Rain-fed Lowland Rice Production Project**
Republic of Ghana	

I. Project Outline

Background	In Ghana, rice is the second staple cereal crop next to maize. The total rice consumption in 2003 was about 500,000 ton or annual consumption of 22kg per person. The rice consumption sharply increased especially in urban areas. On the other hand, because the domestic rice production had been sluggish, 60-70% of rice consumption in the country was covered by imported rice, which resulted outflows of foreign currencies equivalent to more than 200 million dollars in a year. Therefore, from the viewpoints of food security and foreign reserves, enhancement of production and distribution of domestic rice was an urgent issue. With this background, the Government of Ghana prepared a Master Plan of the "Promotion of Domestic Rice in the Republic of Ghana" (2008) under the technical cooperation by JICA. Based on the Master Plan, the Government of Ghana requested the Government of Japan to implement a technical cooperation project aiming at production expansion and quality improvement of domestic rice through introduction of appropriate technologies for rain-fed rice production in lowland, which also could make a significant poverty reduction impact on small-scale rice farmers who has been relying on unstable rain-fed farming.		
Objectives of the Project	Through developing a technical package of improved practices of rain-fed lowland rice production, verifying a methodology to improve farming support system, and establishing extension procedures for the technical package improved by the project, the project aimed at accelerating the dissemination of the "model for sustainable development of rain-fed lowland rice production" in the project areas, thereby contributing to increasing productivity and profitability of rice farming in rain-fed lowland in the target areas. 1. Overall Goal: Productivity and profitability of rice farming in rain-fed lowland in project areas is increased. 2. Project Purpose: Dissemination of the "model for sustainable development of rain-fed lowland rice production (Model)" is accelerated within the project areas.		
Activities of the Project	1. Project Site: 4 districts in Northern Region (Tamale Metro, Sagnarigu, East Gonja, West Mamprusi) and 5 districts in Ashanti Region (Adansi South, Ahafo Ano North, Atwima Mponua, Asante Akim North, Asante Akim Central). 2. Main Activities: 1) development of a technical package of improved practices of rain-fed lowland rice production, 2) verification of a methodology to improve farming support system for sustainable rain-fed lowland rice production, 3) establishment of extension procedures for the technical package improved by the project. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 21 persons 2) Trainees received: 40 persons 3) Trainees received in the third country (Burkina Faso and Uganda): 30 persons 4) Equipment: vehicles, motorcycles, PCs, equipment for post-harvest, office supplies, etc. Ghanaian Side 1) Staff allocated: 29 persons 2) Land and facilities: project offices 3) Local cost: cost for utility of offices (electricity, water and telephone) and operational cost.		
Project Period	July 2009 – December 2014 (Extension: July 2014 – December 2014)	Project Cost	(ex-ante) 500 million yen, (actual) 607 million yen
Implementing Agency	Directorate of Crop Services (DCS), Ministry of Food and Agriculture		
Cooperation Agency in Japan	None		

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

- Continuation status of effects and sustainability of the project are influenced to some degree by the second phase of the project, and it's a difficult challenge to extract the sheer results of this particular project. Therefore, the evaluation results below include somewhat of the influence of the second phase of the project.

1 Relevance

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

Since the "Ghana Poverty Reduction Strategy II (GPRS II)" (2006-2009) and the "Food and Agriculture Sector Development Policy II (FASDEP II)" (2007-2012) at the time of ex-ante evaluation and the "Medium Term Agriculture Sector Investment Plan (METASIP)" (2011-2015) at the time of project completion placed high priority on rice cultivation from the viewpoint of food security and poverty reduction of small-scale farmers, the project has been consistent with the development policies of Ghana.

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

The project has been consistent with the needs of Ghana at the time of ex-ante evaluation and project completion. More than half of the total population of Ghana was the rural population, and the majority of them were engaged in agriculture. Nearly 90% of farmers were small-scale farmers cultivating farm lands less than 2 hectares in size per household, and their productivity was low and unstable due to semi-extensive manner depending on rain-fed farming.

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

The project was consistent with the Japan's ODA policy for Ghana at the time of ex-ante evaluation. In the "Country Assistance Program for the Republic of Ghana" (September 2006), it was emphasized to support the reactivation of rural economy, particularly the improvement of income of smallholder farmers and increase of agricultural productivity by strengthening the production basis, capacity building and organization of farmers.

<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. More than 1,000 farmers applied techniques recommended by the Model established by the project (Indicator 1). In addition, both of the Northern and Ashanti Regions prepared their rice extension plans and submitted them to DCS (Indicator 2), and all the manuals were compiled as the Model and distributed to stakeholders including DCS, the Regional Agriculture Departments (RADs)[1], the District Agriculture Departments (DADs)[2], Agricultural Extension Agents (agricultural extension workers) and farmers in the project sites (Indicator 3) by the time of project completion.

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

The project effects have been continued. The number of farmers applying techniques recommended by the project has been at around 1,300 (Indicator 1). Techniques including seed selection, split fertilizer application and nursery preparation have been continuously applied. While some other techniques such as bund construction, planting in rows, drill sowing and Bambam box threshing were limitedly used by farmers due to slightly difficult designs for local farmers, labor shortage and limited access to agricultural machines, utilization of them has resumed through the refinement by the second phase of the project. All the manuals prepared by the project had been incorporated in the Extension Guidelines, and the Guidelines being fine-tuned by the second phase of the project[3] to be more suitable for local conditions. In the second phase of the project, 35 priority districts (15 in Northern Region and 20 in Ashanti Region) were selected for the implementation of their rice extension plans using the Extension Guidelines. Eleven districts respectively in each region have started implementation of their plans by the time of ex-post evaluation (Indicator 2). The Extension Guidelines are widely used in the project sites by the officials of RADs for the training of trainers, by the DADs and extension agents for their extension activities, and by farmers for their farming (Indicator 3).

<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 average unit yield of rain-fed farmers in the project sites has increased to about 2.8 ton/ha in the Northern Region and about 3.5 ton/ha in the Ashanti Region, which were over 80% of the target yields (Indicator 1). The average income of farmers in the project sites has increased from 1,930 cedis/ha in 2013 to 2,483 cedis/ha in 2017 in the Northern Region and from 4,329 cedis/ha in 2013 to 5,399 cedis/ha in 2017 in the Ashanti Region. According to the interviews with extension agents and farmers, the income of farmers who have adopted techniques recommended by the project was significantly higher than the farmers who have not adopted them (Indicator 2).

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

There are various positive impacts observed at the time of ex-post evaluation. The extension agents introduced the knowledge and skills they had learned from the project to the communities in non-project sites, and farmers in the project sites join the extension agents' activities by introducing techniques they learned and some devices they improvised. Through the training provided by the project, women's involvement in farming has been expanding from simple labor works of seeding and transplanting to decision makings on cropping schedule and investments for seeds and farm tools. According to the interviews with community members, the increased yield of rice has improved their households' food, and the increased income has enabled them to afford to pay children's school expenses and medical bills, to construct and/or renovate houses, to purchase household appliances, electric appliances, farm machines such as power tillers and threshers, and motorbikes and tricycles for carrying farm products. One of the farmers' groups purchased a tractor with the saving they made from a demonstration plot in the project. No resettlement and land acquisition, and no other negative impact have been caused by the project.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td>Project Purpose:
Dissemination of the "model for sustainable development of rain-fed lowland rice production (Model)" is accelerated within the project areas.</td><td>Indicator 1
More than 1,000 farmers apply the recommended techniques of the Model.</td><td>Status of the Achievement: achieved (continued)
(Project Completion)
The number of farmers applying the recommended techniques in the project areas
<table>
<tr><th>Year</th><th>2011</th><th>2012</th><th>2013</th></tr>
<tr><td>Northern</td><td>30</td><td>87</td><td>380</td></tr>
<tr><td>Ashanti</td><td>121</td><td>609</td><td>1,164</td></tr>
<tr><td>Total</td><td>151</td><td>696</td><td>1,544</td></tr>
</table>
(Ex-post Evaluation)
The number of farmers applying the recommended techniques in the project areas</td></tr>
</table>

[1] Former Regional Agriculture Development Units (RADUs).

[2] Former District Agriculture Development Units (DADUs).

[3] The second phase of the project "Sustainable Development of Rain-Fed Lowland Rice Production Project Phase 2" (2016-2021) is ongoing at the time of ex-post evaluation with the purpose of extending the recommended techniques of the Extension Guidelines formulated by the first phase of the project to 35 districts of Northern and Ashanti regions.

		Year / 2014 / 2015 / 2016 / 2017 Northern / 496 / 425 / 479 / 424 Ashanti / 805 / 837 / 874 / 885 Total / 1,301 / 1,262 / 1,353 / 1,309
	Indicator 2 Based on the rice extension plan in target districts, the rice extension plan of Northern and Ashanti region is produced and submitted to MOFA.	Status of the Achievement: achieved (continued) (Project Completion) Both regions produced and submitted their regional rice extension plans to DCS at the time of project completion. (Ex-post Evaluation) 35 priority districts were selected for implementation of their rice extension plans under the second phase of the project, and 11 districts in each region have started their implementations.
	Indicator 3 All the manuals of technical package, farming support system and extension is compiled as "Model" and made available to stakeholders.	Status of the Achievement: achieved (continued) (Project Completion) All the manuals were compiled as the Model and distributed to stakeholders. (Ex-post Evaluation) The Extension Guidelines incorporated all major components of the manuals have been revised by the second phase of the project and available in regions and districts in the project sites. The Guidelines are widely used by the officers in the RADs and DADs, extension agents and farmers.
Overall Goal: Productivity and profitability of rice farming in rain-fed lowland in project areas is increased.	Indicator 1 Average unit yield in rain-fed farmers in the areas who applying the recommended techniques of the "Model" is increased to more than 4.0 ton/ha in Ashanti and 3.0 ton/ha in Northern region.	Status of the Achievement: achieved (Ex-post Evaluation) Average unit yield of rain-fed rice production farmers who applying the recommended techniques in the project sites Unit: ton/ha Year / 2013 / 2014 / 2015 / 2016 / 2017 Northern / 2.9 / 2.8 / 2.5 / 3.3 / 2.6 Ashanti / 3.8 / 3.4 / 3.5 / 3.4 / 3.5 Source: Northern RAD, Ashanti RAD
	Indicator 2 Income from rain-fed lowland rice production is increased in the areas where the model of sustainable development of rain-fed lowland rice production is applied.	Status of the Achievement: achieved (Ex-post Evaluation) Average income of rain-fed rice production farmers in the project sites Unit: Ghana cedis/ha Year / 2013 / 2014 / 2015 / 2016 / 2017 Northern / 1,930 / 1,871 / 1,893 / 2,528 / 2,483 Ashanti / 4,329 / 4,416 / 4,809 / 4,826 / 5,399 Source: Northern RAD, Ashanti RAD

Source: Terminal Evaluation report, questionnaire survey and interview survey with the officials of DCS, the Northern RAD and the Ashanti RAD.

3 Efficiency

Both of the project cost and period exceeded the plan (ratio against the plan: 121% and 108%, respectively). The project period was extended for 5 months due to delay of the completion of the Extension Guidelines. The outputs were produced as planned. Therefore, efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

Under GPRS II and FASDEP II, the Government of Ghana prepared the "National Rice Development Strategy (NRDS)" (2009) targeting the doubling of rice production by 2018. The updated version of NRDS which shifted the target to achieving the self-sufficiency of rice by 2025 is in the process of approval by the Minister of Food and Agriculture at the time of the ex-post evaluation.

<Institutional Aspect>

The institutional setup of and responsibility assignment to DCS, RADs and DADs have not been significantly changed since the time of project completion. The number of staffs in charge of rice cultivation has been insufficient in both of the Northern and the Ashanti RADs. Out of five posts, two posts have been vacant in the Northern and Ashanti RADUs respectively. Vacant posts have been caused by transfers, retirements and study leaves. Staffing at district level has also been inadequate especially the number of extension agents due to financial constraints.

<Technical Aspect>

The technical level of the staffs of RADs has been maintained high through their day to day activities and the training provided by the government and development partners. One of the staffs in the Northern RAD has been assigned as a trainer of rice production training conducted by development partners such as the United States Agency for International Development (USAID). The district level staffs trained by the project, while some of them have been transferred or retired, continue to train farmers in the fields and other staffs including extension agents on the job and off the job training. As for training, a wide variety of training programs on rice cultivation, farm management, marketing, and others have been provided for the government officials and farmers by the government and development partners including JICA, USAID, the Global Affairs Canada, and others.

<Financial Aspect>

According to the questionnaires and interviews with DCS, RADs and DADs, the budget for agriculture extension activities, covering all the sub-sectors of crops, livestock, cocoa, fisheries, forestry/logging and others, has been insufficient but covered about half of the extension activities they expect to conduct. As external funds relating to the agricultural extension activities, while it is not more than sufficient, funding supports are currently provided by a number of development partners including JICA, USAID, the Food and Agriculture Organization (FAO), the Gesellschaft für Internationale Zusammenarbeit (GIZ), the World Bank, the African Development Bank, the Agence Française de Développement (AFD), and others. The Global Affairs Canada has commenced its funding support for agriculture extension across the country from the national to the local level planning from 2017 to 2021. In the phase 2 project, the cost for the

activities such as extension services is supposed to be borne by the counterpart. The project makes efforts to strengthen the capacity of budget acquisition, including planning, negotiation, implementation and monitoring, etc.

<Evaluation Result>

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

5 Summary of the Evaluation

The Project Purpose and the Overall Goal have been achieved by the time of ex-post evaluation. As for sustainability, the number of staffs and the budget at both of regions and district levels have been in short. The funding supports from development partners are expected to be secured for a certain span of years, while the amount is still insufficient to cover the deficiency of the national budget. Technical level of the staff involved was improved and has been sustained through the continuous assistance of development partners including the second phase of the project by JICA. 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:

1. Extension activities of the rain-fed lowland rice production techniques developed by the project are expected to be continued at the initiative of DCS even after the completion of the second phase of the project. Therefore, it is recommended for DCS to keep trying to get further public and external funds by preparing well elaborated, realistic, and feasible extension plans and appealing them to the local government and development partners.
2. It is recommended for DADs to encourage and assist farmers to organize farmers' groups to make it easier for them to access to machinery services and for services providers to reduce the transaction costs. The farmers' groups can also be encouraged to save their profits to acquire machines for themselves and to rent out to other farmers.

Lessons Learned for JICA:

1. Farmers' adequate application of agricultural technologies introduced by outsiders tends to be gradually degraded as time goes by. Inadequate application will lead to poor results and unduly devalue the reliabilities of technologies. Therefore, it is highly recommended for an agriculture project which introduces new technologies to farmers to materialize a regular monitoring by officials such as extension agents to follow up the farmers' usage of technologies introduced.
2. Seeing high productivity of the demonstration plots of the project, not a few farmers nearby adopted the technical packages introduced by the project by inquiring to the District Offices. Since demonstration plots have high potentials to disseminate the outputs of an agriculture project, it is recommended to place demonstration plots close to the main roads or in the fields where people frequently come and go.

Bunds constructed by farmers imitating the bunds in a project's demonstration plot (Anafo Ano North District, Ashanti Region)

Well-adopted weeding technology (Anafo Ano North District, Ashanti Region)

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Ethiopia Office: February, 2019

Country Name	**Quality Seed Promotion Project for Smallholder Farmers (QSPP)**
Federal Democratic Republic of Ethiopia	

I. Project Outline

Background	In Ethiopia, the agricultural sector has been crucial in the national economy and the national industry as it had accounted for 40% of GDP and 85% of the rural population has been engaged in the sector. Whereas the significance of the agriculture development was clearly described in the "Plan for Accelerated Sustained Development to End Poverty (PASDEP)" in 2006, most of the farmers still relied on traditional farming practices of low productivity that brought about unstable food production and supply. The root cause of this problem was deemed to be the limited use and unstable supply of good quality seeds. While the utilization rate of good quality seeds remained low, use of fertilizer and pesticides increased to further stifle total productivity. Moreover, most of the farmers used farm-saved informal seeds or grains as seed. As these seeds were low yield, germination, and purity, its consequence also had been a perpetual low productivity of agriculture. A seed system that is to provide quality seed to meet the demand of farmers was, therefore, essential to ensure the economic and social development. The government of Ethiopia thus aimed at promoting quality seed production by seed farmers themselves to suffice farmers' demand. However, seed farmers did not have adequate production technique and they lacked knowledge of proper management of the seed system.
Objectives of the Project	Through the establishment of quality seed production technology and sustainable seed system, the project aimed at increasing the use of quality seeds, and thereby contributing to the production of self-pollinating crops, such as teff and wheat in the target Woredas. 1. Overall Goal: Production of mainly self-pollinating crops, teff, and wheat, is increased through the utilization of quality seed in the target Woredas. 2. Project Purpose: Use of quality seeds is increased in the target Woredas.
Activities of the Project	1. Project site: 3 regions, 5 Woredas [Oromia Region (Ada'a, Lume, Dendi), South Nations, Nationalities and People's Region (Sodo), Amhara Region (Yilmanadensa)] 2. Main activities: 1) Trials for verifications and adaptability and produce manuals on the seed production technology and simple agricultural machinery, 2) Training for the Seed Farmers School (SFS) and preparation of training materials, 3) Preparation of technical manual for seed quality control and establishment of a lab at Woreda level, 4) Training on seed inspection at Woreda level, 5) Collection and analysis of information about the current seed system, seed market, and distribution channel. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 20 persons 2) Trainees received: 18 persons 3) Training in the third country: 2 persons (in Kenya) 4) Equipment: Vehicles, Motorbikes, PC and office equipment, Grain cleaner etc. Ethiopian Side 1) Staff allocated: 45 persons 2) Land and facilities: Provision of space for project offices at the Ministry of Agriculture and Regional Burea of Agriculture at Amhara and Oromia and DZARC (Debre Zeit Agricultural Research Center). Land and space for building for seed inspection laboratory in Five Woreda Agricultural Offices (Ada'a, Dendi, Lume, Sodo and Yilmanadensa woredas) Agricultural land for verification activities in DZARC. 3) Operation cost: Utility cost of project and running cost for office spaces.
Project Period	February 2010 –August 2014 (Extension: March 2014 –August 2014)
Project Cost	(ex-ante) 360 million yen, (actual) 553 million yen
Implementing Agency	Ministry of Agriculture and Natural Resource (MoANR: Formerly known as the Ministry of Agriculture and Rural Development (MoARD) and the Ministry of Agriculture (MoA) by federal ministerial restructuring during and after the project period.)
Cooperation Agency in Japan	NTC International Co., Ltd. Japan Development Service, Co., Ltd.

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

- It was intended that the project was to strengthen both quality seed production and quality assurance of seed as parallel efforts to achieve the objective. However, verifiable indicators of the Project Purpose and the Overall Goal only depicted the amount of quality seed production. Therefore, the status of improvement in the localized seed inspection and the assurance system newly introduced by the project is to be verified in terms of sustainability.

1 Relevance

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

The project was consistent with Ethiopian development policies of the "Plan for Accelerated Sustained Development to End Poverty

(PASDEP) 2005/6-2009/10", the "Growth and Transformation Plan (GTP) 2010/11-2014/15" and the "Ethiopian Agricultural Sector Policy and Investment Framework, 2010-2020". To maintaining agriculture as a major source of economic growth, one of the major targets in GTP for agriculture and rural development was drastic increase in the supply of improved seeds in five years.

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

The project was consistent with Ethiopian development needs of improving agricultural productivity by establishing quality seed production and sustainable seed system for stable food production. 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 toward Ethiopia, the "Country Assistance Program issued in 2008". Agriculture, rural development, and water management were to be the top priority areas for assistance in the policy.

<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. Approximately 127 tons of quality seed multiplied in a cropping season through the project approach in the 5 target Woredas (Indicator 1). Further, to ensure the quality of the produced seed, it was confirmed that there was a seed quality test training organized for more than 20 seed inspectors from all target Woredas. It was also confirmed that seed quality test training was given to selected Development Agents (DAs) and seed inspectors. The project collaboratively collected seed samples from 190 farmers and conducted the quality test in Woreda seed laboratories as well as in the Ethiopian Institutes of Agricultural Research (EIAR) laboratory. Consequently, the quality test results proved to be qualified for seed quality standard that was in the acceptable ranges for C2 class seeds[1]. Also, according to the QSPP Activity report, right after the time of the terminal evaluation, the project had undertaken market promotion activities including a training workshop for explaining the role of a market support activity and how to follow up and monitor the marketing process to DAs and experts at Woreda Agricultural and Rural Development Offices (WARDO). Those activities were deemed to have facilitated the quality seed production to be more responsive to the seed market. In effect, about 80% of quality seed multiplied in a cropping season was used or sold as seed (Indicator 2).

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

The project effects have been continued since the project completion. A total of 1,790 seed production farmers in the 5 target Woredas were surveyed for the ex-post evaluation. It was confirmed that 5 out of 7 technologies were commonly practiced by the farmers. Regarding the status of the training system, formerly set up to disseminate the aforementioned technologies to the farmers in the 5 target Woredas, the majority of the SFSs established by the project was replaced by the Seed Multiplication Associations (SMA) since 2015 in order to facilitate certified seed production and enhance market access. It was confirmed that they have continued providing training and disseminating the quality seed production technologies.

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

The Overall Goal was achieved at the time of ex-post evaluation. Approximately 4,571 tons of quality seed has been multiplied in 2017/18 cropping season in total, which was substantially higher than the expected target amount of 200 tons (Indicator 1). It dovetailed with the increasing trend in the total number of member farmers affiliated with the SMAs explained above. With regard to Indicator 2, 88% of quality seed multiplied in a cropping season through the established seed multiplication cooperatives was used as a seed or sold in the market in 2017/18. Especially, the amount sold in the market in the recent year indicated the steady expansion of the seed market driven by the production increase.

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

There were several positive impacts observed in the survey for the ex-post evaluation. In terms of the change in marketing seed, it positively affected the income level of member farmers of Primary Seed Multiplication Cooperatives (PSMC), the former graduates of SFS as the member farmers were able to collect payment twice a year. The first payment would be made when they sell quality seed to the Cooperative Unions, which had an estimated 15 percent premium than that of the local market grain price. Subsequently, the Cooperative Unions are supposed to process and pack the seed, then they sell at a higher price as per the standard set by the Ethiopian Seed Enterprise. The Unions retain 30 percent of the profit and give the balance of 70 percent to the PSMCs. The member farmers would be able to get the second payment as a dividend at the end of the year. According to the information obtained from the Woreda office, the total income incurred by member farmers may be at least 30-35 percent higher than that of before the project.

In addition, several cases were reported that some cooperatives could construct a warehouse (Ada'a and Yilmanadensa) and buy trucks (Lume) as the service for members. In effect, the membership was autonomously broadened as more local farmers found rewarding to participate to the seed multiplication business through the arrangement above and the SFS graduated farmer has been recognized as a role model in local communities because of their exemplary success in seed multiplication business. In the meantime, rest assured that no negative impact was confirmed.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Use of quality seeds is increased in the target woredas	(Indicator 1) At least 40 tons of quality seed multiplied in a cropping season through the project approach is produced in the target woredas	Status of the Achievement: achieved (continued) (Project Completion) ・ About 127 tons of quality seed multiplied in the cropping season through the project approach in the target woredas. (see Table 3 below). ・ About 702 graduated farmers from 25 SFSs have continued quality seed production (Ex-post Evaluation)

[1] According to the ex-ante evaluation summary, the project originally intended to facilitate C2 class seed production to meet the demand. C2 is categorized as improved by farmers but considered informal seed.

		・ A significant number of trained farmers (N=1790) have been practicing 5 out of 7 technologies elaborated in "Teff and Wheat Seed Multiplication Practices" in 5 target Woredas in 2017/18. ・ As of 2015/16, the majority of the SFSs established by the project was replaced by the SMA in order to facilitate certified seed production and enhance market access. DAs have continued their role as trainers in the SMA.

Table1: Number of seed production farmers in 5 target Woredas

5 Target Woredas	2014/15	2015/16	2016/17	2017/18
Ada'a	150	180	413	892
Lume	214	324	400	492
Dendi	85	85	85	85
Sodo	157	157	157	225
Yilmanadensa	96	96	96	96
Total	702	842	1,151	1,790

Table 2: Number of SFS, SMA, and DAs (major training system components)

5 Target Woredas		2014/15	2015/16	2016/17	2017/18
Ada'a	SFS	5	--	--	--
	SMA	--	5	5	7
	DA	11	8	16	16
Lume	SFS	4	--	--	--
	SMA	--	5	7	7
	DA	9	14	18	18
Dendi	SFS	5	--	--	--
	SMA	--	3	1	1
	DA	11	10	7	14
Sodo	SFS	7	--	--	--
	SMA	--	2	2	2
	DA	10	5	4	4
Yilmanadensa	SFS	4	--	--	--
	SMA	--	3	3	3
	DA	10	10	10	10
Total	SFS	25	--	--	--
	SMA	--	18	18	18
	DA	51	47	55	60

	(Indicator 2) At least 75% of quality seed multiplied in a cropping season through the project approach in the target woredas is used or sold as seed.	Status of the Achievement: achieved (continued) (Project Completion) ・ 83% of quality seed multiplied in a cropping season is used or sold as seed. (see Table 5 below) (Ex-post Evaluation) ・ 88% of quality seed multiplied in a cropping season is used or sold as seed. (see Table 5 below)
(Overall Goal) Production of mainly self-pollinating crops, teff, and wheat, is increased through the utilization of quality seed in the target woredas.	(Indicator 1) At least 200 tons of quality seed multiplied in a cropping season through the project approach is produced in the target woredas	(Ex-post Evaluation) achieved

Table 3: The amount of quality seed production (C1[2]) in 5 target Woredas (ton)

5 Target Woredas	2014/15	2015/16	2016/17	2017/18
Ada'a	28	2,500	3,010	3,745
Lume	39	63	81	99
Dendi	15	36	54	54
Sodo	28	408	408	583
Yilmanadensa	17	80	86	90
(A) Total Seed Production	127	3,087	3,639	4,571

	(Indicator 2) At least 75% of quality seed multiplied in a cropping season through the project approach in the target woredas is used or sold as seed.	(Ex-post Evaluation) achieved

Table 4: The amount of quality seed used and sold as seed in the target 5 Woredas (ton)

5 Target Woredas		2014/15	2015/16	2016/17	2017/18
Ada'a	Used as seed	4	220	255	268
	Sold in market	20	2,000	2,250	3,000
Lume	Used as seed	4	10	13	15
	Sold in market	30	44	57	69
Dendi	Used as seed	2	5	8	8

[2] Certified seed (C1) production in the five target Woreda has been undertaken by Seed Cooperative Unions through a contractual agreement with Regional Seed Enterprises (RSE). RSEs are using seed laboratories of their respective Region, neighboring regions or ESE laboratories for quality assurance and cleaning and labeling their seeds.

	Sold in market	10	25	38	38
Sodo	Used as seed	5	90	90	129
	Sold in market	16	275	275	408
Yilmanadensa	Used as seed	3	7	16	17
	Sold in market	11	64	60	63
(B) Total Seed Used and Sold		105	2,740	3,062	4,015

Table 5: Percentage of quality seed used or sold as seed in the total seed production in 5 target Woredas **((B)/(A) x100)** %

5 Target Woredas	2014/15	2015/16	2016/17	2017/18
Ada'a	86	89	83	87
Lume	87	86	86	85
Dendi	80	83	85	85
Sodo	75	89	89	92
Yilmanadensa	82	89	88	89
Average (%)	83	89	84	88

Source: Woreda Experts response during Ex-post Evaluation field Survey (June 2018)

3 Efficiency

The project cost and period exceeded the plan (ration against the plan: 138% and 113%, respectively). The outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

In addition to validity in policy manifested in the second phase of GTP, "Growth and Transformation Plan II 2015-2020" and the "Ethiopian Agricultural Sector Policy and Investment Framework, 2010-2020" that have emphasized and detailed the promotion of seeds utilization and productivity of smallholder farmers, it has further reinforced through the implementations of "Seed System Development Strategy[3] (SSDS), 2013-2017" Cooperative-Based Seed Production[4] (CBSP), 2014-2016, 2016-2020", among others.

<Institutional Aspect>

With regard to the promotion of the Farmer Based Seed Production & Marketing (FBSPM), there have not been any major changes in the institutional structure except for the replacement of the SFSs by the SMAs as above. Also, as stated in the policy aspect, the Agricultural Transformation Agency (ATA) with partner organizations has started the CBSP project to fill in gaps in seed supply through localized production and distribution after the project completion. The role and responsibilities of each actor have been confirmed remained the same. Further, it has been even more inclusive by the recently established the "National Seed Platform" by the initiative of the MoANR in December 2017. It was expected to reinforce the prior organizational structures as well as a public and private partnership. However, there has been a concern that frequent turnovers in the regulatory authorities at federal and regional levels may stifle nation-wide dissemination and delay the FBSPM.

[MoANR]-

The Agricultural Extension Directorate and the Input Supply and Market Directorate of the MoANR have been in charge of promoting FBSPM at the Federal level. It has been responsible for the development of laws, the authorization of necessary standards and procedures related to the seed system. 4 staff members have been assigned at the Input Supply and Market Directorate but having considered the volume of work with their expected role and responsibility, it is insufficient which is also worsening with frequent turnovers.

Furthermore, as for the regulatory framework, namely, "Quality Declared Seed (QDS)" to expedite procedures of the quality control, the MoA formally issued a National Directive in October 2014. In the scheme, it enabled community-based producers to declare the quality of their seed by fulfilling the minimal standard established by the regulatory authorities in their respective regions. However, according to the survey results, the approved national Directive Guideline for the QDS has been neither operationalized nor adjusted at the level of each regulatory authority to be practically permeated across Regions and Woredas.

[EIAR (DZARC[5])]

It has remained to be a major source of national registered improved seed varieties and conducted multiplication of Early Generation Seeds (EGS) as there has been about 17 research center local branches under the EIAR (Technology Multiplication and Seed Research Directorate) and approximately 90% of EGS has been produced in these centers. With regard to the FBSPM, 3 research staff have been assigned but having considered insufficient because of frequent turnovers. According to the Director of Technology Multiplication and Seed Research Directorate, there was a serious shortage in supply of EGS and the EIAR was able to supply only 50% of demand amount. The EIAR has been facing a land shortage, lack of human resource and materials to multiply sufficient breeder and pre-basic seeds to meet the demand.

[BoANR(Oromia/SNNPR/Amhara]

The Input and Supply Department have been in charge of registration of certified seed producer, emergency seed distribution, certification of Direct seed Marketing Agent and distribution of certified seed based on the demand at the regional level. 2 staff members in each of the 3 regions have been assigned but having considered the role and responsibility, it is deemed insufficient and worsened by frequent turnovers.

[WARDO] (Ada'a/Lume/Dendi/Sodo/Yilmanadensa)

[3] Under the stewardship of MoANR, SSDS has listed out the bottleneck of the seed sector and further it has identified the way-out and matching exit strategy..

[4] With development partners notably, the Bill and Melinda Gates Foundation, CBSP project is intended to fill in specific gaps in seed supply through localized production and distribution, It also addresses the weak institutional capacity of cooperatives to develop and manage robust business plans by modeling seed unions. In its work with cooperatives, the project trains smallholder farmers on modern seed production and post-harvest handling.

[5] EIAR is an umbrella institute for various research centers in the country and among others, QSPP was actively working with DZARC.

WARDO has been responsible for the assessment of the status of seed demand and supply, and distribution of allocated seed of the Cooperative Unions. It also has provided technical support and training for quality seed production and conducted field inspections in order to assess the optimum level of quality seed production. By contrast, there has been relatively sufficient number of experts (Ada's 12, Lume, 6, Dendi 5, Sodo 2, Yilmanadensa 7). Except for Sodo, the rest of 4 target WARDO responded it sufficient. Accordingly, the expected follow-up activities have been conducted for the promotion of FBSPM for seed producing farmers in their Woredas.

[The Cooperative Promotion Office]

It has been responsible for strengthening the cooperatives and unions in an efficient manner. The Cooperative Unions under the Office should guide the primary cooperatives to channel the inputs (basic seed and agro-chemicals) on time. In addition, the Unions have been in charge of value-added activities such as logistics, sales, and marketing to serve member farmers who supply seed.

[SMA]

The SMAs have been established in the target Woredas since 2015, with the support of SFS graduated farmers by the project. Under the SMA, the SFS trained farmer was eligible to be a member of the newly established PSMC. Through this transition period toward formal seed production by Woredas after the project completion, it has enabled the member farmers to be engaged collectively in the stable supply of quality certified seed through a certain contractual agreement with the Cooperative Unions in their local communities. Furthermore, the trained DAs by the project in respective Woredas have continued their role as trainers in the SMA, as well as for any aspiring farmers who wish to join the PSMC.

<Technical Aspect>

Regarding seed production, out of the total number of the ex-counterpart staff (n=108) engaged in the project, nearly 67% (n=72) of them have been assigned at various positions and transferred to different levels at the time of the ex-post evaluation. However, there has been a mechanism such as a refresher training in place to maintain the necessary technical level. Also, at the Woreda level, experts, DAs, and farmers have had various training opportunities organized by the ATA, Bahir Dar University, and Regional Offices. This has helped respective DAs and experts/Inspectors to retain their technical skill and knowledge in order to promote quality seed production practices. With respect to marketing promotion, the ATA provides a training program for experts and DAs, farmers and PSMCs in three target Woredas (Ada's, Lume and Dendi).

As per the proper control of seed quality, only two laboratories (40%, n=2) (Ada'a and Sodo) have still continued conducting seed quality testing and duly provided the test result for the Cooperative Unions in their Woredas. Further, they have been able to submit the seed quality test result to the regional level laboratories to issue a quality seed certificate. A laboratory in Lume was partially functional; the Woreda officials perceived that there was no official mandate for the laboratory to conduct seed quality testing as it was not authorized to issue quality assurance certificate there. Thus, the lab has advised local cooperatives to inquire directly to a nearby accredited seed laboratory for certification instead. The rest of the two laboratories (Dendi and Yilmanadensa) were not functional mainly due to lack of trained lab technician and inspector.

<Financial Aspect>

The budget for quality the Seed Multiplication Activities has secured relatively sufficient amount of financial resources at the federal, regional and Woreda levels for quality seed production in the context of FBSPM. At the federal level, the budget increased from 43 mils Birr in 2015 to 80 mil Birr in 2017 and 67.5 mil Birr in 2018 which have been earmarked for the FBSPM. Donors have also provided 1.5 mils Birr in 2015, 10 mils Birr in 2016, 8 mils Birr in 2017, and 7 mils Birr in 2018 for the purpose. At the Regional level, Oromia and SNNPR and Amhara have been funded through Agricultural Growth Program Phase II (AGP-II)[6]; 15 mil Birr in 2015, 10 mil Birr in 2016, 8 mil Birr in 2017, 7 mils Birr in 2018. At the 5 target Woredas, as stated above, seed multiplication activities have been mainstreamed along with the extension of related services through seed multiplication cooperatives. In this respect, except Sodo other four target Woredas have secured a certain amount of budget for seed multiplication related activities.

The Annual budget for Seed Multiplication Activities in 5 target Woredas (Unit: Birr)

5 target Woredas	2015	2016	2017	2018
Ada'a,	200,000	218,000	218,000	218,000
Lume,	NA	NA	30,000	30,000
Dendi	NA	35,000	35,000	25,000
Sodo	NA	NA	NA	NA
Yilmanadensa	45,000	75,000	91,000	100,000

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved the Project Purpose and achieved the Overall Goal by the time of ex-post evaluation, as the remarkable amount of quality seed production has been realized and a substantial percentage of the production has been sold in the market despite the remained issues of quality assurance and inspection system. As for the sustainability, although the policy, technical and financial aspect has been reinforced for the seed sector in the context of FBSPM, the organizational aspect has some unsolved issue of insufficient manpower at national and regional levels as a result of frequent turnovers. As for 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:

(1) For respective Regional Bureaus (Amhara and Oromia) including Woreda Agriculture Offices, it is recommended to revitalize the functions of laboratories constructed by the project. It requires to properly outline the organizational structure in order to be allocated budget for recruiting necessary personnel for the quality test services. Besides, the seed laboratories constructed by the project has to establish a formal institutional linkage with the regional level seed laboratories, so as to ensure the regular follow-up mechanism and

[6] AGP is a multi-donor financing project that also involves a wide range of stakeholders in the overall implementation process. These includes, among others; the Canadian International Development Agency (CIDA), the United Nations Development Program (UNDP), the Embassy of the Kingdom of the Netherlands (EKN), the Spanish Agency for International Development (AECID), the United States Agency for International Development (USAID), the Global Agricultural and Food Support Program (GAFSP), ATA, and the World Bank (IDA/WB).

necessary technical support in order to provide quality test services in a sustainable manner at Woreda level.

(2) To enhance the sustainability of the project, all the seed related regulatory authorities at the regional and woreda level (e.g, Regional Input Regulatory Agencies/Regional seed certification authorities, Woreda Agriculture offices) should promote the approved QDS Directive. Whereas QDS means seed produced by organized and/or registered smallholder farmers based on simple principles, despite that, so far there is no officially registered seed producers, farmers/cooperatives, SMA in the QDS scheme in the target Woredas. Thus, the regulatory authorities should encourage SMA to apply for the QDS scheme for the win-win result, as less cumbersome and resource consuming, but more scalable on the ground that it may well effectively complement the existing system of conventional quality control.

Lessons Learned for JICA:

(1) Farmers trained by the project have shifted from being an individual seed producer under SFS scheme to a formal entity by grouping themselves as primary cooperatives (i.e. SMA) and started producing certified seeds (C1), which positively contributed to increase their income and improve their livelihood as well as an increase in seed production. While the project had clearly identified the existing capacity limitation among farmers and extension workers as to how best to improve quality seed production technologies and practices, it did actively encourage farmers and DAs to be involved in a planning process. Thus, the actual capacity gaps as well as needs of farmers were taken into consideration in the project components and a number of training sessions had been organized through SFS approach. Through this practical and participatory approach, the farmers and DAs could build up their own skill and knowledge in producing quality seed, which eventually kept them motivated to engage in current seed business under the SMA. Nonetheless, if it had ever been entitled with a formal status as the SMA and connected to cooperative unions in the first place, farmers could have easily received a supply of EGS from national/regional seed enterprises and quickly produced certified seeds (C1) that have higher market value than informal seeds (C2). The project failed to include the crucial segment of the existing formal seed system as the result shows that farmers ultimately wished to become C1 seed producers on a sustainable basis. It can be summarized as follows;
   - Since the SFS approach is effective to improve seed production technique among farmers, it should be institutionalized to be a part of regular extension program. Let national and regional seed enterprises focus only on producing basic seeds, and farmers' seed multiplication associations produce certified seeds (C1) as out-growers of seed enterprises.
   - QSPP project should have considered strengthening not only the informal seed system but also transition as to how it requires to upgrade or connect farmers to formal seed system.

(2) Except for Ada's and Sodo (and Lume until 2017) where woreda-level laboratories are functional, seed quality control is currently conducted by regional bureau rather than the woreda-level laboratories, and its result is authorized by national/regional seed enterprises as a part of formal seed system. This is not fully consistent with the project's scenario that originally intended to promote inspection of informal seed (C2 level) at woreda level in parallel to the QDS system. There has been no clear definition of the role and level of authority delegated to woreda-level laboratories. The project should have built a firm consensus with C/P organizations about the role of woreda-level inspection laboratories, as well as demarcation of responsibility between the laboratories and regional bureaus/seed enterprises, during the project implementation period.

Functional laboratory in Ada'a Woreda

Seed cleaning machine supported by QSPP in Yilmana Densa Woreda

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Nigeria Office: April, 2018

Country Name	**Project for Enhancing the Function of the National Water Resources Institute**
Federal Republic of Nigeria	

I. Project Outline

Background	The government of Nigeria was trying to supply safe water to all populations by 2011. However, the proportion of population with access to safe water had not sufficiently improved (49% in1990 and 48% in 2004) because of effects such as increase of the population. The Federal Ministry of Water Resources (FMWR) in Nigeria realized that capacity development was important factor for the Rural Water Supply and Sanitation Agency (RUWASSA) and the Ministry of Water Resources in each State, to improve the rural water supply situation. In addition, it was also important to reinforce the training implementation capacity of the National Water Resource Institute (NWRI) which conducted technical training for the relevant staff both at States and national level. NWRI had conducted training on the level of urban water supply and water supply in small town, but had not conducted training in rural water supply and sanitation. For that reasons, NWRI newly established the Rural Water Supply and Sanitation Centre for Capacity Development (RWSSC) and tried to reinforce the training implementation capacity specially to deal with the rural water supply. However, further capacity enhancement was needed.		
Objectives of the Project	Through 1) identifying capacity gaps of NWRI/RWSSC and Rural Water Supply and Sanitation (RWSS) stakeholders at States, Local Government Areas (LGAs) and Community levels, 2) developing responsive and effective training system, 3) enhancing trainers' capacity in RWSS, 4) implementing and reviewing training, and 5) improving management of RWSSC, the project aimed at effective operation of the RWSSC for capacity development, and thereby contributing to the improvement of service delivery of RWSS in the country. 1. Overall Goal: Service delivery of RWSS is improved in Nigeria through Capacity Development of stakeholders. 2. Project purpose: Rural Water Supply and Sanitation Centre for Capacity Development (RWSSC) is effectively operated.		
Activities of the project	1. Project site: Kaduna where RWSSC is located (and Abuja where the training courses were conducted after October 2012 due to the worsened security situation in Kaduna) 2. Main activities: (1) Capacity assessment of NWRI/RWSSC and RWSS stakeholders, (2) Formulation of training program (development of curriculum, modules, materials, facilities etc.), (3) Implementing Training of Trainers (ToT), (4) Implementing and conducting Monitoring and Evaluation (M&E) of training, and (5) Improving management of RWSSC 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 12 persons 2) Equipment: Geophysical prospecting equipment, training rig and related equipment, borehole camera, monitoring equipment, pumping test equipment, etc. Nigerian Side 1) Staff allocated: 12 persons 2) Facilities and utilities: Project office, generator, alternative internet service		
Project Period	March 2010 - November 2014 (Original period: March 2010-November 2013)	Project Cost	(ex-ante) Approximately 560 million yen, (actual) 430 million yen
Implementing Agency	NWRI /RWSSC		
Cooperation Agency in Japan	Yachiyo Engineering Co., Ltd.		

II. Result of the Evaluation

<Constraints on Evaluation>

The Overall Goal was not verified as data is not obtained. The data is unavailable for two reasons. (1) The state RUWASSAs do not keep records of drilled boreholes. (2) The RWSSC records after 2014 does not specify the name of belonging organization where the participants that have attended the training courses came from.

1 Relevance

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

The project was consistent with the Nigeria's development policy. At the time of ex-ante evaluation, "the National Economic Empowerment and Development Strategy (NEEDS)", which was developed in 2004, designated the water supply as one of the prioritized sectors. "The National Water Supply and Sanitation Policy (2000)" and "the Rural Water and Sanitation Program (2004)" aimed at supplying safe water to all populations by 2011. At the time of project completion, one of the main goals of "Nigeria Vision 20:2020", which was published in 2009, was sustaining access to potable water and basic sanitation.

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

The project was consistent with the development needs of Nigeria for water supply. At the time of ex-ante evaluation, the management of training courses at NWRI was weak and the number and hours of training courses was limited. NWRI was not able to conduct the following activities regularly or in a well-coordinated manner: annual planning, revision of curriculum, promotion of the training courses, evaluation of the training, and follow-up of the participants. Besides, teaching materials and equipment were obsolete to response to new training courses. At the time of project completion, although the potential of water development in rural area in Nigeria was high, it was a

problem that private contractors had not been brought up sufficiently and they refused to have works which were in poor access area or in the area where it was difficult to excavate. Therefore, the role of RUWASSA was still important. RWSSC was expected to train RUWASSA officers through reinforcing the capacity of NWRI/RWSSC and therefore the need of capacity development was high.

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

The project was consistent with Japan's ODA Policy to Nigeria at the time of ex-ante evaluation. Rural infrastructure development including water supply was one of the prioritized areas for ODA under the third policy dialogues between Nigeria and Japan in October 2007.[1]

<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>

Judging from the achievement levels of the indicators set to measure the level of achievement by the project, the Project Purpose was achieved at the time of project completion. The indicators "The evaluation result by the trainee at the end of the project is increased compared with the ones at the beginning of the project." (Indicator 1) and "350 RWSS staff will attend RWSSC trainings in total by the end of the project" (Indicator 2) were achieved.

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

After the project was completed, the effects of the project have somewhat continued as the training has been taking place and the average training evaluation results have maintained high level of satisfaction by participants. However, RWSSC faces some financial challenges. The number of training has been under constraint because of the lack of availability or delay execution of RWSSC annual budget allocated by federal government. One to two training courses for each theme were carried out annually after the project end, however, some courses such as "Ground water investigation", "Rehabilitation of boreholes and maintenance" and "Development of alternative water source" have not been carried out. The courses which are done annually are dependent on the amount of funds available for NWRI, the courses with the most impact on the target groups based on the needs assessments and its established effectiveness. In addition, lack of funding by state governments to RUWASSA for their travel expenses has made it difficult to increase the number of participants from the states and conduct all training courses concurrently. The equipment items supplied under the project have been operational and utilized for training such as "Borehole Construction Management and "Drilling Technology". As to the number of trainees, although the accumulated number of trainees was 710 as of September 2017 and not exceeded the target number (800) which was set at the time of the terminal evaluation[2], it is possible to achieve the target number by the end of 2017 if the budget was released as same level as the last year.

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

The Overall Goal was not verified as data is not obtained. The data is unavailable for two reasons. (1) The state RUWASSAs do not keep records of drilled boreholes. (2) The RWSSC records after 2014 does not specify the name of belonging organization where the participants that have attended the training courses came from.

Although there is no record of the out-of-service ratio of boreholes in the states which received the Grant Aid Projects[3], there is a need to rehabilitate and maintain the boreholes in some villages according to some Evaluation Reports of JICA's Grant Aid Projects in rural water supply in Nigeria. The World Bank also reported that approximately 30% of boreholes in Nigeria are broken down two years after the installation[4].

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

As a result of the equipment supplied by the project being used for practical training courses, actual borehole rehabilitations are performed as part of the training courses in different communities. 12 boreholes have also been drilled so far, 4 in Abuja and 8 in Kaduna all under training courses. No land acquisition and resettlement occurred under this project, and no negative impacts on the natural environment were observed.

<Evaluation Result>

In light of the above, the project achieved the Project Purpose at the time of project completion, the effects of the project have partially continued, however, the Overall Goal was not verified at the time of ex-post evaluation. Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td>(Project Purpose)
Rural Water Supply and Sanitation Centre for Capacity Development (RWSSC) is effectively operated.</td><td>Indicator 1: The evaluation result by the trainee at the end of the Project is increased compared with the ones at the beginning of the Project.</td><td>Status of the achievement: achieved (continued)
(Project completion)
Result of training evaluation become higher than beginning of the project on four implemented courses.
Average of training evaluation by the participants
<table>
<tr><th>Training course</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th></tr>
<tr><td>1. Groundwater Investigation</td><td>3.62</td><td>-</td><td>3.89</td><td>-</td></tr>
<tr><td>2. Borehole Construction and Management</td><td>4.4</td><td>4.08</td><td>4.25</td><td>4.44</td></tr>
<tr><td>3. Drilling Technology</td><td>-</td><td>-</td><td>4.49</td><td>4.67</td></tr>
<tr><td>4. Drilling Machinery Maintenance Technique</td><td>-</td><td>-</td><td>4.21</td><td>4.55</td></tr>
</table>
(Ex-post Evaluation)</td></tr>
</table>

[1]Source: ODA Databook 2009

[2]At least 15 individuals per course are expected to take part in annually and therefore, the accumulated number would be more than 800 (15 individuals x 9 courses x 3 years in addition to the 405 individuals who already took part in.)

[3]The Project for Water Supply in Bauchi and Katsina States (2010) , The Project for Improvement of Rural Water Supply (Grant aid project, 2012)

[4]Source: Nigeria Water, Sanitation, and Hygiene (WASH) Poverty Diagnostics: Preliminary Report (2016)

Results rating system has been changed from a grade point system to a percentage system which according to the head of training is easier to be interpreted and for the assessment to be carried out.

Average of training evaluation by the participants

	2013	2014	2015	2016
Groundwater Investigation	3.89	-	-	-
Borehole Construction and Management	4.25	4.44	89%	92%
Drilling Technology	4.49	4.67	95%	94%
Drilling Machinery Maintenance Technique	4.21	4.55	95%	90%
Other courses	93%	87%	85%	90%

Indicator 2: 350 RWSS staff will attend RWSSC trainings in total by the end of the Project.

Status of the Achievement: achieved (partially continued)
(Project Completion)

Number of participants of training by each year

Training course	2011	2012	2013	2014	Total
1. Groundwater Investigation	9	-	38	26	73
2. Borehole Construction and Management	14	25	20	45	104
3. Drilling Technology	-	-	20	32	52
4. Drilling Machinery Maintenance Technique	-	-	20	19	39
5. Installation of hand pump and operation and maintenance	44	-	-	-	44
6. Rehabilitation of boreholes and maintenance	33	-	-	-	33
7. Development of alternative water source	-	-	-	-	-
8. Public health	30	-	-	-	30
9. Community Mobilization	30	-	-	-	30
Total	160	25	98	122	405

(Ex-post Evaluation)

The number of participants of training by each year

	2015	2016	2017*
1. Groundwater Investigation	-	-	-
2. Borehole Construction and Management	20	20	-
3. Drilling Technology	25	60	30
4. Drilling Machinery Maintenance Technique	15	55	25
5. Installation of hand pump and operation and maintenance	20	15	-
6. Rehabilitation of boreholes and maintenance	-	-	-
7. Development of alternative water source	-	-	-
8. Public health	-	-	-
9. Community Mobilization	20	-	-
Total	100	150	55

*As of September 2017

(Overall Goal)
Service delivery of RWSS is improved in Nigeria through Capacity Development of stakeholders.

Indicator 1: The rate of functional rural water supply facilities is increased compared with the ones before the participation to the Training at RWSSC in the specific States which received the Grant Aid Project.

Status of Achievement: not verified
(Ex-post Evaluation) not verified.
Data is unavailable.

Source：JICA internal documents, Questionnaire and interviews with NWRI/RWSSC

3 Efficiency

Although the project cost was within the plan (the ratio against the plan: 77%), the project period exceeds the plan (the ratio against the plan: 124%). However, the project was extended as it was suspended almost one year in the middle of the project period due to security constraints[5]. Considering this situation, the efficiency of the project is high.

[5] Volatility increased at the Project Site in Kaduna in the latter half of 2011 with coordinated terrorist explosions occurring at 3 locations including the air force facility near the project office. Terrorist explosions continued thereafter in Kaduna and the Ministry of Foreign Affairs issued a warning in May 2012 to postpone travel to the entire Kaduba State including the City of Kaduna. As a result, it became impossible for Japanese experts to work in Kaduna and

4 Sustainability

<Policy Aspect>

There is an established support from the government's policy direction. The main goal of "The Partnership for Expanded Water Supply and Sanitation & Hygiene (PE-WASH)", launched in 2016 and covering a period till 2030 is to improve water supply particularly in rural areas and sanitation.

<Institutional Aspect>

An appropriate organizational structure is in place for sustaining the project effects. RWSSC is one of three main centres in charge of providing specialized training under Training Department of NWRI. At RWSSC, single coordinator/trainer is assigned to each course. All course coordinators of RWSSC report to the head of RWSSC who is also the head of the Training Department. NWRI oversees all the training centres and other programmes of the institute. It prepares its own budget and each year, decides how much it allocates to RWSSC and other centres. The number of staff at RWSSC is 22, who are course coordinators/trainers and their assistance. The overall number of staff at NWRI is 151. In order to provide training, NWRI recruited 86 persons in 2015 to add to their capacity.

<Technical Aspect>

NWRI/RWSSC has sufficient technical skills to conduct training. The staff members trained during the project are still working with the institute. In addition, newly recruited staff members were also trained. NWRI has a system to maintain or upgrade staff's skills. NWRI carries out induction courses and other trainings with support from a memorandum of understanding (MoU) with 6 universities signed. MoU mentions that lecturers from the 6 universities, in addition to the staff at NWRI are used as resource persons to help improve capacity of NWRI by giving lectures, seminars, trainings etc. On the other hand, although the project intended to improve the management capacity of RWSSC, activities under the component related to management skills were not fully materialized during the project period. Nonetheless, NWRI has sufficient management capacity. They had developed work plan and utilized it and manuals for administration and logistics as the project originally envisaged.

<Financial Aspect>

Although NWRI faces problems such as insufficient budget and delay in budget release, NWRI is able to secure funds to implement training courses which are highly needed the amount. The States do not allocate fund for tuition fee, therefore training courses are funded by NWRI only. FMWR has not promoted state governments to allocate funds for training at RWSSC.

Budget of NWRI and RWSSC

(Unit: NGN)

	2014	2015	2016
1.1 Applied budget of NWRI	403,000,000.00	350,000,000.00	1,001,330,552.00
1.2 Of which, the budget for RWSSC	20,925,000.00	6,000,000.00	19,535,884.40
2.1 Approved budget NWRI	353,000,000.00	142,000,000.00	1,001,330,552.00
2.2 Of which, the budget for RWSSC	10,006,699.18	3,000,000.00	16,826,190.19
3.1 Executed budget NWRI	153,599,622.00	71,138,410.00	848,947,303.00
3.2 Of which, the budget for RWSSC	9,762,274.18	3,000,000.00	16,826,190.19

<Evaluation Result>

In light of the above, slight problems have been observed in terms of the technical and financial aspects of the implementing agency and state RUWASSAs such as lack of budget and delay in execution of the budget. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

The Project Purpose was achieved at the time of project completion as indicators set to measure the achievement of the project such as the evaluation result by trainees and the number of trainees were achieved. The effects of the project somewhat continued, though the number of training courses and participants has been limited by the budget constraint. The Overall Goal was not verified at the time of ex-post evaluation. As to the sustainability, slight problems have been observed in terms of the financial aspect of the implementing agency and state RUWASSAs such as lack of budget and delay in execution of the budget. As for the efficiency, the project period exceeded the plan due to security constraints.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- Annually, especially before budget plan of following year is finalized, NWRI should make advocacy visit to influential government officials such as State governors, deputy governors, state house of assemblies, commissioners of water resources, and other high level officers that influence budget in the state in the company of RUWASSA and FMWR staff.
- NWRI/RWSSC is recommended to provide training course on rehabilitation of boreholes and maintenance for Water Sanitation and Hygiene Committee (WASHCOM) and Local Area Mechanics (LAMs) at state level. Although it is reported that approximately 30% of boreholes are out-of-service two years after the completion in Nigeria, some RUWASSAs could not secure the budget of the trainings for the village level. Since NWRI could secure the funds for travel expenses of RUWASSAs staffs to come to the institute, it might be good for NWRI to visit the states and provide training not only for RUWASSA alone, but for WASHCOMS and LAMs to extent possible.
- Many local NGOs are involved in improving access to portable water in Nigeria. However, many of them have not been trained in borehole rehabilitation and maintenance. NWRI, through Outreach Division which is responsible for designing and conducting short courses to extend the water related technology to industries and end users, is recommended to provide training to local NGOs in order to increase their capacity so that they are able to repair the broken boreholes in the villages.
- NWRI/RWSSC is recommended to do proper record keeping of data relevant to indicating whether the overall goal of this project and

the Project was suspended. Subsequent discussion with Nigeria in October 2012 led to decisions including extension of the project period and the minutes were sighed.

other relevant projects is achieved e.g. number of boreholes drilled, number and organization of people attending training etc. Such data should be kept at the beginning of any training organized by the RWSSC. This will help both implementing agency and JICA in effectively and continuously evaluating the project effects.

Lessons Learned for JICA:

- In the project aiming to enhance cascade training system, not only the trainers' agency (NWRI) but trainees' agencies (State RUWASSAs) must be advocated through the project or included in the project members to ensure the sustainability after the project end, especially in the case of federal country that each state agency needs to secure the budget at state level.
- All the equipment donated to NWRI/RWSSC is in good working condition. This can be attributed to the fact that the staff was well educated and the maintenance of the equipment was assigned to one course coordinator who is also very competent. The equipment donated to a training institute should be handled by one trained officer (not the head of the organization) for proper operation and maintenance. An appropriate highly competent person should be identified during project execution in collaboration with senior staff of the institute.

Donated rig to NWRI in good working condition

Inside of the RWSSC

conducted by Bhutan Office: February, 2019

Country Name	Study on GLOFs (Glacial Lake Outburst Floods) in the Bhutan Himalayas
Kingdom of Bhutan	

I. Project Outline

Background	A glacial lake outburst flood (GLOF) occurs when a body of water that is contained by a glacier or terminal moraine is released. In Bhutan, hazard from GLOF was an urgent environmental and economic issue. Since 1960s, a number of GLOFs had been recorded concurrently with shrink of glaciers and expansion of glacial lakes over the region. The most recent flood at the time of ex-ante evaluation occurred in October 1994 from the partial burst of the Luge Tsho in eastern Lunana. This flood caused loss of life and extensive damage to property along the Punakha- Wangdi valley. These observations led to a notion that recent global warming might have resulted in an increasing amount of GLOF risk. Therefore, mitigation of GLOF risk was one of the top priorities for climate change adaptation in Bhutan. Under those situations, the project was approved as a SATREPS project.		
Objectives of the Project[2]	Through the Outputs namely 1) identification of potential risk lakes in the Himalayas, 2) clarification of the history and process of glacial lake development as reviewable inventory, 3) comprehensive assessment of outburst risks of glacial lakes in Mangde Chhu basin, 4) development of hazard map in Mangde Chhu, and 5) development of a plan for the early warning system for pilot site and its catchment area, the project aimed at assessing the risk of GLOF in Bhutan through a joint research, strengthening capacity to conduct investigation and research on the GLOF phenomenon, and building capacity to propose effective disaster management in the Bhutan Himalayas, thereby contributing to improvement of safety against GLOF. 1. Overall Goal: Safety against GLOF is improved in the Bhutan Himalayas. 2. Project Purpose: To assess the risk of GLOF in Bhutan through a joint research, to strengthen capacity to conduct investigation and research on the GLOF phenomenon, and to build capacity to propose effective disaster management.		
Activities of the Project	1. Project site: The Bhutan Himalayas and Mangde Chhu basin (as model site) 2. Main activities: 1) connection of a common network system of satellite data for the joint research, development of a database of dangerous glacial lake in the Himalaya region, based on potential assessment using satellite data (ASTER-DEM), establishment of an assessment criteria based on verification of former condition in topography and water level of once broken lakes; 2) development of an inventory of historical glacial lake expansions based on the analysis of satellite data; climatologically analysis on historical expansions of glacial lakes using the inventory, clarification of the expanding mechanism of glacial lake through the consideration of ice/water interaction, based on field survey and observation; 3) detailed analysis on the hazardous lakes selected using satellite data (ALOS-DEM), assessment of risk factors and triggers of GLOF in/around glacial lakes based on ALOS-DEM analyses, selection of the high-priority places as the pilot sites according to the results of field survey and the satellite data analyses; 4) evaluation of a vulnerability to dam collapse based on field survey and geophysical profiling at the moraine, repeated analyses based on records of GLOFs in Himalaya region, simulation of break and flood at the glacial lakes of pilot site(s), drawing of the hazard map including unstable river bank under the flood based on geological and topographical field survey in the lower stream of Mangde Chhu; 5) an inventory survey on social and infrastructure facilities in the downstream area of Mangde Chhu, development of proposal on an effective early warning system 3. Inputs (to carry out above activities) Japanese Side 1) Experts from Japan: (long-term) 2 persons; (short-term) 24 persons 2) Training in Japan: 9 persons 3) Equipment: Surveying instruments, Automatic weather instrument, Satellite data processing machine, Satellite data, Geophysical equipment, GIS software, etc. 4) Local cost: cost for research equipment, etc. Bhutanese Side 1) Staff allocated: 18 persons 2) Land and facilities: office space at Department and Geology and Mining (DGM), etc. 3) Local cost.		
Project Period	May 2009 to April 2012 (Extension: April 2012)	Project Cost	(ex-ante) 220 million yen, (actual) 219 million yen
Implementing Agency	Department of Geology and Mines (DGM)[3], Ministry of Economic Affairs (MEA)		

[1] Science and Technology Research Partnership for Sustainable Development.

[2] Source: The logical framework which officialy added the overall goal approved by the Minutes of the Meeting (M/M) l (9/3/2010) and confirmed by the M/M (1/4/2011) of the Joint Coordinating Committee.

[3] Under DGM, Glaciology Division was in charge of survey and research on GLOF. In 2013, the function of Glaciology Division was transferred to newly established Snow and Glacier Division of Department of Hydromet Service (DHMS) under MEA. In 2016, DHMS was reorganized into an autonomous agency called National Center for Hydrology & Meteorology (NCHM), and Snow and Glacier Division was renamed as Cryosphere Service Division (CSD).

Cooperation Agency in Japan	Nagoya University, Japan Aerospace Exploration Agency, Earth System Science, Co., Ltd.

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

- In the terminal evaluation, achievement status of the Outputs of the project and improvement status of skills and knowledge of counterparts (C/Ps) were used to assess achievement level of the Project Purpose. Respecting the judgement made by the terminal evaluation, they shall be used as supplementary information to confirm the achievement status of the Project Purpose.
- Since Indicators for the Overall Goal were not set for the project, achievement level of the Overall Goal shall be judged based on the progress of the expected goals shared by the concerned parties through the terminal evaluation, that is utilization of the following research outputs by the project i.e. assessment of the dangerous lakes is implemented in Mangde Chhu basin and in wider area in Bhutan, utilizing the methods developed by the project including satellite data-based monitoring and field observation (Item 1) and the plans on early warning system proposed by the project are implemented in Mangde Chhu basin and wider area in Bhutan (Item 2). In addition, utilization status of other major research outputs[4] for improvement of safety against GLOF shall be confirmed (Item 3).

1 Relevance

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

The project was consistent with the development policy of the Bhutanese government, which put GLOF as a priority issue, as stated in the draft of the 10th Five Year Plan (FYP) (2008-2013) at the time of ex-ante evaluation and the 10th FYP at the time of project completion.

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

As stated in "Background", the project was consistent with the development needs of Bhutan of mitigation of GLOF risk at the time of ex-ante evaluation. Change in the development needs was not observed at the time of project completion.

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

The project was consistent with the draft of Rolling Plan for the Kingdom of Bhutan being examined at the time of ex-ante evaluation, in which measures against GLOFs were regarded to contribute to Development Issue which focuses on South Asia Regional 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 Purpose was achieved at the time of project completion. A joint research report between Japan and Bhutan on inventory on glacial lakes was produced by DGM and three joint research papers were published in an international journal, and a proposal on rainstorm and GLOF early warning systems in Mangde Chhu basin and Chamkar Chhu basin, developed by the project, was submitted to DGM (Indicator). All of the Outputs of the project were achieved (Supplementary Information 1). It is judged that, through such collaborative research with Japanese experts, capacity of C/P researchers for survey and research on GLOF was strengthened (Supplementary Information 2).

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

The project effects have mostly continued. When Glaciology Division of DGM was reorganized into Snow and Glacier Division of DHMS (presently CSD of NCHM) in 2013, DHMS (presently NCHM) took over research on GLOFs, while DGM was mandated to provide geological and geophysical data for the research to DHMS (presently NCHM) whenever requested. Since the reorganization, DHMS/NCHM has continued survey and research on GLOF based on the research outputs produced by the project. At the time of ex-post evaluation, 4 research activities are conducted by NCHM (i.e. time-series monitoring of glacial lakes, revision of inventory of glacial lakes developed by the project, study on glacial mass balance, and a collaborative research with Royal University of Bhutan on run off waters from the glacier lakes). In addition, a new organization, Department of Disaster Management (DDM) under the Ministry of Home and Cultural Affairs, has developed a GLOF hazard map for Thimphu Chhu river basin in collaboration with local governments. Further, the major research outputs by the project, including the joint research report on inventory on glacial lakes and the proposal on rainstorm and GLOF early warning systems, have been utilized for improvement of safety against GLOF. (See "Status of Achievement for Overall Goal at the time of Ex-Post Evaluation").

Meanwhile, not all of the research equipment provided by the project has been fully utilized along the intended purpose continuously. At the time of reorganization mentioned above, automatic weather instrument was handed over to DHMS (presently NCHM) and the other critical items were retained at DGM. Automatic weather instrument has been continuously utilized for research on GLOF. As for the research equipment retained at DGM, satellite data has been shared with DHMS/NCHM for research on GLOF. However, satellite data processing machine has been used to process geophysical data using other software[5] and GIS software has not been in use due to high price for renewal of the respective software licenses.It is noted that, this has not affected the research on GLOF because NCHM is able to acquire the up-to-date high resolution satellite data of glaciers from Sentinel 2 for free of charge due to advancement of technology and DGM has been using an alternative GIS software obtained by the government at a subsidized rate. The other critical research equipment has been utilized as intended and the collected data required for research on GLOF has been shared with DHMS/NCHM[7].

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

The Overall Goal has been achieved. As a follow-up to this SATREPS project, a technical cooperation project (TCP) of JICA "The Project For Capacity Development of GLOF and Rainstorm Flood Forecasting and Early Warning in the Kingdom of Bhutan" was implemented by DHMS/NCHM from 2013 to 2016. With the support of the TCP, assessment of dangerous lakes was implemented in Mangde Chhu basin and in Chamkhar Chhu basin, utilizing the methods developed by the project, including satellite data-based monitoring

[4] Other major research outputs are 1) inventory of potentially high-risk glacial lakes based on the common network system of satellite data and the database of dangerous glacial lakes; 2) research report on the history and process of glacial lake development; 3) the methods for detailed assessment of risk factors of glacial lakes outburst in Mangde Chhu basin, including list of dangerous glacial lakes; and 4) hazard map in Mangde Chhu basin.

[5] The processed data has been provided to NCHM as needed.

[7] It is noted that the provided survey instruments have been used as back up since 2017 because DGM procured new ones.

and field observation (Item 1). Rainstorm and GLOF early warning systems in the two basins, proposed by the project, were established (Item 2). Other major research outputs were utilized to improve safety against GLOF. Inventory of potentially high-risk glacial lakes and the methods for detailed assessment of risk factors of glacial lakes outburst in Mangde Chhu basin were utilized to assess the dangerous lakes, and the other major research outputs (i.e. research report on the history and process of glacial lake development and hazard map in Mangde Chhu basin) were utilized in the activities of the TCP. At the time of ex-post evaluation, assessment of dangerous lakes is continued by NCHM under the research activities on time-series monitoring of glacial lakes and revision of inventory of glacial lakes (Item 1) and rainstorm and GLOF early warning systems in the two basins are functional (Item 2).

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

Various positive impacts have been observed. The scientific literacy and awareness of the related government organizations and policy makers about the potential risks of GLOF has been improved through extensive media coverage and scientific seminars about the research outputs of the project. According to NCHM, recommendations from the research outputs of the project such as the list of the dangerous glacial lakes in Bhutan, has contributed to the formation of some of the activities for the 11th FYP (2013-2018) and the draft 12th FYP (2018-2023). The research outputs by the project have been applied to mitigation of disaster other than GLOF: NCHM and DGM have developed flood and landslide hazard maps in Mangde Chhu basin and Chamkar Chhu basin under the TCP. In addition, DGM has conducted geological and geophysical survey and research, utilizing the research method introduced by the project as well as the provided equipment retained at DGM. Meanwhile, 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) To assess the risk of GLOF in Bhutan through a joint research, to strengthen capacity to conduct investigation and research on the GLOF phenomenon, and to build capacity to propose effective disaster management.	Joint research report between Japan and Bhutan on GLOF 1)Database of quantitatively-assessed dangerous glacial lakes 2)Draft/Proposal on GLOF countermeasure	Status of the Achievement: achieved (continued) (Project Completion) - A joint research report between Japan and Bhutan on inventory on glacial lakes was produced by DGM and three joint research papers were published in an international journal. -Proposal on rainstorm and GLOF early warning systems in Mangde Chhu basin and Chamkar Chhu basin was developed and submitted to DGM. (Ex-post evaluation) *See the results of the Overall Goal.
(Overall Goal) Safety against GLOF is improved in the Bhutan Himalayas.	Item 1: Assessment of the dangerous lakes is implemented in Mangde Chhu basin and in wider area in Bhutan, utilizing the methods developed by the project including satellite data-based monitoring and field observation.	(Ex-post Evaluation) achieved -Assessment of the dangerous lakes was implemented in Mangde Chhu basin (twice) and Chamkar Chhu basin (once) in the TCP (2013-2016), and it is continued by NCHM.
	Item 2: The plans on early warning system proposed by the project are implemented in Mangde Chhu basin and wider area in Bhutan.	(Ex-post Evaluation) achieved -Rainstorm and GLOF early warning systems in Mangde Chhu basin and Chamkar Chhu basin, proposed by the project, have been established with support of the TCP.
	Item 3: Other major research outputs by the project are utilized for improvement of safety against GLOF in Mangre Chhu basin and wider area in Bhutan.	(Ex-post Evaluation) achieved -Other major research outputs by the project have been utilized for assessment of the dangerous lakes and the TCP for improvement safety against GLOF.

Source：Terminal Evaluation Report, Project Completion Report, questionnaire and interview survey to DGM and NCHM.

3 Efficiency

While the project cost was within the plan (ratio against the plan: 100%), the project period slightly exceeded the plan (ratio against the plan: 103%). Although the project activities in Bhutan were completed by March 2012, the end of the planned project period, it was in April 2012 that the project was officially completed (reasons for the extension is unknown). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

Improvement of safety against GLOF is consistent with the 11th FYP (2013-2018) and the draft 12th FYP (2018-2023) because they recognize the importance to continuously monitor and validate glacier lakes under the program for reducing and preventing Risk associated with Geo-hazards.

<Institutional Aspect>

CSD of NCHM, the succeeding organization of Glaciology Division of DGM, is mandated to study and monitor cryosphere (snow, glaciers, glacier lakes) and its associated risks to implement appropriate mitigation and adaptation measures, and its functions include time-series monitoring of glacial lakes and assessment of risks associated GLOF. Total of 8 researchers have been assigned for research activities based on the research outputs by the project. The necessary number of staff has been allocated because the research activities have been carried out as planned. Also, NCHM has been slowly developing linkage with other relevant organizations for continuation of the related research and utilization of the research outputs. For example, NCHM has received the geological and geophysical data required for research on GLOF from DGM and has started a collaborative research with Royal University of Bhutan. It has shared the results of

assessment of glacial lakes with the relevant stakeholders such as Department of Hydropower Systems, Druk Green Power Corporation, Ministry of Agriculture and Forests and other relevant authorities. It has also shared the observation data of the water level from the early warning systems to DDM. As for the maintenance of the provided equipment, both NCHM and DGM have assigned persons in charge of management for each item.

NCHM feels that, in order to provide all the services required by the mandates of NCHM, it will need to further expand their research capacity and focus; in addition, it will also need to create linkages with other relevant institutions within the country and the region. In the 12th FYP period (2018-2023), NCHM plans to increase the number of researchers and collaborative research with other national and international institutions and develop a platform or linkage with organizations with similar mandates.

<Technical Aspect>

Researchers of NCHM (former C/Ps of the project) have sustained and improved their capacity to continue the related survey and research by participating in the TCP mentioned in "Effectiveness/Impact" and other short-term training and seminars organized in Bhutan and other countries. They have also kept in close touch with the Japanese researchers involved in the project for carrying out the research activities. In addition, in order to enhance its research capacity, NCHM has recently created Research Publication Division to produce small research articles for internal distribution and review. In the future, it plans to expand this division so that the research results could be shared externally. Besides, as stated in "Institutional Aspect", NCHM plans to further enhance its research capacity by increasing collaborative research and by developing a platform or linkage with the relevant organizations in the 12th FYP period. NCHM and DGM has maintained skills and knowledge for O&M of the critical research equipment provided under the project by continuous utilization. Further, the related organizations are assumed to maintain the scientific literacy for utilization of the research outputs/outcome by the project for improvement of safety against GLOF because they have used the research outputs by the project and information provided by NCHM to analyze, assess, and propose policy matters in their respective fields.

<Financial Aspect>

Budget for the research activities on GLOF using the research outputs by the project has been financed by the government. According to NCHM, the necessary budget has been secured to carry out the research activities. For example, in Bhutanese fiscal year (BFY) 2018, it received Bhutanese Ngultrum (BTN) 1.15 million for time series monitoring of glacial lakes and BTN 0.65 million for research on glacial mass balance. NCHM has also secured the budget for O&M of the automatic weather instrument as part of its annual budget. DGM has secured the budget for O&M of the provided equipment under general maintenance budget. The budget amount for the O&M of the provided equipment was not available because it was impossible to segregate it from the overall 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. To assess the risk of GLOF in Bhutan through a joint research, to strengthen capacity to conduct investigation and research on the GLOF phenomenon and to build capacity to propose effective disaster management). The effect of the project has been mostly continued, and the Overall Goal (i.e. Safety against GLOF is improved in the Bhutan Himalayas.) has been achieved. Regarding the sustainability, the policy support for improvement of safety against GLOF is ensured. The establishment of NCHM and its future plans have also helped to sustain the effects of the project in terms of institutional and technical aspects. Budget for the research on GLOF and O&M of the provided equipment has been secured by both DGM and NHCM. As for the Efficiency, the project period slightly exceeded the plan due to unknown reasons. Considering all of the above points, this project is evaluated to be highly satisfactory.

III. Recommendations & Lessons Learned

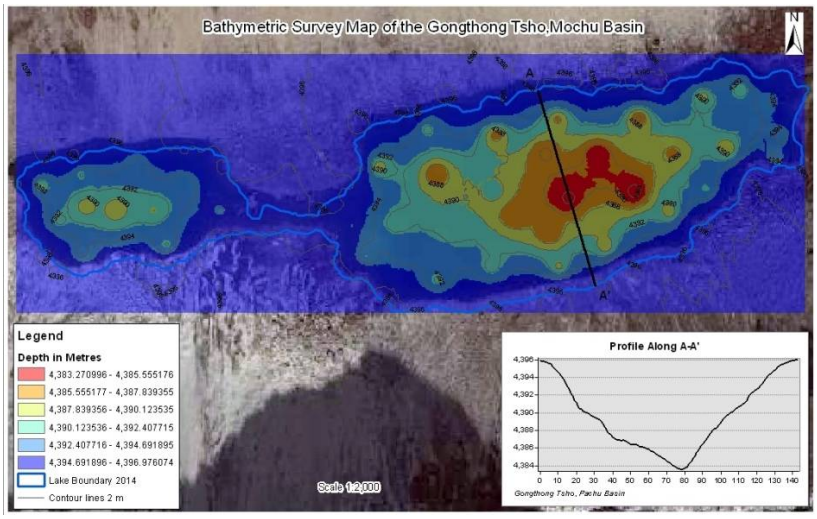
Recommendations for Implementing Agency:

- By the end of 12th FYP (i.e. June 2023), NCHM should further strengthen their linkages with other national and international research institutes as planned so that the former C/Ps have the opportunity to enhance their ability to analyze, interpret and prepare reports related to glacial lakes and their impacts.
- By the end of 12th FYP, NCHM should take forward the recently formed Research Publication Division as planned, which is in its nascent stage and can be highly beneficial to organizations within Bhutan and the region.
- By the end of 12th FYP, NCHM should foster a platform where researchers from other organization can collaborate with researchers of NCHM as planned.

Lessons Learned for JICA:

The TCP, which was proposed and successfully implemented as one of the outcomes of this SATREPS project, provides a good example of the synergy in between two projects. If a successive TCP follows a SATREPS in a timely manner even with the political will of a host country, it will allow bringing in the social implementation component which is usually insufficient in a SATREPS project. Also, sometimes there may arise some difficulty to evaluate the effectiveness/impact of the research outputs during the ex-post evaluation due to less enhanced social implementation component of SATREPS. Such complementarity of projects should be recommended where a TCP immediately follows a SATREPS, which would allow a holistic achievement of the project purpose with better prospects.

Researchers from NCHM/DGM perform a bathymetric survey at Chamkhar Chhu



Bathymetric Analysis of Gongthong Lake

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by China Office: January, 2019

Country Name	**Project for Capacity Development on Mental Health Services for Reconstruction Support of Sichuan Earthquake**
People's Republic of China	

I. Project Outline

Background	In the disaster-affected area hit by the Sichuan Earthquake on May 12, 2008, reconstruction works were steadily being implemented with focus on infrastructure development. Programs on mental health and psychosocial support for those affected were also started right after the Earthquake by various governmental agencies and other organizations in and out of China. However, it was said that the average incidence rate of post-traumatic stress disorder (PTSD) in the quake-affected area was estimated as more than 10% (at the time of ex-ante evaluation) and cases of secondary damage including suicide were continuously reported. This indicated that there had still been urgent needs of the metal health and psychological support. What still remained as challenges were: how to cope with the lack of mental health care workers, how to ensure the quality of care program, how to secure the sustainability of care provision system, and what to do with the lack of comprehensive coordination and management. It was confirmed that these challenges were aggravated over the time. It was also pointed out that the self-care of mental health care workers should be given full consideration as it was often the case that they themselves were the disaster victims.
Objectives of the Project	In the disaster-affected area hit by the Sichuan Earthquake (Sichuan Province, Gansu Province, and Shaanxi Province), the project aims to establish the appropriate and sustainable community-based psychosocial support system(1) through human resource development of mental health care workers in multi-sectoral areas (education, psychology, social work and medicine) as well as strengthening of collaboration and cooperation among sectors with focus on affected people, thereby having the concept of established support system well accepted in those project areas. (1) Psychosocial support system: All kinds of service provision to maintain and promote the psychosocial health as well as to prevent and treat mental disorder. Under this project, it includes the organizational implementation and management system, appropriate intervention by respective professional category, appropriate referral system and policy support. 1. Overall Goal: Concept on sustainable psychosocial support system, which appropriately reflects local culture, social character and other aspects, is well accepted in the Project areas. 2. Project Purpose: Sustainable psychosocial support system, which appropriately reflects local culture, social character and other aspects, is established at model sites.
Activities of the Project	1. Project Site: Sichuan Province, Gansu Province, and Shaanxi Province Model site: Five (5) sites (Jiange County, Guangyuan City, Sichuan Province; Chongzhou City, Chengdu City, Sichuan Province; An County, Mianyang City, Sichuan Province; Chencang District, Baoji City, Shaanxi Province; Qinzhou District, Tianshui City, Gansu Province) 2. Main Activities: (1) Establishment of operation and management mechanism for psychosocial support at model sites, (2) Development of human resources engaged in psychosocial support through trainings of trainers, (3) Enhancement of awareness and understanding toward psychosocial support among governmental agencies and local people. 3. Inputs (to carry out above activities) Japanese Side 1. Experts: 19 persons; (Long-term) 3 persons, (Short-term) 16 persons 2. Trainees received: 177 persons 3. Equipment: Vehicles for monitoring; office equipment such as personal computers and printers; furniture such as desks, chairs and bookshelves for office and library; reference books, etc. 4. Local expenses Chinese Side 1. Staff allocated: (Coordination team members) 56 persons 2. Chinese Experts: 10 persons 3. Facilities and equipment: Office space, psychology room and its facilities, books, existing care facilities (schools, psychology stations, governmental offices, medical facilities, etc.) 4. Local expenses:
Project Period	June 2009 – May 2014 / Project Cost: (ex-ante) 330 million yen, (actual) 380 million yen		
Implementing Agency	Main implementing agency: All-China Women's Federation (ACWF); Ministry of Health; Ministry of Education; Institute of Psychology, Chinese Academy of Sciences		
Cooperation Agency in Japan	Hyogo Institute of Traumatic Stress; Energy and Rescue Team by school staff of Hyogo (EARTH); Hyogo University of Teacher Education; Research Institute of Nursing Care for People and Community, University of Hyogo; Association of Japanese Clinical Psychology; Japanese Society of Certified Clinical Psychologists; Japanese Society for Traumatic Stress Studies, etc.		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

(Assessment of continuous status of psychosocial support system)

・The psychosocial support system aimed by the project consists of four aspects; 1. Organizational implementation and management system, 2. Appropriate intervention by respective professional category, 3. Appropriate referral system, and 4. Policy support. In assessment of continuation status of these aspects, the achievements of 1, 2 and 3 were examined through the continuation status of the Project Purpose at the time of ex-post evaluation and that of 4 was examined through the achievement status of the indicator 1 of the Overall Goal at the time of ex-post evaluation.

(Evaluation of achievement status of the Overall Goal)

・To assess the achievement of the Overall Goal "Concept on sustainable psychosocial support system, which appropriately reflects local culture, social character and other aspects, is well accepted in the Project areas", two indicators are set, namely, "Psychosocial support is mentioned in related policy documents (indicator 1)", and "Psychosocial support not limited to post-disaster support is continuously implemented (indicator 2)". In addition to these indicators, the achievement status of the Overall Goal in the target areas other than the model sites of the project 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 "The Comprehensive Plan for Rehabilitation and Recovery after Sichuan Earthquake (2008-2015)" by the State Council, which states that in severely affected areas of Sichuan, Gansu and Shaanxi Provinces hit by the Earthquake, 15 agendas for restoration and reconstruction including the mental health care services should be promoted. At the time of project completion, this "planning" was still effective.

<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 mental health and psychosocial support at the time of ex-ante evaluation. At the time of project completion, human resource development of high-quality mental health care workers was still important. The project was consistent with the needs of ACWF and those, involved in medicine, education, and communities, who were responsible for promoting mental health care activities.

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

The project was placed under the special issue "Assistance for reconstruction after the Sichuan Earthquake". The Japanese government had a series of meetings including policy discussion of governmental missions in late June as well as the Japan-China summit meeting held on July 9 in 2008 and made a decision to implement assistance in each aspect of five pillars (1. Health and welfare, 2. Society and culture, 3. Industry and employment, 4. Disaster prevention, 5. Community development). The assistance for mental health was targeted under the above pillars 1 (health and welfare) and 4 (disaster prevention).

<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, "Sustainable psychosocial support system, which appropriately reflects local culture, social character and other aspects, is established at model sites" was achieved by the time of project completion. Three types of tools to introduce and manage psychosocial support system were completed and shared with those at the model sites and related organizations (indicator 1). The expansion of activities such as training of second core human resources by core human resources[1] (through cascade system) and establishment of human resource network (as a function of platform for psychosocial support system) was confirmed by monitoring reports of all model sites (indicator 2). In addition, the experiences and lessons learned at the model sites were shared with other cities and countries in project target sites through training in China and Japan as well as the web-site of Women's Federations at all levels (indicator 3).

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

The project effects have continued since the project completion. Questionnaire survey and interview conducted in the ex-post evaluation confirmed that the management tools developed and the support system established by the project as well as core human resources well trained through project activities have been continuously utilized. This means that the psychosocial support has been properly provided in response to the local needs. Women's Federations at each model site have been actively providing psychosocial support to enhance mental health care services especially for children and women, in responses to the changing local needs. Though no specific operational guidance (in terms of project management with special consideration to PDCA cycle) has been provided at the model sites, the review of ongoing activities with appropriate advices have been made by ACWF and Provincial Women's Federation in an occasional manner. ACWF has been distributing three management tools developed by the project throughout the country with an aim to expand the mental health care system to the areas other than the model sites. It was confirmed that both of trained core human resources and second core human resources have increased in number and that they have been actively involved in mental health care services in various locations. These findings imply that the psychosocial support system, especially in terms of (1) Organizational management and implementation system, (2) appropriate intervention by respective professional category, and (3) appropriate referral system, has been continuously functioning in response to the changing local needs. In terms of (4) policy support, the project effects have also been reflected on related policies as described later, though the level of adaptation of mental health care system to the current administrative structure varies among provinces. Shaanxi Province is promoting the mental health care services incorporated into the routine health care activities, while Gansu Province is making effort to establish a series of activities of mental health care for women and children. In Sichuan Province, they have responded to the social needs in terms of service contents and the coverages, such that they promote the mental health care services incorporated into the routine health care activities by shifting the focus from disaster victims to those with special difficulties or many of women and children[2].

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

The Overall Goal, "Concept on sustainable psychosocial support system, which appropriately reflects local culture, social character and other aspects, is well accepted in the Project areas" was achieved. In the related policy papers prepared by the Chinese Communist Party, Sichuan Province, Gansu Province and Shaanxi Province, the terms of psychosocial support system were referred (indicator 1). For example, in order to promote and strengthen mental health care programs, following policies were developed. Firstly, in collaboration among departments of the Ministry of Education and those of the Nationl Health Commission (the former Ministry of Health),"Five-Year Plan for Promotion and Guidence on Education in the House (2016 – 2020)" was developed. In this policy, mental health is placed as a

[1] Core human resources are those who have engaged in supportive activities in the disaster-affected areas. They are teachers, healthcare workers, social service organizations and experts in the field of psychological counselling, etc. Second core human resources are those who have been trained by core human resources and have also engaged in supportive activities in the disaster-affected areas.

[2] "Those with special difficulties or many of women and children" means the group of people who are socially vulnerable without regular income, such as aged people with no supporters, those under age without parents, those with severe disabilities, etc.

priority issue in the family home education. Secondly, “Five-Year Plan of Promotion and Guidence on Eductation in the House (2016 – 2020)” was promulgated by each of 31 provinces (cities and counties).

As described before, it was confirmed that psychosocial support has been continuously provided in response to the local needs, not limited to post-disaster support (indicator 2). It was also confirmed that in response to their local needs, not limited to post-disaster suppport, the psychosocial support activities have been carried out in non-model sites of the project areas as well as non-project area, such that upon request by Yunnan Province, Guangxi Zhuang Autonomous Region, Gansu Province, Ningxia Hui Autonomous Resion, and Inner Mongolia Autonomous Region, the core human resources in Shaanxi Province have provided training for teachers, parents, and mid-level volunteers, by utilizing the management tools from 2015 up to the time of ex-post evaluation.

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

With the initiative of Chinese and Japanese experts and core human resources involved in the project, the International Academic Conference on Psychological Support after Disaster in Asia was established and 10 conference meetings were organized during the period between 2010 and 2018 in major cities in both of China and Japan. It was commented by those concerned that through the conference meetings, technical exchange and knowledge promotion have been advanced and individual mutual understandings between China and Japan have been promoted.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td rowspan="2">Project Purpose:
Sustainable psychosocial support system, which appropriately reflects local culture, social character and other aspects, is established at model sites.</td><td>Indicator 1:
Tools to introduce and manage psychosocial support system is developed (1).

(1) Tools to introduce and manage psychosocial support system. Based on the concept and methodology clarified through the project, completed materials such as management guideline, various training materials, tools, curriculum, and instruction manuals are compiled as one package with CD-ROM in user-friendly manner.</td><td>Achievement States: Achieved (continued)
(Project Completion)
・Three management tools were developed in March 2014. They are: “A way for professional mental health care worker - Handbook for development of core human resources for post-disaster mental health”, “A way for family reconstruction - Handbook on post-disaster mental health care at home”, and “A way for growth of child - Instruction manual on post-disaster mental health care for children”. Those tools were distributed to the model sites and related agencies.
(Ex-post Evaluation)
・At respective model sites, Women’s Federations distributed three management tools mentioned above to related organizations of mental health care, including schools and hospitals, while utilizing them as materials for training courses. In addition, in response to the emerging needs of mental health care services (mental health guidance in general, such as interpersonal communication, personality counseling and adolescence counseling as well as issues of children raised without parents and care for the aged), for the purpose of improving mental health of local people, especially children and women, Women’s Federations are actively implementing activities of psychosocial support which include the development of new materials, establishment of voluntary organizations, and hosting counseling and training courses targeted for students, parents, and educators.
・ACWF distributed those management tools nation-wide to develop core human resources, to improve education services on mental health for families and children and to expand mental health care programs. They also incorporated mental health education into the national level family education plan and put the priority on the mental health education for children and parents. Furthermore, they are implementing a series of seminars on mental health care all over the country.</td></tr>
<tr><td>Indicator 2:
Expansion of activities is confirmed by monitoring report tables prepared by all model sites (2).

(2) Tools to objectively monitor the progress of activities of psychosocial support in respective area. With the tools, operation and management system and criteria of mental health care activities are clarified.</td><td>Status of Achievement: Mostly achieved (continued)
(Project Completion)
・The core human resources implemented training, guidance and various awareness-raising events at all model sites. Second core human resources were developed in all model sites in cascade method of human development.
・Human resources network was established by a core group who were heavily involved in the project activities. They exchanged the information via mailing list and held meetings when needed. The list of second core human resources was developed, which enabled to quickly bring necessary human resources together for immediate action at the time of disaster. Human resources network was established at all model sites and it served as the principal platform for psychosocial support system. The framework of monitoring and feedback, which might require further improvement, was being gradually established as an implementation mechanism.
(Ex-post Evaluation)
・Development of core human resources and second core human resources has continued after the project completion and the number of those human resources increased as shown below. They have been effectively utilized for mental health care services in respective areas. It was confirmed that further development of activities has been carried out at all (5) model sites.
It was confirmed that psychosocial support has been continuously provided in response to the local needs, not limited to post-disaster support.

Number of core human resources and second core human resources
<table><tr><th rowspan="2">Province</th><th colspan="2">Number of core human resources</th><th colspan="2">Number of second core human resources</th></tr><tr><th>At the time of Terminal evaluation 2014</th><th>At the time of Ex-post evaluation 2018</th><th>At the time of Terminal evaluation 2014</th><th>At the time of Ex-post evaluation 2018</th></tr><tr><td>Sichuan</td><td>46</td><td>88</td><td>223</td><td>818</td></tr><tr><td>Shaanxi</td><td>14</td><td>110</td><td>119</td><td>229</td></tr><tr><td>Gansu</td><td>14</td><td>34</td><td>10</td><td>25</td></tr><tr><td>Total</td><td>74</td><td>232</td><td>352</td><td>1,072</td></tr></table>Source: Women’s Federation at each province and model site</td></tr>
</table>

Status of progress and continuation/expansion at each model site

Model site	Status of progress of activities	Status of continuation/expansion of activities (Indicator 2 of Overall Goal)
Jiange County, Guangyan City, Sichuan Province	92 mental health development guidance centers for minors were established at schools and 65 counseling rooms established at hospitals, respectively. A total of 5,400 people received counseling.	・Seminars and lectures on mental health care: at national parents' meetings, at poor villages and at the trainings for village leaders, etc. ・Utilization of management tools: for promotion activities on mental health care by volunteers at schools and hospitals (480 activities for a total of 45,000 people), for promotion of activities on mental health care and field consultation in townships and villages (distribution of promotion material: 20,000 copies, handbook: 45,000 copies, field consultation: a total of 450 people). ・Provision of venues for psychological consultation: establishment of 20 venues for claims against domestic violence and 8 model rooms for arbitration of marital conflict. ・Provision of psychological consultation services via internet, periodical broadcast of programs on psychological lecture.
Chongzhou City, Chengdu City, Sichuan Province	Social organization related to the mental health care was established by core human resources and consultation and support services on mental health were being implemented by the mental health care team.	・Activities on mental health care for elementary and middle school students and their family, psychological guidance before examinations, etc. ・By utilizing the budget on special account, City Women's Federation implemented priority support for social organizations that provide psychological consultation and support services for women and children (provided a total of more than 100 activities in three years after project completion, attended by for more than 26,000 of women, children and adolescents).
An County (currently Anzhou District), Mianyang City, Sichuan Province	A total of 108 second core human resources were developed for education and health fields as well as for women's federation. Psychological guidance base was established at each primary and secondary school and kindergarten, while psychological consultation room was established at district-level hospital. With these facilities mental health care activities were being progressed.	・Held exhibitions of mental health education at school and excellent classes, Seminars on mental health in communities, activities on mental health in remote rural areas (36 times, for more than 6,500 people), care for children with special needs at children's home. ・Utilization of management tools (at the meetings to enhance the project effects, at various events to promote continuous implementation of psychological support and training activities). ・Provision of psychological consultation services through internet, periodical broadcasting of programs on psychological lecture. ・Held more than 40 large scale events on mental health care in 4 years after project completion, targeted for 5,285 children and 22,481 adults.
Chencang District, Baoji City, Shaanxi Province	Trainings for core human resources were periodically held for their skill development. Core human resources team is being expanded.	・Provision of daily psychological consultation and guidance services at district psychological consultation room and family education and guidance center. ・Utilization of management tools (distributed at various promotion activities and training courses) ・Improvement of psychological consultation room (Psychological consultation services tailored for targets) ・Advice via psychological consultation hotline ・Focused dissemination activities (on holidays, consultation services for mental health knowledge promotion by core human resources and volunteers, lectures, etc.) ・In 3 years since the project completion, 26 focused dissemination activities, 21 free public psychological lectures, psychological consultation for 136 people
Qinzhou District, Tianshui City, Gansu Province	School mental health care model class was established. District Women's Federation, in collaboration with	・Implementation of seminar, lecture, and professional training on mental health (occasionally 9 times, attended by about 500 participants) ・Charity events on mental health education for migrating children with migrant workers (training for teachers and for parents of migrating children)

			Cultural Communication Limited Company, established a working base of mental health care for women and children in Qinzhou District, Tianshui City, implementing training and dissemination activities.	・Recruitment of student volunteers for mental health care ・Capacity development of trainers focused on mental health psychology ・Specialized lectures on mental health care held on memorial day (more than 100 lectures in 3 years since project completion, on topics such as women's mental health and advocacy for women's rights, etc.

Indicator 3: The experiences and lessons learned at model sites are shared in other target cities and counties.

Status of achievement: Achieved (continued)

(Project Completion)

・The experiences of respective model sites were shared and utilized through training both in China and Japan as well as on the website of Women's Federation at central, provincial, and city/district levels. Especially, to the website of ACWF, many internet lectures were uploaded, which served to complement the training program. This means that an effective use of internet was incorporated into psychosocial support system.

(Ex-post Evaluation)

・Through interview with ACWF, it was confirmed that some of the most effective technical transfer by the project were knowledge sharing on mental health, method to disseminate the knowledge, practice of psychological consultation services and routine practice of disaster prevention education.

Model site*	Results shared with other cities/counties
Jiange County, Guangyan City, Sichuan Province	Through WeChat and QQ group (1), knowledge on mental health was promoted and advertised to areas in and out of the model site.
An County (currently Anzhou District), Mianyang City, Sichuan Province	Core human resources and second core human resources went to areas including Jiangyou and Youxian and held seminars. Two staff members of "Family Garden" (2) gave instructions to Family Gardens in and out of the Province to implement mental health care activities.

Note: Only 2 model sites out of 5 provided information on this indicator.

(1) QQ group: Online service that provides the group chat function.

(2) Family Garden: "Family Garden Project", which aims at building a happy home. Target population is children raised without parents at home.

Overall Goal: Concept on sustainable psychosocial support system, which appropriately reflects local culture, social character and other aspects, is well accepted in the Project areas.

Indicator 1: Phrases regarding psychosocial support system are inserted in related policy papers.

(Ex-post Evaluation) Achieved

・The Report of "the 19th the National Congress of the Communist Party of China" describes the goal and direction of mental health activities, stating that the psychosocial service system should be established and strengthened and social psychological status should be nurtured to realize the social improvement based on high self-respect and calm intellect".

・"Outline on Child Growth in Sichuan Province (2016-2020)" and "Five-Year Plan for Promotion and Guidance on Education in the House in Sichuan Province (2016-2020)" describe, as the second priority task of the Plan; establishment of public service network for child mental health, establishment of department (for outpatients) on child mental health under the Organization for Women's and Children's Health, as well as an assignment of medical specialist, establishment of psychological consultation room and assignment of teachers specialized in mental health education at school, etc.

・"Program on Child Growth in Chongzhou City, Chengdu City (2016-2020)" describes the establishment of public service network for child mental health, establishment of psychological consultation room and assignment of teachers specialized in mental health education at school, training for staff specialized in mental health to provide psychological guidance and care for children with PTSD and child sufferers from serious natural disaster such as earthquake, etc.

・"Five-Year Plan for Promotion and Guidance of Education in the House in Gansu Province (2016-2020)" describes the assignment of social workers and counselors dedicated to local area, continuous and specialized family support services targeted for children in especially difficult situation, provision of psychological consultation services and necessary referral service, etc.

Indicator 2: Psychosocial support is continuously implemented in response to local needs, not limited to post-disaster support.

(Ex-post Evaluation) Achieved

・Through the questionnaire survey for Women's Federation of respective model sites, it was confirmed that psychosocial supports in response to local needs, not limited to post-disaster support had been continuously provided at all model sites. For the details, refer to "indicator 2 of the Project Purpose".

Source: Terminal Evaluation Report, Project Completion Report, Questionnaire and interview with ACWF and Women's Federations of the model sites, Questionnaire and interview with related agencies including the Ministry of Health

3 Efficiency

While the project period was as planned, the project cost exceeded the plan (ratio against the plan: 100% and 115%, respectively). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

In addition to the related policies described above, policies concerning mental health care were promulgated in education and health sectors as well. In the education sector, there are "Guideline on Development of Facility for Psychological Guidance at Primary and Secondary Schools (2015)" and "Working Guideline for Moral Education at Primary and Secondary schools (2017)". In the health sector, there is "Guiding Opinion for Strengthening Mental Health Services (2017)", which is considered as the first Chinese governmental guideline on a macro-scale developed and proclaimed jointly by 22 ministries and agencies in order to strengthen mental health care programs. The guideline is of great significance in terms of human resource development in mental health care as well as its program implementation Therefore, it can be said that policy sustainability is secured.

<Institutional Aspect>

At central level, the Ministry of Health, the Ministry of Education, and the Institute of Psychology, Chinese Academy of Sciences are responsible agencies in terms of mental health care. The role of each agency is clearly defined. The Ministry of Health (National Health Commission since 2018) is in charge of early detection of children with psychological and behavioral development disorder and provision of trainings on child psychology. The Ministry of Education is responsible for development of mental health education system, its conceptualization in education, provisions of support for parents, and so on. The Institute of Psychology, Chinese Academy of Sciences, is responsible for the technical and knowledge aspect of mental health care, such as policy promotion, development of tools for trauma evaluation, development of intervention tools, establishment of network and promotion of related references. All of those agencies have worked in collaboration and cooperation with ACWF. Some of experts in those agencies are assigned to ACWF to provide guidance and support for program implementation. Current staff number at each organization was not available, but no major problem has been reported in terms of operation and management. Therefore, it is considered that institutional sustainability is secured.

<Technical Aspect>

A majority of counterpart personnel of the project have continuously been working for the organizations at their respective model sites at the time of ex-post evaluation. There is an established system at each model site to provide staff with trainings on a regular or ad-hoc basis. As described before, guidelines and manuals on mental health care are effectively utilized. As for the technical level of staff engaged in duties of psychosocial support system not limited to post-disaster support, it was ensured by the study that a certain technical level can be sustained considering such findings that a certain level of staff number has been maintained, many of counterpart personnel of the project have continuously been working for the organizations and there is a system to train staff at many organizations. On the other hand, according to the questionnaire, half of those surveyed commented that the current technical level is not sufficient and the future prospect is not certain. Taking into the account of the fact that diversified activities are carried out in order to respond to their local needs respectively, it is difficult to judge the current technical level and its future prospect on sufficient grounds.

<Financial Aspect>

Women's Federations do not have the budget specifically labelled with mental health care, but carry out activities based on the funds obtained as part of home education program from their respective local governments on the basis of planning. In addition, Women's Federations often receive donations from private sector through the social charity program. The amount of funds and its source are not stable, therefore, there are some uncertainties in future prospect of financial aspect. It should be well noted that the mental health care programs have undergone changes in service contents and will do in the future as well, and it is difficult to assess the financial aspects based on the budgetary amount over the time.

<Evaluation Result>

Some uncertainties are identified in maintaining the technical levels and future prospect to secure the budget. Therefore, the sustainability of the project effects is fair.

5 Summary of the Evaluation

At the model sites of target areas (Sichuan Province, Gansu Province, and Shaanxi Province, which were hit by the Sichuan Earthquake), the Project Purpose of establishing the sustainable psychosocial support system, which appropriately reflects local culture, social character and other aspects, was achieved. The effects of the project have continued at the time of the ex-post evaluation, and the Overall Goal to promote the well-acceptance of the concept of the support system has been achieved. Regarding the sustainability, there are some uncertainties in technical and financial aspects but no problem in policy and institutional 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

Recommendations for Implementing Agency:

・None specified.

Lessons Learned for JICA:

・ACWF in Beijing assumed the responsibility of the implementing agency and the project activities were carried out respectively by Women's Federations (such as Provincial Women's Federation, City Women's Federation, District Women's Federation, etc.) and related organizations at model sites. After the project completion, ACWF was expected to facilitate activities and to monitor their progresses as well. However, it faced some difficulties to fulfill the role as expected due to that ACWF does not have the power to make a decision on management of activities for Women's Federation at model sites, it was not easy for them to grasp the status of all the wide-ranged activities on mental health care and that the physical distance to reach to the model site made it difficult for ACWF to visit. In prior to the project completion, it is necessary to encourage them to formulate the plan of operation by carefully assessing, from the perspective of the implementing agency, the expected future role of the organization and issues to cope with as well as the countermeasures, so that the implementing agency can play the expected role after project completion.

	
Shaanxi Province: Project to support three kinds of family members (the elderly, women, and children) in migrant workers' families in rural area	"Lecture on psychological support regarding parent-child relation" provided by the Mental Health Care Center for Women and Children in Tianshui City

Internal Ex-Post Evaluation for Technical Cooperation Project (Science and Technology Research Partnership for Sustainable Development: SATREPS)

conducted by Indonesia Office: January 2019

Country Name	Identification of Anti-Hepatitis C Virus (HCV) Substances and Development of HCV and Dengue Vaccines
Republic of Indonesia	

I. Project Outline

Background	In Indonesia, the number of individuals with chronic hepatitis C was estimated at approximately 7 million (2008). Some of persistent infection of Hepatitis C Virus (HCV) principally is predicted to develop liver cirrhosis and hepatic cancer subsequently, resulting to death. The number of death cases caused by HCV was estimated at over 200,000. Although the Interferon (IFN) + Ribavirin (RBV) combination therapy significantly improved the rate of viral clearance in comparison to the conventional IFN monotherapy, it was limitedly effective for around the half of the infected persons and it was very costly. As for the situation of Dengue viral infection, the numbers of diagnosed and fatal cases of Dengue Fever/Dengue Hemorrhagic Fever were estimated at over 100,000 and over 1,000, respectively. Treatment of dengue viral infection is primarily symptomatic treatment, and preventive vaccines and/or antivirals effective for dengue viral infection remain to be developed. Also, from the aspect of afferent infectious disease, it was regarded as an urgent issue not only in Indonesia but also worldwide. Under those situations, the project was approved as a SATREPS[1] project. As a project of SATREPS for development of antiviral drugs against HCV and vaccines for HCV and dengue, the project aimed at boosting self-reliant research and development capacity of the University of Indonesia and Airlangga University. The research theme for development of novel antivirals as well as therapeutic and/or preventive vaccines with low cost and high efficacy and safety (tolerability) and development of dengue preventive vaccine was highly valuable for not only Indonesia but also other developing countries.		
Objectives of the Project	Through collaborative research activities with Japanese research institutes, the project aimed at enhancing research capacity of University of Indonesia and Airlangga University for development of anti-HCV agents and vaccines against HCV and Dengue virus, thereby contributing to implementation of pre-clinical trial of these agent and vaccines and application of the developed research techniques and equipment for other medicine development.		
	Project Purpose: Research capacity of Indonesian research institutes, for the development of anti-HCV agents and vaccines against HCV and Dengue virus, are enhanced through collaborative research activities with Japanese research institutes.		
Activities of the project	Project site: Jakarta and Surabaya. 1. Main activities: 1) Collaborative research activities for identification of novel compounds with anti-HCV activity from medical plants and natural products, 2) Generation of candidates of HCV therapeutic/preventive vaccines, 3) Generation of candidates of dengue virus preventive DNA vaccine, etc. 2. Inputs (to carry out above activities) Japanese Side 1) Experts from Japan: 62 persons 2) Training in Japan: 18 persons 3) Equipment: Nuclear magnetic resonance system, DNA microarray, liquid chromatography mass spectrometer (LC/MS), etc. 4) Local cost: cost for research equipment, etc. Indonesian Side 1) Staff allocated: 41 persons 2) Land and facilities: office and research space at space at UI and AU, etc. 3) Local cost.		
Project Period	February 2010 to February 2014	Project Cost	(ex-ante) 350 million yen, (actual) 501 million yen
Implementing Agency	University of Indonesia (UI) and Airlangga University (AU)		
Cooperation Agency in Japan	Kobe University, Research Center for Medicinal Plant Resources, National Institute of Biomedical Innovation.		

II. Result of the Evaluation

[Special Perspectives Considered in the Ex-post evaluation]

- Though Overall Goals were not set at the ex-ante evaluation, the following two were considered as envisaged Overall Goals at the Terminal Evaluation which can be considered as "actions/efforts for utilization of the research outcomes by the project": 1) The pre-clinical trial is conducted on: i) Anti HCV agent candidates, ii) Candidate vaccines against HCV, and iii) Candidate vaccines against Dengue virus, and 2) Research techniques and equipment introduced by the project are applied for other medicine development. Therefore, the achievement level of the envisaged Overall Goals were verified at the ex-post evaluation as a part of positive impacts of the SATREPS project.

1 Relevance

<Consistency with the Development Policy of Indonesia at the time of ex-ante evaluation and project completion>

One of the priorities in the "Indonesia Sehat (Healthy Indonesia) 2010" issued by the Ministry of Health in 1999 was control of infectious diseases, which was still effective at the time of the project completion. Also, development of anti-HCV agents and vaccines against HCV and Dengue virus is prioritized in the "Science and Technology Policies (Research on MADAT[2])" (2010-2014).

<Consistency with the Development Needs of Indonesia at the time of ex-ante evaluation and project completion >

In order to decrease patients with chronic hepatitis C and HCV victims, development of novel antivirals as well as therapeutic and

[1] Science and Technology Research Partnership for Sustainable Development.

[2] MADAT stands for malaria, avian influenza, dengue fever/dengue hemorrhagic fever, HIV/AIDS and tuberculosis.

preventive vaccines with low cost and high efficacy and safety (tolerability) was needed. Also, development of dengue preventive vaccine was regarded as an urgent issue not only in Indonesia but also worldwide. The project was consistent with these needs at the time of both the ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

In the Country Assistance Program for Indonesia (2004), one of the priority areas for assistance was creation of a democratic and fair society. Assistance for combatting infectious diseases was included in this area.

<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. It is judged that, through collaborative research activities with Kobe University and National Institute of Biomedical Innovation of Japan, UI and AU enhanced their research capacity for development of anti-HCV agents and vaccines against HCV and Dengue virus. They succeeded in determination of candidates of anti-HCV substance and HCV and Dengue vaccines for pre-clinical trial (Indicator 1). Part of their research outcomes were summarized in academic journals (Indicator 2).

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

The project effects have continued. Since the project completion, UI has continued research activities for anti-Dengue drug development with competitive grants, based on the research output produced by the project. Also, UI started discussion with Kobe University for collaboration for new anti-bacterial substances. As well, AU has continued researches related to anti-HCV for identifying bioactive compounds derived from plants, involving undergraduate and graduate students. Also, the Institute of Tropical Diseases (ITD) of AU has conducted a collaborative research with Kobe University for identifying bioactive compounds of anti-Dengue derived from plants[3]. A PhD graduate has continued a research on anti-HCV from bio marine resources, with research equipment and techniques developed by the project. On the other hand, AU's research focus has been shifted from anti-HCV to anti-amoeba and anti-malaria. One reason is that researches related to HCV are difficult due to its characteristics of mutation, and another reason is it requires long time from in-vivo analysis to approval and release as drugs, according to a professor of AU. Because of AU's new SATREPS project[4] which deals with development of lead compounds of anti-malaria and anti-amebic agents in addition to the project, they have been able to expand their research area.

The implementation system for development research introduced by the project has sustained at both UI and AU, such as preparation of the Standard Operating Procedures (SOP) and progress review. All of the major provided research equipment have been utilized, except LC/MS due to troubles of the uninterruptible power supply (UPS) and compressors at AU, however, of which some parts were already replaced and prepared for use.

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

Although no Overall Goal was set forth at the time of ex-ante evaluation, this ex-post evaluation attempted to verify achievement level of the envisaged Overall Goals mentioned above. As of the ex-post evaluation, for pre-clinical trial on anti HCV agent candidates and candidate vaccines against HCV and Dengue virus, (envisaged Overall Goal 1), only the in-vivo analysis (mice) has been conducted on anti-Dengue virus vaccines. It should be noted that this had been expected by the Terminal Evaluation Team, and no responsibility of UI and AU sides had been officially mentioned for realizing the pre-clinical trial. Another expected impact is application of the research techniques and equipment introduced by the project for other drug development. Techniques such as cytotoxicity evaluation and MTT assay[5] and equipment have been utilized for researches on anti-obesity, anti-bacteria, anti-cancer, anti-amoeba, and so on (envisaged Overall Goal 2).

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

Based on the project experience, a patent on Hepatitis strain research model was applied in Japan. No negative impacts such as bio hazards from researches on HCV and dengue vaccines have not occurred at UI or AU.

<Evaluation Result>

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

Achievement of the Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Research capacity of Indonesian research institutes, for the development of anti-HCV agents and vaccines against HCV and Dengue virus, are enhanced through collaborative research activities with Japanese research institutes.	1 At least one candidate of anti-HCV substance and one each candidate for HCV and Dengue vaccines are determined for pre-clinical trial.	Status of achievement: Achieved (Continued). (Project Completion) - Eighteen (18) anti-HCV compounds have been identified, two (2) of which with strong activity are regarded as final candidates for future pre-clinical trials in the Project. - HCV genomic region to be integrated into anti-HCV recombinant varicella vaccine candidate was identified. - Dengue virus genomic region to be integrated into dengue DNA vaccine (serotypes 1 to 4) was determined, and the dengue DNA vaccine candidates were generated. (Ex-post Evaluation) - The Faculty of Medicine of UI won a competition-based research fund for anti-Dengue drug development in 2017/18 (2 billion Indonesian Rupiahs (IDR). - At AU, ITD has continued collaborative researches with the Faculty of Pharmacy and Faculty of Science and Technology related to anti-HCV.

[3] AU was supposed to conduct researches for development of drugs against HCV, and the bioactive compound of anti-Dengue was unintentionally found during other research activities.

[4] "Project for Searching Lead Compounds of Anti-malarial and Anti-amebic Agents by Utilizing Diversity of Indonesian Bio-resources" (2015-2020). Indonesian research institutes including AU has implemented the project in collaboration with Japanese universities and other organizations.

[5] It is a method which is widely used to investigate cell proliferation, activity and toxicity.

	2. More than 2 research papers, in which first author is an Indonesian researcher, are published for each research subject in peer-reviewed journals with its impact factor more than 1.0.	Status of achievement: Achieved (Continued). (Project Completion) - Two or more research papers in each research group were either published or in the process of reviewing in peer-reviewed journals with the impact factors of 1.0 or higher. (Ex-post Evaluation) - Since March 2014, four and five research papers in which the first author is an Indonesian researcher of UI and AU, respectively, have been published in the journals with the impact factors of 1.0 or higher.

Source: Terminal Evaluation Report and data/information provided by UI and AU.

3 Efficiency

Although the project period was as planned, the project cost exceeded the plan (ratios against the plan: 100% and 143%, respectively). Outputs were produced as planned. Therefore, the project efficiency is fair.

4 Sustainability

<Policy Aspect>

Development of anti-HCV agents and vaccines against HCV and Dengue virus is prioritized in the "National Dengue Vaccine Consortium on Development of Dengue Vaccine" (2015-2020) of the Ministry of Research, Technology and Higher Education (RISTEKDIKTI). Thus, it is backed up at least until 2020.

<Institutional Aspect>

UI has sustained an appropriate organizational structure for utilizing research outputs produced by the project. The Indonesia Medical Education and Research Institute (IMERI) was established under the Faculty of Medicine of UI in 2017. IMERI has 12 research clusters including ones for drug development and infectious diseases, and the number of the assigned staff including research assistants has been sufficient, according to the Faculty of Medicine. AU's organizational structure has been sufficient, with assigned 18 staffs at the Center for Natural Product Medicine Research and Development (NPMRD). UI and AU has conducted bimonthly meetings for sharing research progresses and next work plan, but no other arrangement for collaboration, since research themes have been demarcated among them.

<Technical Aspect>

Researchers of both IMERI and NPMRD have sustained a sufficient capacity to implement research activities using the research outputs by the project, as they have yearly won research funds from RISTEKDIKTI, university and other agencies. Besides, AU has made efforts for technical capacity development by conducting joint researches with private companies and other research institutes and by involving young researchers in the SATREPS project. Both universities have sustained skills and knowledge for operation and maintenance of the facility and equipment installed by the project based on SOP or by asking technicians and service agents for repair when necessary.

<Financial Aspect>

IMERI has received competitive funds from FMUI, RISTEKDIKTI and a private fund. Among from these fund sources, FMUI's fund has reached 20,700 US dollars (USD) for dengue vaccine researches for 2020. One of the researches who worked for the project has got 86,900 USD in 2018 and 89,700 USD for 2019 for the biomarker research on dengue infection. According to the Research Coordinator of the FMUI, these funds have been sufficient. As well, NPMRD has obtained funding from the university (250 million IDR in 2016 and expenses from the SATREPS project in 2017 and 2018), which has been sufficient, according to the Research Coordinator of AU. Both of IMERI and NPMRD have continuously secured budgets for operation and maintenance of the research facility and equipment installed by the project, by collecting service charges from clients.

<Evaluation Result>

Therefore, the sustainability of the effects is high.

5 Summary of the Evaluation

The Project Purpose was achieved, and the project effects have continued. Through collaborative research activities with a Japanese university and research institute, both UI and AU enhanced their research capacity for development of anti-HCV agents and vaccines against HCV and Dengue virus. Since the project completion, the two universities have continued research activities on drug development against Dengue virus and HCV, respectively, while AU's research focus has been shifted from anti-HCV to anti-amoeba and anti-malaria. Regarding sustainability of the research outputs, both UI and AU have sustained an appropriate organizational structure and staffing. Financially, both have gained competitive research funds from the university and external institutions. As for the project efficiency, the cost exceeded the plan.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing agency:

- According to UI, it requires much preparation to win competitive funds, in terms of human resources, facility and equipment. Besides these funds, for further promotion of research activities, it is recommended to RISTEKDIKTI to establish a scheme of block grant (subsidy assigned for each university) for conducting research activities. It should be considered to involve the industry sector (private companies related to drag development) as fund providers.

Lessons learned for JICA:

- Overall Goal had not been set forth at the time ex-ante evaluation, as it would take more than several years to implement the pre-clinical and clinical trial of anti-HCV agent candidates and candidate vaccines against HCV and Dengue virus after they are determined by the project. And, no responsibility of UI and AU sides had been officially mentioned for realizing these trials as of the project completion. If the project expects implementing agencies (research institutions) to sustain activities to achieve specific goals after the project completion, it should be written and officially agreed before the project completion. And, capacity building should be done for responsible stakeholders to conduct necessary activities, depending on set goals, during the project period. For example, in projects for drug development, if goals are set as determination of active compound (in-vitro), pre-clinical trial (in-vivo), or clinical trial, responsibilities should be clarified and necessary training should be given for stakeholders such as university researchers, research coordinators, pharmaceutical companies, the Ministry of Health, an ethical committee, and medical institutions, before the project completion.

- In the project, special equipment including the nuclear magnetic resonance system and LC/MS were provided as necessary for medicine department. IMERI and NPMRD could not only implement research activities as planned, but also have provided rental services for researchers within and outside the universities. These equipment have been utilized by many users, and furthermore rental fees have been collected. Thus, when providing equipment which can be utilized beyond the project activities, it is effective to provide paid rental services unless it affects the project activities from the project period or after the project completion. By spending the collected fees for payment of operation and maintenance of the equipment, financial sustainability will be enhanced.

A researcher explain the Nuclear Magnetic Resonance (NMR) equipment for Structure elucidation of chemical compound (Airlangga University)

Elisa reader equipment for reading the antigen – antibody bond (University of Indonesia)

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Cambodia Office: January, 2019

Country Name	**The Project for Capacity Development for Implementing the Organic Law at Capital and Provincial Level**
Kingdom of Cambodia	

I. Project Outline

Background	The Royal Government of Cambodia was promoting decentralization and deconcentrating (D&D) reform, for which "Law on Administrative Management of the Capital, Provinces, Municipalities, Districts and Khans (Organic Law)" (2008) was formulated. The law defined that provincial councilors and administrative staff were responsible for formulation, implementation, and monitoring of the provincial five-year development plan (CPDP) and the capital and provincial three-year rolling investment program (CPIP). Although JICA provided technical cooperation through "Project on Improvement of Local Administration (PILAC)" (2007-2010) to enhance the training management capacity of government staff for strengthening local administration management, there was still need for development of capacity of local administration at capital and provincial level on formulation and management of the CPDP and CPIP.		
Objectives of the Project	The project, known as PILAC2, aimed to establish capacity of local administration at capital and provincial level to formulate and manage[1] CPDP and CPIP in Cambodia through (i) identification of issues on human resource development and countermeasures in relation to local administration management and human resource development by National Committee for Sub-National Democratic Development (NCDD) Secretariat (NCDDS) headed by the Ministry of Interior (MoI), (ii) structuring of operational procedures and practices related to formulation and management of CPDP and CPIP at capital and provincial level by NCDDS, and (iii) systematical enhancement of the capacity of capital and provincial councilors and relevant officers to implement local administration management to formulate and manage CPDP and CPIP by Sub-National Administration Capacity and Human Resource Development Office (SCHRDO)/Policy Analysis and Development Division (PADD) and supporting agencies[2], thereby operationalizing a strategic system to formulate and manage CPDP and CPIP at capital and provincial level with stronger ownership aiming at improving socio-economic situation. 1. Overall Goal: A strategic system to formulate and manage 5-year development plans and 3 year rolling investment programs are operationalized at capital and provincial level with stronger ownership aiming at improving socio-economic situations. 2. Project Purpose: Capacity of local administration at capital and provincial level to formulate and manage 5-year development plans and 3-year rolling investment programs is established.		
Activities of the Project	1. Project Site: Cambodia 2. Main Activities: (i) Implement human resource development program for senior officials at capital and provincial level. (ii) Refine guidelines on CPDP and CPIP; revise manual on CPDP and CPIP and finalize the manual based on the guidelines; problem finding survey on the formulation and management of CPDP and CPIP. (iii) Prepare training package; prepare, implement, and evaluate training management for the revised training manuals; develop training curriculum for the revised training manuals; prepare, implement and evaluate operation and management of CPDP and CPIP training; prepare, implement, and evaluate TOT on CPDP and CPIP; implement CPDP and CPIP training and finalize the training package. 3. Inputs (to carry out above activities) Japanese Side 1. Experts: 5 persons 2. Trainees Received: 25 persons 3. Equipment: Office equipment, etc. 4. Local Cost: Cost for training activity and local staff, etc. Cambodia Side 1. Staff Allocated: 27 persons from NCDDS 2. Land and Facilities: project office in NCDDS 3. Local Cost: utilities for project office, etc.		
Project Period	March 2010 - March 2015	Project Cost	(ex-ante) 420 million yen, (actual) 445 million yen
Implementing Agency	Sub-National Administration Capacity and Human Resource Development Office (SCHRDO)/Policy Analysis and Development Division (PADD) [3], National Committee for Sub-National Democratic Development Secretariat (NCDDS)		
Cooperation Agency in Japan	None		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

- To verify the Project Purpose Indicator 3, namely, "capital and provincial councils are able to monitor and analyze the changes of basic regional socio-economic situations for CPIP in capital and all provinces," we used the following interpretation made in the mid-term review and the terminal

[1] "Manage" means "Monitor and evaluate" according to the project framework.

[2] Selected government officials of General Department of Local Administration of Ministry of Interior, Ministry of Planning, Ministry of Economy and Finance, NCDD Sub-Committee on Sub-National Plan and Sub-Committee on Financial and Fiscal Affairs.

[3] The initial implementing agency was Capacity Development and Information Unit of NCDDS. It was changed to SCHRDO/PADD due to restructuring of NCDDS in early 2012.

evaluation of this project that one could assume a certain achievement this indicator if a monitoring system is in place, that is, if "Monitoring Strategy of CPDP (2014)" is available.

- Continuation status of the training system developed as part of the project's Outputs shall be confirmed as Supplementary Information to assess continuation of effects of the project.

1 Relevance

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

At the time of ex-ante evaluation, the project was consistent with the "Rectangular Strategy for Growth, Employment, Equity and Efficiency of the Royal Government of Cambodia" (2009-2013) announced in 2008 in that good governance was regarded as the core strategy, and public administration reform including D&D, which includes implementation of the Organic Law, was one of the four major reform areas under good governance. At the time of project completion, the project was consistent with the "National Program for Sub-National Democratic Development (NP-SNDD)" (2010-2019) and the "Second Three-year Implementation Plan of NP-SNDD (IP3-II)" (2015-2017) in terms of strengthening of system of D&D and capacity of stakeholders at provincial level.

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

This project was consistent with the needs for development of capacity of local administration at capital and provincial level on formulation and management of the CPDP and CPIP as mentioned stated in "Background" above (No information sources report drastic changes in project context that would have declined the needs for the project during the implementation period).

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

The project was consistent with Japan's Country Assistance Program for the Kingdom of Cambodia (2002), which included "strengthening of good governance" under one of the four priority areas ("Sustainable economic growth and realization of a stable 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. The capital and all the provinces formulated the first CPDP and CPIP in 2011 (Indicator 1), and most of them revised CPIP every year (Indicator 2). The monitoring strategy for CPDP was also formulated in the capital and all provinces, which could be regarded as an indication of the enhanced monitoring capacity of each local administration (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. The formulation of the second CPDP and CPIP as well as the annual revision of CPIP took place in the capital and all provinces, based on the requirement of the Organic Law as well as the "Policy on Planning System at Sub-National Level" (December 2014) (hereafter called "Planning Policy 2014"). However, the training system developed under this project has not been operational so far since, according to NCDDS, training on CPDP is necessary only at the beginning of the five-year mandate period (i.e., when the new councilors are elected; the next time will be 2019), and training on CPIP is not necessary as the guideline of the Planning Policy 2014 provides guidance on formulation of CPIP. Moreover, as discussed later, the training is a responsibility of the Ministry of Planning (MoP), not MoI as this project expected, under the Planning Policy 2014.[4]

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

The Overall Goal was achieved by the time of ex-post evaluation. As stated above, the capital and all provinces formulated the second CPDP and CPIP in 2015 (Indicator 1) and have revised CPIP every year (Indicator 2). Also, the capital and all provincial councils have prepared the monitoring reports annually based on CPIP (Indicator 3).

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

No negative impacts of the project were observed. As a potential positive impact on gender, there is a planning development processes, which requires to promote more women to get involved in the process.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Capacity of local administration at capital and provincial level to formulate and manage 5-year development plans and 3-year rolling investment programs is established.	Indicator 1: CPDP and CPIP are formulated by capital and all provinces.	Status of the Achievement: achieved (continued) (Project Completion) The first CPDP and CPIP were formulated by the capital and all provinces in 2011. (Ex-post Evaluation) *See Indicator 1 of the Overall Goal.
	Indicator 2: CPIPs are revised by capital and all provinces every year.	Status of the Achievement: mostly achieved (continued) (Project Completion) The first CPIP (2011) were revised in both 2012 and 2013 by the capital and 17 provinces out of 20 collected answers of PILAC2 survey (the number of provinces in Cambodia was 24). (Ex-post Evaluation) *See Indicator 2 of the Overall Goal.
	Indicator 3: Capital and provincial councils are able to monitor and analyze the changes of basic regional socio-economic situations for CPIP in capital and all provinces.	Status of the Achievement: partially achieved (partially continued) (Project Completion) "Monitoring strategies of CPDP (2014)" was not completed by the time of project completion. Nevertheless, the capital/all provinces formulated the monitoring strategy based on CPDP, while it did not have any physical record

[4] We do not discuss this issue under Relevance, as the adoption of the Planning Policy 2014 had not been revealed at the time of project completion. By around 2017, it became clear that MoP would be in charge of the training.

		since it was in annual meeting materials. (Ex-post Evaluation) The capital and all provinces formulated the monitoring strategy of CPDP 2015-2019, which is written in the CPDP.
(Overall Goal) A strategic system to formulate and manage 5-year development plans and 3 year rolling investment programs are operationalized at capital and provincial level with stronger ownership aiming at improving socio-economic situations.	Indicator 1: 5-year development plan (CPDP) and 3-year rolling investment program (CPIP) at capital and all provincial level are formulated according to guidelines in capital and all provinces even after the 2nd election in 2014.	(Ex-post Evaluation) achieved Following the requirement of the Organic Law as well as the Planning Policy 2014, the capital and all province formulated the second CPDP and CPIP in 2015.
	Indicator 2: 3-year rolling investment program (CPIP) at capital and provincial level are being revised in capital and all provinces.	(Ex-post Evaluation) achieved The capital and all provinces have revised CPIP every year.
	Indicator 3: Capital and provincial councils continue to monitor and analyze the changes of basic reginal socio-economic situation in capital and all provinces.	(Ex-post Evaluation) achieved The capital and all provincial councils have prepared the monitoring reports annually based on CPIP which is updated every year.

Source: Terminal Evaluation Report; interview and questionnaires to MoI/NCDDS

3 Efficiency

The project cost slightly exceeded the plan, while the project period was as planned (ratio against the plan: 106% 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 government established the support policy and system for D&D and implementation of the Organic Law with the three important policy and national program, namely, NP-SNDD, the "Third Three-year Implementation Plan of NP-SNDD (IP3-III)" (2018-2020), and the Planning Policy 2014. However, as already mentioned, this policy does not support the training system developed by the project in the same way as it was expected. Also, while the D&D policy is to decentralize planning management to sub-national administration, it seems the Planning Policy 2014 is giving the responsibility for capacity development of sub-national administration in planning back to the Ministry of Planning (MoP) (principally responsible for national planning) rather than MoI, which is contradicting to the D&D concept.

<Institutional Aspect>

NCDDS continues to be the national focal point for CPDP and CPIP. There have been no structural changes in NCDDS since project completion, and three staff members are assigned to Sub-National Administrative Finance and Planning Office under PADD of NCDDS, which coordinates and organizes policies and legal documents related to CPDP and CPIP. According to NCDDS, this number is not yet sufficient to fulfill the organizational roles. NCDDS is seeking for those who have skills and experiences,[5] and is developing the staff's capacity through training.

Regarding the training system on CPDP and CPIP, however, it was not transferred to the newly established Training Department of MoI as recommended by the terminal evaluation of this project; instead, under the Planning Policy 2014, MoP assumes the responsibilities for such training. Since the next (third) CPDP is to be formulated in 2019, it is not clear whether and in what way MoP plans to conduct the training related to CPDP/CPIP.

<Technical Aspect>

Although concrete information was not available, it is considered that the capital and provinces are more or less capable of formulating/revising CPDP/CPIP given the fact that they could formulate the second CPDP and CPIP in 2015 and have revised CPIP since then. At NCDDS, as well, the staff seems to have a certain degree of capacity to coordinate the planning work of sub-national administration. However, most of the staff trained under this project have been transferred to different organizations/institutions. As NCDDS considers that the staff's skill and knowledge are limited, it is managing to develop their capacity through training related with laws, regulations, etc. The guidelines and other materials developed under this project is no longer used, but they were updated to the current guidelines of the Planning Policy 2014.

<Financial Aspect>

No special budget is required for NCDDS to fulfill the role of the national focal point for CPDP and CPIP. Regarding the training on CPDP and CPIP, due to the situation explained above, NCDDS/MoI does not allocate budget for the training on CPDP and CPIP in 2015 and 2016. As for 2017, USD11,990 was funded from SIDA and there was new budget allocated to MoP for the Planning Policy 2014, but they were not for the training on CPDP/CPIP and detailed information was not available.

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved the Project Purpose of establishing the capacity of local administration to formulate and manage CPDP/CPIP by the time of project completion. The Overall Goal has been achieved as CPDP/CPIP have been worked on by the capital and all provinces to the time of ex-post evaluation, while it is not clear whether the training on planning will continue. Regarding the sustainability, problems were found on the policy, institutional, technical, and financial aspects mainly due to some contradiction between the Planning Policy 2014 (that stipulates CPDP/CPIP formulation and management) and the D&D policy. Nonetheless, NCDDS is continuously functioning as the national focal point for CPDP/CPIP. As for the efficiency, the project cost slightly exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

[5] NCDDS is a temporary organization, it does not have rights to recruit staff directly. Therefore, NCDDS always requests staff from MoI but no staff volunteer to work with NCDDS where the work is not their core works. As result, NCDDS keeps requesting staff and never has enough staff.

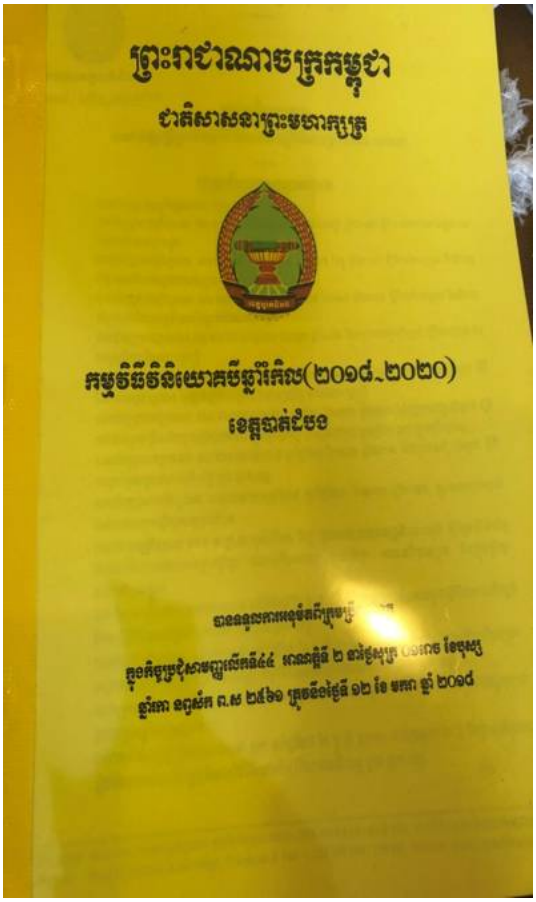
III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

The Ministry of Interior and NCDD Secretariat should seek for a way to coordinate with MoP as soon as possible so that the training related to the formulation of the next CPDP in 2019 would be conducted in a way that is fully aligned to the D&D concept, based on which this project helped establish the system of sub-national planning. For this purpose, NCDD Secretariat could consider coordination with an on-going JICA technical cooperation project "Project for Capacity Development on Training Management for Strengthening Sub-National Administrations" (2017-2022) implemented by Training Department of MoI.

Lessons Learned for JICA:

When we follow up a completed project related with any sector or issues, we should make sure that the policy of the country of that sector is in place, otherwise, the sustainability is not fully ensured like this project. In case of this project, the training (on sub-national planning management) was transferred to another Ministry which was different from the expectation at the formulation stage.



CPIP (2018-2020), Battambang province

CPIP (2018-2020), Banteay Meanchey province

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Laos Office: August 2018

Country Name	**Project for Improving In-service Teacher Training for Science and Mathematics Education**
Lao People's Democratic Republic	

I. Project Outline

Background	As one of the top prioritized sectors in contributing to poverty reduction in Lao PDR, various efforts had been made in the education sector under the following three pillars: (1) improvement of equitable access; (2) improvement of quality and relevance; and (3) improvement of administration and management. Although the enrollment rate in the primary education had been improved, other indicators that are related to the quality of education, for example, repetition, dropout, and completion rates had not been improved as expected. With these backgrounds, the Education Sector Development Framework (ESDF) (2009-2015) placed an emphasis on the improvement of teachers' quality by strengthening the capacity of in-service training. JICA supported the improvement of teacher education through the Project for Improving Science and Mathematics Teacher Training (SMATT) from 2004 to 2008, which aimed at improving quality of science and mathematics lecturers at teacher education institute (TEI). Training contents and learner-centered approaches of SMATT were recognized as relevant and useful for persons and organizations concerned. Recognizing these achievements and impacts of SMATT project, the Government of Lao PDR requested the continued support to enhance and expand the outputs of SMATT project to the school level.		
Objectives of the Project	Through strengthening the mechanism and human resources and developing materials for improving lessons, the project aimed at improving quality of science and mathematics lessons in target schools, thereby improving quality of lessons in target provinces. 1. Overall Goal: Quality of lessons in target provinces is improved. 2. Project Purpose: Quality of science and mathematics lessons in target schools is improved.		
Activities of the Project	1. Project Site: Savannakhet, Champasack and Khammouane Provinces[1] 2. Main Activities: (1) Ministry of Education and Sports (MOES) prepares an operational plan for supporting the mechanism for improving lessons and conducts workshops on In-service Teacher Training for Science and Mathematics Education (ITSME), District Education and Sports Bureau (DESB) conducts training of trainers (TOT), principals and academic teachers (AT) in target schools[2] prepare action plans and implement activities for improving lessons, DESB monitors utilization of model lesson plans in target schools and reports to Provincial Education and Sports Service (PESS), and MOES organizes seminar to share experiences with relevant organizations; (2) ITSME trainers[3] participate in ITSME workshops to gain necessary subject knowledge and skills for improving lessons and principals and AT participate in TOT to learn how to improve lessons in target schools; and (3) the project develops a standard format of lesson plan, a lesson plan preparation manual, a lesson plan evaluation sheet, a lesson observation sheet, a monitoring report format, and reference materials for improving lessons for ITSME trainers, and ITSME trainers develop model lesson plans and manual for Internal Supervision (IS) for improving lessons etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 6 persons 2) Trainees Received: 30 persons 3) Equipment: vehicle, photocopier, computer, printer, software and video camera etc. 4) Local activity cost Lao Side 1) Staff Allocated: 40 persons 2) Provision of office space and utilities 3) Local activity cost		
Project Period	February 2010 – October 2013	Project Cost	(ex-ante) 390 million yen, (actual) 303 million yen
Implementing Agency	Department of Teacher Education (DTE), Ministry of Education and Sports (MOES)		
Cooperation Agency in Japan	Vision and Spirit for Overseas Cooperation Co., Ltd. (VSOC)		

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

- [Supplementary Information for Continuation Status of Project Effects] As stated in the Terminal Evaluation Report, achievement of Output 1, 2 and 3 led to the activation of IS and External Supervision (ES) activities[4] in target schools, which in turn led to the achievement of Project Purpose. However, IS and ES activities are not mentioned in indicators of Project Purpose. Thus, in this ex-post evaluation, whether, how frequently and where IS and ES activities have been conducted after project completion are checked to evaluate continuation status of project effects.
- [Supplementary Information for Overall Goal] It is stated in the Terminal Evaluation Report that the achievement level of indicators of Overall Goal

[1] The target districts were Kayson District, Champhone District and Phalanxay District in Savannakhet Province, Thakhek District and Himboun District in Kammouane Province, and Sanasonboun District, Bachieng District and Paksong District in Champasak Province.

[2] The total number of the target schools was 116 in eight districts in three provinces.

[3] ITSME trainers: lecturers of Teacher Training Colleges (TTCs) and Pedagogical Advisors (PAs) of PESS and DESB, 38 persons in total (6 in PESS, 16 in DESB and 16 in TTC) during the project period

[4] In IS activities, teachers observe demonstration lessons conducted by principals and ATs utilizing model lesson plans, analyze model lesson plans, observe lessons conducted by peer teachers, and revise/modify their own lesson plans in accordance with model lesson plans. In ES activities, ITSME trainers (PAs) monitor lessons conducted by school teachers and provide guidance/advice to schools.

should be evaluated taking into account the two aspects below, as targets set in these indicators are not very clear:

(1) Coverage: the achievement level in terms of 'coverage' should be evaluated against coverage targets set in plans of DTE, PESS and DESB to extend ITSME approach for improving the quality of lessons in the target provinces.

(2) Qualitative achievement: the qualitative achievement level should be evaluated against 'target situation' stated for indicators of Project Purpose, which are;

Target situation for Indicator 1: Teachers can conduct lessons that are easy to understand and enjoyable for students by using ITSME lesson plans.

Target situation for Indicator 2: Teachers can develop their own lesson plans for lessons that are easy to understand and enjoyable for students by using ITSME lesson plans.

In this ex-post evaluation, the two aspects above are used to evaluate the achievement level of indicators of Overall Goal.

<Constraints on Evaluation>

- [Supplementary Information for Overall Goal] Regarding '(1) Coverage' above, coverage targets set in plans of DTE, PESS and DESB could not be obtained due to lack of data. Thus, the achievement level of indicators of Overall Goal was evaluated taking into account of '(2) Qualitative achievement' only among the above.

1 Relevance

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

The project was consistent with Lao PDR's development policy on 'improvement of the quality of education' and 'strengthening of in-service teacher trainings' as set forth in "the Sixth National Socio-Economic Development Plan (NSEDP) (2006-2010)", "the Sixth Five-Year Education Sector Development Plan (ESDP) (2006-2010)", "Teacher Education Strategy 2006-2015 and Action Plan 2006-2010 (TESAP)", "the Seventh NSEDP (2011-2015)", "the Seventh ESDP (2011-2015)" and "TESAP (2011-2015)" etc. at the time of both ex-ante evaluation and project completion.

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

The number of primary schools increased from 7,148 in 1991 to 8,740 in 2007, and the enrollment rate in primary schools was improved from 80.3% in 2001 to 86.4% in 2007. However, at the time of ex-ante evaluation (2009), improvements were not seen in repetition, dropout, and completion rates as expected, and one of the reasons for this was considered to be low quality of education. At the time of project completion, the Director of the Department of Teacher Education (DTE) announced that DTE would encourage all TTCs to introduce ITSME lesson planning as a part of compulsory study for new teachers, and ITSME lesson plan format and method of lesson planning, which were developed under the project, would be commended for a national standard. Thus there were needs for improving the quality of teachers and lessons both 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 Japan's ODA policy, as stated in the "Country Assistance Program for Lao PDR (2006)", in which 'improving the quality of education' is emphasized.

<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 had been achieved by the time of project completion. In general, the quality of lessons, especially their framework, conducted by the target school teachers was improved. Through the use of ITSME materials (model lesson plans, ITSME manual and reference materials for teachers' study) developed under the project and the lesson plans made by teachers themselves, lessons became easier to understand and more enjoyable for students (Indicator 1). In general, the quality of lesson plans developed by the target school teachers was also improved. Their lesson plans were composed of i) clear objectives, ii) detailed learning process/student activities, and iii) evaluation questions based on the model lesson plans, which was a remarkable improvement from the situation at the baseline survey (Indicator 2).

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

The project effects have been partially sustained since project completion. As data on the continuation status of project effects (Indicators 1 and 2 of Project Purpose) was not available in the implementing agency, an interview survey was conducted to principals of 10 schools targeted under the project[5] during the field survey for the ex-post evaluation. Regarding Indicator 1, six principals (60%) replied "yes" to the question, "are teachers in your school able to set clear objectives, lead students' activities, summarize and evaluate the lessons using lesson plans based on ITSME models in the lesson?". Moreover, eight principals (80%) replied "yes" to the question, "are teachers able to conduct lessons that are easy to understand and enjoyable for students by using ITSME lesson plans?". They also commented that ITSME models made most of students more willing to join classes than before project implementation. Regarding Indicator 2, seven principals (70%) replied "yes" to the question, "are teachers able to develop their own lesson plans that are composed of i) clear objectives, ii) detailed learning process/student activities, and iii) evaluation questions based on the model lesson plans?". They also commented that teachers conduct peer reviews on their lesson plans to improve them, and when teachers obtain feedbacks to their teaching from other teachers, they reflect feedback comments to their lesson plans. In seven districts[6] in three provinces targeted under the project, IS activities have been conducted once or twice a month in all schools utilizing ITSME lesson plans since project completion. However, ES activities have been conducted once a month in a limited number of schools (approximately 10% of the total number of schools), as many schools do not have a capacity to conduct both IS and ES activities and hence prioritize IS activities.

<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. An interview survey was conducted to principals of 12 schools that were not targeted under the project in three provinces[7] during the field survey for the ex-post evaluation. Regarding Indicator

[5] An interview survey for project-targeted schools was conducted in one school in Paksong District, one school in Bachieng District and two schools in Sanasonboun District in Champasak Province, one school in Phalanxay District and one school in Champhone District in Savannakhet Province, and two schools in Thakhek District and two schools in Himboun District in Kammouane Province (10 schools in total).

[6] Data was not available in Himboun District in Kammouane Province.

[7] An interview survey for non project-targeted schools was conducted in two schools in Paksong District, one school in Bachieng District and two schools in Sanasonboun District in Champasak Province, one school in Phalanxay District, one school in Kayson District and one school in Champhone District in

1, nine principals (75%) replied that teachers in their schools are able to set clear objectives, lead students' activities, summarize and evaluate the lessons using lesson plans based on ITSME models in the lesson, and ten principals (83%) replied that teachers are able to conduct lessons that are easy to understand and enjoyable for students by using ITSME lesson plans. One of good examples is that teachers start asking questions to students from an easy level to a difficult level during a lesson, to help students understand lesson contents. Regarding Indicator 2, seven principals (58%) replied that teachers are able to develop their own lesson plans that are composed of i) clear objectives, ii) detailed learning process/student activities, and iii) evaluation questions based on the model lesson plans.

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

No negative impact on natural and social environment has occurred under the project. As other positive impacts, according to interviews with 34 ITSME trainers, approximately 80% of them replied that examination scores of mathematics and science have been improved to a certain extent in schools where ITSME approach has been adopted, compared with scores before project implementation. Moreover, according to the review of "the Education Strategic Development Plan (2011-2015)", the number of dropped-out students at the national level has decreased by 18%, compared with the number before project intervention. MOES has analyzed that the project has contributed to this improvement to a certain extent through improving the quality of teacher training.

<Evaluation Result>

In light of the above, through the project, the Project Purpose had been achieved by the time of project completion, the project effects have been partially sustained since project completion, and the Overall Goal has been partially achieved by the time of ex-post evaluation. Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Quality of science and mathematics lessons in target schools is improved.	1. Improvement of the quality of lesson performed by target school teachers	Status of the Achievement: achieved (partially continued) (Project Completion) The quality of lessons conducted by the target school teachers was improved and lessons became easier to understand and more enjoyable for students. (Ex-post Evaluation) According to the interview survey, 60% of targeted schools replied that teachers can set clear objectives, lead students' activities, summarize and evaluate the lessons using lesson plans, and 80% of targeted schools replied that teachers can conduct lessons that are easy to understand and enjoyable for students by using ITSME lesson plans.
	2. Improvement of the quality of lesson plans made by target school teachers	Status of the Achievement: achieved (partially continued) (Project Completion) The quality of lesson plans developed by the target school teachers was improved and their lesson plans were composed of clear objectives, detailed learning process/student activities, and evaluation questions. (Ex-post Evaluation) According to the interview survey, 70% of targeted schools replied that teachers can develop their own lesson plans that are composed of i) clear objectives, ii) detailed learning process/student activities, and iii) evaluation questions based on the model lesson plans.
	(Supplementary Information) Whether, how frequently and where IS and ES activities have been conducted after project completion	Status of the Achievement: (partially continued) (Ex-post Evaluation) In seven districts in three provinces targeted under the project, IS activities have been conducted once or twice a month in all schools utilizing ITSME lesson plans, while ES activities have been conducted once a month in a limited number of schools (approximately 10% of the total number of schools).
(Overall Goal) Quality of lessons in target provinces is improved.	1. Improvement of the quality of lesson performed by teachers in the target provinces	(Ex-post Evaluation) partially achieved According to the interview survey, 75% of non-target schools replied that teachers can set clear objectives, lead students' activities, summarize and evaluate the lessons using lesson plans, and 83% of non-target schools replied that teachers can conduct lessons that are easy to understand and enjoyable for students by using ITSME lesson plans.
	2. Improvement of the quality of lesson plans made by teachers in the target provinces	(Ex-post Evaluation) partially achieved According to the interview survey, 58% of non-target schools replied that teachers can develop their own lesson plans that are composed of i) clear objectives, ii) detailed learning process/student activities, and iii) evaluation questions based on the model lesson plans.

Source：Project completion report, interviews with MOES, PESSs, DESBs, TTCs and target and non-target school teachers (principals)

3 Efficiency

Both the project cost and the project period were within the plan (ratio against the plan: 78%, 100%, respectively). Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

The importance of improving the quality of education and strengthening of in-service teacher training are stated in "the Education Vision to 2030" and "the Education Sector Development Plan (2016-2020)", which are effective at the time of ex-post evaluation.

<Institutional Aspect>

There has been no change to the organizational structures for promoting ITSME approach among DTE, PESSs, DESBs and TTCs since

Savannakhet Province, and two schools in Thakhek District and two schools in Himboun District in Kammouane Province (12 schools in total).

project completion. The total number of quota in DTE is 36 persons in total, which is filled at the time of ex-post evaluation, and the number of staff is sufficient for DTE to promote ITSME approach utilizing the methods and materials developed by the project, according to interviews with DTE. However the number of staff at PESSs, DESBs and TTCs in Savannakhet, Champasack and Khammouane Provinces is insufficient to disseminate ITSME approach and one to two more staffs need to be assigned in each office, according to interviews with PESSs, DESBs and TTCs. There are 56 ITSME trainers in three provinces at the time of ex-post evaluation (47% increase since project completion), and the number of ITSME trainers is sufficient to develop model lesson plans, conduct TOT and monitor utilization of model lesson plans at schools, according to interviews with DTE, PESSs, DESBs and TTCs.

<Technical Aspect>

Most project counterparts (C/Ps) still work at DTE, PESSs, DESBs and TTCs at the time of ex-post evaluation. The skill level of staff of DTE is sufficient to promote ITSME approach utilizing the methods and materials developed by the project, and the skill level of staff of PESSs, DESBs and TTCs in Savannakhet, Champasack and Khammouane Provinces is also sufficient to disseminate ITSME approach, as the monitoring and supporting network for promoting ITSME approach has been established among these organizations and required tasks of each organization has been conducted properly. The skill level of ITSME trainers in three provinces is generally sufficient to develop model lesson plans, conduct TOT and monitor utilization of model lesson plans at schools, according to interviews with ITSME trainers. On the other hand, some ITSME trainers pointed out that teachers in schools would need to develop skills to teach students in multi-grades at once, as approximately 30% of classes in Laos has multi-grades students in a class. Preparation workshops to prepare model lesson plans have been conducted twice (once in 2014 and another in 2016) among ITSME trainers since project completion. The workshop was not conducted in 2015, due to lack of budget. TOTs have been conducted for some schools (among 22 schools visited during the field survey for ex-post evaluation, TOTs have been conducted in four schools) once or twice a year to deliver model lesson plans to schools (principals and ATs) since project completion, however, TOTs have not been conducted in other schools due to lack of budget etc. According to interviews with staffs of DTE, PESSs, DESBs and TTCs and school teachers in three provinces, ITSME Material Book produced under the project is still utilized at these organizations and schools.

<Financial Aspect>

DTE does not have sufficient amount of budget to cover all the activities for promoting ITSME approach utilizing the methods and materials developed by the project, due to lack of budget allocation from the Ministry of Finance, according to interviews with DTE (detailed financial data was unavailable). PESSs, DESBs and TTCs in Savannakhet, Champasack and Khammouane Provinces also do not have sufficient amount of budget to disseminate ITSME approach including conducting preparation workshops, TOTs and monitoring of schools sufficiently, due to lack of budget allocation from MOES, according to interviews with PESSs, DESBs and TTCs. According to interviews with schools in three provinces, generally, they are not allocated sufficient amount of budget to conduct IS activities, however, they make efforts to secure budget for conducting IS activities by allocating the school independent budget which is managed under school principals supported by other donors and/or utilizing the budget from the Village Education Development Committees (VEDSs)[8].

<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

Through the project, the Project Purpose had been achieved by the time of project completion, the project effects have been partially sustained since project completion, and the Overall Goal has been partially achieved by the time of ex-post evaluation. As for sustainability, some problems have been observed in terms of the institutional, technical and financial aspects of the implementing agency, while there is no problem in terms of the policy aspect.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- As stated above, some ITSME trainers pointed out that ITSME approach should also focus on multi-grade class teaching. Thus, DTE and relevant organizations should consider to develop skills to teach multi-grade class students with lessons learned of ITSME experience.

Lessons Learned for JICA:

- As stated above, ES activities have been conducted once a month in a limited number of schools, as many schools do not have a capacity to conduct both IS and ES activities. One of the reasons for this is that the volume of teaching materials which the project supported to develop is excessive of teachers' capacities to handle. Thus, when implementing a similar project in future, appropriate volume of teaching materials which teachers can actually handle should be developed, taking into account their capacity.

[8] Village Education Development Committees (VEDSs) are village committees in charge of education development within a community, and are composed of a village leader, school staff and residents in a village.

Target School under the Project

Science Class in the Target School

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Lao PDR Office: January 2019

Country Name	Project on Riverbank Protection Works Phase II
Lao People's Democratic Republic	

I. Project Outline

Background	In the Mekong River basin, damages such as land collapse and runoff caused by riverbank erosion occurred, and also riverbank retreat was caused. As riverbank protection, the gabion construction method[1] had been commonly used, but, these countermeasures were not sufficient due to the high cost and difficulty of domestic procurement of necessary equipment and materials. Under these circumstances, several Japanese methods for river protection were introduced and applied as experimental construction. Then, the master plan for riverbank protection was developed by JICA (Study on Mekong Riverbank Protection around Vientiane Municipality, 2001-2004), and based on the master plan, a technical cooperation project was implemented for capacity development on riverbank protection measures using traditional methods (Technical Cooperation Project on Riverbank Protection Works, 2005-2007). However, the Ministry of Public Works and Transport (MPWT) still had needs for diffusing the developed methods nationwide, and therefore, a successor project was requested.		
Objectives of the Project	Through training and seminars on riverbank protection for the staff of the Department of Waterworks (DOW) of MPWT and the Department of Public Works and Transport (DPWT) in Provinces of Bokeo, Luangprabang and Bolikhamxay, development and revision of the manuals, and pilot project implementation for riverbank protection, the project aimed at capacity development of MPWT and DPWTs for low cost and environmentally friendly protection against riverbank erosion, thereby contributing to diffusion of these measures nationwide.		
	1. Overall Goal: The other provincial DPWT staff, besides the Target Group, will be able to implement low cost and environmentally friendly protection measures against riverbank erosion. 2. Project Purpose: The staff of the target group (staff from DOW, DPWTs in Bokeo, Luangprabang, Bolikhamxay and Vientiane Capital) will be able to implement low cost and environmentally friendly protection measures against riverbank erosion.		
Activities of the project	Project site: Bokeo, Luangprabang, Bolikhamxay and Vientiane Capital 1. Main activities: training and seminars for MPWT and target DPWTs on riverbank protection, development and revision of manuals, and pilot project implementation in Bokeo, Luangprabang, and Bolikhamxay, etc. 2. Inputs (to carry out above activities) Japanese Side 1) Experts from Japan: 11 persons 2) Training in Japan: 15 persons 3) Equipment: river survey equipment, tools for the Soda Technique[2], etc. 4) Local cost: Cost for hiring local persons, travel expenses, etc. Laotian Side 1) Staff allocated: 13 persons 2) Land and facilities: Office space, 3) Local cost: expenses for pilot projects, etc.		
Project Period	October 2010 to September 2014	Project Cost	(ex-ante) 290 million yen, (actual) 345 million yen
Implementing Agency	Ministry of Public Works and Transport (MPWT)		
Cooperation Agency in Japan	NEWJEC Inc., Yachiyo Engineering Co., Ltd.		

II. Result of the Evaluation

1 Relevance

<Consistency with the Development Policy of Lao PDR at the time of ex-ante evaluation and project completion>

The project was consistent with Laos' development policies, as programs for riverbank protection including the use of eco-friendly and cost-effective methods were included in the "Fifth Five-year Plan" (2006-2010) and "Sixth Five-year Plan" (2010-2015) of MPWT.

<Consistency with the Development Needs of Lao PDR at the time of ex-ante evaluation and project completion>

Although 166 km of the river basin was eroded in the country at the time of the ex-ante evaluation, countermeasures had been taken for 63 km. Severe riverbank erosion occurred particularly in the provinces of Bokeo, Luangprabang and Bolikhamxay. As a responsible section, DOW was newly established in 2007, and the project was consistent with needs for capacity building of DOW personnel until the time of the project completion

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

In the "Country Assistance Program for Lao PDR" (2006), one of the six priority areas was development of socioeconomic infrastructure and effectively utilizing existing infrastructure, with a view to promoting economic growth constituting the driving force for independent, sustained growth, Japan will support foundation building for the economic growth.

<Evaluation Result>

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

[1] Method for riverbank protection by placing baskets made of bamboo, willow, iron wire, etc. which contain stones.

[2] Method for preventing riverbed erosion with combined logged twigs, wood piles and stones.

2 Effectiveness/Impact

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

The Project Purpose was achieved. As pilot projects, riverbank protection works were implemented in all of the three target provinces with the introduced Soda method. The average cost per unit of the pilot projects was 1,114-1,933 US$/m, lower than that of other similar projects (2,530 US$). The Soda method requires construction materials such as plants and stone that are locally available. Unlike modern construction methods, the Soda method can preserve the natural environment and also Soda mattress would serve as nursing ground for fisheries.

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

It can be judged that the project effects have partially continued. In all of the target provinces, the river protection works implemented by the project have been maintained and monitored by DPWT and villagers. Villagers have been involved in minor repair of the riverbank protection works, and local private companies have conducted outsource works. However, the project experience in pilot projects have not been extended in other areas in the target provinces. For example, DPWT of Bokeo planned and surveyed three additional sites for construction of river protection with the Soda method, among which one site was already designed. However, it was still awaiting budget approval for 2019 implementation. In Luangprabang, 2-3 sites were proposed by DPWT for slope protection works with the Soda method, but they have not been implemented due to budget shortages.

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

The Overall Goal has not been achieved. Since the project completion, DOW has conducted seminars to introduce the Soda method to other 14 provinces including Phongsaly and Oudomxay. For example, it conducted training on monitoring and supervision for river bank protection works in Oudomxay Province in 2017. However, due to budget shortage of DOW, there has been no new project in other provinces.

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

First, according to DOW and DPWTs, there has been no negative impact on the natural environment, and vegetation and tree growing have prevented further erosion, in addition to tree planting of the pilot project. Second, manuals on river bank protection works developed and translated by the project were distributed to the Faculty of Engineering of the University of Laos. They have been incorporated into the curriculum and lectures have been given on river engineering, though it is a minor subject. Third, a settled area (sedimentation area) formed after the pilot project in Luangprabang has been utilized as a recreational space for villagers, boosting the local economy during Lao New Year in April.

<Evaluation Result>

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

Achievement of the Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) The Staff will be able to implement low cost and environmentally friendly protection measures against riverbank erosion.	1. Riverbank protection works will be implemented a total of at least three sites in the Pilot Project Provinces.	Status of achievement: Achieved (Continued). (Project Completion) - Three pilot projects for riverbank protection were implemented in the Provinces of Bokeo, Luangprabang, and Bolikhamxay. (Ex-post Evaluation) - In Bokeo, the river protection work implemented by the project was repaired by DPWT and villagers, and it has been under regular monitoring by DPWT and villagers. - In Luangprabang, the river protection work implemented by the project was repaired by DPWY and DOW after it partially collapsed by flash flooding in 2014. It has been monitored by DPWT in coordination with the District Office of Public Works and Transport. - In Bolikhamxay, the river protection work implemented by the project has been maintained and monitored by villagers?
(Overall goal) The other provincial DPWT staff, besides the Target Group, will be able to implement low cost and environmentally friendly protection measures against riverbank erosion.	1. Riverbank protection works will be implemented at least one province other than the Target Group.	Status of achievement: Not achieved. (Ex-post Evaluation) - There has been no new project using low cost and environmentally friendly river bank protection work in other provinces.

Source: Terminal Evaluation Report, Project Completion Report, and information provided by DOW and DPWTs.

3 Efficiency

Although the project period was as planned (ratio against the plan: 100%), the project cost exceeded the plan (ratio against the plan: 119%). There was no change in the Outputs described in the Project Design Matrix. Therefore, the project efficiency is fair.

4 Sustainability

<Policy Aspect>

Development of human resources for disaster prevention including riverbank protection is prioritized in the "8th National Socio-Economic Development Plan" (2016-2020) as a policy on coping with disaster risks and impacts from climate changes. And, riverbank protection is included in the "Eighth Five-year Plan" (2016-2020) of MPWT. Thus, development of human resources for disaster prevention is backed up at least 2020.

<Institutional Aspect>

There have been issues of staff insufficiency. At the time of the ex-post evaluation DOW of MPWT had 41 staff. 24 posts were vacant due to the limited quota of the government staff recruitment. The Division of Riverbank Impact Prevention under DOW had 12 staff, members which was not sufficient to carry responsibilities related to riverbank protection works, according to DOW. At the provincial level, the Waterway Management Division has been newly established at each DPWT of Bokeo, Luangprabang and

Bolikhamxay in 2011 as a division specific for prevention measures against riverbank erosion. In these divisions, three, three and four staff have been assigned as responsible for prevention measures against riverbank erosion, respectively. Although DPWTs have requested for filling the vacant posts, they have not been realized due to the limited quota of the government. Regarding the meteorological and hydrological data, DOW has received necessary data under the agreement on information sharing with the Department of Meteorology and Hydrology of the Ministry of Natural Resources and Environment.

<Technical Aspect>

DOW has sustained sufficient skills for river engineering and management, as it has university graduates from river engineering and management courses. Also, some of them have got experiences on river protection in other countries. DPWTs of the target provinces have lacked a sufficient number of skilled staff or faced concerns of such staff's turnover or retirement. DOW used to organize trainings on riverbank erosion and protection for DPWT staff on the semi-annual basis, but there has been no training since the ones in 2017 due to limited budgets. Manuals developed by the project have been used by DPWTs for data collection and riverbank protection design. In all of the tree target provinces, private construction companies have been available to outsource low cost and environment-friendly methods.

<Financial Aspect>

Overall, there have not been sufficient budgets for river management at the central and provincial levels. Budgets of DOW including the Division of Riverbank Impact Prevention and other five divisions have not been stable. Budgets of DPWTs come from MPWT and get only approved on the project basis. Budgets of the three DPWTs have been increasing and decreasing in each province. This insufficient budget allocation from MPWT has been attributed to lack of MPWT's precise planning and budget calculation, according to DOW. As mentioned earlier, the Soda method is less expensive than other methods, but still, budgets have not been sufficient to cover all the needs of riverbank protection. Budget shortages have also been affected by MPWT's policy which prioritizes road network more than waterways. Furthermore, among waterways works, more emphasis has been put on riverbank protection works of the large rivers such as the Mekong, since they are more economically influential than those of smaller rivers flowing through the target provinces.

Table: Disbursed budget (billion Laotian Kip)

	2015	2016	2017	2018
DOW	15.98	21.42	13.51	15.64
DPWT Bokeo	0.60	2.00	1.75	1.75
DPWT Luangprabang	0	0.25	0	0.12
DPWT Bolikhamxay	2.40	0.50	0.1	0.47

Source: DOW and DPWTs

<Evaluation Result>

Therefore, the sustainability of the effects is fair.

5 Summary of the Evaluation

The Project Purpose was achieved, and the effects have continued. Pilot projects for riverbank protection were completed in all of the three target provinces with the low cost and environmentally friendly method introduced by the project, and these construction works have been maintained. However, due to budget shortages, these measures against riverbank erosion have not been extended to other sites within and outside the tree departments. Regarding sustainability, budge shortages have hindered assignment of sufficient skilled staff and new construction works. As for efficiency, the project cost exceeded the plan.

Considering all of the above points, despite of the fact that effectiveness of the Soda method was confirmed during the evaluation process, this project is evaluated to be partially satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing agency:

- It is recommended to DPWTs to prepare the master plan for riverbank protection and staff capacity building with clearly specified prioritization and finely calculated budget planning, in order to request approval from MPWT. Then, it is recommended to MPWT to carefully examine submitted budget requests to discuss with the Ministry of Finance and the Ministry of Planning and Investment.
- Newly assigned DPWT staffs have not gained sufficient skills for riverbank protection works. It is recommended to DOW to restart training for DPWT staffs or to DPWT to have a succession plan for knowledge transfer before skilled staff's turnover.

Lessons learned for JICA:

- In two of the target provinces, villagers have been involved in minor repair of the riverbank protection works, and local private companies have conducted outsource works. Thus, introduced construction methods have been not only transferred to DOW and DPWTs but also diffused to local stakeholders. Their involvement has been promoting factors for making construction works efficient and effective. In projects which conduct constructions works, it is effective to include components of capacity building of the local stakeholders in the project design and involve them in the construction works, which will lead to technical sustainability of the introduced construction methods.

In the project, no new riverbank protection works have been conducted since the project completion, due to budget shortages at DPWTs. This insufficient budget allocation from MPWT has been attributed to lack of precise planning and budget calculation. Another reason is that river protection of large rivers has been more prioritized than that of smaller rivers flowing through the target provinces, even though the significance of the Soda method as low cost and environmentally friendly means has been understood by MPWT and DPWTs. For securing necessary budgets after the project completion, it is necessary to train the responsible staff on how to make the work plan with budget calculation, not only certain technical methods themselves which the project introduces.

Board with explanation about the riverbank protection works in Bokeo

Riverbank protection works implemented in Bolikhamxay

Nam Khan River where riverbank protection works were implemented in Luangprabang

conducted by Vietnam Office: February, 2019

Country Name	**Project on Strengthening the System and Operation on Standards and Conformance**
Socialist Republic of Viet Nam	

I. Project Outline

Background	Viet Nam was facing a need to intensify efforts in standards and conformity assessment to remove technical barriers to trade (TBT), participate in the international market and attract foreign direct investment. In particular, ensuring the quality of electrical and electronic (EE) equipment was important for its high export potential and consumers' safety. However, the standards and conformance system in the field of EE equipment was developing and not adequately operated.		
Objectives of the Project	Through training and technical advice in policy planning, developing standards/regulations, accreditation, certification, and testing, the project aimed at strengthening the system and operation of organizations in charge of standards and conformance for EE equipment in Viet Nam, thereby improving the quality of EE equipment manufactured in Viet Nam and ensuring the consumers' safety. 1. Overall Goal: The quality of electrical and electronic equipment manufactured in Viet Nam is improved, and the consumers' safety is ensured. 2. Project Purpose: The system and operation of the Directorate for Standards, Metrology and Quality (STAMEQ) and other related organizations on standards and conformance in the field of electrical and electronic equipment are strengthened.		
Activities of the Project	1. Project site: Hanoi and Ho Chi Minh 2. Main activities: Training and technical advice in policy planning, developing standards/regulations, accreditation, certification, and testing 3. Inputs (to carry out above activities) * As of Terminal Evaluation in Nov. 2012 Japanese Side 1) Experts: 19 persons 2) Trainees received: 45 persons 3) Equipment: laboratory equipment, etc. 4) Local expenses Viet Nam Side 1) Staff allocated: counterpart personnel from the implementing agencies (number not specified) 2) Office space in Hanoi and Ho Chi Minh 3) Local expenses		
Project Period	November 2009 – April 2013	Project Cost	(ex-ante) 350 million yen (actual) 342 million yen
Implementing Agency	Directorate for Standards, Metrology and Quality (STAMEQ), Ministry of Science and Technology (MOST) and the following related organizations under MOST: Vietnam Standards and Quality Institute (VSQI); Bureau of Accreditation (BOA); Vietnam Certification Center (QUACERT); Quality Assurance and Testing Center (QUATEST1); and QUATEST 3		
Cooperation Agency in Japan	Ministry of Economy, Trade and Industry		

II. Result of the Evaluation

<Constraints on Evaluation>

- The evaluation judgment on Effectiveness/Impact and Sustainability was made based on the limited information available from the implementing agencies.

< Special Perspectives Considered in the Ex-Post Evaluation >

- Assessing Continuation Status of Effectiveness: Since the Indicator for the Project Purpose is not specific enough, this ex-post evaluation used selected indicators of Outputs for assessment of the status of the continuation of project effects.
- Assessing Achievement Status of Overall Goal: (1) (Target year) The project design matrix (PDM; a matrix representing the project framework) does not mention the target year for the Overall Goal. Since the Ex-ante Evaluation Report states that the ex-post evaluation would be conducted in three to five years after project completion, this ex-post evaluation interprets that the ex-ante evaluation would have supposed the target year for the Overall Goal to be 2018, five years after project completion in 2013.
  (2) (Target value) PDM does not mention the target values for the quantitative indicators. This ex-post evaluation judged each indicator "mostly achieved" when the actual value increased.

1 Relevance

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

This project was consistent with the Viet Nam's development policies at the times of both ex-ante evaluation and project completion, such as "Socio-Economic Development Strategy (SEDS)" (2001-2010) and SEDS (2011-2020) that both hold at the front its vision/general objective of becoming basically an industrialized country by 2020. Also, MOST was implementing "National Program on Enhancing Productivity and Quality of Products, Goods produced by Vietnamese Enterprises to the Year 2020" (2010-2020).

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

The project was consistent with the Viet Nam's development needs at the time of ex-ante evaluation as described in "Background" above. The need continued to the time of project completion as STAMEQ and other related organizations remained relevant as being responsible for the standards and conformance system.

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

"Country Assistance Program for Viet Nam" (2009) holds "Promotion of Economic Growth and Strengthening of International Competitiveness" as one of its four 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. Based on the strengthened activities of the counterpart organizations in developing standards (by VSQI), accreditation (by BOA), certification (by QUACERT), and testing (by QUATEST1 in Hanoi and QUATEST3 in Ho Chi Minh), the ex-post evaluation supports the Terminal Evaluation's view that STAMEQ and other related organizations showed the notable improvement of their capabilities on standards and conformance as compared with international standards and recommendations. STAMEQ became the national member body of the IEC System of Conformity Assessment Schemes for EE Equipment and Components (IECEE) in 2012. The project completed documentation for application for the IECEE Certification Body (IECEE/CB) in which QUACERT was expected to become a National Certification Body (NCB) and QUATESTs to become Certification Body Testing Laboratories (CBTLs).

<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 information collected from the implementing agencies show that the standard and conformance system strengthened under this project continues to be operating or further expanded in scope by the counterpart organizations (see the table below). However, the application for the IECEE/CB Scheme did not take place after project completion as the Vietnamese side has not designated QUACERT as an NCB yet due to political and diplomatic considerations, though it continues to be the Viet Nam's main certification body. Accordingly, QUATEST1 and QUATEST3 (Electricity Testing Laboratory) have not yet applied for CBTLs[1]. Nevertheless, this issue may not largely affect the degree of continuation of project effects as it is a small portion among the project Outputs.

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

Achievement for the Overall Goal at the time of ex-post evaluation is unverifiable since sufficient information to verify the indicators (on improved quality of Viet Nam-made EE equipment and related consumers' safety) is not available. Regarding claims caused by EE equipment (Indicator 1), the number of claims received by QUATEST3 decreased from 2016 to 2017, while the number is generally larger after project completion than during project implementation reportedly as it has wider variety of testing services, which makes it difficult to use this indicator for judging the achievement status of the Overall Goal. No information on the other Indicators is available.

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

No negative impacts of the project were confirmed.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td>(Project Purpose)
The system and operation of the STAMEQ and other related organizations on standards and conformance in the field of electrical and electronic equipment are strengthened.</td><td>Improvement of capabilities of STAMEQ and other related organizations on standards and conformance as compared with international standards and recommendations</td><td>Status of the Achievement: achieved (mostly continued)
(Project Completion)
・ Standards development capacity: The number of Viet Nam national standards (TCVN) developed by VSQI based on the latest International Electrotechnical Commission (IEC) standards increased from 52 in 2008 to 80 in 2013.
・ Accreditation capacity: The scope of accreditation for EE testing laboratories and electro-magnetic compatibility (EMC) testing laboratories by BOA was enhanced by using the equipment provided under this project. BOA also obtained a member status with Product Certification sector at Pacific Accreditation Cooperation (PAC) Multilateral Recognition Arrangement (MLA) in addition to its existing member status with Management System sector.
・ Certification capacity: The number of product certificates issued by QUACERT was accumulated from 259 (55 EE products) in 2009 to 621 (85 EE products) in 2012. Preparation of documentation for application for the IECEE/CB Scheme was completed.
・ Testing capacity: QUATEST1 and QUATEST3 became able to execute tests on all of the 13 mandatory EE equipment using the equipment provided under this project. As for QUATEST3, both the range and field of testing have been enhanced not only for 13 mandatory products but for similar products as well. The number of testing services offered for EE products increased (see the table below).
(Ex-post Evaluation)
・ VSQI has improved the relations with entities at home and abroad, thus enhancing the status of a national quality inspector (e.g., it has annually organized seminars on TCVN application for all stakeholders, including State management entities, enterprises, sector clusters under the framework of "National Program on Enhancing Productivity and Quality of Products, Goods produced by Vietnamese enterprises to the year 2020" and with funding from UNEP, International Copper Alliance and Australia). The stable number of TCVN is published each year, and the TCVN developed so far is operating.
Number of TCVNs published Each year
<table>
<tr><th>2008</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th><th>2016</th><th>2017</th></tr>
<tr><td>52</td><td>45</td><td>92</td><td>80</td><td>69</td><td>69</td><td>68</td><td>74</td></tr>
</table>
・ BOA continues to be a member of PAC MLA in Product Certification Sector. In addition, it</td></tr>
</table>

[1] QUATEST3 has been preparing document to register as a CBTL under Korea Testing Laboratory (KTL), which is an NCB of Korea.

expanded its scope to PAC MLA for Global Gap (2015) and Environmental Management Systems (2016).

- QUACERT continues to be the Viet Nam's main certification body. However, application for the IECEE/CB Scheme has not yet been done.

Accumulated number of product certificates by QUACERT

	2009	2011	2012 (-Oct)	2013	2014	2015	2016	2017
Total cumulative	259	450	621	1,588	1,725	1,950	1,930	1,816
Of which EE products	55	88	90	618	408	289	563	682

- QUATEST1 and QUATEST3 have kept or further expanded the scope of testing.

Number of testing services offered for EE products

	2009	2011	2012	2013	2014	2015	2016	2017
QUATEST1 (mandatory 13 EE equipment)	5,774	8,798	13,500	3,519	3,626	3,707	3,421	3,125
QUATEST3 (mandatory 13 EE equipment), including	4,110	9,652	8,582	8,838	9,712	9,658	10,018	10,110
- Electricity cable sample testing	4,100	4,200	4,315	4,450	4,605	4,788	4,856	4,803
- Household electricity sample testing	10	5,452	4,267	4,388	5,107	4,870	5,162	5,307

Note: The reason why the number decreased at QUATEST 1 in 2013 and thereafter is emergence of other testing entities under local governments such as under local department of science and technology.

(Overall Goal) The quality of electrical and electronic equipment manufactured in Viet Nam is improved, and the consumers' safety is ensured.	1) Decrease in the number of claims caused by electrical and electronic equipment	(Ex-post Evaluation) not achieved Number of claims caused by EE equipment received by QUATEST1: Every year, QUATEST1 receives a number of claims of EE products. However, those claims and explanation by QUATEST1 are done verbally, rather than being recorded in written forms. Hence, no specific numbers are available. Number of claims caused by EE equipment received by QUATEST3

2013	2014	2015	2016	2017
190	299	1,484	2,327	1,704

	2) Increase in the amount of export of domestic manufacturers in the field of electrical and electronic equipment	(Ex-post Evaluation) not verifiable Data is not available.
	3) Increase in the share of CR marked products at designated marketplaces	(Ex-post Evaluation) not verifiable Data is not available.

Source: Terminal Evaluation Report; Questionnaire to the implementing agencies; Interviews with QUATEST1 and QUATEST3.

3 Efficiency

Both the project cost and the project period were within the plan (ratio against the plan: 98% and 100%). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

"National Program on Enhancing Productivity and Quality of Products, Goods produced by Vietnamese Enterprises to the Year 2020" is still effective at the time of ex-post evaluation.

<Institutional Aspect>

No problem is found in the organizational structure, which has not experienced major changes since project completion. The current number of staff of the counterpart organizations is generally larger than the numbers as of 2012. Those staff meets the need and are capable enough to do given tasks.

Number of staff allocated

	Oct.2012	2018
MOST	300	290
BOA	26	30
STAMEQ	118	200
QUACERT	102	100
QUATEST1	133	166
QUATEST3	500	625
VSQI	75	80

Source: Each organization

<Technical Aspect>

As mentioned in "Continuation Status of Project Effects at the time of Ex-post Evaluation" above, each of the related organizations have maintained or further expanded their functions, which indicates their sufficient skills to promote the standards and conformance system for EE equipment. Both QUATEST1 and QUATEST3 have frequently utilized the materials on testing developed under this project. QUATEST3 has issued the mechanism, regulations and guidance on training, plan formulation annually. It has always organized training, seminars, workshops and meetings on training, maintenance and enhancing technological training for staff, experts in conformity and standards for EE equipment. Also, QUATEST1 and QUATEST3 have frequently exchanged views, testing skills to maintain testing results, i.e., testing skills, testing process, testing and comparison. No problem was found on operation and maintenance of the laboratory equipment provided under this project.

<Financial Aspect>

None of the counterparts provided clear financial data on yearly basis for expenditure needed for operations of standard and

conformance system. In replace of that, QUATEST1 informed about the budget for the three years from 2015 to 2017. This center spends over 100 million VND/ year on average on operation and maintenance (O&M) for all kinds of testing equipment. Most of QUATEST1's equipment has been maintained and adjusted by its own laboratories. Hence, QUATEST1 has not paid much to other laboratories for O&M tasks. For QUATEST3, those numbers range from 500 million to 1 billion VND/ year from its permanent spending source for O&M tasks. This fund has been created based on the business activities by QUATEST3 on its own, rather than taking from annual fund of State budget. STAMEQ, on the other hand, has actively participated in a wide range of training and organizing thematic workshops, seminars on operations of standard and conformance. STAMEQ has closely cooperated with many international partners to realize the above work. Those are Korean Agency on Standard and Technology, ASEAN- Joint Sectorial Committee for Electronic Equipment, APEC- Sub-committee on Standard and Conformance, Japan- Joint Sectorial Committee for Electronic Equipment.

Based on above information, interview results, site visits observation, it is fair to say that certain budget is allocated considering the continued operation of the standard and conformance system by the major counterpart organizations as mentioned in "Effectiveness/Impact" above.

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved its Project Purpose (strengthening of the system and operation of related organizations on standards and conformance in EE equipment) upon project completion and the effects have continued to the time of project completion. The Overall Goal (improved quality of Viet Nam-made EE equipment and consumers' safety) is not verifiable due to unavailability of most of the necessary data. For the sustainability, no problems are observed in all of the policy, institutional, technical, and financial aspects.

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

III. Recommendations & Lessons Learned

Lessons learned for JICA:

Timely revision of the PDM:

It is relatively popular that when PDM was designed at the project's preparation/start, all stakeholders are very optimistic on the project's outputs, goals achievement. However, during the project's implementation, it turned out that there are many factors affecting the project's goals and outputs. If no timely revision, amendment are made to PDM, during the project's life and upon its completion, to make the outputs, goals really realistic, the project evaluation in the future cannot properly reflect the actual status and reasons behind the failure or success. In case of this project, this situation took place due to the judgment of the Overall Goal status.

Equipment provided to QUATEST 3

Equipment provided to QUATEST 3

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Vietnam Office: September, 2018

Country Name	**Project for Implementing Maternal and Child Health Handbook for Scaling Up Nationwide**
Socialist Republic of Viet Nam	

I. Project Outline

Background	In pursuit of reducing a big gap in basic health indicators among areas with different socio-economic and geographical conditions, the Government of Viet Nam (GOV) and donors had developed and introduced booklets, cards and pamphlets aiming to record data and monitor the status of maternal and child health (MCH), which was called home-based records (HBRs) in general. Ministry of Health (MOH) considered this situation as a hindrance to improving maternal and child health care services due to problems such as the existence of sub-standard formats, parallel existence of different materials, the difficulty of monitoring period covering from pregnancy of mothers to childhood period, and so on. With this background, MOH took notice of the effectiveness and development potential of the maternal and child health handbook (MCHHB) that had been piloted by a Japanese NGO; and the GOV requested the Japanese Government to develop a nationally standardized HBR for its possible nationwide scaling up.		
Objectives of the Project	Through finalizing and distributing MCHHB and capacity development of health personnel involved in MCH care on the use of MCHHB in the four pilot provinces, the project aimed at preparing a standardized MCHHB for nationwide distribution, thereby improving maternal and child care services in the whole country with the use of MCHHB. 1. Overall Goal: Maternal and child health care services improve by using MCHHB nationwide. 2. Project Purpose: A standardized MCHHB for nationwide scaling-up is developed.		
Activities of the Project	1. Project Site: Dien Bien Province, Hoa Binh Province, Thanh Hoa Province, and An Giang Province 2. Main Activities: Training for central and provincial Project Management Units (PMUs) on project management; training for health workers (HWs), village health workers (VHWs) / health volunteers (HVs) and private sectors involved in MCH on the use of MCHHB; finalizing and distributing of MCHHB and users' guide; IEC (Information, Education and Communication) on MCHHB; etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 7 persons 2) Trainees received: 10 persons 3) Equipment: computers, weighing scales, measures, stethoscopes, etc. 4) Local expenses Viet Nam Side 1) Staff allocated: 44 persons 2) Local expenses: part of training cost		
Project Period	February 2011 – December 2014 (extension period: February 2014 – December 2014)	Project Cost	(ex-ante) 150 million yen[1] , (actual) 271 million yen
Implementing Agency	Maternal and Child Health Department (MCHD), Ministry of Health (MOH)		
Cooperation Agency in Japan	-		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

- Assessing Continuation Status of Effectiveness: Instead of verifying the Indicator for the Project Purpose (MCHHB being ready for scaling-up), which is not something that continues, this ex-post evaluation will examine whether the outputs of the project (primarily MCHHB) have been continuously disseminated nationwide including the pilot provinces.
- Target Year for Overall Goal: The Project Design Matrix (PDM) does not mention the target year for the Overall Goal. Having analyzed the scenarios proposed during the project implementation, this ex-post evaluation set the target year to be 2020 and examined the interim result as of 2018 and prospects for 2020.

1 Relevance

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

Both at the times of ex-ante evaluation and project completion, the project was consistent with the MOH's "Five-year Health Sector Development Plan 2011-2015" that included narrowing down the gap in maternal and child health care indicators across regions, between segments of population and achieving the Millennium Development Goals for MCH in its objectives.

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

As mentioned in "Background" above, there was a need to standardize home-based record formats for improving MCH services. There were no drastic changes in the project context during project implementation.

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

"Country Assistance Program for Viet Nam" (2009) held "Improvements in Living and Social Conditions and Corrections of Disparities" as one of its four priority areas, and aims under this area at "strengthening health and medical care systems at the provincial level, with an emphasis on dissemination and development of good practices."

[1] Estimation by JICA Viet Nam Office, as the ex-ante Evaluation Sheet does not mention the planned project cost.

<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 developed the standardized MCHHB (Version 2.2) as well as related materials such as the HWs' guide, training guide, the operation guide, etc. These were approved by the Joint Coordinating Committee (JCC) of the project and submitted to the Vice Minister in charge of MOH for nationwide scaling-up (Indicator 1).

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

The project effects have continued by the time of ex-post evaluation. Those submitted documents have been acknowledged by Vice Minister in charge of maternal and child health care. By this time being, the handbook, its user guide and IEC materials (posters, leaflets) have been revised once in February 2017, by adding updated information on MCH care and more friendly and attractive illustrations. The operation guide is also in use as the official guidance from MOH to 63 provinces /cities nationwide on how to implement the MCHHB. Up to date, MOH has issued 2 ministerial letters to 63 provinces / cities, recommending the implementation the MCHHB.

So far, MCHHB is being implemented in 41 provinces, but at different scale, either in whole provinces (4 JICA supported provinces, Tay Ninh, Ben Tre, etc.) or in partial areas (Hung Yen, Lao Cai, etc.). Due to budgetary constraints at both central and provincial level, MOH still cannot instruct to implement the MCHHB as compulsory. However, MOH leaders expressed willingness to expand nationwide coverage by 2020. MOH is taking promotional actions[2] as follows: (i) from a target program on health and population 2016-2020 (approved on July 31, 2017), MOH allocated small amount to several training courses related to the MCHHB; (ii) in order to promote MCHHB implementation as a routine work, MOH integrated its contents into the "National Guideline on Reproductive Health care" and put the MCHHB usage as awarded point into the annual evaluation of reproductive health care; (iii) MCHD/MOH has been calling supports from other partners for the MCHHB implementation, including development partners and private companies[3].

<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 data were not available from all the provinces, by reviewing the data of 4 JICA piloted provinces and data collected from other 12 provinces, it could be said that these important indicators on MCH services are improved year by year. In JICA piloted provinces, through the questionnaires and direct interviews made at Hoa Binh and Thanh Hoa, both HWs and users expressed their opinions that MCHHB helped to improve mother's essential knowledge and practice on MCH care. HWs always keep reminding mothers to bring MCHHB when taking children to health facilities and getting immunization.

In other provinces where MCHHB is being implemented, it may be too early to give proper judgment on effects of MCHHB to MCH care. Even so, through direct interview and observation at 2 visited provinces of Hung Yen and Ninh Binh, positive comments such as trained HWs are providing enthusiastic consultation about the role of MCHHB to user, reminding mothers to keep and bring to health facilities, and mothers expressed their love to the "Pink book" very much. In addition, several other impact evaluations show positive impacts of the MCHHB on behavior and knowledge of mothers[4].

Regarding prospects for the achievement of the Overall Goal by the target year of 2020, leaders of MCHD/MOH shared strong desire to reach nationwide coverage. Several ideas are being considered such as issuance of official regulation on compulsory usage of MCHHB as replacement of medical book, using for pregnant women and children under 6 year old. The MCHD/MOH is now collecting comments and opinions from local provinces, including those provinces where MCHHB is sold, as evidence to convince Health Minister to issue such regulation. Therefore, the Overall Goal is likely to be achieved by the target year.

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

No negative impacts were observed. Regarding positive impacts, surveyed provinces commented that "MCHHB helps to change their knowledge, attitude and practice on MCH care of pregnant women, mother with small child and HW at grassroot level" and "Mothers got useful information on how to take care of mother and child, danger signs during pregnancy and first aid skills, particularly who are living in rural remote areas with limited access to literature". In addition, the above-mentioned impact evaluations and other analyses/assessments of the project's interventions were presented at several international academic conferences: thus, this project not only brought about evidenced impact on MCH in Viet Nam, but also significantly contributed to increasing JICA's presence in global health communities.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) A standardized MCHHB for nationwide scaling-up is developed.	Availability of the MCHHB recommended by Joint Coordinating Committee (JCC) for nationwide scaling-up.	Status of the Achievement: achieved (continued) (Project Completion) The MCHHB and related materials approved by JCC on October 28, 2014 and submitted to the Vice Minister in charge of MOH. (Ex-post Evaluation) MOH has updated the MCHHB and related materials and distributed to all of the Viet Nam's 63 provinces/cities with strong recommendation for the implementation.
(Overall Goal) Maternal and child health	1. Proportion of mothers keeping the MCHHB (%)	(Ex-post Evaluation) partially achieved Status of distribution of MCHHB

[2] These actions were recommended from Terminal Evaluation of this project.

[3] During 2016-2017, MOH had mobilized support from partners (WB, EU, Child Fund) and Vietnamese and foreign private companies (Bayer, Wakodo, VIMOS) to support for MCHHB in selected provinces across the country.

[4] Aiga, H., et. al. (2018). Cost savings through implementation of an integrated home-based record: a case study in Vietnam. *Public Health*, 156, 124-131.
Aiga, H., et. al. (2016). Knowledge, attitude and practices: assessing maternal and child health care handbook intervention in Vietnam. *BMC Public Health*, 16, 129.
Aiga, H., et. al. (2016). Fragmented implementation of maternal and child health home-based records in Vietnam: need for integration. *Global Health Action*, 9, 29924.

care services improve by using MCHHB nationwide.

(Total of 16/20 provinces that responded to the survey)

	2015	2016	2017
No. of districts where MCHHB was distributed (out of total 177 districts in 16 provinces)	59	69	95
No. of pregnant women per year	420,535	433,223	494,949
No. of copies of MCHHB distributed	104,094	112,408	199,800
Approximate % of pregnant women who received MCHHB	25%	26%	40%
of which, the pilot provinces (average)	70%	63%	61%

2. Proportion of health facilities trained on the use of the MCHHB (%)

(Ex-post Evaluation) partially achieved
Status of training on MCHHB
(Total of 16/20 provinces that responded to the survey)

	2015	2016	2017
No. of districts where health facilities were trained on MCHHB (out of total 177 districts in 16 provinces)	21	46	134
No. of HWs trained on MCHHB	1,356	1,436	3,229
Approximate % of health institutions trained on MCHHB	n/a	n/a	n/a
of which, the pilot provinces (average)	100%	100%	100%

3. Indicators of antenatal care (ANC), delivery, postpartum, and newborn and child health care (for children under 6 year-old) improve in provinces where the MCHHB has been introduced.

(Ex-post Evaluation) achieved
Status of MCH service delivery
(Average 16/20 provinces that responded to the survey)

	2015	2016	2017
Percentage of pregnant women received at least 4 time ANC (%)	51.5%	60.0%	69.1%
Percentage of pregnant women received tetanus vaccine	92.2%	94.0%	95.7%
Percentage of pregnant women delivered at health facilities	93.3%	93.4%	94.0%
Percentage of mother and newly born babies received post-delivery care at home	87.5%	88.0%	89.7%
Percentage of children got full immunization	96.9%	97.7%	96.3%

(Average of 4 pilot provinces)

	2015	2016	2017
Percentage of pregnant women received at least 4 time ANC (%)	58.9%	64.6%	72.8%
Percentage of pregnant women received tetanus vaccine	86.5%	92.8%	94.3%
Percentage of pregnant women delivered at health facilities	87.7%	87.6%	88.7%
Percentage of mother and newly born babies received post-delivery care at home	90.7%	92.0%	93.6%
Percentage of children got full immunization	95.0%	95.9%	92.8%

Source： Final Report, MCHD/MOH, 16 provinces that responded to the survey, field visits

3 Efficiency

The project period exceeded the plan (ratio against the plan: 127%) as the project was extended due to delays in some activities and addition of a few activities for developing nationwide scaling-up strategies. The project cost significantly exceeded the plan (ratio against the plan: 181%) due to the extension of the project period, modification of assignment of some experts (from short-term to long-term), additional counterpart training in Japan[5], and increase in expenses for on-site activities. Therefore, the efficiency of the project is low.

4 Sustainability

<Policy Aspect>

Relevant important plan such as the “Five-year Socio Economic Development Plan” (2016-2020) and the “Five-year Plan for People’s Health Protection, Care and Promotion” (2016-2020) raise the needs of improving MCH care as one of the important tasks. However, despite the issuance of ministerial letters as mentioned in “Effectiveness/Impact” above, using the MCHHB as a mandatory tool is not yet mentioned at any document.

<Institutional Aspect>

MCHD at the central level and Reproductive Health Care Centers (RHCCs) of Department of Health (DOH) at the provincial level are responsible for dissemination and operation of the MCHHB. The number of staff in charge of such tasks is two officials and one contracted staff hired by JICA at MCHD and two to three staff at each RHCC. MCHD and RHCC are capable for MCHHB implementation because close coordination network among central – provincial – district – commune. A concern is about re-structuring of the health network at the

[5] Additional counterpart training in Japan was considered necessary to provide them with actual experience of Japan in implementing MCHHB and MCH care.

provincial level. With request from GOV on streamlining and more effective work, MOH issued a Circular in 2017 regarding the establishment of "Center of Disease Control" (CDC), which combines several existing centers (preventive medicine center, HIV/AIDS prevention center, RHCC, and so on), under DOH. Accordingly, RHCC should be merged into this new CDC by January 1, 2021. This change would somehow affect MCHHB promotion because leaders of newly set up CDC may not know well about MCHHB and therefore may not fully support it.

<Technical Aspect>

Based on the interviews to MCHD and the provinces visited, MCHD officials and provincial trainers have good understanding of basic contents of the MCHHB since all the contents in MCHHB are in line with National Guideline on reproductive health care. During the period between 2016 and 2017, estimated about 240 provincial trainers attended trainers training (TOT) co-organized by MOH and JICA (as the follow-up activity of this project and as part of the individual expert (Health Policy Advisor))[6]. No information was available about skill level of HWs, while training for HWs on the MCHHB is on-going in many provinces as mentioned above. At both central and provincial levels, some or most of the counterpart personnel remain in the organization.

<Financial Aspect>

Budget for mass dissemination is the biggest challenge in scaling-up of MCHHB. According to the survey to 16 provinces, funds are allocated from Provincial People's Committees (PPCs), MOH for the national Population-Health Program, DOHs, or external sources such as development partners and private companies. Among them, the major local funding source is PPC. The average budget amount allocated for the MCHHB among these provinces (excluding zero allocation) as well as the number of provinces where PPC allocates budget are increasing: 25 million VND in 2015 (1 province), 102 million VND in 2016 (6 provinces) and 257 million VND in 2017 (13 provinces). The data of the pilot and non-pilot provinces visited is presented in the table below. The amount varies, but it is often limited to print sufficient copies of the MCHHB, distribute them and provide necessary training.

Financial resource for MCHHB in the provinces visited (Unit: VND)

Province	Allocated in 2015	Allocated in 2016	Allocated in 2017	Allocated in 2018	Required in 2018
Dien Bien (Pilot)	0 (MCHHB provided by JICA in stock)	0 (MCHHB provided by JICA in stock)	240,000,000 (from PPC)	242,000,000 (from PPC)	Total: 637,616,349 Printing: 162,474,474
Hoa Binh (Pilot)	0 (MCHHB provided by JICA in stock)	0 (MCHHB provided by JICA in stock)	0 (using Child Fund support to print MCHHB)	320,000,000 (from PPC)	Total: 708,353,642 Printing: 193,655,461
Thanh Hoa (Pilot)	0 (MCHHB provided by JICA in stock)	0	800,000,000 (from PPC; for free MCHHB in poor districts only. In 16 remaining districts, CHC provided black –white copied version)	800,000,000 (same as 2017)	Total: 1,888,896,842 Printing: 698,364,075
An Giang (Pilot)	271,740,000 (from PPC)	116,640,000 (from PPC)	429,910,000 (from PPC)	Still waiting for approval from PPC for printing 40,000 HBs	Total: 920,249,282 Printing: 386,440,267
Hung Yen (Non-pilot)	100,000,000 (from PPC)	100,000,000 (from PPC)	600,000,000 (from PPC)	n/a	Total: 683,150,571 Printing: 206,289,073
Ninh Binh (Non-pilot)	0	0	0 (in-kind support from the World Bank and a private company)	n/a	Total: 561,425,208 Printing: 203,461,396

Source: Provinces (actual allocation in 2015-2018); Calculation by a consultant prior to project completion (required budget in 2018).

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved its Project Purpose of developing a standardized MCHHB by the end of the project period. After project completion, the project effect has continued as the number of provinces where the MCHHB is implemented at least in some districts / communes significantly increased from 4 to 41 out of 63 provinces / cities by the time of ex-post evaluation. The Overall Goal of improving MCH services is likely to be achieved by the target year of 2020. For the sustainability, some problems were found on policy, institutional, and financial aspects mainly due to insufficient budget for printing the handbook to distribute in the entire country and non-issuance of official regulation on compulsory usage of the MCHHB. For the efficiency, both the project period and 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:

1) Observations at fields and interview with both HWs and users as well as existing impact studies have confirmed the important role of MCHHB in promoting continued MCH care. Efforts of both central ministry and local provinces in implementing MCHHB are highly appreciated, particularly in the circumstance of budget constraints.

In order to achieve the target nationwide coverage in 2020, it is strongly recommended that MOH to issue legal document which regulate the implementation of MCHHB as compulsory.

In addition, a policy / guidance from MOH on financial mechanism, for example, MCHHB is NOT distributed free, but with certain fee (selling at approximately 10,000 VND (approx. 50 yen) as the case of Long An, Dong Nai) should be made so that local province can follow.

[6] From FY 2018, it is included in another on-going technical cooperation project titled "Project for Strengthening Clinical Training System for New-Graduate Nurses" (2016-2020).

2) Restructure of the healthcare system at provinces by the establishment of CDC is being implemented, therefore, we do expect that the new CDC will continue focusing on MCH care activities, along with other preventive medicine activities.

Lessons Learned for JICA:

We can see that the project design was not soundly carried out, leading to modification in project length and budget. Furthermore, expected scenario on future expansion at the time of project completion was set too high. Therefore, at the time of detailed planning, the examination of both technical contents as well as necessary budget should be carefully made. Furthermore, in case of introducing new thing – as MCHHB, scenario on further development should be practical and applicable for the recipient country.

Mothers with MCHHB at Nhan Nghia commune, Tan Lac District, Hoa Binh Province

Nurse in Tan Lac District Hospital is recording delivery information into MCHHB

conducted by Vietnam Office: January, 2019

Country Name	Project for Capacity Building for National Greenhouse Gas Inventory
Socialist Republic of Viet Nam	

I. Project Outline

Background	Vietnamese government ratified United Nations Framework Convention on Climate Change (UNFCCC) in 1994 and Kyoto Protocol in 2002. Preparation of national Greenhouse Gas (GHG) inventory enables the viewer to have a good understanding of the emission conditions, and national GHG inventory is an indispensable tool to develop policies and measures for GHG emission reduction and to track their progress. Vietnamese government prepared GHG inventories twice based on UNFCCC. However, it lacked an institutional framework, an organization system, and capable people with technical expertise to prepare national GHG inventory because inventory preparation was not mandatory for Viet Nam[1]. There were also some technical problems such as inconsistent data sources and estimation methods because the national GHG inventory preparation teams were formed at an ad-hoc basis.
Objectives of the Project	The project aimed to strengthen capacity to prepare accurate, reliable and periodical national GHG inventories in Viet Nam through enhancement of capacity to periodically and systematically collect and compile necessary data for national GHG inventories, to promote understanding of national GHG inventories among relevant parties, and to manage quality assurance/quality control (QA/QC) of GHG inventories for each sector (energy; industrial processes; agriculture; land use, land-use change and forestry (LULUCF); and waste), thereby having accurate and reliable national GHG inventories prepared periodically. 1. Overall Goal: Accurate and reliable national GHG inventories are prepared periodically. 2. Project Purpose: Capacity to prepare accurate, reliable and periodical national GHG inventories is strengthened.
Activities of the Project	1. Project Site: Hanoi 2. Main Activities: (i) Preparation of a roadmap for improving the national system for preparation of GHG inventories, development of a manual for institutional arrangement, collection of data from relevant parties, development of a database, compilation of national GHG inventories, planning and implementation of QA/QC activities, development of manuals for procedures of inventory compilation and QA/QC activities (e.g. national GHG inventory report (NIR)), development of a national GHG inventory improvement plan; (ii) Organization of workshops on preparation and improvement of national GHG inventories, and on methodological study on accuracy and reliability; (iii) Study of methods for preparing activity data and emission factors[2] and for implementing data compilation and QA/QC for each sector of the national GHG inventories, key category[3] analysis and identification of priority categories, investigation of measures for reducing uncertainties for prioritized key categories, collection and compilation of information and identification of emission factors, etc. that better reflect national or regional circumstances, and preparation of time series of activity data for each sector. 3. Inputs (to carry out above activities) Japanese Side (as of project completion) 1) Experts: (Long-term) 2 persons; (Short-term) 8 persons 2) Trainees Received (Japan) 4 persons; (Third country) 13 persons 3) Equipment: Printer, personal computers, etc. 4) Local Costs: Cost for travel, hiring local assistants and local consultants, etc. Vietnamese Side (as of Terminal Evaluation in February 2014) 1) Staff Allocated: 25 persons（9 from Department of Meteorology, Hydrology and Climate Change (DMHCC), 3 from Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE), 9 from Institute of Meteorology, Hydrology and Environment (IMHEN), and 4 from Vietnamese Environment Association (VEA)) 2) Land and Facilities: An office room for experts at the former building of DMHCC 3) Operation Costs
Project Period	September 2010 - October 2014 (Extended Period) September 2013- October 2014
Project Cost	(ex-ante) 280 million yen, (actual) 268 million yen
Implementing Agency	Department of Meteorology, Hydrology and Climate Change (DMHCC)[4], Ministry of Natural Resources and Environment (MONRE)
Cooperation Agency	Greenhouse Gas Inventory Office of Japan, Center for Global Environmental Research, National Institute for

[1] The Copenhagen Accord, which was taken note of during the Conference of the Parties (COP) 15 in 2009, included content that the developing countries (i.e. non-Annex I countries) may prepare and submit their national GHG inventory every 2 years.

[2] "Activity data" is defined as the data on the magnitude of human activity resulting in emissions or removals taking place during a given period of time, and "emission factor" is defined as the average emission rate of a given GHG for a given source, relative to units of activity.

[3] "Category" is a subdivision of sector.

[4] After DMHCC was divided into two departments in 2017, Department of Climate Change (DCC) took over the role of managing climate change matters including national GHG inventory.

in Japan	Environment Studies, Mitsubishi UFJ Research and Consulting Co., Ltd., Suri-Keikaku Co., Ltd.

II. Result of the Evaluation

<Special Perspective Considered in the Ex-Post Evaluation>

- Target year for the Overall Goal is not specified in the PDM, but in the Ex-ante Evaluation Sheet, it is defined to be around 5 years after completion of the project. In view of the above, in the ex-post evaluation, the target year shall be set to be 2019 (i.e. 5 years after completion of the project).
- Since the existing Indicator for the Overall Goal ("A national GHG inventory is prepared every 2 years") does not cover accuracy and reliability of the inventories prepared, whether or not the inventories prepared are considered as "accurate and reliable" shall be confirmed with grounds as Supplementary Information.

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 and project completion, the project was consistent with a Vietnamese development policy of development of statistical data on GHG emissions and strengthening of the capacity of national GHG inventories as set forth in the "Action Plan for the Implementation of the Kyoto Protocol" (2007-2010) and "Plan of greenhouse gas emission management; management of carbon trading activities to the world market" (2012-2020).

< Consistency with the development Needs of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with development needs of Viet Nam for preparation of accurate, reliable and periodical national GHG inventories at the time of ex-ante evaluation. The needs were greater at the time of project completion because it became mandatory for non-Annex I countries of the UNFCCC to prepare biennial update reports (BUR) containing updated national GHG inventory.

<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 Viet Nam (2009), which includes "Environmental Conservation" in one of the priority areas and "Climate Change Countermeasures" in one of the points to be considered in cooperation.

<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 activities of the project, a NIR was produced for 2005 and 2010 (Indicator 1). Estimation methods for the National GHG Inventory for 2005 and 2010 were improved in comparison with the one for 2000 (Indicator 2).

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

The project effects were continuing. According to MONRE, the estimation methods improved by the project were continuously being utilized (e.g. for development of the 2013 and 2014 National GHG Inventories) because these methods were based on the guidelines of Intergovernmental Panel on Climate Change (IPCC) and had been improved through the project in response to the availability of data in Viet Nam.

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

The Overall Goal was achieved by the time of ex-post evaluation. A national GHG inventory were being prepared almost every 2 years. Through the project, the 2010 Inventory was prepared in 2014 as part of BUR1. After the project completion, the 2013 Inventory was prepared in 2017 as part of BUR2[5]. At the time of ex-post evaluation, preparation of the 2014 Inventory was ongoing as part of National Communication (NC) 3, which was expected to be completed in 2018 (Indicator 1). According to MONRE, the 2013 and 2014 Inventories are more "accurate" and "reliable" compared with the 2010 Inventory because (i) methodologies to calculate necessary data for the 2013 and 2014 Inventories have been improved; (ii) all of the activity data were updated for the 2013 and 2014 Inventories and recalculated for the 2010 Inventory[6]; and (iii) QA/QC procedures have been improved. It is noted the collection/processing of the activity data has not followed the formal one regulated in the Prime Minister (PM) Decision No 2359/ QĐ-TTg on establishment of the National GHG Inventory System (NIS) issued in 2015 because line ministries (LMs), the assumed data providers, have faced difficulties to provide the required data mainly due to lack of budget for data collection and inappropriate forms for data collection.[7] Therefore, MONRE has collected the data (Supplementary Information).

The achievement level is likely to be sustained or enhanced by the target year (i.e. 2019). Vietnamese government plans to prepare the 2016 Inventory in 2019 as part of BUR3 (Indicator 1). According to MONRE, a Circular for detailed guidance on the NIS will be prepared by reviewing and revising the current content of the PM Decision[8], and the budget for LMs is likely to be secured by issuance of the Roadmap Decree to reduce GHG emission, including NIS. The Decree is expected to be issued in the second quarter of 2019 after MONRE

[5] Initially, the 2012 Inventory was supposed to be prepared in 2016 as part of BUR2. However, preparation of BUR2 was postponed until 2017 due to delay of disbursement of the fund from Global Environment Fund (GEF). Preparation of the 2012 Inventory was changed into the 2013 Inventory according to the IPCC guidelines, which state the base year should be within 4 years from the submission year.

[6] MONRE collected the national data such as social economic data. The data officially announced by General Statistics Office (GSO) were selected first. Next, data reported by local governments were additionally collected. When necessary, MONRE requested some specific data required for calculation for GHG inventory in each sector from research institutes under LMs.

[7] LMs have not been able to provide the required data because they possess and manage a variety of data required in each sector but only data for socioeconomic planning. LMs cannot process specific detailed data which is necessary for the GHG emission estimation. LMs need some amount of the budget allocation for collection/processing of data to serve the role of GHG emission estimation. In addition, according to LMs, the forms for data collection attached in the annexes of the PM Decision are not appropriate and they cannot fill in the forms. Consequently, they have not been involved in the estimation process of the national GHG inventory as regulated by the PM Decision.

[8] For example, according to MONRE, there are some gaps and conflicts between the PM Decision on the NIS and the current Statistics Law and official reporting system at LMs, which need to be improved. In fact, Ministry of Transport plans to integrate indicators for GHG emission calculation into their statistical reporting system. It would reduce the cost and increase efficiency of the NIS. MOIT and MARD affirmed that LMs should be more involved in QA/QC of GHG emission estimation for relevant sectors as they have sectoral expertise.

justifies the content of the Decree based on the agreement on Paris Agreement Work Plan (including Transparency Framework) of COP24 (December 2018) and resubmits the draft Decree to Office of Government. With the required data provided by the LMs, accuracy and reliability of the 2016 Inventory are likely to be further improved. (Supplementary Information).

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

No negative impacts of the project have been observed. As to other positive impacts, the experiences and deliverables of this project have been widely utilized by the relevant projects supported by other development partners (DPs) i.e. British Embassy, GIZ and German Ministry of Environment (BMU). For example, the reports developed by this project were referred to during the implementation of "Training and Support Services for the Development of a National Greenhouse Gas Inventory System and National Measurement, Reporting and Verification Methodology in Viet Nam" (2014-2017), supported by British Embassy. According to MONRE, the project deliverables (e.g. a series of reports) have contributed to enhancing the better understanding among stakeholders such as LMs on development of national GHG inventory.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Capacity to prepare accurate, reliable and periodical national GHG inventories is strengthened	1. A National GHG Inventory Report is produced for 2005 and 2010.	Status of the Achievement: achieved (Project Completion) -A NIR was produced for 2005 and 2010.
	2. Estimation methods in the GHG inventory are improved (e.g. from lower tier [9] to higher tier, improvement of notation keys[10], etc.)	Status of the Achievement: achieved (continued) (Project Completion) -Estimation methods for the 2005 Inventory and 2010 Inventory were significantly improved in comparison with the 2000 Inventory. For example, higher tier methodology and more appropriate notation keys were applied. In addition to what had already been accomplished in the 2005 Inventory, the project made a pre-review of data and information for local circumstances to be better reflected in the 2010 Inventory. (Ex-post Evaluation) -Estimation methods improved through the project were continuously being utilized in preparing national GHG inventories.
(Overall Goal) Accurate and reliable national GHG inventories are prepared periodically.	1. A national GHG inventory is prepared every 2 years.	(Ex-post Evaluation) mostly achieved <List of national GHG inventories prepared/being prepared after the project completion> (Ref) 2010 Inventory: October 2014: Included in BUR 1 2013 Inventory: November 2017: Included in BUR 2 2014 Inventory: September 2018 (expected): To be included in NC3 -Vietnamese government plans to prepare the 2016 Inventory in 2019 as part of BUR 3.

Source: Terminal Evaluation Report; presentations of energy consultants for IMHEN at a consultation workshop for the 2014 Inventory; interview with a national consultant for development of the 2014 Inventory and Deputy Director of DCC (formerly DMHCC).

3 Efficiency

Although the project cost was within the plan (ratio against the plan: 96%), the project period exceeded the plan (ratio against the plan: 136%). The project was initially extended by 8 months due to delay of formal approval of the project by the Vietnamese side (including securing budget and formulation of Project Management Unit) and was further extended by 5 months to support finalization of NIR 2010, which had been decided by the Vietnamese government to be included in BUR 1 to be submitted by the end of 2014.

4 Sustainability

<Policy Aspect>

As stated in "Effectiveness/Impact", the PM Decision on the NIS was issued in 2015. Initially, MONRE planned to implement the NIS as a pilot activity in 2016-2017 and review and revise it in 2018-2019. However, instead of reviewing and revising the NIS in the PM Decision, MONRE decided to include the content of the NIS into the draft Roadmap Decree to reduce GHG emission, which is expected to be issued in the second quarter of 2019. According to MONRE, a Circular for detailed guidance on the NIS will be prepared by reviewing and revising the current content of the PM Decision, once the Roadmap Decree comes into effect. ~~It is expected that formats of excel spreadsheets for data collection will be improved during the development of the Circular on NIS~~.

<Institutional Aspect>

The NIS, established by the PM Decision (2015) stated above, is still in an experimental stage and, therefore, has not been fully operational yet. According to the Decision, MONRE is the leading agency for the NIS, which manages, calculates, and reports the national GHG inventory to UNFCCC, and LMs, such as Ministry of Industry and Trade (MOIT) and Ministry of Agriculture and Rural Development (MARD), are expected to collect/process the activity data required in GHG emission calculation, and provide the collected data via GSO/Ministry of Planning and Investment. However, MONRE has still collected the activity data, which has been done by IMHEN, former VEA staff members trained by the project, and some experts of research institutes through several consultant contracts with DCC (formerly DMHCC), because LMs are not able to assume the role defined in the NIS yet as stated in "Effectiveness/Impact"[11]. It

[9] "Tier" means the level of methodological complexity. Tier 1 is the lowest level and Tier 3 is the highest one.

[10] "Notation keys" (i.e. NO (Not Occurred), NE (Not Estimated), NA (Not Applicable), C (Confidential), IE (Included Elsewhere)) are annotations used to explain the non-estimated items.

[11] According to MOIT and MARD, a focal point (i.e. department) and staff in charge have been assigned for the national GHG inventory (2 persons at MOIT and 1 person at MARD); however, the number of the staff would not be sufficient to manage the data collection activity required by the PM Decision (2015) as the assigned staff have other engagements and do not have special expertise. It would be necessary to hire local consultants who have

is noted that the NIS is expected to be improved and fully operational in 2020 in time for the 2016 Inventory preparation if the Circular for the detailed guidance on the NIS is issued in 2019-2020.

At MONRE, institutional arrangement set up for preparation of the national GHG inventory, including collection/processing of the activity data, is firmly established. DMHCC was reorganized into DCC in 2017, which has continued to be a main focal point at MONRE for development of the national GHG inventory in general and in charge of collecting/processing activity data in sectors such as Agriculture, LULUCF and Waste. IMHEN, a related institution in MONRE, is responsible for collecting/processing activity data and estimation of GHG emission in Energy and Industrial Process sectors while ISPONRE is in charge of doing QA/QC. The number of staff allocated for the national GHG inventory is 19 at DCC, 7 at IMHEN, and 2 at ISPONRE. The number is considered sufficient as the 2013 and 2014 Inventories have been prepared without a serious problem. It is noted that the number of the staff has increased at DCC (formerly DMHCC) since the project completion. At ISPONRE, one of the staff members was retired but still works as a senior advisor on QA/QC process. ISPONRE has a plan for internal training by the senior staff trained by the project to build capacity of 6 additional staff members so that they can take part in QA/AC if needed. VEA has not been involved in the preparation of the national GHG inventory as an institution since the project completion, but 2 of 4 staff members, transferred to DCC (formerly DMHCC) and Vietnam Administration of Seas and Islands have been engaged in preparation of the national GHG inventories (2013 and 2014 GHG Inventories) as key contributors.

<Technical Aspect>

At MONRE, there is established technical level for preparing the national GHG inventory. Most of the staff at DCC (formerly DMHCC), ISPONRE, and IMHEN, trained by the project, remain with the respective organizations and engage in preparation of the national GHG inventory as key persons. Experienced staff members have shared the knowledge and skills to newly joined members. DCC (formerly DMHCC) and IMHEN have accumulated knowledge and skills for data collection/processing and calculation of national GHG inventory in all sectors. ISPONRE has a plan to train their other staff in QA/QC to enhance its capacity. Technical capacity of MONRE is expected to be further enhanced through the learning by doing process and also with support from DPs such as British Embassy, GIZ, Asian Development Bank, and World Bank.

With the coming Decree on Roadmap for mitigation and Circular for detailed guidance on the NIS under the Roadmap Decree, it is expected that formats of excel spreadsheets for data collection will be improved during the development of the Circular on NIS

<Financial Aspect>

The 2013 National GHG Inventory was prepared as part of BUR2 and the 2014 Inventory is being prepared as part of NC3. Total budget and expenditure specifically for the national GHG inventory preparation is not available. For reference, total budget for BUR2 was more than 385,000 USD, and 650,000 USD for NC3. The overall budget for the 2013 and 2014 Inventories is considered sufficient because the Inventories were prepared without a serious problem and "accuracy" and "reliability" were improved compared with the previous ones.

Budget of MONRE for preparation of BUR2, NC 3, and BUR3 (Unit: USD)

	2016[12]	2018
Budget approved (Plan)	More than 385,000	1,002,000
<State budget> -C/P budget for UNEP/GEF -Others	 33,000 for BUR2 (*all in-kind) 0	 150,000 for NC3 (*24,000 in cash and the others in-kind) 352,000 for the 2016 Inventory to be included in BUR3 (*for LULUCF sector only)
<Other sources> -UNEP/GEF (including estimation of GHG inventory) -GIZ	 352,000 for BUR2 Some amount for BUR2	 500,000 for NC3 N/A
Budget allocated (Actual)	More than 385,000	1,002,000
Expenditure	N/A	N/A

Source: MONRE

Preparation of BUR2 and NC3 has been mainly supported by GEF. Although the PM Decision on the NIS was issued in 2015, state budget allocated for the national GHG inventory is still limited at MONRE. LMs and GSO have not secured budget to collect/process the activity data required by the Decision. According to LMs, they have not secured the budget for GHG inventory in their annual budget planning because they have not been able to implement the Decision (See footnote 7 for details).

For the 2016 Inventory to be included in BUR3, in 2018, MONRE received some amount of the state budget on ad-hoc basis (for LULUCF sector only) and, in 2019, MONRE needs to get more funding from GEF and state budget in order to make the inventory more "accurate" and "reliable". Continuous support from GEF is expected because GEF is supposed to provide funds to non-Annex I countries for BUR/NC preparation according to the decisions of the COP. Meanwhile, it is not certain if MONRE will continue to secure sustainable financial resource from the state budget for biennial preparation of the national GHG inventory report as required by UNFCCC. However, it is noted, according to MONRE, with the coming Roadmap Decree to reduce GHG emission, budget allocation for national GHG inventory at both MONRE and LMs is likely to be secured from 2020 if the Circular for detailed guidance on the NIS is issued in 2019-2020.

<Evaluation Result>

In light of the above, it has been observed that further improvements are needed in terms of institutional and financial aspects. Therefore, the sustainability of the effect through the project is fair.

5 Summary of the Evaluation

special skills to collect and process the activity data. In addition, as necessary data for GHG inventory development is specific, MOIT/MARD need to process the existing data by using special skills. Additionally, there are some specific data required for GHG inventory that MOIT/MARD do not manage and they will have to conduct additional surveys to collect these data. However, they feel they do not have sufficient awareness and capacity.,

[12] Budget for BUR2 was approved/allocated in 2016, but preparation of BUR was postponed to 2017 as stated in footnote 5.

The project achieved the Project Purpose (i.e. Capacity to prepare accurate, reliable and periodical national GHG inventories is strengthened). The effect of the project has been continued, and the Overall Goal (i.e. Accurate and reliable national GHG inventories are prepared periodically) has been achieved. Regarding the sustainability, some difficulties have been observed in terms of the institutional aspect (i.e. the NIS has not been fully operationalized yet. It is still in an experimental stage and is planned to be reviewed and improved in 2020) and financial aspect (i.e. state budget for the national GHG inventory preparation is limited at MONRE and the budget for the inventory is not secured in annual budget planning of LMs). As for 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:

-It is recommended that MONRE and LMs take the following actions by the end of 2019 once the Roadmap Decree is issued in the second quarter of 2019 and when the Circular on guidance of NIS is developed to fully operationalize the NIS.

(1) MONRE should organize awareness-raising workshops for LMs (including GSO) and major emitters in relevant private sector to encourage them to understand the purpose of activity data collection/processing for national GHG inventories, which is based on decisions on GHG Inventory (UNFCCC) and IPCC guidelines. GSO has the capacity of collecting and processing social economic statistic data, but they do not have specific capacity focusing on activity data for GHG inventory. Cooperation from private sector (as major emitters) for data collection is needed.

(2) MONRE should provide trainings to LMs and major emitters in relevant private sector to build their capacity on data collection/processing such as how to categorize data, how to fill in data input templates etc. It is very important that a sectoral system of data collection and management at each LM will be developed for information sharing and management of their GHG emission reduction activities in the future.

(3) Cost estimation for preparation of GHG inventory should be incorporated into annual budget planning of MONRE and LMs. MONRE should develop an implementation plan for preparation of the national GHG inventory including capacity building for related agencies within MONRE and other LMs once the Circular on NIS is issued in 2019-2020. Based on this plan, MONRE will be able to request for state budget as a part of their annual budget planning. MONRE will have a sustainable budget to maintain NIS and will not have to depend on supports/funding from others.

(4) Data collection for national GHG inventories should be aligned with the official reporting system at LMs.

(5) With sectoral in-depth understanding and expertise, each LM should assign its sectoral experts of each research institute to be involved with MONRE in the review of activity data and also QA/QC in order to validate the result of GHG inventory estimation. （In this connection, MONRE should provide capacity building/training to LMs to improve their understanding and experience for inventory development). Or, it will be much better if an independent party can do QA/QC, hence accuracy of and transparency of the national GHG inventory estimation process will be improved. For example, experts such as of a consulting company or academia from universities/professional organizations can act as an independent party for QA/QC.

Lessons Learned for JICA:

-JICA Vietnam Office has continued to follow up the project with C/Ps and other DPs after the project completion because the project proposed National GHG Inventory System in its recommendation of the final report and JICA Vietnam Office followed up to ensure that the recommendation by the project was referred to for the institutionalization of the National GHG Inventory System. Therefore, materials produced by the project such as NIR 2005 and 2010 as well as the proposal on institutional arrangement of NIS were shared timely with other DPs and the outcomes of the project contributed to the establishment of the NIS.

-As the project focused on strengthening the capacity of relevant agencies in MONRE, involvement of LMs was limited. However, at the time of ex-post evaluation, Vietnam already ratified Paris Agreement and the Rule-book of Paris Agreement has been set in the last COP negotiation. With new development of international negotiation and commitment on climate change response, Vietnam has become more committed to promote climate change mitigation measures resulting into better institutional arrangement of MONRE and other LMs. During the last few years without data which are managed by LMs, MONRE has made effort to collect/process and prepared national GHG inventories by contracting with IMHEN and VEA staffs. In the future, outputs of project related to GHG Inventory should be shared and transferred to LMs as well, and involvement of LMs is important. For example, trainings/workshops on methods for data collection/processing should be provided to LMs and major emitters in relevant private sectors to promote their cooperation in the future preparation of national GHG inventories. Therefore, it is very important to ensure that the project outputs should be not only delivered to C/Ps by the project but also should be further disseminated to other stakeholders by C/Ps not only during implementation of the project but also after the project completion, for example, through workshops.

Workshop on Introduction of the second Biennial Updated Report organized by MONRE

Consultation workshop on the 2014 GHG Inventory in Energy and Industrial Process (for the Third National Communication

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Dominican Republic Office: November, 2018

Country Name	Project on Sustainable Tourism based on Public-Private Partnership in the Dominican Republic
Dominican Republic	

I. Project Outline

Background	The tourism sector was considered as a priority sector for development and tourism promotion policies such as tax incentives for foreign investment and developing infrastructure were implemented. As a result, the Dominican Republic became the most popular tourist destination in the Caribbean countries with 3.98 million visitors in 2008. The Province of Puerto Plata, which is located in the northern part of the country, is the third-largest tourist destination of the country and had approximately 540,000 foreign visitors for tourism in 2008. While most of beach resort development that the Government actively promoted was so-called "all-inclusive resort[1]" led by the foreign investment, opportunities for local people to participate in tourism businesses were limited and the people did not receive much benefit. Also, the standard of living in the province remained lower than the average of the country. Under these situations, the Government of the Dominican Republic requested the Government of Japan a technical cooperation project to develop a framework for sustainable tourism development to benefit local communities by utilizing unique local characters and resources, based on cooperation among stakeholders in the public and private sectors.		
Objectives of the Project	Through development of tourism products and services as well as establishment of the tourism development model based on the public-private network at the municipal and provincial levels, the project aimed at establishing a system to benefit local communities based on public-private partnership (PPP) in order to benefit local communities, thereby contributing to increase in local communities' opportunities of participation in tourism activities for sustainable tourism development and livelihood improvement. Overall Goal: Local communities in and around the tourism development areas have more opportunities to participate in tourism activities, associated and collaborated with existing tourism industries, and realize a sustainable tourism development and an improvement of local communities' livelihood level. Project Purpose: This project aims to establish a system to benefit local communities based on public-private partnership, through developing tourism products and services by using local resources. Note: PPP in the project means a system for activity implementation through effective collaboration between the "public" (government institutions including the Ministry of Tourism (MITUR), National Institute of Technical Professional Development (INFOTEP) and municipalities) and the "private" (private companies, universities, and civil society organizations).		
Activities of the project	Project site: 9 Municipalities of Puerto Plata Province (Puerto Plata, Altamira, Guananico, Imbert, Los Hidalgos, Luperón, Sosúa, Villa Isabela and Villa Montellano) 1. Main activities: 1) establishment of the public-private network at the municipal and provincial levels, 2) implementation of pilot tourism projects, 3) development of tourism products and services, 4) preparation of guidelines, etc. 2. Inputs (to carry out above activities) Japanese Side 1) Experts from Japan: 9 persons 2) Training in Japan: 7 persons **3)** Local cost: Expenses for hiring local consultants, in-country training, etc. Dominican Republic Side 1) Staff allocated: 19 persons 2) Land and facilities: Office space, etc. 3) Operation cost: Cost for fuel and maintenance of vehicle, drivers, etc.		
Project Period	November 2009 to November 2013	Project Cost	(ex-ante) 300 million yen, (actual) 451 million yen
Implementing Agency	Ministry of Tourism (MITUR) (Renamed from the State Secretary of Tourism in 2010), National Institute of Technical Professional Development (INFOTEP)		
Cooperation Agency in Japan	IC Net Limited.		

II. Result of the Evaluation

1 Relevance
<Consistency with the Development Policy of Dominican Republic at the time of ex-ante evaluation and project completion> The project was consistent with Dominican Republic's development policies, as community tourism was prioritized in the "National Plan for Competitiveness" (2006), "National Development Strategy of the Dominican Republic 2010-2030" and "Government Plan 2012-2016." <Consistency with the Development Needs of Dominican Republic at the time of ex-ante evaluation and project completion> Opportunities for local people to participate in tourism businesses were limited, and the people did not receive much benefit. The project was consistent with development needs for improving the livelihood through tourism activities, at the times of both the ex-ante evaluation and project completion <Consistency with Japan's ODA Policy at the time of ex-ante evaluation> One of the priority areas was set as "poverty reduction" based on the policy dialogue on economic cooperation in 2007[2]. Related to this issue, capacity development through rural development and tourism was considered as a support approach.

[1] Package in which fees for room, food and activity are all included.

[2] Ministry of Foreign Affairs (2009) "ODA Databook 2008."

<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. As PPP for tourism development, 10 Municipal Units for Community Patrimony (Unidades Municipales para el Patrimonio Comunitario: UMPCs) were established (Indicator 1). UMPC members were from the municipality, NGOs and community organizations. Some UMPCs acquired NGO status and others were applying for NGO and other status. Each UMPC developed tourism products and services based on its own brand (Indicator 2), such as the "Land of the Amapolas" of Los Hidalgos and "Paradise of Manati" of Villa Isabela. The Provincial UMPC Network, Provincial Coordination Table (Mesa de Coordinación Provincial: MCP) and TURISOPP[3] Unit[4] were developed as part of the system for supporting municipality-level efforts (Indicator 3). These experiences were accumulated in the guidelines on tourism development models (Indicator 4).

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

The project effects have partially continued. Among UMPCs established during the project period, five of them have continued tourism activities as NGO or community-based organization, based on the municipal brand for tourism. Four UMPCs have not conducted continuous activities and one has already been dissolved. According to the Provincial UMPC Network and UMPCs, reasons of inactive UMPCs are lack of leadership, transfer of young members, disagreement among members on visions and activities, inappropriate capacity of planning and marketing, and so on. The Municipal UMPC Network has not been functioning as before, since the key personnel who had been active during the project period was transferred and the new personnel has been busy with his/her own UMPC activities. MITUR has not newly employed a paid staff in the province since 2017, due to inappropriate planning for staff assignment and budget shortage but has supported UMPCs through the Unit of Sustainable Tourism (UTS). MCP has changed its functions from supporting municipalities on community tourism to promoting tourism activities related to the cruise ship in Puerto Plata, in line with the government policy of re-launching Puerto Plata as an important tourist destination. However, regardless changes in the provincial level coordination, some UMPCs have independently continued their activities, according to the Provincial UMPC Network and UMPCs.

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

It is judged that the Overall Goal has been achieved. Local communities have participated in UMPC's tourism activities, by preparing the festival jointly with UMPC (Sosúa), providing promotion and logistics services (Guananico), preparing snacks for tour gests (Villa Isabela), and so on. They have increased incomes from selling artisan chocolates and crochets or providing guide services (Indicator 1). The number of tourism activities have increased in some municipalities and decreased in other municipalities (Indicator 2). As successful examples, in Altamira, Chocolala (community organization which aims at promoting women's economic empowerment) has developed new tourism products. Including this municipality, others have increased tourism activities to attract passengers of the cruise which arrives at Puerto Plata.

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

First, female participation has increased in tourism activities. As women were encouraged to hold important positions in UMPC such as treasurer and coordinator which had been occupied only by men, some of them have started tourism business: sales booths on the beach and restaurant (Villa Isabela). Some chocolate shops including ones in Hacienda Cufa are headed by women, which was not a case before the project. According to UMPCs, barriers of gender and age have been removed by the project. Second, the government incorporated the project experience in the action plan for tourism development in the five provinces in the Northwestern Region, including community participation, organization for PPP, institutional infrastructure for promotion and marketing, and so on. Also, the project experience has been utilized in the succeeding project, "Project for Enhancing the Mechanism for Sustainable Community Based Tourism Development in the North Region" (2016-2021), sharing the following principles: local initiative, local prosperity and harmony and local pride and attraction. In the mentioned project, the Government of Dominican Republic has set up the first community tourism strategy, "Strategy for Development of Sustainable Community Tourism in the North Region in the Dominican Republic."

<Evaluation Result>

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

Achievement of the Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) This project aims to establish a system to benefit local communities based on public-private partnership to benefit local communities, through developing tourism products and services by using local resources.	1. More than 9 tourism development and management systems at municipal level are established.	Status of achievement: Achieved (Partially Continued). (Project Completion) - 10 UMPCs were established. (Ex-post Evaluation) - Five of the 10 UMPCs established during the project period have continued their activities. Other four UMPCs have operated the activities in an intermittent manner and one has been dissolved.
	2. More than 9 tourism products and services based on municipal brand are developed.	Status of achievement: Achieved (Continued). (Project Completion) - 10 municipal brands were developed by 10 UMPCs, and more than 30 tourism products and services were developed through pilot projects. (Ex-post Evaluation) - Tourism products and services have been sustained in eight UMPCs.
	3. A tourism development and	Status of achievement: Achieved (Partially continued). (Project Completion)

[3] TURISOPP is the abbreviation of the project title in Spanish.

[4] MCP members are from the Provincial UMPC Network, the public sector (MITUR, INFOTEP, Ministry of Environment, Provincial Government, etc.) and the private sector (chamber of commerce, hotel association, etc.). TURISOPP Unit members are officers of INFOTEP and MITUR.

	management system at provincial level to support municipal systems is established.	- The Provincial UMPC Network was established in August 2008. - The system for promoting tourism-based community development at the provincial level was developed by MCP and TURISOPP Unit. (Ex-post Evaluation) - The Provincial UMPC Network has been maintained, but regular meetings have been reduced. - MCP has been assumed by a provincial coordination unit with local stakeholders. - TURISOPP Unit has sustained its functions as UTS..
	4. Recommendations for the tourism development models are prepared.	Status of achievement: Achieved (Mostly continued). (Project Completion) - The guidelines including recommendations on tourism development models were developed and approved by the Joint Coordination Committee of the project. (Ex-post Evaluation) - The guidelines including recommendations on tourism development models have been utilized, but it was pointed out by UMPCs that it lacked marketing and institutional development.
(Overall goal) Local communities in and around the tourism development areas have more opportunities to participate in tourism activities, associated and collaborated with existing tourism industries, and realize a sustainable tourism development and an improvement of local communities' livelihood level.	1. Tourism activities newly developed by the project enable local communities to participate in the tourism industry and increase income level.	Status of achievement: Achieved. (Ex-post Evaluation) - Local communities which participate in tourism activities have increased their income, according to MITUR, UMPCs, etc., from selling artisan chocolates and crochets or providing guide services.
	2. All municipalities increase tourism activities.	Status of achievement: Partially achieved. (Ex-post Evaluation) - According to MITUR and UMPCs, the number of tourism activities have increased in some municipalities and decreased in other municipalities.

Source: Project Completion Report, data provided by MITUR and UMPCs.

3 Efficiency

Although the project period was as planned (ratio against the plan: 100%), the project cost exceeded the plan (ratio against the plan: 150%) mainly because of additional inputs for a new output (establishment of the municipal level network for tourism development). Therefore, the project efficiency is fair.

4 Sustainability

<Policy Aspect>

The tourism sector is prioritized in the "National Development Strategy of the Dominican Republic 2010-2030". Besides, the Government of Dominican Republic has set up a strategy for community tourism development with the aim of increasing tourists to 10 million by 2020. The strategy includes components related to PPP and a policy of "Re-launching Puerto Plata" as a tourist destination. Thus, the tourism development in Puerto Plana Province is backed up at least until 2020.

<Institutional Aspect>

It can be said that an appropriate organizational structure for promoting the model developed by the project has been sustained, from the following facts. As of the time of the ex-post evaluation, MITUR has sustained UTS with three staff with responsibilities of monitoring and supporting UMPCs. UTS has worked for tourism promotion in the province in collaboration with the private sector. INFOTEP has a satellite office (seven staff) in Puerto Plata, providing training programs on community development which was based on the TURISOPP model, such as promotion of community development, community marketing, and design of action plans. The satellite office can receive administrative and technical support from the North Region Office of INFOTEP in Santiago when necessary. MITUR, INFOTEP and the Ministry of Economy, Planning and Development (MEPyD) have sustained their agreement on development and diffusion of the TURISOPP model. MEPyD has played a role as an inter-institutional coordinator.

<Technical Aspect>

MITUR has sustained sufficient knowledge for diffusion of the TURISOPP model, including support for UMPCs. Since the project completion they have dedicated monitoring and supervision works and have played a key role in the succeeding project. UTS has received training opportunities provided by MITUR headquarters. Though there has been no specific training for UMPCs, they can take part in programs offered by INFOTEP, as mentioned above. The guidelines on the TURISOPP model developed by the project, which include recommendations on tourism development models, have been utilized by UMPC, MITUR and INFOTEP.

<Financial Aspect>

Although financial data were not available from MITUR and INFOTEP at the ex-post evaluation, it can be said that MITUR has disbursed budgets for tourism promotion based on the TURISOPP model to some extent, as it has maintained UTS exclusively for supporting UMPCs, according to MITUR. In align with its institutional strategic plan; MITUR has expected a mid-term disbursement for promotion of community tourism in the North Region. Regarding INFOTEP, as it started a training institution exclusive for the tourism, it is presumed that it has intensively invested in tourism development.

<Evaluation Result>

Therefore, the sustainability of the effects is high.

5 Summary of the Evaluation

The Project Purpose was achieved, and the effects have partially continued. UMPCs were established and tourism products and services were developed on each municipal brand. Through UMPCs, collaboration among the municipality, community and private sectors was strengthened and the experience was compiled as guidelines. Since the project completion, half of UMPCs have expanded tourism activities with community participation. Community tourism activities have been sustained and expanded, and the project experience has been utilized in other provinces. Regarding sustainability, MITUR and INFOTEP have sustained appropriate institutional structure and capacity for supporting UMPCs. Although financial data of MITUR were not confirmed, sufficient budgets for UTS'

support for UMPCs have been secured. As for the project 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:
- At the ex-post evaluation survey, there was a difficulty in getting detailed quantitative data and information on the project experience and effects. It is recommended to MITUR headquarters to specify a section which collects and accumulates such data and information so that it could share them with other provinces.
- It is recommended to MITUR to re-activate UMPCs which have suspended their activities but are willing to restart, by providing training opportunities in collaboration with INFOTEP on leadership, marketing and preparation of the action plan.

Lessons learned for JICA:
- After the project completion, since some UMPCs have reduced their functions, some community tourism activities have been stopped. Reasons include lack of leadership, lack of skills on marketing and planning, and so on. UMPCs and community members had been trained on these topics and encouraged to implement pilot activities, but opportunities for learning from the implementation results of themselves and other UMPCs were limited. As a result, for some UMPCs, experiences were not sufficiently entrenched for sustaining activities. In projects which have components of capacity building through implementation of pilot activities, it is important to have not only training but also giving practicing opportunities with appropriate feedback in case they fail.

Lunch on the “higüero” (fig tree)plate in the tour (Hacienda Cufa, Municipality of Guananico)

Gastronomy Festival (Municipality of Sosúa)

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Guatemala Office: October 2018

Country Name	Project for Maternal and Child Health in Quetzaltenango, Totonicapán and Sololá in the Republic of Guatemala
Republic of Guatemala	

I. Project Outline

Background	Among the Central American countries, Guatemala was behind in improving indicators related to reproductive health, such as maternal mortality rate, neonatal mortality rate, infant mortality rate and under-five mortality rate. Since the Ministry of Public Health and Social Assistance (MSPAS) identified that these were caused by limited technical skills and knowledge of the traditional birth attendants and poor access of expecting and nursing mothers to health facilities, MSPAS started programs for improving health services in rural areas. Under the program, selected health centers were upgraded to provide 24-hour services, and more health service providers were assigned in rural areas. JICA implemented the "Project for Child Health in Department of Quetzaltenango" (2005-2009) to decrease infants who got critically ill due to respiratory infection and diarrhea by strengthening prenatal care services and upgrading mothers' knowledge. Based on this experience, further technical cooperation was requested to the Government of Japan in order to improve maternal and infant health services in the Departments of Quetzaltenango, Totonicapán and Sololá.		
Objectives of the Project	Through strengthened Health Areas' health monitoring and supervision, trained health personnel and community activities for maternal health, the project aimed at upgrading the quality of health services for mothers and infants, thereby contributing to improvement of their health conditions in Quetzaltenango, Totonicapán and Sololá.		
	Overall Goal: The health condition of women (expecting and nursing mothers) and under-five children is improved in the three target departments. Project Purpose: Women (expecting and nursing mothers) and infants receive health services in better quality in the three target departments.		
Activities of the project	Project site: 3 Departments of Quetzaltenango, Totonicapán and Sololá 1. Main activities: Development monitoring and supervision tools, training of the health personnel (doctors, nurses, assistant nurses, and educators) and health volunteers and birth attendants for prenatal and postpartum services and nutrition, networking among the health facilities and hospitals, etc. 2. Inputs (to carry out above activities) Japanese Side 1) Experts from Japan: 7 persons 2) Experts from the third countries: 6 persons 3) Training in the third countries: 105 persons 4) Equipment: Vehicles, office equipment, medical equipment, etc. 5) Operation cost for medical equipment, hiring local staff, etc. Guatemalan Side 1) Staff allocated: 90 persons 2) Land and facilities: Office space, etc. 3) Establishment of new Health Posts, operation cost for fuel and maintenance of vehicle, travel expenses of MSPAS personnel, electricity and water expenses of the project office, etc.		
Project Period	March 2011 to March 2015	Project Cost	(ex-ante) 380 million yen, (actual) 378 million yen
Implementing Agency	Ministry of Public Health and Social Assistance (MSPAS), Health Area Offices (Dirección de Area de Salud) of Quetzaltenango, Totonicapán and Sololá		
Cooperation Agency in Japan	None.		

II. Result of the Evaluation

[Special Perspectives Considered in the Ex-post evaluation]

- In the Project Design Matrix (PDM), indicators on maternal mortality, neonatal mortality and infant mortality were set for both the Project Purpose and Overall Goal. Since these are indicators to assess changes brought by improved health services for maternal and infant health (Project Purpose), these indicators were used to verify the Overall Goal at the ex-post evaluation.

1 Relevance

<Consistency with the Development Policy of Guatemala at the time of ex-ante evaluation and project completion>

The project was consistent with Guatemala's development policy on improving the health situations in the rural area including maternal and infant health and nutrition, as set forth in the "National Health Plan 2008-2012" and "National Health Policy 2014-2019."

<Consistency with the Development Needs of Guatemala at the time of ex-ante evaluation and project completion >

The project was consistent with Guatemala's development needs on improving maternal and infant health especially in the western region in the country, at the times of both ex-ante and ex-post evaluation.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

Based on the policy dialogue between the government of Guatemala and the Government of Japan in 2008, "sustainable economic development" was selected one of the priority areas, and related to this area, efforts would be made for the purpose of "improvement of the livelihood in the rural areas[1].

<Evaluation Result>

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

2 Effectiveness/Impact

[1] Ministry of Foreign Affairs (2011), "ODA Databook 2010."

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

It is judged that the Project Purpose was partially achieved. The facility-based delivery rate increased (Indicator 1) in the three target departments, and the percentage of the under-weight babies at the birth by the facility-based delivery decreased in one department (Indicator 2), but not attained the target value. On the other hand, according to the Terminal Evaluation Report of the project, the Health Area Offices improved their capacity for data collection and analysis which resulted in improvement of the data accuracy, and therefore it was difficult to simply compare the data at the project completion with those at the project commencement. The report also pointed out that the target had been ambitious.

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

The project effects have partially continued. Since the project completion, health services strengthened by the project including the medical examination for infants, prenatal consultation, follow-up of postpartum mothers and follow-up for the under-weight babies have been sustained as they were during the project period. First, the facility-based delivery rate has been increasing in the three target departments (Indicator 1). According to MSPAS and the Health Area Offices in the target departments, this is attributed to health facilities' efforts for facility-based delivery, improvement of the geographical access to the health facilities, timely detection of high risk pregnant women for referral to the health facilities due to good coordination with traditional birth attendants, and so on. Pregnant Women's Clubs also promoted expecting mothers' knowledge on prenatal care. Second, the percentage of the under-weight babies at the birth has been on a decreasing trend in Totonicapán and Sololá (Indicator 2), while the percentage has increased in Quetzaltenango. In Totonicapán and Sololá, mothers are provided with free nutritious food by most Health Centers or Posts and they exchange information on how to take nutrition in the Pregnant Women's Club. Third, uses' satisfaction against the health facilities has been improved only in Totonicapán (Indicator 3).

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

The Overall Goal has been partially achieved. In Quetzaltenango and Totonicapán, almost all the indicators has reached the target, indicating improvement compared to the time of the project completion. However, in Sololá, although the neonatal mortality ratio has decreased as planned, situations have been worsened regarding other three indicators of maternal and child mortality. As reasons for the increase in the maternal mortality, cultural factors including preferring the birth at home were pointed out by MSPAS.

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

All of the three target Health Area Offices answered that husbands have shown more understanding toward maternal health. For example, some husbands who participated in the Pregnant Women's Club's activities, unlike before, permit or even accompany their wives' visiting health facilities and show more understandings towards contraception[2].

<Evaluation Result>

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

Achievement of the Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td rowspan="3">(Project Purpose)
Women (expecting and nursing mothers) and infant receive health services in better quality in the three target departments.</td><td>1. Increase the facility-based delivery rate by Q: 10%, T: 15% and S: 25%.</td><td>Status of achievement: Not achieved (Continued).
(Project Completion)
- The ratio of facility-based delivery increased from 2010 to 2014 by 6%, 11% and 0.5% in Quetzaltenango, Totonicapán and Sololá, respectively, but not reached the target.
(Ex-post Evaluation)
- Since the project completion, the ratio of the birth at health facilities has been increasing in three departments.
<table>
<tr><td></td><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>Quetzaltenango</td><td>55%</td><td>56%</td><td>59%</td><td>60%</td><td>61%</td><td>62%</td><td>64%</td><td>69%</td></tr>
<tr><td>Totonicapán</td><td>28%</td><td>31%</td><td>34%</td><td>38%</td><td>39%</td><td>40%</td><td>44%</td><td>41%</td></tr>
<tr><td>Sololá</td><td>40%</td><td>46%</td><td>38%</td><td>42%</td><td>40%</td><td>39%</td><td>50%</td><td>52%</td></tr>
</table></td></tr>
<tr><td>2. Decrease the percentage of the under-weight babies at the birth by facility-based delivery by: Q: 4%, T: 5% and S:20%</td><td>Status of achievement: Not achieved (Partially continued).
(Project Completion)
-The percentage of the under-weight babies at the birth by the facility-based delivery decreased from 2010 to 2014 by 6% in Totonicapán, but not reached the target. The percentage increased by 1% and 3% in Quetzaltenango and Sololá, respectively.
(Ex-post Evaluation)
- Since the project completion, the percentage of the under-weight babies at the birth at health facilities has been on a decreasing trend in Totonicapán and Sololá.
<table>
<tr><td></td><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>Quetzaltenango</td><td>14%</td><td>15%</td><td>12%</td><td>12%</td><td>15%</td><td>19%</td><td>20%</td><td>23%</td></tr>
<tr><td>Totonicapán</td><td>13%</td><td>12%</td><td>17%</td><td>8%</td><td>8%</td><td>23%</td><td>28%</td><td>21%</td></tr>
<tr><td>Sololá</td><td>2%</td><td>6%</td><td>8.8%</td><td>6%</td><td>5%</td><td>16%</td><td>14%</td><td>14%</td></tr>
</table></td></tr>
<tr><td>3. Increase the satisfaction rate of the service users.</td><td>Status of achievement: Partially achieved (Partially continued).
(Project Completion)
- The percentage of the service users who answered “very good” or “good” increased in Totonicapán and Sololá, but not in Quetzaltenango.
(Ex-post Evaluation)
- Since the project completion, the percentage of the service users who answered “very good” or “good” increased in Totonicapán, but not in Sololá and Quetzaltenango.
<table>
<tr><td></td><td>2011</td><td>2014</td><td>2018</td></tr>
<tr><td>Quetzaltenango</td><td>86%</td><td>79%</td><td>76%</td></tr>
</table></td></tr>
</table>

[2] There were approximately 300 participants in the family planning consultations in the health center of Cajola Xetalbijoj in Quetzaltenango in 2017, though there had been no participants in the previous years.

<table>
<tr><td></td><td></td><td>
<table>
<tr><td>Totonicapán</td><td>82%</td><td>91%</td><td>94%</td></tr>
<tr><td>Sololá</td><td>78%</td><td>87%</td><td>87%</td></tr>
</table>
</td></tr>
<tr><td rowspan="4">(Overall goal)
The health condition of women (expecting and nursing mothers) and children under 5 is improved in the three target departments.</td><td>1. Decrease the maternal mortality ratio (MMR) to: Q:90, T:153, S:98</td><td>Status of achievement: Partially achieved.
(Ex-post Evaluation)
- The maternal mortality ratio has decreased in Quetzaltenango and Totonicapán, mostly achieving the target.
<table>
<tr><td></td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>Quetzaltenango</td><td>109</td><td>128</td><td>94</td></tr>
<tr><td>Totonicapán</td><td>156</td><td>121</td><td>130</td></tr>
<tr><td>Sololá</td><td>131</td><td>112</td><td>184</td></tr>
</table>
</td></tr>
<tr><td>2. Decrease the neonatal mortality ratio to: Q:9, T:8, S:10</td><td>Status of achievement: Achieved.
(Ex-post Evaluation)
- The neonatal mortality ratio has decreased in the three departments, reaching the target.
<table>
<tr><td></td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>Quetzaltenango</td><td>5.37</td><td>4.27</td><td>3.30</td></tr>
<tr><td>Totonicapán</td><td>10</td><td>9</td><td>5</td></tr>
<tr><td>Sololá</td><td>9</td><td>11</td><td>10</td></tr>
</table>
Note: Figures after the decimal point were not available for Totonicapán and Sololá.</td></tr>
<tr><td>3. Decrease the infant mortality ratio (IMR) to: Q:13, T:28.5, S:13</td><td>Status of achievement: Partially achieved.
(Ex-post Evaluation)
- IMR has decreased in Quetzaltenango and Totonicapán, reaching the target.
<table>
<tr><td></td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>Quetzaltenango</td><td>13.42</td><td>10.85</td><td>7.87</td></tr>
<tr><td>Totonicapán</td><td>22.62</td><td>22.74</td><td>15.02</td></tr>
<tr><td>Sololá</td><td>19</td><td>23</td><td>22</td></tr>
</table>
Note: Figures after the decimal point were not available for Sololá.</td></tr>
<tr><td>4. Decrease the under 5 mortality ratio (U5MR) to: Q:2.5, T:1.42, S:9</td><td>Status of achievement: Not achieved.
(Ex-post Evaluation)
- The under 5 mortality ratio has decreased in Quetzaltenango, reaching the target.
<table>
<tr><td></td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>Quetzaltenango</td><td>1.08</td><td>1.18</td><td>0.73</td></tr>
<tr><td>Totonicapán</td><td>0.95</td><td>1.12</td><td>1.63</td></tr>
<tr><td>Sololá</td><td>20</td><td>23</td><td>27</td></tr>
</table>
Note: Figures after the decimal point were not available for Sololá.</td></tr>
</table>

Source: JICA documents, data provided by MSPAS and Health Area Offices of Quetzaltenango, Totonicapán and Sololá.

3 Efficiency

Both the project cost and period were within the plan (ratio against the plan: 99% and 100%, respectively). Therefore, the project efficiency is high.

4 Sustainability

<Policy Aspect>

The "National Plan for the Reduction of Maternal and Neonatal Mortality 2015-2020" and "Institutional Strategic Plan 2016-2020" of MSPAS hold policies and programs for reproductive health and strengthening of the health service networks. Services strengthened by the project are backed up by these policies at least until 2020.

<Institutional Aspect>

In the three departments in common, the organizational structure for providing health services for mothers and children is appropriate, but some Health Centers and Posts do not have a sufficient number of the health personnel. At the Health Area Office of Quetzaltenango, 20 staff are assigned: 3 epidemiologists, 4 staff in charge reproductive health, 2 staff in health promotion, 4 nurses, 2 nutritionists, and 5 administrative and other staff, but the number is not sufficient to cover the extensive territory. The staff number of the Health Area Offices of Totonicapán and Sololá (13 and 15, respectively) is sufficient. At the Health Center level, they have necessary professions such as doctors, nurses and rural health workers, but the staff number is not sufficient in two of the four visited Health Centers to provide services of medical treatment, follow-up and medical examinations. Also at the Health Post level, the organizational structure itself is appropriate with assigned professionals, but the staff number is not sufficient in two of the seven visited Health Posts for providing health services in the jurisdiction. One reason is that people live dispersedly in rural areas. In the three departments, case conferences are held among the hospital and Health Center or Post and referral/counter-referral[3] are conducted, according the Health Area Offices. However, in Sololá, referral/counter-referral has been used without sheets, because no copies were made due to the budget shortage.

<Technical Aspect>

No particular technical issues were raised. The Health Area Offices of the three departments answered that the personnel of the Health Centers and Posts mostly have sufficient knowledge on maternal and infant health, as the personnel had continuously training programs even after the project completion. In the three departments, training opportunities are provided to nurses, auxiliary nurses and midwives on prenatal care, partum/postpartum care, newborn care, nutrition, and so on. Materials developed by the project including flipcharts on risk signs, manual for prenatal control, referral/counter-referral sheets and DVD on maternal and infant health have been used in the three departments. Performance of the Health Centers and Posts are monitored by the Health Area Offices. In Quetzaltenango and Totonicapán, Health Centers and Posts are monitored bimonthly and monthly, respectively, with the monitoring checklist. If issued are raised, technical assistance or training is provided. In Sololá, the Health Posts are monitored by the Health Centers, and the Health

[3] Referral: Referral and transfer from the lower health facilities to the higher health facilities; Counter-referral: Referral and transfer from the higher health facilities to the lower health facilities.

Centers are supervised by the Health Area Office.

<Financial Aspect>

Budgets of the Health Area Offices of Quetzaltenango, Totonicapán and Sololá have increased for the last four years (56 million Guatemala Quetzals (GTQ) (2015) to 65 million GTQ (planned, 2018), 60 million GTQ (2015) to 84 million GTQ (planned, 2018), and 68 million GTQ (2015) to 84 million GTQ (planned, 2018), respectively), but according to the offices, they have not been sufficient to cover all necessary programs. The Health Area Office of Totonicapán receives financial support from donors, besides budgets assigned from MSPAS. Budget shortages were claimed also at the Centers and Posts, which cannot purchase necessary clinical laboratories, preventive maintenance of the medical equipment, and other medical supplies. No prospect for increase in budget distribution was confirmed by MSPAS and no particular solutions were showed by the Health Area Offices at the time ex-post evaluation survey.

<Evaluation Result>

Therefore, the sustainability of the effects is fair.

5 Summary of the Evaluation

The Project Purpose was partially achieved, and the effects have partially continued. Health services for mothers and infants were strengthened in the target departments, such as prenatal and partum/postpartum care and follow-up of under-weight babies, although they did not reach the target. As a result, situations related to mortality of mothers, newborn babies, infants and under 5 children have improved in the two departments. Regarding sustainability of these improved health services, the number of the personnel of some Health Centers and Posts and budgets are not sufficient to cover all of the needs for maternal and infant health services, the organizational structure itself has been appropriate, and the health personnel have sufficient knowledge on maternal and infant health, while

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 MSPAS to institutionalize the referral/counter-referral sheets and diffuse them to Health Centers and Posts. In Sololá, although the staff recognized their usefulness and effectiveness, they do not use them now because they lack budgets to reprint them. Printing and distribution of the sheets should be under MSPAS responsibility.

Lessons learned for JICA:

- The project promoted the Health Centers and Posts for establishing Pregnant Women's Clubs in the communities, and these clubs have played an important role for raising awareness of mothers. Mothers share knowledge and experience on prenatal care such as medical control and nutrition intake, which has resulted in the increase in the facility-based delivery and decrease in under-weight babies. Some activities involve their husbands, which raises their understanding on maternal health. It does not take any costs establish these clubs, and through these clubs Health Centers and Posts can easily organize related workshops and other activities. In maternal health projects, this kind of non-costly but effective organization are very recommended for awareness raising of pregnant women.

Husbands accompanying their wives at the Health Post
(Nueva Candelaria, Totonicapan)

Interview with pregnant women at the ex-post evaluation survey
(Santa Maria Visitación, Sololá)

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Turkey Office: November, 2018

Country Name	School-Based Disaster Education Project
Republic of Turkey	

I. Project Outline

Background	Turkey is one of the most earthquake-prone countries and the government of Turkey regarded Disaster Risk Management as an urgent issue, having made remarkable efforts to build up a resilient nation focusing on structural measures with the assistance of foreign donors including Japan. However, in terms of non-structural measures, the government of Turkey has realized that further efforts should be made, especially to promote the education in disaster preparedness at schools. The National Earthquake Strategy and Action Plan (NESAP) (2012-2023) includes the promotion of disaster education as the responsibility of the Ministry of National Education (MoNE), and requires that each school has to prepare the Civil Defense Plan. However, classroom lessons on disaster preparedness at school had not been carried out systematically, which had made it difficult to expand them over the nation.		
Objectives of the Project	The Project aimed at improving the school-based Disaster Education in the Pilot Basic and Secondary Schools(1) of the project area by enhancing the capacity of Master Teachers(2) and administrators, improving supportive educational materials for teachers and the establishment of disaster management system, thereby enhancing Disaster Education capacity in the project area of selected ten provinces. (1) Pilot Basic and Secondary Schools: Basic and Secondary Schools where the project activities were done. Mater teachers were selected from those pilot schools. (2) Master Teachers : They were selected from each pilot school and Provincial Education Office in pilot provinces. They took master teacher training in order to disseminate the knowledge about disaster education by giving trainings for other teachers of their own schools or neighbouring schools.		
	1. Overall Goal: To enhance Disaster Education capacity for fostering awareness of school administrators and teachers in Basic schools and of school administrators in Secondary Schools in the project area. 2. Project Purpose: To improve school-based Disaster Education to enhance knowledge and to strengthen school disaster management capacity of school administrators and teachers in the Pilot Basic and Secondary Schools in the project area.		
Activities of the Project	1. Project Site: Eight provinces of Marmara region (Balikesir, Bursa, Canakkale, Istanbul, Kocaeli, Sakarya, Tekirdag, Yalova) and neighboring two provinces (Bolu, Duzce) 2. Main Activities: 1) To enhance capacity of Master Teachers and administrators to be able to disseminate the knowledge to their colleagues regarding Disaster Education. 2) To improve supportive educational materials for teachers related with Disaster Education for basic education. 3) To establish disaster management system of Pilot Basic and Secondary Schools which are suitable to their environment. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 8 persons 2) Trainees received: 41 persons 3) Equipment: None 4) Operational Expenses Turkey Side 1) Staff allocated: 21 persons 2) Provision of Facilities and Equipment 3) Operating expenses		
Project Period	January 2011- July 2014 (Extension period: January 2014 – July 2014)	Project Cost	(ex-ante) 230 million yen (actual) 219 million yen
Implementing Agency	General Directorate of Teacher Training and Development (GDTTD), Ministry of National Education (MoNE) (The implementing agency was called as "In-service training Department", MoNE before the organizational reform.)		
Cooperation Agency in Japan	Crisis Management Office, Kobe City Government Guidance Division of the Guidance Department, Board of Education Secretariat, Kobe City Government		

II. Result of the Evaluation

<Constraints on Evaluation>

・Effects of subsequent technical assistance under the technical cooperation project: It should be well noted that the outcome of the project studied under this ex-post evaluation is the combined effects with the subsequent JICA project, "Project of Earthquake and Tsunami Disaster Mitigation in the Marmara Region and Disaster Education in Turkey" (2013-2018) under which some assistance in the field of disaster education has been continued after the project completion.

・Evaluation judgment with limited information on project activities during the extension period : During the extension period, some activities were carried out. However, no documents on those activities are available except the Management Guidance Survey Report prepared by Japanese experts. The evaluation judgment under this ex-post evaluation, therefore, is made based on this existing document and results of field survey.

< Special Perspectives Considered in the Ex-Post Evaluation >

・Change of number of pilot schools due to the Education reform: In September, 2012, the national educational system was reformed from "8 years of basic schools (5 years of elementary schools+3 years of junior high schools) + 4 years of secondary schools" to "4 years of elementary schools +4 years of junior high schools +4 years of secondary schools" and basic schools were classified into two categories, elementary schools (4 years) and junior high schools (4 years). This change resulted in the increase of Pilot Basic School number from 80 to 145. This report uses the most updated data, but presents the result by applying it into the original number of Pilot Schools.

・Clarification of measurement to examine the achievement level of Overall Goal: In order to examine the achievement level of Overall Goal, ("To enhance Disaster Education capacity for fostering awareness of school administrators and teachers in Basic schools and of school administrators in Secondary Schools in the Project area"), it is important to review whether the sustainable system of promoting disaster education has been in place,

especially in provincial level. However, no indicator to verify this aspect is set in the project design matrix (PDM). Therefore, supplementary information 1, ("Has the Provincial Education Office promoted the Disaster Education in the province and has the Master Teacher Circles promoted the disaster education in the province?") is used. For the judgmental standard to examine the improvement level stated in indicators of Overall Goal, no information is available in the existing document. And the Overall Goal is expected to be achieved by three to five years after the project completion, as stated in the Terminal Evaluation Report. Taking those into account, for the ex-post evaluation, it is important to examine how many contents and methods of school-based disaster education introduced by the Project have contributed to the current education system. Therefore, in order to examine this aspect, the supplementary information 2 related to the question, "Has the implementing agency (MoNE/GDTTD) confirmed the improvement of disaster education quantitatively and qualitatively?" is used.

・How to deal with Super Goal: According to the Terminal Evaluation Report, the Super Goal of this Project "To expand the effect of Disaster Education to school administrators, teachers, students and their parents for fostering disaster knowledge, awareness and management through school education to all over the nation." is expected to be achieved by five to ten years after the project completion. Under this ex-post evaluation study, which is conducted four years after the project completion, the achievement level of the Super Goal is not examined.

1 Relevance

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

At the time of ex-ante evaluation, this project was relevant to the 9th National Development Plan (2007-2013) which stressed the need for quality improvement in teacher's skills for Disaster Education. At the time of project completion, it was found that the National Earthquake Strategy and Action Plan (2012-2023), prepared by the Prime Ministry Disaster and Emergency Management Presidency in August 2011, states the action to be undertaken by MoNE, such as "A number of topical units on disaster and emergency management shall be incorporated into primary and secondary education programs" and "Teachers shall be educated in disaster and emergency topics on continuous basis".

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

This project has been consistent with Turkey's development needs of disaster and emergency management in primary and secondary education at the time of ex-ante evaluation as described in "Background" above. The earthquake that occurred in Van in October 2011 during the Project term caused extensive damage, but increased interests to disseminate the disaster education in Marmara Region. At the time of project completion, the GDTTD regarded the disaster education as important and placed a high expectation on the role of Master Teachers at schools as well as on the institutional arrangement to promote the disaster education.

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

It was agreed in the policy consultation on economic cooperation held in 2008 that the disaster prevention was set as one of the priority issues.[1]

<Appropriateness of Project Design/Approach>

As described below, it is judged that the effectiveness/impact of the project is low. The project design was considered as appropriate as described in the Ex-ante Evaluation Summary Sheet in that the project was planned to enhance the capacity development of school teachers and administrators by using the existing system for Training of Trainers (TOT) as well as to improve the institutional capacity by introducing the School Disaster and Emergency Management Plan (SDEMP). However, the project activities were adversely affected by two external factors. In the middle of the project period, the education reform (April 2012) was implemented, which made many C/Ps transferred. JICA Turkey Office made some efforts to maintain the system work for the project by requesting the director of GDTTD /MoNE to keep their C/Ps working in the project sites. However, it was not successful due to the personnel changes in management of Turkey side. As a results, the project failed to maintain the human resources gained throughout the project period. In September 2012, "Law of Occupational Health and Safety" was enacted. As a result, the government-made "Risk Assessment and Emergency Plan (RAEP)" replaced the project-made SDEMP right after the project completion in August 2014.

These external factors were beyond the control of MoNE and beyond the scope of the assumption for the project to cope with.

<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>

By the project completion, the Project Purpose, "To improve school-based Disaster Education to enhance knowledge and to strengthen school disaster management capacity of school administrators and teachers in the Pilot Basic and Secondary Schools in the Project area" was partially achieved.

Three teachers at each of 80 pilot schools in 10 targeted provinces and two administrators at each 10 Provincial Education Offices were selected as Master Teachers and received fundamental training on disaster education under STEP training[2] system as planned. (Indicator 1). Education materials for the model class were developed and 50 draft teaching guides were revised and added to the existing version. Cards, experiment equipment, and related materials were developed by teachers and students (Indicator 2). Approximately 50% of all Master Teachers taught the knowledge acquired at the Master Teacher Training to at least 3 colleagues in their schools (Indicator 3). Through the training on school disaster and emergency management planning, 45 pilot schools (56% of what was targeted) prepared SDEMP. (Indicator 4). Forty-five (45) Pilot Schools participated in the Disaster Management Activity Contest, achieving 93% of what was targeted (Indicator 5). As for the Administrators of Secondary Schools, no information was found on the achievement level at the time of project completion. (Indicator 6) Considering the situation examined retrospectively, it was unlikely that they could acquire the knowledge related to the SDEMP by the project completion because only limited numbers of those administrators had been informed about the trainings during the project period. During the extension period from January to July 2014, the training activity to disseminate SDEMP to all Pilot Basic Schools was conducted but it could not cover all ten provinces.

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

After the project completion, most of the project activities have not continued. As explained above, after the education reform, many C/Ps (many of them were administrators) were transferred and the enactment of new law and related regulations issued by the

[1] MOFA, ODA Data book 2010

[2] A STEP Training is the Framework for countrywide dissemination of disaster education constructed in four steps (Framework of Trainings of Trainers)

government made all schools prepare RAEP instead of SDEMP since August of 2014. Neither Provincial Directorates, nor MoNE took necessary precaution or promotion to keep the system alive and usable. Without any instructions or orders by MoNE and/or the Provincial Directorates of National Education, Core Master Teachers[3] and Master Teachers could not officially continue any regular training programs. Therefore, STEP trainings and other project activities have been discontinued except campaigns and related activities of awareness raising for disaster preparedness conducted individually or voluntarily in some provinces.

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

It is observed that the Overall Goal, "To enhance Disaster Education capacity for fostering awareness of school administrators and teachers in Basic schools and of school administrators in Secondary Schools in the Project area" has not been achieved. The MoNE has not improved education materials for disaster education. It was decided that those materials developed by the project would not be used for formal education, but they were to be used as reference materials for the in-service trainings for teachers, after being updated through the subsequent project, namely "School Based Disaster Education Project Phase-II (2017-2019)", which has executed in the form of trainings in Japan known as "Knowledge Co-Creation Program". The MoNE has continued the in-service trainings in 2016 and 2017 on their own and intended to continue it in 2018 (Indicator 1). More than 3,000 Master Teachers are available for conducting regular disaster education in the classes, however, only the limited number of teachers have dealt with disaster education because of no instructions from the MoNE. This means that they have not had many opportunities to acquire capability to conduct classes for systematic Disaster Education based on the materials through TOT training (Indicator 2). The Guideline of SDEMP has not been improved by the MoNE since it was determined that the SDEMP would no longer be used under the new law and most of project related personnel were transferred after the project completion (Indicator 3). Consequently, school administrators who received Disaster Education in the Project Area of Basic and Secondary Schools have not implemented awareness-raising activities for disaster management and have neither prepared nor implemented their own SDEMP (Indicator 4).

It was found by the study that the Provincial Education Office as well as the Master Teacher Circle in the province have failed to promote the Disaster Education under no guidance of MoNE/GDTTD after the project completion (Supplemental information 1). There is no monitoring or follow-up system functioned by MoNE or the Provincial Directorates after the project completion, however, according to the questionnaire, the MoNE has confirmed some improvement of disaster education in elementary, junior high and secondary schools, in that the limited number of schools have been practicing the disaster education introduced by the project in the special day/week, such as in the Civil Defense Day and Earthquake Week (Supplemental information 2).

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

Some ripple effects have been identified during the study. Some disaster education activities have been carried out voluntarily by Core Master Teachers in collaboration with Turkish Japanese Foundation and JICA Alumni Association, such as at a shopping mall in Ankara, in a preschool and elementary school. Some teachers of pilot schools who were once trained by the project have also got involved in those activities. Interviews with Master Teachers revealed that adults in neighboring communities of pilot schools participated in some disaster training activities held in the pilot schools of Sakarya and Balikesir.

<Evaluation Result>

In light of the above, the project partially achieved the Project Purpose at the time of project completion. Having been affected by two major external factors; the education reform and the enactment of new law, the effect of the project has not continued after the project completion, and thus, the Overall Goal has not been achieved. Therefore, the effectiveness/impact of the project is low.

It should be well noted that there are some noticeable ripple effects identified, such that the disaster education activities have voluntarily been carried out by some teachers trained by the project in collaboration with the third party organizations.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) To improve school-based Disaster Education to enhance knowledge and to strengthen school disaster management capacity of school administrators and teachers in the Pilot Basic and Secondary Schools in the Project area.	Indicator 1: 260 Master Teachers (1 school administrator, 1 class teacher, 1 subject teacher from each pilot school, and 1 supervisor, 1 civil defense expert from each provincial education office in the Project Area) who receive training from selected Master Teachers will be trained via new School-based Disaster Education.	Status of the Achievement: achieved (not continued) (Project Completion) From 80 pilot schools in 10 targeted provinces, 3 teachers (1 administrator, 2 general teachers) at each pilot school, total of 240 teachers were selected as Master Teachers. Two administrators (1 school inspector and 1 civil defense specialist) at each 10 Provincial Education Office were selected as provincial Master Teachers. These 260 Master Teachers all told took fundamental trainings three times on disaster education. (Ex-post Evaluation) After the project completion, neither STEP trainings nor other project activities have been continued except campaigns and related activities of awareness raising for disaster preparedness conducted individually in some provinces. This is due to lack of instruction and coordination from the MoNE or Provincial Directorate of Education that works under the guidance and authorization of the central government.
	Indicator 2: Education materials for the model class of Disaster Education will be improved.	Status of the Achievement: achieved (Project Completion) Education materials for the model class were developed and 50 draft teaching guides were revised and included in the existing version. Cards, experiment equipment, and related materials were developed by teachers and students. According to the project completion report, the model classes of disaster education served to further encourage teachers. *This indicator is intended to examine the situation only up to the project completion.
	Indicator 3: More than 80% of the Master Teachers teach the knowledge trained at the Master Teacher Training	Status of the Achievement: partially achieved (not continued) (Project Completion) According to the End Line Survey, 104 Master Teachers taught knowledge to at least

[3] Core Master Teachers mean teacher who instruct and promote disaster education in each province and who has volunteer spirit and high motivation towards disaster education. They are selected by Provincial Education Office or MoNE to be trained in the Training Program in Japan. They are lecturers for STEP training.

<table>
<tr><td></td><td>to at least 3 colleagues in their schools.</td><td>3 colleagues in their schools. The achievement ratio was 61%. (48.9% out of 80%).
<table><tr><th>items</th><th>Target value</th><th>End Line Survey 2013</th><th>Ex-post evaluation 2017</th></tr><tr><td>Number of Master Teachers targeted</td><td>260</td><td>214</td><td>NA</td></tr><tr><td>Number of Master Teachers who trained at least 3 colleagues</td><td>208</td><td>104</td><td>NA</td></tr><tr><td>Ratio (%)</td><td>80%</td><td>48.9%</td><td>NA</td></tr></table>(Ex-post Evaluation)
Master Teachers stopped teaching because Core & Master Teachers could not continue any regular training programs under no guidance of MoNE and/or the Provincial Directorates of National Education.</td></tr>
<tr><td></td><td>Indicator 4: 80 Pilot Schools will prepare their own School Disaster Management and Emergency Plan (SDEMP) by referring to the Teacher’s Handbook and implement activities based on the plan.</td><td>Status of the Achievement: partially achieved (not continued)
(Project Completion)
Through the training on school disaster and emergency management planning, 45 pilot schools prepared SDEMPs. The achievement ratio was 56% (45 out of 80).
(Ex-post Evaluation)
Activities were not continued. Having affected by a new law, “Law of Occupational Health and Safety” enacted in June 2012, and about 60 regulations issued between 2012 and 2014 by the Government, all schools had to prepare the government-made RAEP instead of SDEMP since 2014. SDEMP became invalid even for the pilot schools.</td></tr>
<tr><td></td><td>Indicator 5: More than 60% of the Pilot Schools participate in the Disaster Management Activity (School Project) Contest.</td><td>Status of the Achievement: achieved
(Project Completion)
Forty-five (45) Pilot Schools, which constituted 56% of total pilot schools, participated in the Disaster Management Activity Contest. The achievement ratio was 93% (56% out of 60%).
*This indicator is intended to examine the situation only up to the project completion.</td></tr>
<tr><td></td><td>Indicator 6: Throughout this Project, Administrators of Secondary Schools in the Project Area will acquire knowledge about School Disaster Management and Emergency Plan.</td><td>Status of the Achievement: not verifiable (not continued)
(Project Completion)
No information given in the existing document.
(Ex-post Evaluation)
During the project period, very limited number of administrators of secondary schools received information about SDEMP because MoNE mainly focused on primary schools. After the project completion, due to the education reform (April 2012), activities were not done because almost all administrators were transferred to other schools and newcomers were not informed about the SDEMP.</td></tr>
<tr><td>(Overall Goal)
To enhance Disaster Education capacity for fostering awareness of school administrators and teachers in Basic schools and of school administrators in Secondary Schools in the Project area.</td><td>Indicator 1: (For teachers) MoNE improves education materials for disaster education.</td><td>(Ex-post Evaluation) not achieved
Review and revisions of education materials for disaster education required by MoNE have not been done. And those materials (four guidelines /books) have not been used for formal education. It is planned, however, that they are to be updated in the “Knowledge Co-Creation Program” Training in Japan, so called “School Based Disaster Education Project Phase-II” and are planned to be used as reference materials for the in-service trainings for teachers.</td></tr>
<tr><td></td><td>Indicator 2: (For teachers) Basic school teachers in the project area who’s been taught Disaster Education will acquire capability to conduct class for systematic Disaster Education based on the education materials through TOT training.</td><td>(Ex-post Evaluation) not achieved
Currently, 3,296 Master Teachers raised by the project are available for conducting regular disaster education in the classes. According to the questionnaire survey, they have sufficient capacity as being well trained. However, very little number of teachers can deal with disaster education because of no instruction from MoNE. Therefore, it is difficult to say that they have acquired capability to conduct class for systematic Disaster Education based on the materials through TOT training. No STEP trainings have been conducted after the project completion.</td></tr>
<tr><td></td><td>Indicator 3: (For administrators) MoNE improves the Guideline of School Disaster Management and Emergency Plan (SDEMP).</td><td>(Ex-post Evaluation) not achieved
MoNE has not improved the Guidelines. No promotional study or action or inspection to schools (even in the pilot schools) have been made by MoNE. The reason of such negligence might be attributed to low level of ownership after it was determined that the SDEMP was no longer used under the new law and most of project related personnel were transferred after the project completion.</td></tr>
<tr><td></td><td>Indicator 4: (For administrators) School administrators who have been taught Disaster Education in the Project Area of Basic and Secondary schools will raise disaster management awareness and prepare and implement their own School Disaster and Emergency Plans.</td><td>(Ex-post Evaluation) not achieved
After the project completion, all schools in Turkey prepared the Government-made RAEP instead of SDEMP as part of the Law and Regulation of Occupational Health and Safety. Furthermore, after the project completion, neither Provincial Directorates nor MoNE took necessary precaution, improvement or promotion to keep the system as alive and usable. Therefore, school administrators have not raised disaster management awareness and have not prepared/implemented SDEMP to their schools.</td></tr>
</table>

Source : Project Completion Report and interviews with and response to the questionnaires by the implementing agency and related organizations.

3 Efficiency

While the project cost was within the plan, the project period exceeded the plan (ratio against plan: 95%, 119%). It was considered as necessary to extend the project period in order for the Disaster Education Advisory Group (DEAG), which was newly established in June 2013 for sustainable improvement of the project outcome, to be firmly expedited, and to carry out the training activity of Step 3 in ten Pilot Provinces. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The 10th National Development Plan (2014-2018) has a chapter of Disaster Management which states that the implementation mechanism to reduce disaster risks should be strengthened and retrofitting the public buildings including schools and dormitories to increase disaster preparedness should be priotized. Under the National Earthquake Strategy and Action Plan (2012-2023), the MoNE and JICA agreed that, through the aforementioned project for "School Based Disaster Education Phase II", the MoNE formulates the Vision and Action Plan for Disaster Education, and applies it in all levels of schools in the entire country. It is judged that the support from government's policy has been firmly established and it is expected to be maintained after ex-post evaluation.

<Institutional Aspect>

The responsible agencies for disaster education have remained unchanged as MoNE/GDTTD being responsible in the central level and Provincial Education Offices in the provincial levels. However, education reform brought some changes into the education system itself, such that the compulsory education became 12 years instead of 8 years. In addition, many C/Ps of both at GDTTD, other general directorates and Provincial Directorates were transferred, thus there were not enough number of trained personnel to manage the activities in entire country. Furthermore, some coordination problems within related general directorates and with provinces were identified. On this, the DEAG was established by the Undersecretary's circular note dated June 2013 and the first meeting was held in October 2013 to keep activities going, but it only served as the transient option. After the project completion, the DEAG ceased its function because the Undersecretary who used to be a responsible person in charge got transferred to other position. As countermeasures, the MoNE has recently established the core team under the direct supervision of the Director General to manage and coordinate the activities of disaster education. The core team includes some teachers trained by the project at pilot schools and they are expected to play the leading roles to expand the disaster education over the country. It is judged that the implementing agency has been in the process to reconstruct the institution to sustain the project effects by utilizing human resources developed by the project.

<Technical Aspect>

After the completion of the project, it has become difficult for MoNE to maintain the knowledge and skills developed by the project as many C/Ps left their positions or provinces, those newly assigned personnel are not well trained in terms of disaster education and thus STEP trainings have been discontinued. Under such circumstances, the MoNE has made some attempts to sustain techniques acquired through the project by conducting the limited number of in-service training programs to train teachers who did not have any disaster education training background. Furthermore, in order to respond to the current needs under the new law and new education system, the MoNE has started working to reshape the framework of disaster education based on what was established by the project. Practically, educational administrators and teachers have participated together in the aforementioned project (training programs in Japan) with the purpose to prepare action plans for disaster education, to redefine the roles of teacher trainers who lead the systematic training programs and to update the disaster training guidebooks, etc. It is judged that several attempts made by the implementing agency to cope with the adverse effects of education reform have started to work.

<Financial Aspect>

According to the questionnaire to those of MoNE, there is no budgetary problem to conduct in-service training programs at provincial level. The total budget for MoNE has been steadily increasing since the project completion in 2014. It is judged that the implementing agency's financial source (the status of funding) has been firmly established and it is likely to be maintained after ex-post evaluation.

(CCY Unit: '000 Turkish Lira)

items	2014	2015	2016	2017
Budget for MoNE	55,704,817	62,000,248	76,354,306	85,048,584
Budget for GDTTD	17,898,048	14,695,428	16,440,600	17,489,492
Budget of In-Service trainings	2,400,000	1,960,000	2,366,500	2,166,500

Source: MoNE

<Evaluation Result>

In light of the above, some problems have been observed in terms of institutional and technical 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 for knowledge enhancement to improve school-based Disaster Education and for strengthening school disaster management capacity of school administrators and teachers in the Pilot Basic and Secondary Schools in the Project area. Due to the consequences of the education reform that had made many C/Ps transferred and the enactment of new law that had led the project-made SDEMP being invalid, the effect of the project has not continued after the project completion and the Overall Goal has not been achieved.

But it should be well noted that there are some noticeable ripple effects identified, such that the disaster education activities have voluntarily been carried out by some teachers trained by the project in collaboration with the third party organizations. As for sustainability, some problems have been observed in terms of institutional and technical aspects. As for efficiency, the project period exceeded the plan.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

To: The Ministry of National Education

The evaluation study revealed that the effect of the project has not continued after the project completion. This is mainly due to that the MoNE/GDTTD could not timely cope with the consequences of education reform and the enactment of new law by effectively

utilizing the well-trained personnel under the project. It was also identified by the study that the MoNE has started working to utilize the effect of the project under the new education system and to further expand it over the country. It is recommended, therefore, that the MoNE/GDTTD should continue their efforts through on-going project, "School Based Disaster Education Phase II" by

1) Effectively utilizing the core team to manage activities and to coordinate the related general directorates and provinces, and by
2) Re-establishment of the systematic training mechanism to enhance the capacity of Master Teachers as well as to raise the new Master Teachers.

Lessons Learned for JICA:

1. Possible measures to sustain the effect generated by the project should be discussed with implementing agency before the end of the project. It might be worthwhile to involve higher level of management in such discussions.

The evaluation study identified that the coordination system by setting the DEAG to sustain the project effect, could not be activated in the MoNE, and though JICA made some efforts to maintain the system work for the project as explained above. It was not successful due to the personnel changes in management of Turkey side. As a results, the project has failed to maintain the human resources gained throughout the project. It should be well considered to involve higher level of management when JICA discusses with the implementing agency for the alternative ways in order not to lose human assets created by the project about how the implementing agency should cope with the external changes such as sector reform and personal movements.

2. Encouragement of voluntary initiatives could serve as one option to keep up activities

As explained above, having affected by external factors, the project faced some difficulties to continue activities after the project completion. However, some noticeable ripple effects have been made, such that the disaster education activities have voluntarily been carried out by some teachers in collaboration with Turkish Japanese Foundation (TJF) under the support of Hyogo Turkey Friendship Fund, JICA Alumni Association and JICA Turkey Office. In this collaboration, some teachers who used to work as C/Ps were invited to activities jointly held by these organizations and were encouraged to continue their training activities either in their schools for students and teachers from out of the region or in other provinces. A good relationship maintained by JICA Turkey Office with TJF and JICA Alumni Association have made these joint activities realized.

In case that the responsible institution faces difficulties to officially sustain activities after the project completion, it is worth considering to encourage the voluntary initiatives by obtaining the collaborations with the third party organizations.

Reference Materials developed by the project are not used for the formal education as expected, but are planned to be used as reference materials in the In-service Training Programs for teachers.

Disaster Training Activity in Bursa was conducted with the voluntary initiative of some teachers in collaboration with Turkish Japanese Foundation and JICA Alumni Association.

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Ethiopia Office: February, 2019

Country Name	
Federal Democratic Republic of Ethiopia	**National Pilot Project for Strengthening Mathematics and Science Education (SMASEE)**

I. Project Outline

Background	In Ethiopia, certain level of progress had been made for the access to the general education, however, the quality issues remained critical, since the positive change had not been seen as expected. Furthermore, Ethiopia came up with the policy to strengthen the human resource in the area of science for the industrialization, targeting 70% of students above Grade 11 (G 11) to major science. With the assistance of development partners such as the World Bank, the Government of Ethiopia was implementing the General Education Quality Improvement Program (GEQIP) which included the Continuous Professional Development (CPD). Under such circumstances, the Government of Ethiopia requested a technical cooperation to the Government of Japan in order to improve mathematics and science education.		
Objectives of the Project	Through (1) Establishing bodies/units to implement SMASEE* at the federal and regional levels, (2) developing capacity of the Regional Trainers (RTs) and the Key Teachers (KTs) to provide the In-service Education and Training (INSET), (3) developing a SMASEE INSET monitoring and evaluation system, and (4) institutionalizing scale-up the system of SMASEE INSET, the project aimed at establishing a model for the SMASEE INSET system in the target regions, and thereby improving ability of mathematics and science teachers in the target regions. * Promoting ASEI-PDSI (Activity, Student, Experiment, Improvisation-Plan, Do, See, Improvement) approach		
	1. Overall Goal: The ability of grade 7 and 8 primary school mathematics and science teachers to conduct student-centered lessons is improved in target regions. 2. Project Purpose: A model of the SMASEE INSET system for grade 7 and 8 primary school mathematics and science teachers is established in target regions.		
Activities of the project	1. Project site (Pilot area) : North Shore Zone in Amhara Region, Arsi Zone in Oromia Region, and Addis Ababa 2. Main activities: (1) Establishing bodies/units to implement SMASEE at the federal and regional levels, (2) developing capacity of RTs and KTs to provide INSET, (3) developing a SMASEE INSET monitoring and evaluation system, and (4) institutionalizing scale-up the system of SMASEE INSET 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 8 persons 2) Trainees received in Japan: 35 persons 3) Trainees in the third countries: 31 persons 4) Equipment: vehicles, PCs, photocopy machine, and others 5) Local Operational Expenses: training expenses Ethiopia Side 1) Staff allocated: 30 persons 2) Provision of spaces: project offices and INSET centers 3) Local cost: training expenses, travel expenses, allowance and others		
Project Period	March 2011-July 2014 (Extension Period: March 2014-July 2014)	Project Cost	(ex-ante) 240 million yen, (actual) 243 million yen
Implementing Agency	Federal Ministry of Education (MoE), Amhara Regional Education Bureau (AREB), Oromia Regional Education Bureau (OREB), Addis Ababa City Administration Education Bureau (AAEB)		
Cooperation Agency in Japan	-		

II. Result of the Evaluation

<Constraints on Evaluation>

- Data on Overall Goal was not obtained since the institutionalization of monitoring system or monitoring tools was not adequate, and information was collected through interviews with teachers.

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. "The Plan for Accelerated and Sustained Development to End Poverty (PASDEP) (2005/2006-2009/2010)" prioritized the education sector. "The Education Sector Development Program (ESDP) IV (2010/2011-2014/2015)" emphasized the necessity for improving quality of primary education, and enhancing quality of teachers and strengthening mathematics and science education were one of the prioritized areas. GEQIP, a sub-sector program regarded enhancement of quality of teachers as one of the pillars of the program, and this project was positioned as a part of the program.

<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 education in Ethiopia. At the time of ex-ante evaluation, there was few opportunities for teachers to learn student-centered approach in Ethiopia. In addition, there were limited number of trainers who can teach the student-centered approach. At the time of project completion, the curriculum at the time was promoting the student-centered approach.

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

The project was consistent with Japan's ODA Policy. "The Country Assistant Program for Ethiopia (2008)" prioritized education including the improvement of the access to education and the quality of education in remote rural 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 partially achieved the Project Purpose at the time of Project Completion. While the indicator of "A model of the SMASEE INSET system is approved as a prototype of the National INSET program for grade 7 and 8 primary school mathematics and science teachers." was achieved, the indicator of "SMASEE INSET materials are approved as the Continuous Professional Development (CPD) modules." was not achieved. The SMASEE INSET materials were not formally approved as CPD, because the CPD system was general and not subject specific, and it had also not been implemented across all the schools in a uniform manner.

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

The effects of the project have partially continued since the project was completed. The structure for the SMASEE INSET training established under the project has somewhat continued after the project was completed as described below ("Institutional Aspect" under "4. Sustainability). Under this institutional setting, new rounds of training have been conducted at the federal and regional level (in the three target regions). However, there has been a budget constraint for further implementation. Majority of schools have provided School-based training even though not effectively and strictly as per the SMASEE INSET module/guideline. However, the Cluster-based training has not been surely in place in all the regions after the project completed. Lack of commitment by education officials and lack of responsible structure and personnel to follow up the training at the lower level and lack of budget to organize cluster-based training have been identified as the major reasons for not putting the cluster system in place. Further, the main reason for the model not reaching down to the school level successfully at the target regions is that it is a sort of "extra business" for most experts at the zone and woreda level. Although SMASEE activities were supposed to have its own structure at regional level as a unit or a focal point, no special structure has not created that focuses on SMASEE activities except Oromia. Instead, SMASEE activities were merged with Teacher Development Program (TDP) or curriculum department. Much could have been done in terms of cascading, if it has independent SMASEE unit staffed with science and mathematics experts. There has been no strong follow-up and supportive supervision by local education officials for SMASEE activities as there has been no accountability for failing to do so.

Based on interviews with education officials, principals and teachers, most of mathematics and science teachers who got SMASEE INSET training have continuously used the modules in their lessons. However, majority of the teachers explained that due to lack of support by school directors and supervisors as well as woreda educational office, it was difficult for them to implement it properly. Teacher's class workload has made it difficult to do practical lesson in classrooms and other commitments in the schools have kept the teachers busy. Part of the explanation that the guideline has not been utilized in a complete way is, lack of complete awareness of heads of REBs about the importance of having complete team at regional, zonal and woreda levels that follow-up the utilization of the model. There is no accurate information about the number of schools which utilize the SMASEE materials in the CPD schedules except Addis Ababa. However, AREB and OREB mentioned that even though not officially reported, most of the primary schools (7,000 and 16,000, respectively) in one way or another have utilized part of the materials in their CPD.

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

The Overall Goal was partially achieved. Interviews with teachers who participated in SMASEE INSET training and KTs revealed that there have been positive changes in teachers' attitude towards mathematics and science education, improvement in pedagogical skills including resource utilization as well as improvement in attitude of students toward mathematics and science and in participation in classroom activities. However, since the institutionalization of monitoring system or monitoring tools was not adequate, data/information on the entire target regions was not obtained.

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

No negative impact on natural environment was observed and no land acquisition and resettlement occurred under this project.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) A model of the SMASEE INSET system for grade 7 and 8 primary school mathematics and science teachers is established in target regions.	Indicator 1: A model of the SMASEE INSET system is approved as a prototype of the National INSET program for grade 7 and 8 primary school mathematics and science teachers.	Status of the Achievement: achieved (partially continued) (Project Completion) SMASEE INSET package was approved by the Government of Ethiopia and scaling up of the training nationwide was determined. (Ex-post Evaluation) SMASEE INSET package has been remained approved by the Government of Ethiopia, and most of mathematics and science teachers who got SMASEE INSET training have continuously used the modules in their lessons. However, the application has not been somewhat incomplete. - Amhara: The strict implementation of the SMASEE INSET system vary from school to school. It is not uniformly applied. - Oromia: The region uses the SMASEE INSET prototype with no modification. Teachers have been utilizing it but not uniformly implemented across all the schools visited. - Addis Ababa: It has been continuously used in schools by SMASEE INSET trainers though implementation has varied from place to place and school to school
	Indicator 2: SMASEE INSET materials are approved as Continuous Professional Development (CPD) modules.	Status of the Achievement: not achieved (not achieved) (Project Completion) SMASEE INSET materials were not formally approved as CPD modules.

<table>
<tr><td></td><td></td><td>(Ex-post Evaluation)
SMASEE INSET materials were not formally approved as CPD but teachers have often utilized it part of SMASEE INSET materials like lesson plan, lesson observation and even lesson study in schools during the CPD schedules.
No. of schools which use materials in CPD
<table>
<tr><th>Target region/city</th><th>No. of schools which use the materials in the CPD</th><th>Average hours the material used per year*</th></tr>
<tr><td>Amhara</td><td>1,800</td><td>~10 hr</td></tr>
<tr><td>Oromia</td><td>2,900</td><td>~20 hr</td></tr>
<tr><td>Addis Ababa</td><td>220 (all schools)</td><td>~15 hr</td></tr>
</table>
*The total hours of CPD per year is 60 hours.</td></tr>
<tr><td rowspan="4">(Overall Goal)
The ability of grade 7 and 8 primary school mathematics and science teachers to conduct student-centered lessons is improved in target regions.</td><td>Indicator 1: Positive change in teachers' attitude towards mathematics and science education</td><td>(Ex-post Evaluation) partially achieved
Almost all of the interviewed teachers who got SMASEE INSET training/KTs underlined that there had been a positive change in their attitude and perception towards mathematics and science education.</td></tr>
<tr><td>Indicator 2: Improved pedagogical skills</td><td>(Ex-post Evaluation) partially achieved
All interviewed KTs testified that their pedagogical skill had improved as the training gave them a skill on how to prepare teaching aid from locally available materials. They also said they have been applying those skills in day to day activities in their classrooms.</td></tr>
<tr><td>Indicator 3: Improved skills of resource utilization</td><td>(Ex-post Evaluation) partially achieved
See Indicator 2 above.</td></tr>
<tr><td>Indicator 4: Improved attitude of students toward mathematics and science, and improved participation in classroom activities</td><td>(Ex-post Evaluation) partially achieved
- Those students who were thought by trained SMASEE trained KTs found out to be more motivated towards science and math's education.
- During the survey it was also identified that there was a difference in students' participation in the classroom activities between students of KTs and non-KTs in science and math's class.</td></tr>
</table>

Source: Questionnaires and interviews with Math and Science Improvement Center (MSIC), REBs and teachers as well as observation. Interviewees include 8 staff members including Center Director of MSIC, 21 science and mathematics teachers, 3 directors and 3 supervisors in 9 schools.

3 Efficiency

Both the project cost and project period slightly exceeded the plan (the ratio against the plan: 101%, 111%). Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The policy support for SMASEE INSET has been consistent. ESDP V (2017-2022) emphasized the need to deliver quality education at all level. It further had its focus to on science and technology and stated that 'Education with science and mathematics as its major components determine the level of prosperity and welfare of the people and the nation at large'. It proposed high quality curriculum revision to enhance science and technology. Under GEQIP (2018-2023), improvement in learning outcomes in English and mathematics in primary schools have been prioritized.

<Institutional Aspect>

At the federal level, in accordance with the project, the Math and Science Improvement Center (MSIC) was establish and MSIC has been working since project completion by having a complete team in each subject. MSIC has had one director, 19 national subject experts in the fields of mathematics, biology, chemistry and physics. MSIC has had six support staff members. MSIC has been fully functional and mainly tasked with improvement of science and mathematics education in Ethiopia. Its national subject experts in collaboration with the College of Teachers Education (CTE) regularly have provided SMASEE INSET training for regional trainers and KT. Thus, there has been an established organizational structure at the federal level. However, considering the workload, the number of manpower has not been adequate, especially national trainers to reach out in providing training throughout the country.

Unlike the federal level, there have been the lack of uniformity/organized SMASEE structure/teams in the regions. The regional education bureaus of Oromia and Addis Ababa have SMASEE structure at the regional level (the SMASEE Case Team). They have provided and coordinated the SMASEE INSET training. At least they have had one expert for each subject. They have also had SMASEE focal person at the zonal and sub city level respectively. Even if there has been a structure at the regional level, it needs to be strengthened and further linked to woreda and school level so as to follow-up and monitor the actual expansion of SMASEE INSET at the cluster and school. Manpower has not been adequate considering the teachers' workload and challenges.

In Amhara region, there has been no SMASEE Case Team, but four subject specialists have got together as taskforce in the Curriculum Department to facilitate the SMASEE activities as additional work. In the zones, there has been no SMASEE focal person unlike in Regions of Oromia and Addis Ababa.

<Technical Aspect>

MoE and REBs in the target regions have not had sufficient skills to plan, implement, monitor and evaluate SMASSEE INSET. There has been a quarterly performance evaluation and refresher training program on SMSEE INSET between MoE and REBs. MoE and REB quarterly meet monitor and evaluate the progress of SMASEE INSET. However, at the regional level, the priority has been given to reaching out to those who did not took part in the SMASEE INSET before.

<Financial Aspect>

Certain budget has been allocated for SMASE INSET from GEQIP. Compared to the workload/number of science and mathematics teachers who did not get training, the budget has not been sufficient. MSIC has requested GEQIP for more budgets for the upcoming new

fiscal year.

Budget for SMASEE INSET from GEQIP

(unit: Birr)

	2015	2016	2017
MOE	2,945,658	3,048,800	5,656,035
AREB	3,430,328	3,315,430	2,775,375
OREB	6,000,000	3,800,000	3,700,000
AAEB[1]	1,600,000	421,848	327,370

<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 at the time of project completion, as an indicator of "A model of the SMASEE INSET system is approved as a prototype of the National INSET program for grade 7 and 8 primary school mathematics and science teachers." was achieved, though, an indicator of "SMASEE INSET materials are approved as Continuous Professional Development (CPD) modules." was not achieved. The effects of the project have partially continued. The SMASSE INSET training have continued at the federal and regional level, however, reaching down to the school level has not been satisfactory. Most of the teachers who got SMASEE INSET training have continuously used the modules. Though not officially approved, most of schools have used SMASEE materials in CPD. Positive impacts were observed in the teachers' attitude towards mathematics and science education, improvement in pedagogical skills including resource utilization as well as improvement in attitude of students toward mathematics and science and in participation in classroom activities. As for the sustainability, slight problems have been observed in institutional, technical and financial aspects. As for efficiency, both 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:

- For MSIC, high quality SMASEE contents and skills for training is required to the national trainers so as to further improve the quality of training at the regional level. SMASEE INSET management planning, monitoring and supervision skills are required to further put in place follow-up skill /system of SMASEE INSET training at the lower level. The following actions need to be taken. (1) The first thing is that MSIC should exhaustively assess the areas that may concern it and strategize its intervention. (2) Upgrade the qualification of the experts. (3) MSIC need to work jointly with CTE's which is helpful to focus on Pre-service Training and Education. (4) Awareness creation training to the MoE top officials. (5) Equip the four national labs, that supported the INSET training during the project implementation, fully.
- AREB, OREB and AAEB need to organize a SMASEE unit with clear mandate and accountability with in REB. They should be aware that this trend in almost all Africa. Specifically, they should have the SMASEE Case Team at regional level and the focal persons at zonal and woreda levels as indicated by the guideline, which is helpful to nearly and continuously perform, follow and support activities performed regarding to mathematics and science at all levels from region to schools. Also, establishment of training centers with equipped labs in all three regions or align with respective CTEs, have full time trainers in all regions - who are clever experienced, motivated with teaching background.

Lessons Learned for JICA

- During project formulation and when we set project goal, we need to take in to account that other independent variables such as turnover rate or institution/policy might affect fulfilment of project goal. Since officials and experts turnover is high, institutional and policy stability is not stable. In the case of this project, in the outset, Ethiopian side agreed to work the tools (SMASEE INSET materials, in this project) to be integrated into national CPD. However, latter on they said that CPD policy is general but not subject specific as stipulated in the project. In this regard, we have to make sure the content of project and what I/A needs when designing the project in light of achieving goal that we set in the beginning.
- Monitoring capacity building at MSIC level was not found out to be sufficient enough to cascade the project output further down to the school level efficiently. At the designing stage of the project, we should have also anticipated (establish system or show the way) on how supportive monitoring could be effective enough along the way down to school.

[1] The budget of AAEB dropped in 2016 as the budget was re-directed/redistributed to other 9 regions as the number of schools there were much bigger than Addis Ababa.

Students actively participate in Mathematics Class


MoE &REB officials discussing how to scale up best practice of SMASEE activities nationwide

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Ethiopia Office: May, 2018

Country Name	Project on Strengthening Multi Sectoral Planning and Budgeting Capacity in Oromia Region
Federal Democratic Republic of Ethiopia	

I. Project Outline

Background	Decentralization process has been underway in Ethiopia since the establishment of the Federal Government in 1995. Due to this reform, it was incumbent upon the regional governments to establish lower administrative structures and to decentralize its power to the lower levels of the governments. Since 2002, fiscal decentralization to Ana ("District" in Oromiffa language[1]) level has progressed. As a result, in Oromia region, about 60% of the total budget that could have been allocated to Anas and the Region was allocated to Ana level. It was, therefore, increasingly important to strengthen the capacity of Anas to prepare plan and compile budget.		
Objectives of the Project	Through development of the draft of guideline/manuals on Ana planning/budgeting/monitoring and its replication system, the project aimed at formulation of an Ana planning/budgeting/monitoring model, thereby contributing to improvement of capacities of Regional, Zonal and Ana officers in Oromia Region for using the funds of Anas, the Regional government and other funding sources. 1. Overall Goal: Capacities of Regional, Zonal and Ana officers are improved with the model of the planning/budgeting/monitoring, which utilizes the funds by Ana as well as the regional government and other funding sources. 2. Project Purpose: An Ana planning/budgeting/monitoring model is formulated, which utilizes the funds by Ana as well as the regional government and other funding sources.		
Activities of the Project	1. Project Site: Oromia National Regional State 2. Main Activities: 1) drafting of guideline/manuals for Ana planning/budgeting/monitoring, 2) identification of information and methodology for collection, accumulation and analysis on Ana planning and budgeting 3) identification of achievements and lessons from pilot Ana planning/budgeting/monitoring using the drafted guideline/manuals, 4) establishment of supporting functions in Region and Zones for Ana planning/budgeting/monitoring and information management in pilot areas, 5) strengthening Regional budgeting process reflecting the drafted guideline/manuals, and 6) to develop a replication system for the drafted Ana planning/budgeting/monitoring guideline/manuals. 3. Inputs (to carry out above activities) Japanese Side 1. Experts: 11 persons 2. Trainees Received: 14 persons 3. Equipment: cars, projectors, PCs, photocopy machine, motorbikes, etc. Ethiopian Side 1. Staff Allocated: 11 persons 2. Land and Facilities: Office rooms 3. Local cost: Cost for utility (electricity, water and internet connection) and maintenance cost for project office		
Project Period	October 2010 – September 2013	Project Cost	(ex-ante) 380 million yen, (actual) 423 million yen
Implementing Agency	Oromia Bureau of Finance and Economic Development (Oromia BoFED)		
Cooperation Agency in Japan	International Development Center of Japan (IDCJ), Koei Research Institute International Corp. (KRI)		

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 policies of Ethiopia stated in the "Plan for Accelerated and Sustained Development to End Poverty (PASDEP) (2005/06-2009/10)," and the "Oromia National Regional State Five-year Development Plan (Regional GTP[2]) (2010/11-2014/15)" aiming at the administrative capacity development on region level for accelerating decentralization which was stated to be prioritized in the "Ethiopian Federal Government Constitution (1995)."

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

Due to the fiscal decentralization, it was incumbent upon the regional governments to establish lower administrative structures, and powers had to be decentralized to the lower levels of the governments, i.e. the districts. Although, the capacity of districts' planning and budgeting was still challenging and supporting functions of regions and zones for districts were not enough. Therefore, the project was consistent with the development needs of Ethiopia at the time of ex-ante evaluation and the project completion.

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

The project aimed to improve the social services through the capacity development of local administration and thus consistent with Japan's ODA Policy for Ethiopia since the "Japan's Country Assistance Program for Ethiopia (June 2008)" placed high priority on the capacity development of regional and local level skills such as management, administration, and planning in order to promote the decentralization.

<Appropriateness of Project Design/Approach>

There were three Important Assumptions for attaining the Overall Goal stated in the PDM, namely, 1) approval of the draft

1 Oromiffa or Oromo is a language mainly spoken by Oromo people in Oromia region in Ethiopia.

2 GTP: Ethiopian Poverty Reduction Strategic Paper (PRSP) named "Growth and Transformation Plan."

guideline/manuals, 2) implementation of training for replication of the guideline/manuals, and 3) preparation of budget for replication of the guideline/manuals. However, all of these three assumptions have been failed as stated below. Because of that, the Overall Goal was not achieved, and the effects of the project have not been sustained. These assumptions were out of control of the project. Although both parties had several discussions and applied some adjustments including changing PDM since the mid-term evaluation, these were hardly included in the project components. Therefore, although the logical framework of the project design was appropriate, the Effectiveness/Impact is to be lowly evaluated.

<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 project made the necessary preparation by the time of the project completion by submitting the final draft guideline/manuals (Indicator 1) and the plan on budget, institutional arrangement and business processes necessary for disseminating the draft guideline/manuals (Indicator 2) to RPEDC (the Regional Planning and Economic Development Commission) (former BoFED) for approval.

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

The project effects have not been continued. The guideline/manuals on Ana planning/budgeting/monitoring was drafted and approved by BoFED but only the English version. Moreover, the dissemination plan of the guideline/manuals was drafted but not approved yet at the time of ex-post evaluation because of the low quality of translation of the plan into Oromiffa language, and reshuffle and turnover of personnel especially the high-level officials affected the continuation of the activities for dissemination. As a result, the guideline/manuals have not been disseminated and utilized.

<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 because the guideline/manuals have not been disseminated and utilized as stated above. However, there is a possibility of utilizing the guideline/manuals with some revisions. The BoFED has been restructured into one bureau and one commission as stated below. The restructured commission, which is in charge of planning, monitoring and evaluation of public works, is planning to revise the guideline/manuals and conduct training on the revised versions.

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

No negative impact on natural, social and economic environment has been observed.

<Evaluation Result>

In light of the above, through the project, while the Project Purpose was achieved at the time of project completion, positive effects by the project have not continued, and the Overall Goal was not achieved at the time of ex-post evaluation. Therefore, the effectiveness/impact of the project is low.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) An Ana planning/budgeting/monitoring model is formulated, which utilizes the funds by Ana as well as the regional government and other funding sources.	1. Preparation is done for submitting the final draft guideline/manuals to BoFED for approval.	Status of the Achievement: Achieved. (Continued) (Project Completion) The project made the necessary preparation by submitting the final draft guideline/manuals to RPEDC (former BoFED) for approval by June 2013. (Ex-post Evaluation) The guideline/manuals were approved by PREDC on Sept. 2013.
	2. Preparation is done for submitting the plan on budget, institutional arrangement and business processes necessary for disseminating the draft guideline/manuals in all the Anas to BoFED for approval.	Status of the Achievement: Achieved. (Not continued) (Project Completion) The project made the necessary preparation by submitting the dissemination plan of the guideline/manuals to RPEDC (former BoFED) for approval by the project completion. (Ex-post Evaluation) The dissemination plan was submitted on Sept. 2013 but not approved due to disqualified translation and organizational restructuring.
(Overall Goal) Capacities of Regional, Zonal and Ana officers are improved with the model of the planning/budgeting/monitoring, which utilizes the funds by Ana as well as the regional government and other funding sources.	1. More than X% of Regional Zonal and Ana officers in charge of planning and budgeting has taken training on Guideline/Manuals. (The target level will be decided in the formulation of the replication plan.)	Status of the Achievement: Not achieved. (Ex-post Evaluation) Since the dissemination plan was not approved, the training on guideline/manuals has not been implemented.
	2. Planning and budgeting officers in Anas are able to conduct planning, budgeting and monitoring by utilizing the Guideline/Manuals.	Status of the Achievement: Not achieved. (Ex-post Evaluation) Since the dissemination plan was not approved, the guideline/manuals have not been disseminated, and the training on guideline/manuals has not been implemented.

Source : Questionnaire survey to and interviews with BoFED, ZoFED (Finance and Economic Development of Zone) and AoFED (Finance and Economic Development of Ana).

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: 111%). Therefore, efficiency of the project was fair.

4 Sustainability

<Policy Aspect>

Further decentralization of public service delivery and infrastructure development as well as enhancement of fiscal decentralization are clearly described in several sections in the current GTP II (2015/16-2019/20). Moreover, establishment of the democratic and good governance through enhancing implementation capacity of the public sector and mobilization of public participation is one of the nine pillar strategies of the plan. The project effects are, thus, expected to be sustainable from the perspective of policy aspect.

<Institutional Aspect>

BoFED has been separated into one bureau and one commission namely the Bureau of Finance and Economic Cooperation (BoFEC) and the Regional Planning and Economic Development Commission (RPEDC). BoFEC is in charge of financial administration and procurement and the RPEDC is in charge of PME (planning, monitoring and evaluation) of public works. RPEDC is planning to implement training on PME for all Zones and Anas with revising the guideline/manuals. According to the interviews with RPEDC, the guideline/manuals should be streamlined fitting to the current institutional structure and work procedures.

<Technical Aspect>

According to the interviews with officials of Zones and Anas participated in the training provided by the project, as they are not utilizing the guideline/manuals for regular PME activities and no refresher training has been conducted, they do not sustain their skills and knowledge obtained in the project. One exception was the case of Arsi ZoFED which conducted a training program on the guideline/manuals once in 2017 for Anas' PME officials. Officials in Arsi ZoFED now and then refer to the guideline/manuals and other materials prepared by the project since they are helpful for their works.

<Financial Aspect>

Since the dissemination plan has not been approved, the guideline/manuals have not been endorsed as official documents, so that budget has not been allocated for Zones and Anas for replication, application and updating of the guideline/manuals.

<Evaluation Result>

In light of the above, major problems have been observed in terms of technical and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is low.

5 Summary of the Evaluation

The Project Purpose was achieved by submitting the final draft of guideline/manuals and their dissemination plan to BoFED for approval. However, while the guideline/manuals have been approved, the dissemination plan was not approved. Therefore, the guideline/manuals have not been disseminated and utilized by Anas and Zones. As for sustainability, skills and knowledges transferred in the project are not sustained since the guideline/manuals have not been diffused, and budget by the government has not been prepared for utilizing, disseminating and sustaining them. As for efficiency, the project cost exceeded the plan. Considering all of the above points, this project is evaluated to be unsatisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- It is recommended for RPEDC with the support of BoFEC to take initiative in the revision of the guideline/manuals, translation of dissemination plan to Oromiffa language, and preparation of budget for dissemination and utilization of them.

Lessons Learned for JICA:

- All of three Important Assumptions for the Overall Goal stated in the PDM have been failed, and caused the non-achievement of the Overall Goal and insufficient sustainability leading to the low overall evaluation of the project. When Important Assumptions are apprehended to be critical, they could be "Killer Assumptions[3]." In that case, the project plan has to be changed to mitigate the negative effects of Important Assumptions. In other words, risk analysis should be deliberately conducted at the initial planning stage, and the project is to be planned to reflect the results of the analysis.

An interview with experts at Goma AoFED in the ex-post evaluation.

Motorbike donated by the project to Limu Bilbilo AoFED.

[3] Assumptions which may "kill" a project (FASID, "PCM: Management Tool for Development Assistance", 2007).

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Uganda Office: July, 2018

Country Name	**The Technical Assistance to Improve National Diagnostic Capacity for Animal Disease Control in Uganda**
Republic of Uganda	

I. Project Outline

Background	Livestock industry accounted for 13% of agricultural domestic product in Uganda and more than 40% of rural farmers were engaged in livestock keeping for their livelihood (as of 2005). To improve the productivity and quality of livestock and its product, the prevalence of animal diseases and lack of system for livestock hygiene improvement were major bottlenecks. Local governments did not have sufficient skills and budget for livestock hygiene measures, and National Animal Disease Diagnostic and Epidemiology Center (NADDEC) under Ministry of Agriculture and Livestock Fisheries (MAAIF) was not functioning as a central disease referral laboratory. From 2007 to 2009, JICA implemented a technical cooperation project "Technical Assistance to Enhancement of Technical Capacity of Animal Disease Control in Uganda", which aimed to strengthen the animal disease control system through training of diagnostic techniques and development of diagnostic laboratory facilities at NADDEC and district veterinary offices (DVOs). Through implementation of this project, it was realized that shortage of diagnostic staff limited the capacity improvement of NADDEC. Meanwhile, MAAIF developed a concept of joint animal disease diagnostic system by means of collaboration of NADDEC and Faculty of Veterinary Medicine, Animal Resources and Biosecurity, Makerere University (MAK-FVM), and requested for an assistance to JICA as a successor to the above- mentioned project.
Objectives of the Project	The Project aimed at improvement of national diagnostic capacity for animal disease in Uganda by means of the close collaboration of NADDEC and MAK-COVAB (College of Veterinary Medicine, Animal Resources and Biosecurity, Makerere University; formerly known as MAK-FVM), leading to the platform for the joint institute, through (i) developing an action plan for functional diagnostic system of animal diseases, (ii) launching the Joint National Animal Disease Diagnostic Centre (J-NADIC)[1], (iii) establishing an operational investigation system for emergency diseases, (iv)developing an information exchange system for sharing between NADDEC and MAK-COVAB, and (v) improving primary diagnostic and sample preparation techniques at the selected DVOs, thereby establishing a functional joint diagnostic system for animal disease control. 1. Overall Goal: A functional joint national diagnostic system for animal disease control is established in order to improve the production and productivity of livestock. 2. Project Purpose: The national diagnostic capacity for animal disease is improved by means of the close collaboration of NADDEC and MAK-COVAB, leading to the platform for the joint institute.
Activities of the Project	1. Project Site: MAK-COVAB Central Diagnostic Laboratory (CDL)[2] (Kampala), MAAIF-NADDEC (Entebbe) and five targeted DVOs (Central Region- Kiboga, Mpigi, Wakiso; East Region-Mbale; West Region-Mbarara) 2. Main Activities: establishment of the integrated and specialized diagnostic service functions in J-NADIC and sample reception system from the field; establishment and operation of investigation system for emergency diseases; training on staff of collaborating DVOs and enhancement of the field activities, etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: (long-term) 4 persons; (short-term) 26 persons. 2) Trainees Received: 24 persons 3) Equipment: vehicles, office equipment, equipment for laboratory 4) Local Costs Uganda Side 1) Staff Allocated: 38 persons (2 from MAAIF, 3 from NADDEC, 26 from MAK-COVAB (including 8 from CDL),7 from 5 DVOs) 2) Facilities: office space for experts at MAK-COVAB and old headquarters of MAAIF, laboratory space at MAK-COVAB (CDL) and NADDEC 3) Counterpart Budget
Project Period	June 2010 -June 2014 (Extension: June 2013-June 2014)
Project Cost	(ex-ante) 450 million yen, (actual) 357 million yen
Implementing Agency	Department of Livestock Health & Entomology (DLHE), Directorate of Animal Resources and Fisheries, Ministry of Agriculture, Animal Industry and Fisheries (MAAIF); National Animal Diseases Diagnostic and Epidemiology Center (NADDEC), MAAIF; College of Veterinary Medicine, Animal Resources and Biosecurity, Makerere University(MAK-COVAB); District Veterinary Office (DVO)
Cooperation Agency in Japan	Nihon University

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

- The status of achievement of selected Output Indicators at the time of ex-post evaluation were examined as Supplemental Information to confirm the operational status of the system established under this project.
- The target year for the Overall Goal is not specified in the Project Design Matrix (PDM). Since there is a statement in the Mid-term Review Report that the Overall Goal would be achieved three to five years after project completion, this evaluation regards year 2019, five years after the actual year

[1] J-NADIC is a system for diagnosing animal disease at the national level, which aims to function under the collaboration between NADDEC and MAK-COVAB, and there is no "center" as a building.

[2] MAK-COVAB's old laboratory was renovated and renamed as CDL with new diagnostic equipment provided by the project in September 2011.

of project completion, as the target year for the Overall Goal.

- The target number is not specified for the Indicator 2 of the Overall Goal. Since it is difficult to clarify the target number at the time of ex-post evaluation, exact level of achievement cannot be assessed. As alternative, whether or not the actual status is considered sufficient as "a functional joint national diagnostic system for animal disease control" as stated in the Overall Goal was examined with reasons for judgement.

1 Relevance

The project was consistent with Uganda's development policies such as "measures against livestock diseases" as set forth in "Third Poverty Reduction Eradication Action Plan" (2004-2007) and "control of diseases in agriculture" in "National Development Plan 2010/11-2014/15 (NDP)" and development needs for improvement of productivity and quality of livestock through animal disease control, as well as a need for human resources in both the quality and quantity in the diagnostic system of the central government (especially NADDEC), at the times of both ex-ante evaluation and project completion. Also, the project was consistent with Japan's ODA policy for Uganda as agreed in the economic cooperation policy dialogue in 2006 (which included agricultural development). Therefore, 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. Almost all of the twenty-five animal diseases designated by the project became ready to be diagnosed by NADDEC and CDL combined (Indicator).

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

The project effects have continued at the time of ex-post evaluation. Both NADDEC and CDL combined are in position to diagnose the twenty-five diseases listed by the project. During the period from 2013 to 2016, the number of diagnostic samples received and analyzed by NADDEC and CDL has increased by 430% and 819%, respectively. The diagnostic manual developed by the project is being utilized by NADDEC and CDL during diagnosis, and NADDEC developed the Standard Operating Procedure based on the manual.

Regarding the five targeted DVOs, the survey in March 2018 found that most of the primary diagnosis and sample preparation techniques acquired through the project are maintained and utilized while some techniques (e.g., white blood cell and differential count) are not maintained at some DVOs depending on their technical capacities. At the same time, other DVOs enhanced primary diagnosis capacity by acquiring laboratory equipment or hiring technologists, which led to decrease of use of J-NADIC for primary diagnosis.

While sharing and exchange of information is regularly done between NADDEC and DVOs (through social networking services and the monthly reporting by DVOs to NADDEC) and between CDL and DVOs (through regional DVO annual meetings/workshops organized by MAAIF/NADDEC with CDL as an invited participant), the collaboration between NADDEC and CDL is more on ad-hoc basis than during the project implementation period[3]. However, joint handling of emergency disease outbreaks (e.g. foot and mouth disease, lumpy skin disease, etc.) continues: they are investigated by a joint investigative team consisting of NADDEC, CDL and DVOs, according to the guideline for joint survey prepared by the project.

Using the J-NADIC concept, a bigger platform, 'ONE HEALTH PLATFORM', coordinated by the office of the Prime Minister (OPM) and bringing together different stakeholders in animal health, including; Ministry of Agriculture/NADDEC, Ministry of Health, National Drug Authority, DVOs, MAK-COVAB, among other stakeholders was established in 2016 to manage animal disease outbreaks in a more coordinated manner.

<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. According to the above-mentioned survey of the targeted DVOs, the average grade given to services provided by J-NADIC was higher than expected (Indicator 1). In general, DVOs send samples to J-NADIC (i.e., NADDEC or CDL) under two circumstances; (i) when they want confirmation on their diagnosis and (ii) when they don't have the capacity to analyze the sample themselves. Both can be referred to as "sending of samples for reference diagnosis" as expected (Indicator 2). On average, the targeted DVOs sent 164 samples a year to J-NADIC for that purpose. Some DVOs indicated that the frequency of utilization of J-NADIC was sufficient while others thought otherwise.

Prospects for the target year (2019) vary among DVOs. Some of the targeted DVOs expect the same trend, while some[4] may use J-NADIC less frequently due to their increased capacities with private practitioners being expected to work together with a DVO, acquisition of new laboratory equipment and hiring of laboratory technologist at some DVOs. It should be noted that even with less frequent use by some DVOs, CDL and NADDEC are still essential as the central reference laboratories as DVOs still have to refer to them for confirmation on several occasions. Therefore, it is considered that the good status of achievement of the Overall Goal will continue until the target year.

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

No negative impacts of the project were observed. As to positive impacts, neighboring districts are benefiting from the services provided by project-supported laboratories (at the targeted DVOs). Also, the project-supported laboratories are being upgraded to regional laboratories supporting more districts in the respective regions.

<Evaluation Result>

In light of the above, through the project, the Project Purpose was achieved by the time of project completion. The project effects have been continued and the Overall Goal has been achieved 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 national diagnostic	A total of 25 animal diseases listed by the Project can be	Status of the Achievement: achieved (continued) (Project Completion)

[3] Information exchanges from NADDEC and CDL on diagnosis results still exist though at a lesser level compared to the project period – most of the exchanges are on suspected cases of notifiable diseases. Exchanges on non-notifiable diseases are usually based on demand from NADDEC.

[4] Mbarara and Mbale DVOs noted that the frequency of utilization could have been higher hadn't it been for the limited courier system for transporting more samples as well as the limited awareness on the part of the farmers.

capacity for animal disease is improved by means of the close collaboration of NADDEC and MAK-COVAB, leading to the platform for the joint institute.	diagnosed by J-NADIC.	The project prepared a diagnostic manual for the 25 diseases, and J-NADIC (i.e., NADDEC and CDL combined) became able to diagnose 24 diseases. (Ex-post Evaluation) NADDEC can diagnose all 25 diseases listed by the project. CDL can diagnose 21 diseases. For the 4 diseases CDL alone does not handle, CDL refers suspected cases to NADDEC or jointly diagnoses cases with NADDEC.
	(Supplemental Information) Number of diagnostic samples received and analyzed by J-NADIC	(Project Completion) (Ex-post Evaluation) Number of diagnostic samples received and analyzed by J-NADIC

	2010	2012	2013	2014	2015	2016
CDL	280	388	519	3,271	4,375	4,768
NADDEC	2,105	5,799	3,767	20,000	20,000	20,000
Total	2,385	6,187	4,286	23,271	24,375	24,768

Note: Since 2014, NADDEC has handled wide-ranging samples from wildlife, livestock, pets and food security. CDL on the other hand has registered a decrease of samples coming from DVOs due to the fact that most of them currently deal with NADDEC – this is associated service fees charged at CDL, which do not exist at NADDEC. However, on the whole, samples received and analyzed by CDL have increased due to awareness campaigns conducted by MAK-COVAB targeting medium and large-scale livestock farmers.

(Overall Goal) A functional joint national diagnostic system for animal disease control is established in order to improve the production and productivity of livestock.	1. Stakeholders and DVO staff will grade the diagnostic services provided by J-NADIC higher than 3 under 5 point rating system.	(Ex-post Evaluation) achieved As of March 2018, the surveyed five targeted DVOs graded services provided by J-NADIC at 3.5 points. Note: The satisfactory level was rated as 'EXCELLENT, HIGH, MODERATE, LOW, VERY LOW' each of which accounted for different points – 5, 4, 3, 2 and 1 respectively, underlining the 5-point rating system. This survey targeted the five targeted DVOs only since they largely serve as intermediaries between other users and NADDEC/CDL.
	2. All the selected DVOs by the Project are utilizing the J-NADIC for reference diagnosis.	(Ex-post Evaluation) mostly achieved Number of samples sent to J-NADIC for reference diagnosis

DVO	2014	2015	2016	2017	Total
Kiboga	12	2	4	9	27
Mpigi	n/a	n/a	n/a	n/a	n/a
Wakiso	3	-	110	27	140
Mbale	2	5	52	37	96
Mbarara	8	19	46	320	393
Total	25	26	212	393	656

Note: The increase in Wakiso in 2016 is due to disease outbreaks (Bird-flu). The increase in Mbarara in 2017 is due to a mass testing programme under operation of wealth creation, which is an agricultural input distribution programme of the Government of Uganda. Mpigi DVO didn't have documented record of the times it used J-NADIC since project end.

Source: Terminal Evaluation Report; questionnaire and interview to NADDEC and MAK-COVAB/CDL; questionnaire to the five targeted DVOs

3 Efficiency

While the project cost was within the plan (ratio against the plan: 80%), the project period was extended (ratio against the plan: 133%) due to reasons including delays of some inputs from both Japanese and Ugandan sides and thus delays of some activities. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

"Agriculture sector strategic plan (2015/16-2020/21)" sets out to reduce the prevalence of production and trade sensitive diseases. Also, "Second National Development Plan (NDP II)" (2015/16-2019/20) includes "Controlling pest, disease and vector" as the intervention of the objective (1. Increase agricultural production and productivity).

<Institutional Aspect>

The upgrading of NADDEC to Division level under Director of Animal Resource (DAR) of MAAIF in FY2016/17 is most likely to increase technical and operational capacity to sustain project achievements and fulfill the roles of NADDEC in animal disease control. One Veterinary Officer and ten laboratory technicians are allocated to the Epidemiology and Diagnostic Units of NADDIC, while filling of six vacant positions will ease overload of the staff[5]. The organizational structure and role of CDL remains the same as those during the project implementation. As recommended in the terminal evaluation, former project assistants and interns are continuously engaged at CDL. The current number of staff (eight Academicians and eight Technicians), which is more than the quota (i.e. six each), is enough to manage more than the current number of cases and CDL is small to accommodate a big number of staff. As mentioned above, technical exchanges between NADDEC and CDL are made but not regularly, depending on demand.

The structures of the DVOs remain the same as during the project days. Kiboga and Mbarara DVOs have recruited full-time laboratory technologists, and all the five DVOs have staff assigned to primary diagnosis and sample collection.

<Technical Aspect>

As mentioned in "Effectiveness/Impact" above, NADDEC and CDL have maintained their technical capacities to diagnose animal diseases designated by the project, and the five targeted DVOs have also mostly maintained or further strengthened the technical capacities with some variance. They all utilize/apply the manuals/techniques etc. developed and learnt under the project. All the counterpart personnel remain at NADDEC and CDL, and some CDL counterparts are currently undergoing PhD studies as a part of capacity building. While three of the senior counterparts (Mbale, Mpigi and Wakiso) have since retired from the DVOs, they were replaced by colleagues who had an understanding of and were engaged to the project, which has to an extent ensured continuity of project activities.

Most of the equipment provided under the project is well utilized and maintained. Kiboga, Mbarara and Mbale DVOs have acquired extra equipment from other development partners. This is, however, not the case with Mpigi district veterinary laboratory which suffers the

[5] There have been promotions of some of the counterparts from NADDEC to MAAIF. Gaps have been created within NADDEC and most of the officers are in acting capacities while others are holding two portfolios which is not tenable.

problem of unstable power supply and subsequent break-down of some equipment, a situation worsened by the fact that the power back-up provided by the project also broke down. Nevertheless, The DVO is in the process of acquiring a solar back-up system. A requisition has already been made to the district leadership.

<Financial Aspect>

The budget directly flows from MAAIF to DAR, and DAR allocates budget to its four divisions, of which NADDEC is one. Approx.. UGX50,000,000 is allocated to NADDEC annually. Budgetary allocation to MAAIF is insufficient which automatically negatively affects budget allocations to all Directorate divisions including NADDEC, to undertake their key activities including field work and disease surveillance. However, MAAIF fully provides for utility (power and water) costs and consumables. Furthermore, there have been some externally generated sources of funding from development partners which has usually come in the form of equipment and lab consumables. It is expected that the NADDEC's upgrading to Division level will come with some benefits in terms of increased human and financial capacity for improved operations.

Regarding CDL, there is a clear revenue collection and distribution system in place. The budget consists of allocations from MAK-COVAB (mainly in the form of utilities – water and electricity) and external revenue, and the total amount allocated for reagents, consumables, maintenance and staff salaries is USD25,000 in 2014 and, USD33,000 in 2015 and 2016. According to CDL, this amount is not sufficient to fulfill its J-NADIC roles which have been increasing over time. A business plan for CDL outlining its marketing, operational, human resource and financial strategies to boost its revenues for self-sufficiency through streamlining of lab operations was formulated and awaits implementation. Through the plan, CDL plans to offer a comprehensive package composed of disease diagnosis, research, consultancy and extension services.

DVOs are fully facilitated by NADDEC especially for consumables/reagents and occasionally in the form of equipment/maintenance which reduces their strain brought about by the limited budget allocation by their respective district local governments. Since the District veterinary laboratories are by law prohibited charging their clients for services provided, they have to depend majorly on NADDEC and their respective district local government. Utility costs (electricity and water) are provided for by their respective district local governments which also provide for field work for animal disease surveillance.

<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 achieved the Project Purpose and the Overall Goal: a national diagnostic system for animal disease control involving NADDEC and MAK-COVAB (CDL) was established and it has continued to provide services to DVOs. No major challenges were identified for the relevance, effectiveness/impact. In addition, slight problems were found in sustainability in terms of limited operational budget for NADDEC and CDL as well as insufficient human resource for the lab in DVOs. However, the policy background, the organizational status and technical capacities of NADDEC, CDL and some DVOs have been maintained or further strengthened. This surely contributes to the sustainable operation and management of each institution. For efficiency, however, the delays in some inputs from both Ugandan and Japanese side led to the delay in certain activities.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

One of the key pillars of J-NADIC was technical coordination and interaction between NADDEC and CDL as well as a well-capacitated DVO structure. With this arrangement, it would be possible to achieve comprehensive diagnosis. However, in the current arrangement, despite the improved capacity at NADDEC, CDL and DVOs the extent of which satisfies the targeted level of the project defined through its indicators, there is still limited technical coordination and interaction between NADDEC and CDL, a situation further complicated by the partially limited operational capacity at NADDEC and technical and operational capacity at some DVOs, exacerbated by their inability to generate revenues while CDL is constrained by weak revenue management practices despite its ability to generate revenues. It is therefore recommended that in the next planning cycle;

1. NADDEC and CDL rejuvenate the regular information/technical exchange meetings.
2. Operational capacity at NADDEC and technical and operational capacity at some DVOs should be improved through extra budget allocations as well as recruitment of full-time lab technicians especially at District Veterinary Laboratories.
3. CDL should work according to the formulated business plan to streamline its revenue and cost management practices.
4. DVOs should share information and work closely with neighboring districts to bring the positive spill over.

Lessons Learned for JICA:

1. During the ex-post evaluation, it was possible to get updated information since most of the key counterparts to the project are still with their institutions. Before undertaking a development project, we should be sure of the commitment by the Implementing Agency to continue with the project activities for the achievement of the project goal.
2. However, the remaining counterparts are overstretched. Save for a few DVOs where lab technologists have been recruited, the situation remains tricky at NADDEC where there have been some staff retirements and corresponding shifts to higher positions (NADDEC to MAAIF) without replacements thus leaving the few staff overstretched. Additionally, the human capacity situation of the Implementing Agency should be assured to ensure sustainability of project achievements.

Some of the materials developed under the project currently being used by the target DVOs
（Photo taken on 21st February, 2018）

The service station at Kiboga District Veterinary Laboratory. All the equipment provided by the JICA project is in good condition
(Photo taken in 13th February, 2018)

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Burkina Faso Office: February, 2019

Country Name	School Management Committee Support Project
Burkina Faso	

I. Project Outline

Background	In Burkina Faso, "the Ten-year Basic Education Development Pan (Plan Décennal de Développement de l'Education de Base: PDDEB)" (revised in 2007), as a development framework of the education sector, had set forth the 2 major goals by 2010, 1) increasing the gross enrollment rate to 78.2% and the adult literacy rate to 40% by 2010 by the 3 pillars of "expansion of access to education", "quality improvement of education" and "capacity building of educational administration". As a result, whereas the primary enrollment rate had steadily improved, learning environments in primary school had remained severe due to lack of the number of teachers and continuous overcrowded classrooms. PDDEB aimed at improvement of the learning environments for achievement of "quality improvement of education". In May 2008, the Ministry of National Education and Literacy (Ministère de l'Enseignement de Base et de l'Alphabétisation: MEBA) promulgated a law concerning establishment of school management committee (Comités de Gestion d'École : COGES) which perform a role of school management. However, a specific strategy was not clearly stipulated and did not brought about the situation where COGESs were functioning under sufficient participation of communities. Under the situation, the government of Burkina Faso requested the government of Japan a technical cooperation project to functionalize COGESs smoothly.
Objectives of the Project	The project aims at formulation of a strategy to establish functional COGESs through delivery of trainings the for educational officers and school staffs on establishment of COGES, establishment of a monitoring system on COGES activities by education officers at levels of provinces and the basic education districts (Circonscription d'Education de Base: CEB) and support for activities to disseminate a COGES model in the target region, thereby contributing to extension of the COGES model nationwide and improvement of school environment by the COGESs. 1. Overall Goal: 1) Functional COGESs are extended nationwide, 2) School environment is improved by functional COGESs. 2. Project Purpose: The strategy on establishment of functional COGESs is formulated in the target area.
Activities of the Project	1. Project Site: Central Plateau Region, Central East Region, 5 CEBs in Central Region, 3 Provinces in Central North Region (The project sites were extended from 1,400 schools in the two regions of Central Plateau and Central East in the original plan to 2,780 schools in the four regions for dissemination of the COGES model.) 2. Main Activities: 1) Delivery of trainings for education officers and school staffs on COGES and establishment of the COGESs, 2) Development of COGES operation guide and delivery of trainings on school activity plans and fund management methodologies, 3) Delivery of trainings for local government officers on monitoring of COGESs and holding monthly COGES monitoring meetings, 4) Evaluation and analysis of the COGES model and holding workshops for sharing experiences, etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 8 persons 2) Trainees Received: 10 persons 3) Equipment: vehicle, motorcycle, PCs, printer, etc. 4) Local Cost: training cost, cost for manual development Burkina Faso Side 1. Staff Allocated: 10 persons 2. Land and Facilities: project office 3. Local Cost: training cost, etc.

Project Period	November, 2009 – March, 2014 (Extended Period: November, 2013 – March, 2014)	Project Cost	(ex-ante) 300 million yen, (actual) 417 million yen
Implementing Agency	Ministry of National Education and Literacy (MEBE) (Ministry of Basic Education and Literacy was renamed in January 2011)		
Cooperation Agency in Japan	None		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

[Achievement level of the Project Purpose at the time of project completion]

The project period was extended due to an evacuation of Japanese experts from Burkina Faso since the political turmoil induced deterioration of security situation in the country in 2011. However, the achievement level of the Project Purpose was verified only by the terminal evaluation undertaken in April 2013, but it was not confirmed that it had been verified by the both sides of Burkina Faso and Japan at the time of project completion. Therefore, the judgement on the achievement level of the Project Purpose is based on the results of the terminal evaluation in April 2013 in this ex-post evaluation.

1 Relevance

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

This project was consistent with Burkina Faso's development policies of "the Ten-year Basic Education Development Plan (BDDEB)" (revised in 2007) and "the Ministerial Order №2013-023 for Structure and Function of COGES" (effective since March, 2013) setting quality improvement of education as one of prioritized areas.

<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 "functionalization of COGESs" because COGESs were not functioning well despite that the law on establishment of COGESs as a main body of school management was issued in May 2008 in order

to improve school environment.

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

The project was consistent with the Japan's ODA policy towards Burkina Faso, including support for the basic human needs including basic education, which was one of priority areas confirmed by the bilateral dialogue between Burkina Faso and Japan in July 2007. It was consistent with "TICAD IV[1] Yokohama Action Plan" adopted in May 2008 mentioning an expansion of a project to improve school management based on the model of "School for All" to 10,000 schools in West Africa.

<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. Most of COGESs in the target areas prepared their activity plans and their implementation rate exceeded 70% (Indicator 1). In terms of community contribution to school management (Indicator 2), the number of COGESs established surged from 362 in 2009/10 to 1,442 in 2011/12, and the size of financial contribution had significantly expanded in terms of the total amount as well as the amount per COGES. Also, regarding community participation into the school management, COGESs were newly established steadily every year and the activities for establishing COGESs in rural areas started in the2011/12. The total number of participants into COGESs established by 2011/12 exceeded 154,000 and the proportion of female members in COGESs reached to almost half of the total number, 48%. As for the extension of the COGES model promoted by the project (Indicator 3), the "Ministerial Order on Structure and Function of COGES" was issued and effective in March 2013 after approval of the relevant ministries and the nationwide extension strategy was approved in May 2013.

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

The project effects have mostly continued since the project completion. After the project completion, a system for dissemination of the COGES model has been established and the establishment of COGESs have been promoted in the target areas and the non-target areas. The number of COGESs in the target region increased from the ones at the project completion and reached to 3,058 in total as of the year of 2015/16. The implementation rates of activity plans by COGES have been more than 80% in the 3 regions of Central Plateau ,Central East and Central North. In addition, 7,561 COGESs had been established in total in 9 regions besides the target areas. Even in the non-target regions, the implementation rates of activity plans by COGES was more than 60%. Financial contribution to school management by COGES increased from 2012/2013 to 2015/2016 on the total amount basis except in Central East Region. On the other hand, while the amount of financial contribution for each COGES increased in regions of Central Plateau and Central North, it has decreased in regions of Central East and Central. In the regions where the financial contribution has increased, it has been perceived that understanding on the COGES activities and improvement of school management have motivated the community members to participate in the COGES actvities. However, in the regions where the financial contribution has decreased, the community members have been less motivated due to hesitation against double payment of financial contributions to the two similar organizations with the similar purpose, namely the Parents Association (Association de Parents d'Elèves: APE) and COGES. The participation rates in general meetings of COGES have been in upward trends for 15 out of 22 COGESs surveyed for this ex-post evaluation. It was recognized that that situation has resulted from reliability of the COGES members towards the management of COGES with transparency and the COGES members' understanding on COGES through awareness raising activities. Also, the General Directorate of Formal Education (Direction General de l'Education Formale Generale: DGEFG) of MEBA established an extension system for the COGES model promoted by the project based on the Ministerial Order.

<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. In terms of the Overall Goal 1, "nationwide dissemination of the functional COGES model" has been reflected into the "Strategic Development Program for Basic Education (Programme Développment Stratégique de l'Education de Base: PDSEB)" (2012-2021), and the model has been disseminated. The "School Management Committee Support Project Phase 2" (May, 2015-December, 2017), as a successive project of this project, the establishment of COGESs has been promoted in all the regions of the country, and the number of COGESs established reached to 11,216 as of the year of 2015/16. In addition, in the 10 non-target regions, the adoption rates of the COGES model (the proportion of primary schools with COGES) attained 87% in the lowest region and 98% in the highest region. In terms of the Overall Goal 2, "improvement of school environment by the functional COGES", 3,621 COGES in the country have been implementing the five activities incorporated in the school activity plan under the Phase 2 project. In particular, construction of classrooms and operation of canteens have positively affected access to primary education (Indicator 2-1). At a national level, the gross enrollment rate and the gross entrance rate (Indicator 2-2) improved from the time of beginning of the project to the year of 2015/16 after the project completion. The improvement attributes to effects of supports by the government of Burkina Faso and other donors. In terms of communities' participation into school management (Indicator 2-3), as mentioned above, the participation rate for the general meetings of COGESs have been over 60% of COGESs surveyed by the ex-post evaluation and in upward trends. The financial contribution has increased from the previous year in 2 out of the target regions and 4 out of the non-target regions

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

Positive impacts of the project were observed at the time of ex-post evaluation. Many of the officers of MEBA interviewed by the ex-post evaluation answered that the project contributed to improvement of the girls' enrollment rate, in particular. Also, cooperation and collaboration between school support organizations (APE, Mothers' Association (AME) and COGES) at a community level has been promoted. No negative impact of the project was observed at the time of ex-post evaluation.

<Evaluation Result>

In light of the above, through the implementation of the project, the Project Purpose was achieved, the Project Effects have continued, and the Overall Goal has been achieved by 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

[1] The 4th Tokyo International Conference on African Development

<table>
<tr>
<td>(Project Purpose)
The strategy on establishment of functional COGES in the target area is formulated.</td>
<td>(Indicator 1)
More than 75% of COGESs elaborate and implement their school activity plans.</td>
<td>Status of the Achievement: Achieved (Continued)
(Project Completion)
[Rate of preparation of school activity plans by COGESs]
<table>
<tr><th>2009/10</th><th>2010/11</th><th>2011/12</th></tr>
<tr><td>100%</td><td>100%</td><td>97%</td></tr>
</table>
[Implementation rate of activity plans by COGESs]
<table>
<tr><th>Year</th><th>No. of COGESs</th><th>No. of activity plans</th><th>No. of implemented school activity plans</th><th>Implementation rate school activity plans (against plan: %)</th><th>No. of activities per COGES</th></tr>
<tr><td>2009/10</td><td>362</td><td>1,594</td><td>1,328</td><td>83%</td><td>3.7</td></tr>
<tr><td>2010/11</td><td>1,035</td><td>4,904</td><td>3,503</td><td>71%</td><td>3.3</td></tr>
<tr><td>2011/12</td><td>1,442</td><td>6,673</td><td>4,756</td><td>71%</td><td>3.3</td></tr>
</table>
(Ex-post Evaluation)
[Implementation rate of activity plans by COGESs (Year of 2015/2016)]
<table>
<tr><th>Region</th><th>No. of COGESs</th><th>No. of school activity plans</th><th>No. of implemented school activity plans</th><th>Implementation rate of school activity plans (against plan: %)</th><th>No. of activities per COGES</th></tr>
<tr><td>Central Plateau</td><td>780</td><td>2,834</td><td>2,378</td><td>84%</td><td>3.0</td></tr>
<tr><td>Central East</td><td>882</td><td>3,686</td><td>2,986</td><td>81%</td><td>3.4</td></tr>
<tr><td>Central</td><td>378</td><td>1,275</td><td>844</td><td>66%</td><td>2.2</td></tr>
<tr><td>Central North</td><td>1,018</td><td>3,807</td><td>3,078</td><td>81%</td><td>3.0</td></tr>
</table>
</td>
</tr>
<tr>
<td></td>
<td>(Indicator 2)
Contribution to school management by communities (fund, equipment, and services) are increased.</td>
<td>Status of the Achievement: Achieved (Partially continued)
(Project Completion)
[Financial contribution by communities]
<table>
<tr><th></th><th>2009/10</th><th>2010/2011</th><th>2011/12</th></tr>
<tr><td>No. of COGESs</td><td>362</td><td>1,035</td><td>1,442</td></tr>
<tr><td>Financial Contribution (Total amount) (million FCFA)</td><td>62.27</td><td>189.27</td><td>387.98</td></tr>
<tr><td>Financial Contribution per COGES (Million FCFA)</td><td>0.172</td><td>0.182</td><td>0.269</td></tr>
</table>
[Participation of communities into newly established COGESs]
<table>
<tr><th></th><th>2009/10</th><th>2010/2011</th><th>2011/12*</th><th>Total</th></tr>
<tr><td>No. of newly established COGESs</td><td>362</td><td>673</td><td>407</td><td>1,442</td></tr>
<tr><td>No. of persons of communities participating in newly established COGESs</td><td>44,851</td><td>74,773</td><td>34,394</td><td>154,018</td></tr>
<tr><td>Proportion of women -participating in COGES (%)</td><td>49.3</td><td>49.1</td><td>44.4</td><td>48.1</td></tr>
<tr><td>No. of persons participating per COGES</td><td>124</td><td>110</td><td>84</td><td>106</td></tr>
</table>
*In 2011/12, although the activities for establishing new COGES in rural areas were conducted, the total number of participants in COGESs and the number of participants per COGES were smaller than the those data for the period by the previous year.
(Ex-post Evaluation)
• Financial contribution in 2 out of all the target regions has been increasing. Refer to the indicator 2-3 of the Overall Goal.</td>
</tr>
<tr>
<td></td>
<td>(Indicator 3)
Approval on a strategy at a national level workshop</td>
<td>Status of the Achievement: Achieved (Continued)
(Project Completion)
• In March, 2013, after an approval by the related four ministries, the Ministerial Order on Structure and Function of COGES was issued and the COGES establishment model promoted by the project was approved in the Ministerial Order.
• The national extension strategy for the COGES model was approved in May, 2013.
(Ex-post Evaluation)
• After the project completion, the Ministerial Order No.2014-0082 and No.2017-0039 for setting up the Office of Coordination of Decentralized School Management for dissemination of COGESs (Service de la Coodination de la Gestion Décentralisée des Ecoles: SCGDE) nationwide was implemented, and the organizational arrangement has been progressed. (Refer to the section of “Sustainability”).</td>
</tr>
<tr>
<td>(Overall Goal)</td>
<td>(Indicator 1)</td>
<td>(Ex-post Evaluation) Achieved
• The COGES model promoted by the project was extended nationwide by the Phase 2</td>
</tr>
</table>

<table>
<tr><td>1) Functional COGES model is extended nationwide.</td><td>Integration of the strategy into the sector plan.</td><td>project.
• The COGES model was adopted in all the regions as a model reflecting the contents of the “Strategic Development Program for Basic Education (PDSEB)” for decentralization of education administration and school management.
[Adoption status of the COGES model in the non-target regions (year of 2015/16)]
<table><tr><th>Region</th><th>Proportion of primary schools with the COGES model*</th></tr><tr><td>Boucle du Mouhoun</td><td>95.9%</td></tr><tr><td>Cascades</td><td>93.5%</td></tr><tr><td>Central</td><td>87.0%</td></tr><tr><td>Central West</td><td>87.5%</td></tr><tr><td>Central South</td><td>94.7%</td></tr><tr><td>East</td><td>92.9%</td></tr><tr><td>Upstream</td><td>91.1%</td></tr><tr><td>North</td><td>95.2%</td></tr><tr><td>Sahel</td><td>89.5%</td></tr><tr><td>South West</td><td>98.4%</td></tr></table>*The proportion of primary school establishing COGES out of the total number of primary schools</td></tr>
<tr><td rowspan="3">2) School environment is improved by functional COGES.</td><td>(Indicator 2-1)
Types and numbers of activities implemented under the school activity plans.</td><td>(Ex-post Evaluation) Achieved
• Types of activities: After the project completion, the following five activities were incorporated in the activity plans:
➢ Increase in study time
➢ Purchase of school equipment and teaching materials
➢ Increase in commitments by stakeholders concerning education, including mayors and supervisors for children’s learning environment
➢ Improvement of learning conditions (learning environment, hygiene (toilet), management for school lunch, and so on)
➢ Improvement of learning environment (facility construction)
• Numbers of activities: According to the Project Completion Report on the Phase II (Table 30), 29,288 activities in total were conducted by 11,216 COGES in all the 13 provinces. ((2.5 activities were conducted by one COGES in average)</td></tr>
<tr><td>(Indicator 2-2)
Improvement of educational statistics (gross entrance rate[2], gross enrollment rate[3], attendance rate, etc.)</td><td>(Ex-post Evaluation) Achieved
[Educational indicators at a national level]
<table><tr><th></th><th>2009/10</th><th>2013/14</th><th>2014/15</th><th>2015/16</th></tr><tr><td>Gross enrollment rate</td><td>74.8%</td><td>83.0%</td><td>83.7%</td><td>86.1%</td></tr><tr><td>Gross entrance rate</td><td>85.8%</td><td>97.0%</td><td>98.8%</td><td>100.1%</td></tr></table></td></tr>
<tr><td>(Indicator 2-3)
Improvement of communities’ participation in school management</td><td>(Ex-post Evaluation) Partially achieved
• The number of participants in the COGES activities: No data available, but 15 out of the 22 COGESs surveyed by the ex-post evaluation answered that the participation rate for COGES general meetings and meetings.
• Financial contribution by communities: Among the target regions, the contribution has increased in regions of Central Plateau and Central North since the project completion. It increased in the regions where the COGES model has been disseminated since the year of 2014/15 (Boucle du Mouhoun, Cascades, Upstream, South West)
[Financial contribution by communities]
<table><tr><th rowspan="2">Region</th><th colspan="2">Total (Million FCFA)</th><th colspan="2">Per COGES (FCFA)</th></tr><tr><th>2012/13</th><th>2015/16</th><th>2012/13</th><th>2015/16</th></tr><tr><td>Central Plateau</td><td>84.045</td><td>108.212</td><td>0.132</td><td>0.138</td></tr><tr><td>Central East</td><td>201.297</td><td>130.764</td><td>0.315</td><td>0.148</td></tr><tr><td>Central</td><td>11.124</td><td>40.521</td><td>0.137</td><td>0.107</td></tr><tr><td>Central North</td><td>84.529*</td><td>107.771</td><td>0.083*</td><td>0.105</td></tr></table>*The data for the Central North Region comes from 2013/14.</td></tr>
</table>

Source : Terminal Evaluation Report, Project Completion Report, project documents related to the Phase 2 project, results of field survey by the ex-post evaluation (questionnaire and interview survey with 22 COGES in the target and non-target regions)

3 Efficiency

The project cost and the project period exceeded the plans (ratio against the plan: 139% and 108%, respectively). The excess of the project cost matched the additional outputs for nationwide dissemination of the COGES model and the project scope was extended from 1,400 schools in 2 regions in the original plan to 2,780 schools in 4 regions, in accordance with the approval on the nationwide extension strategy for the COGEs model by MEBA in May, 2013. Also, it is judged that the extension of the project period matched the additional inputs considering the evacuation of the Japanese experts in 2011 caused by the deteriorated security in the country and the expansion of the project sites. Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

As mentioned above, the policies related to dissemination of the COGES model such as establishment and operation of COGES and its monitoring system have been reflected into PDSEB (2012~2021) of the Ministry of Basic Education and Literacy, which includes measures including activation of COGESs.

<Institutional Aspect>

[2] The proportion of the actual number of children entering in primary school against the number of children at age for entrance in primary school (the age of 6) in the relevant school year. The current primary education system in Burkina Faso is the 6-year course.

[3] The proportion of the actual number of students enrolled against the number of children at school ages for primary education (the age of 6-11) in the relevant school year.

In Burkina Faso, the organizational arrangement for dissemination of the school management based on COGESs has been promoted through decentralized school management[4]. SCGDE under DGEFG of MEBA has been responsible for the decentralized management for schools in the country as well as for COGESs engaged in school management on site. At the regional level, one officer in charge of COGES has been deployed to the Regional Directorate of Preschool, Primary and Formal Education for supervision and technical support for COGESs. In addition, at the CEB level, focal points of COGESs have been positioned. At a communal level, development plan is required to include activities of GOGES and the Communal Coordination of GOCES (Coordination Communale de COGES: CCC) and supports activities by each COGES. For the extension of COGES, 13 officers at the regional level and 45 officers at the provincial level have been deployed. In all over the country, 488 officers at the CEB level and 360 officers at the communal level have been deployed in total. Since the extension of the COGES model have been progressed, it can be judged that the number of staffs deployed have been sufficient. CCC, which conducts monitoring and support for COGESs at local level, is composed of the school director, the chief of communal education office and the chief of CEB. The extension of CCCs was partly hampered because of social and political turmoil caused by frequent and extended strikes by local education officers for better deals. At the time of ex-post evaluation, among the target regions, while no CCC has been established in Central Region, CCCs have been established in Central Plateau Region (19 out of 20 communes), Central East Region (16 out of 30) and Central North Region (14 out of 28). However, the delay of establishing CCCs has not constrained establishment and dissemination of COGESs. The social turmoil such as strikes was determined in January, 2018 because the improvement of deals has been committed by the discussion between the Teachers Union and the Prime Minister and the Minister of Education at the time was resigned. Establishment of CCCs is essential to ensure quality and sustainability of COGESs' activities. Also, dissemination of CCCs is expected since establishment of CCCs is obligation by the ministerial order of the Ministry of Basic Education and Literacy.

<Technical Aspect>

The knowledge and skills of the officers of MEGA on establishment, management and monitoring of COGESs has been sufficient level. In addition, according to the Project Completion Report of the Phase 2 (table 4), capacity development trainings have been continuously delivered in order to0 ensure sustainability of COGESs' functions even after the project completion through SCGDE by the Phase 2 Project. Also, the officers in charge of COGES at the region level and the district level have the necessary knowledge and skills to supervise management of COGESs. CEBs, COGESs and schools have sustained the necessary knowledge and skills to continue the activities for improvement of school management based on the COGES model. Most of the manuals for training instructors prepared by the project, such as "the Guideline for establishment of COGESs", "the Guideline of Participatory School Management by COGES", "the Monitoring Guide" have been utilized, and the materials for COGESs, including "the COGES Manual", "the Manual for Preparation of School Activity Plan" and "the COGES Monitoring Manual" have been utilized since the project completion.

<Financial Aspect>

MEGA has allocated a budget for the extension of COGESs and monitoring. The budget amount increased from 500 million Franc CFA (FCFA) in 2014/15 to 888 million FCFA in 2015/16 because training cost for communities have been required in order to establish COGESs. After 2015/16 when COGESs were established nationwide, the budget related to COGESs has been downward trends and decreased to 129 million FCFA in 2016/17 and 79 million FCFA in 2017/18 as necessary cost has been only for monitoring. Whereas the budget at the central level has been sufficiently secured, many cases where the budgets had not been executed were observed by the survey for the ex-post evaluation due to the time-consuming process for budget allocation to each region and each district as well as the limited budget execution capacity of local education offices. Furthermore, there have been a critical issue on budget execution which is beyond the responsibility of MEBA because of the personnel reshuffle of the Ministry of Economy and the introduction of the new budget system as well as insufficient human resource capacity for the new system.

<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 for enhancement of system for establishing and maintaining the functional COGESs for primary schools in the country and the Overall Goals for improvement of educational indicators such as primary enrollment rate through the school management by COGESs. A for sustainability, although there has been an issue of constraints against budget execution at local level, the policy for nationwide extension of the COGES model has been clearly developed and the budget for activities of COGESs and monitoring activities have been secured at the central level. Also, the organizational arrangement for the extension of the COGES model has been well. As for efficiency, despite that the project cost and period exceeded the plan, the increase in the project cost was consistent with the increase in the outputs and the extension of the project period was for the measure to cope with the deterioration of security situation in Burkina Faso.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

The following measures are recommended for the stakeholders of the project in order to promote positive impact and enhance sustainability of the project effects.

[DGEFG)]

- For future, it is recommended to sustain capacity of school management by COGES and monitoring through continuous delivery of trainings for untrained persons such as newly appointed members of the COGES committees, including newly assigned school directors and members of CCCs in charge of monitoring while there is no problem on monitoring for COGESs so far.
- Prompt approval on an annual strategy of PDSEB for each year, including the year of 2019, smooth budgeting and budget allocation as well as firm implementation of the annual strategy are required for empowerment of COGESs and CCCs and improvement of school management under decentralization.

[Chiefs of Education Offices at local level, SCGES and the Directorate of Sectoral Statistics of the Ministry of Basic Education and

[4] Administrative units in Burkina Faso are: region (Région), province (Province), district (Département) and village (Commune).

Literacy]

- Budget execution procedures should be adequately conducted through deployment of capable staffs with accounting at local level and their capacity enhancement in order to execute expenses for monitoring (fuel cost, cost for reporting, and so on) which is necessary for continuous and effective monitoring of activities by COGESs and CCCs and for keeping records.

[SDGDE]

- Cooperation between school and community is essential to functionalize COGESs established in the country. Also, promotion of establishment of CCCs which has been limited in a part of the country is required to allocate subsidies for COGESs through CCCs. In addition, it is necessary to promote and support establishment of CCCs through firm delivery of trainings for stakeholders in areas without CCCs.

Lessons Learned for JICA:

- In the project, the extension strategy was elaborated for extension of the model for school management by COGES and CCC under decentralization in the post-project period and COGES was extended nationwide as planned. On the other hand, there were difficulties to extend CCC nationwide as planned despite of the support by the Phase 2 project since education officers at local level, including education supervisors and teachers, complained their deals and the labor unions launched a strike or boycotted. Although the delay of establishing CCCs has not constrained the dissemination of COGESs, it is essential for enhancement of sustainability of the COGESs' activities and it is desirable to implement extension of CCCs in parallel. That was not expected situation such as strikes by education administrative officers and teachers and the situation was not a controllable issue for the project to deal with. However, it is necessary to collect and assess information about activities by the teachers' unions or the labor unions which the education officers belong to, and consider selection of the target areas and project activities at the time of project formulation and the project implementation.

Caption

At the school of «Bagré Périmètre» B, the President and treasurer of the COGES accompanied by the principal come to say hello to a teacher who works in a classroom built by the COGES

Caption

A teacher in a classroom built by the COGES in the school of Namssa

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by China Office: November, 2018

Country Name	**Project on Forest Restoration after the Earthquake in Sichuan Province**
People's Republic of China	

I. Project Outline

Background	The Sichuan Earthquake, which occurred in Wenchuan County in Sichuan Province in China on May 12, 2008, caused a great deal of damages to forest vegetation. As measures to restore the disaster-affected forests, the Government of China launched a policy to restore multiple functions of forests in stages through combining natural regeneration and artificial restoration. Through JICA's technical cooperation project "The Model Afforestation Project in Sichuan" (2000-2007), technologies such as "Chisan" technologies using simple work methods had been developed in Sichuan Province. However, because of diverse geographical conditions of the areas affected by the Sichuan Earthquake, it was difficult to determine the precise measures for each condition. In addition, technical and management capacity of the related agencies was not sufficient for restoration of forest vegetation which had been destroyed in an unprecedented scale in China.		
Objectives of the Project	The project aims at improving technical capacity of the related agencies of Sichuan Province, engaged in restoration projects for typical disaster-affected forests in the project areas[1] in the earthquake-stricken areas in Sichuan Province in China, through development of restoration plans for the typical disaster-affected forests, establishment of technological system concerning major forest restoration work methods, and enhancement of contents and system of technical training necessary for implementation of restoration works for the disaster-affected forests, thereby enabling sustainable and self-reliant implementation of restoration projects for the disaster-affected forests. 1. Overall Goal: Restoration projects for the disaster-affected forests are implemented in the earthquake-stricken areas in Sichuan Province in a sustainable and self-reliant way. 2. Project Purpose: Technical capacity of the related agencies of Sichuan Province, engaged in restoration projects for typical disaster-affected forests in the project areas, is improved.		
Activities of the Project	1. Project Site: Wenchuan County, Beichuan Qiang Autonomous County (Beichuan County), and Mianzhu City 2. Main Activities: 1) Selection of pilot sites[2] in the project areas, identification of earthquake damage type in the pilot sites, implementation of study to develop restoration plans for the disaster-affected forest, and development of the restoration plans for the pilot sites; 2) Selection of test construction sites[3], design of restoration work methods for the disaster-affected forests, implementation of and monitoring of the restoration work and evaluation of the introduced work methods, improvement of the methods based on the evaluation results, development of technical guidelines on the restoration work methods for the disaster-affected forests; 3) development of curriculum and textbooks for training on restoration technologies for the disaster-affected forests, planning and implementation of training, evaluation of effects of the training and improvement of the training contents as necessary 3. Inputs (to carry out above activities) Japanese Side 1) Experts: (Long-term) 6 persons; (Short-term) 7 persons 2) Trainees Received: 64 persons 3) Equipment: Vehicles, video cameras, personal computers, etc. 4) Local Costs: Cost for test construction, technical training, etc. Chinese Side 1) Staff Allocated: 50 persons (Sichuan Provincial Forestry and Grassland Administration (former Sichuan Provincial Forestry Department)[4], Sichuan Provincial Institute of Forestry Research and Planning, Sichuan Provincial Institute of Forestry Science Research, Sichuan Provincial Academy of Forestry, Wenchuan County Bureau of Forestry, Beichuan County Bureau of Forestry, Mianzhu City Bureau of Forestry, Pengzhou City Bureau of Forestry, and Mao County Bureau of Forestry) 2) Land and Facilities: Project Offices (Sichuan Provincial Forestry and Grassland Administration (former Sichuan Provincial Forestry Department), Wenchuan County Bureau of Forestry, Beichuan County Bureau of Forestry, Mianzhu City Bureau of Forestry, Pengzhou City Bureau of Forestry) 3) Local Costs: Cost for activities of counterpart personnel (C/P), expenditures of Project Offices, etc.		
Project Period	February 2010 - January 2015	Project Cost	(ex-ante) 600 million yen, (actual) 567 million yen

[1] Wenchuan County, Beichuan Qiang Autonomous County, and Mianzhu City.

[2] The sites in the project areas, for which restoration plans for the forests damaged by the earthquake are developed.

[3] The sites where restoration work for the disaster-affected forests is tested.

[4] The name was changed in November 2018 after completion of the field survey of this ex-post evaluation. In Result of the Evaluation, the name at the time of the field survey (i.e. June 2018) is utilized,

Implementing Agency	Sichuan Provincial Forestry and Grassland Administration (former Sichuan Provincial Forestry Department), Sichuan Provincial Institute of Forestry Research and Planning, Sichuan Provincial Institute of Forestry Science Research, Sichuan Provincial Academy of Forestry, Wenchuan County Bureau of Forestry, Beichuan County Bureau of Forestry, and Mianzhu City Bureau of Forestry. (From 2012) Pengzhou City Bureau of Forestry and Mao County Bureau of Forestry (Note: these city and county were not included in the project areas)[5]
Cooperation Agency in Japan	Forestry Agency, Ministry of Agriculture, Forestry and Fisheries

II. Result of the Evaluation

<Special Perspective Considered in the Ex-Post Evaluation>

- The Indicators of the Project Purpose only measure the degree of improvement of technical capacity of the related agencies (implementing agencies) as a whole. Therefore, at the time of the terminal evaluation, the degree of improvement of technical capacity of each implementation agency related to the project areas was set as an additional study item, and the achievement of the Project Purpose was judged based on the achievement status of the Indicators and the results of the additional study. To maintain consistency with the terminal evaluation, this additional study item shall be utilized as supplemental information, which shall be taken into consideration in judgement of achievement at the time of the ex-post evaluation. The continuation status of the supplemental information at the time of ex-post evaluation shall be confirmed with the information collected under sustainability.
- Sustainability at county/city levels shall be assessed based on the results of the survey to the county/city bureaus of forestry of the project areas (i.e. Wenchuan, Beichuan, and Mianzhu), taking into consideration the level of participation in the project and the relative importance in the continuation of the effects.

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 "Restoration and Reconstruction Plan for Forestry Ecology after the Wenchuan Earthquake" (2008-2010) developed by the Provincial Government of Sichuan based on "State Council's Overall Plan for Post-Wenchuan Earthquake Recovery and Reconstruction" issued by the Government of China after the Sichuan Earthquake. At the time of project completion, the project was consistent with the development policy prioritizing ecological environment because forestry Chisan technologies applied in the project were included as model technologies in "Outline Plan for Ecological Civilization Construction in Forestry in Sichuan Province" (2014-2020) developed by the Sichuan Provincial Forestry Department based on "Ecological Civilization Construction" (2013-2020) of the Government of China.

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

At the time of ex-ante evaluation, as described in "Background", it was urgent to improve technical and management capacity for restoration of forest vegetation in view of the large-scale destruction of forest vegetation caused by the Sichuan Earthquake. At the time of project completion, local and social needs for restoration of the disaster-affected forests were further increased since an earthquake occurred in Lushan, Ya'an City in Sichuan Province in April 2013.

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

The project was consistent with the Japan's assistance measures for reconstruction following the Sichuan Earthquake confirmed at the Japan-China summit meeting on July 9, 2008, which included support in disaster prevention field.

<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. As for area pass rate[6] of the disaster-affected forest restoration work at test construction sites and the "independent construction" sites (i.e. the sites where restoration work, using the technologies of the project (forestry Chisan technologies), was implemented by the related agencies independently) in the project areas, the target value was set to be 90%. Overall, target was mostly achieved because the area pass rate was 99.7% in Beichuan, and 97.8% in Mianzhu (target achieved) while it was 69.4% in Wenchuan (i.e. 77% of the target: target partially achieved) (Indicator 1). In each project area, the total area of independent construction work ranged from 20ha to 50ha, which was well beyond the target (i.e. 1ha) (Indicator 2)[7]. Both in the test and independent construction, planning, including selection of sites for forest restoration, was carried out by the county/city bureaus of forestry; survey and design by Provincial Institute of Forestry Research and Planning, Provincial Institute of Forestry Science Research, and the county/city bureaus of forestry; and construction supervision by the county/city bureaus of forestry. At each implementing agency related to the project areas, technical capacity for the disaster-affected forest restoration work was improved through these works (Supplemental Information).

[5] In this project, forestry Chisan technologies were applied to forest restoration. In the first half of the project period, importance of dramatically increasing awareness on Chisan technologies was recognized since the concept of Chisan was not common in China. As a result, Pengzhou City and Mao County were added as the implementing agencies which were "not included in the project areas" at the third Joint Coordinating Committee (December 2011). "Not included in the project areas" means "not included in the evaluation of achievement of the Project Purpose". After that, Pengzhou City Bureau of Forestry and Mao County Bureau of Forestry participated in technical training on restoration of disaster-affected forests organized by the project. The project planned to implement additional activities for test construction in Mao County in 2012, but it was canceled in the same year because approval of the local government could not be obtained. Additional test construction was implemented in Pengzhou City, but the number of works and the area of construction were limited compared to three project areas.

[6] Percentage of the area where survival rate reaches the standard set by Sichuan Provincial Forestry Department.

[7] This is attributable to the following factors: Mianzhu City Bureau of Forestry had started forestry restoration projects before the commencement of this project with the financial support of Obuchi Fund of Japan and European Investment Bank; and after that, the county/city bureaus of forestry in the project areas implemented the independent construction work with the financial support of "Post-Earthquake Ecological Restoration Trial Model Project in Sichuan Province" (2012-2013) implemented by Sichuan Provincial Forestry Department..

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

The project effects have been continued. In the project areas, forest restoration works using forestry Chisan technologies have been continued under the ecological restoration projects ("Project for Comprehensive Ecological Restoration in Arid and Semi-arid Area in Sichuan Province" (2015-2016) and "Project for Restoration of National Priority Ecological Areas"). As for the "Project for Comprehensive Ecological Restoration in Arid and Semi-arid Area in Sichuan Province", for which the data was available, the total area of forest restoration of each project area (ranging from 133ha to 267ha or more) and the area pass rate of each project area (100% in all areas) exceeded the level achieved during the project. At each implementing agency, technical capacity necessary for forest restoration work using forestry Chisan technologies has been maintained (See "Sustainability"). At Sichuan Provincial Academy of Forestry, technical training for forest restoration work, which was strengthened by the project, has been continued. For example, a training for 73 directors of county/city bureaus of forestry was conducted in 2016, utilizing the curriculum, materials and manuals developed by the project and the instructors trained by the project[8].

<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 the earthquake-stricken areas in Sichuan Province, the total area of forest restoration, using forestry Chisan technologies, greatly exceeded the target (i.e. 200ha): the restored area was more than 3,000ha after the project completion[9], and 3,100ha, including the one during the project period. It was attributable to the following factors: technical guidelines ("Local Standard") on forestry Chisan technologies were approved and adopted by the Province through the project activities; forestry Chisan technologies were included as model technologies in "Outline Plan for Ecological Civilization Construction for Forestry in Sichuan Province" (2014-2020); and Sichuan Provincial Forestry Department and Provincial Bureau of Finance jointly implemented "Project for Comprehensive Ecological Restoration in Arid and Semi-arid Area in Sichuan Province" and "Project for Recovery of Industry and Ecosystem to Escape Poverty in Arid Valleys" (2017-2018) (Indicator).

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

In Sichuan Province, forestry Chisan technologies have been widely applied to restoration of forests other than those affected by the earthquake[10]. In addition, the cost estimation standard of forestry Chisan has been introduced to afforestation budget. As a result, it has become possible to make the cost estimation based on the needs, and the ceiling, which was 1,000 yuan per 1 mu (1/15ha), has been abolished[11]. In the forest restoration work, local people, including women, have been employed, which has promoted improvement of their income. The impact of the project has been expanded to another province. Upon the request by the people's government of Guye District in Tangshan City in Hebei Province, the former C/Ps at Sichuan Provincial Academy of Forestry and Institute of Forestry Research and Planning have been dispatched to provide guidance on vegetation restoration in the former mining site. Meanwhile, no negative impacts of the project have been observed.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td>(Project Purpose)
Technical capacity of the related agencies of Sichuan Province, engaged in restoration projects for typical disaster-affected forests in the project areas, is improved.</td><td>(Indicator 1)
Area pass rate is 90 % or above at the test construction sites and the sites of restoration work for the disaster-affected forests independently implemented by the related agency of each project, using the technologies of the project</td><td>Status of the Achievement: mostly achieved (continued)
(Project Completion)
<Area pass rate for planting during 2010-2013 period at the test construction sites and the independent construction sites (as of July 2014)>
<table><tr><th></th><th colspan="3">Project area</th><th>Non-project area (for reference)</th></tr><tr><th></th><th>Wenchuan</th><th>Beichuan</th><th>Mianzhu</th><th>Pengzhou (test construction only)</th></tr><tr><td>Area pass rate</td><td>69.4%</td><td>99.7%</td><td>97.8%</td><td>100.0%</td></tr></table>
(Ex-post Evaluation)
<Area pass rate of restoration work for the disaster-affected forests using forestry Chisan technologies after the project completion (planting in 2015-2016) > (as of January 2018)
<table><tr><th></th><th>Wenchuan</th><th>Beichuan</th><th>Mianzhu</th></tr><tr><td>Area pass rate</td><td>100%</td><td>100%</td><td>100%</td></tr></table></td></tr>
<tr><td></td><td>(Indicator 2)
Related agencies in each project area implement restoration work for at least 1ha of disaster-affected forests independently.</td><td>Status of the Achievement: achieved (continued)
(Project Completion)
<Area of forest restoration work independently implemented by the related agencies in the project areas>
<table><tr><th>Wenchuan</th><th>Beichuan</th><th>Mianzhu</th></tr><tr><td>20.3ha</td><td>20.0ha</td><td>59.1ha</td></tr></table></td></tr>
</table>

[8] In addition, Sichuan Provincial Academy of Forestry is coordinating with Jiuzhaigou County Bureau of Forestry to conduct training on restoration technologies for the forests damaged by the Jiuzhaigou Earthquake in August 2017. It also has a plan to organize a training for officers in charge of forestry in developing countries involved in "One Belt, One Road Initiative" in September 2018.

[9] As described in footnote 7, forestry Chisan technologies are also applied to ecological restoration project after the Jiuzhaigou Earthquake and the total area of 10,000 mu (approximately 667ha) is covered by the project. (At the time of ex-post evaluation, designing was already completed, and construction work is under preparation.)

[10] For example, "Project for Recovery of Industry and Ecosystem to Escape Poverty in Arid Valleys" jointly implemented by Sichuan Provincial Forestry Department and Bureau of Finance, etc..

[11] For example, budget for ecological restoration projects after the Jiuzhaigou Earthquake is estimated with the rate of 30,000 yuan per 1 mu according to Sichuan Provincial Forestry Department.

		(Ex-post Evaluation) <Area of forest restoration work independently implemented by the related agencies in the project areas using the technologies of the project > (as of April 2018) Wenchuan: 267-333ha; Beichuan: 133-200ha; Mianzhu: 267-333ha
(Overall Goal) Restoration projects for the disaster-affected forests are implemented in the earthquake-stricken areas in Sichuan Province in a sustainable and self-reliant way.	(Indicator) In three years after project completion, the area of forest restoration, using technologies of the project, reaches 200ha in the earthquake-stricken areas	(Ex-post Evaluation) Achieved <Area of forest restoration using technologies of the project (forestry Chisan) in the earthquake-stricken areas> Total: 3,191–3.591ha (as of April 2018)

	Wenchuan	Beichuan	Mianzhu	Pengzhou	Others*	Total**
Test construction by the project	5.2ha	5.6ha	9.2ha	1.2ha		21.2ha
Independent construction during the project implementation	20.3ha	20.0ha	59.1ha			99.4ha
Construction between project completion and ex-post evaluation (March 2015 - April 2018)	267-333ha	133-200ha	267-333ha	0	2,403 -2,603ha	3,070 -3,470ha

*Others: 1 city, 17 counties (including Mao County), and 2 districts in the affected areas of Wenchuan Earthquake and the earthquake in Ya'an City, covered by "Project for Comprehensive Ecological Restoration in Arid and Semi-arid Area in Sichuan Province" and "Project for Recovery of Industry and Ecosystem to Escape Poverty in Arid Valleys". In the above table, the area in Wenchuan, Beichuan, and Mianzhu restored through "Project for Comprehensive Ecological Restoration in Arid and Semi-arid Area in Sichuan Province" is shown in the column of each county.

**Total may not match due to rounding off.

Source: Terminal Evaluation Report, Project Completion Report, questionnaire and interview to Sichuan Provincial Forestry Department, field observation by ex-post evaluators

3 Efficiency

Both the project cost and period were within the plan (ratio against plan: 95%, 100%). Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

Policy support to sustain the project effects is established. In Sichuan Province, forest restoration applying forestry Chisan technologies is implemented through ecological environment restoration projects and, therefore, is consistent with the "13th Five-Year Plan for Economic and Social Development of the People's Republic of China" (2016-2020), which lists ecosystem conservation as one of the priority strategies. In addition, in Sichuan Province, "Outline Plan for Ecological Civilization Construction for Forestry in Sichuan Province", in which forestry Chisan technologies are included as model technologies as a result of the project, and the technical guidelines (Local Standard) on forestry Chisan technologies, developed through the activities of the project, are still effective as described in "Effectiveness/Impact". It is noted, as another result of the project, a draft amendment to the "Forest Law" was prepared as the legal basis of "Forestry Chisan", and invitation for public comment was made throughout the country in 2016. For finalization and promulgation of the amendment, review and approval by the Standing Committee of the National People's Congress is required, and its timing is not fixed yet. According to Sichuan Provincial Forestry Department, it will continue to implement forest restoration applying forestry Chisan under ecological environment restoration projects even if the amendment is not approved and enforced. However, with the amendment approved and enforced, the budget specialized for forestry Chisan could be secured, which would promote implementation of Chisan projects further.

<Institutional Aspect>

There has been no major change in organizational structure and roles of the implementing agencies in terms of forest restoration. At provincial level, Institute of Forestry Science Research and Institute of Forestry Research and Planning mainly engage in project planning and designing, and provision of technical guidance on consignment from counties. Academy of Forestry implements forestry Chisan training under the project item of ecological restoration. Provincial/city bureaus of forestry select project sites, develop plans, outsource design and construction work, and supervise the construction work, among others. At the implementing agencies, the number of the staff is considered sufficient to sustain the project effects since restoration of the disaster-affected forests using forestry Chisan has been implemented with the pace higher than the target of the Overall Goal.

<Number of staff members engaged in forest restoration work using forestry Chisan (including training) at the implementing agencies>

Sichuan Provincial Forestry Department			County/City Bureaus of Forestry in the project areas		
Institute of Forestry Research and Planning	Institute of Forestry Science Research	Academy of Forestry	Wenchuan	Beichuan	Mianzhu
28	20-30	4	6	4	13

Source: Questionnaire and interview with implementing agencies

<Technical Aspect>

After the project completion, some C/Ps have been transferred but necessary information and knowledge have been handed over to their successors. The C/Ps of the implementing agencies at provincial level have been engaged in forest restoration projects applying forestry Chisan, utilizing the knowledge and skills accumulated by the project and the deliverables such as manuals. The implementing agencies consider that their staff have sufficient knowledge and skills to implement their work as these projects have been implemented smoothly. As for the staff of county/city forest bureaus, according to Sichuan Provincial Forestry Department, it is important to understand the philosophy of forestry Chisan, which is required to outsource planning, designing and construction properly. It is considered that, at the county/city bureaus of forestry in the project areas, technical capacity necessary to outsource designing and construction work has been secured as the area pass rate of the respective forest restoration work is 100% after the project completion.

<Financial Aspect>

Forest restoration applying forestry Chisan has been implemented, utilizing the budget for various ecological restoration projects, as the legal basis for forestry Chisan has not been established yet. Although the detailed budget data is unknown, it can be inferred that necessary budget has been secured since the actual result of the Overall Goal greatly exceeds the target value. As to ecological restoration project budget at the Sichuan Provincial Forestry Department (including the budget allocated to counties), the budget for "Project for Comprehensive Ecological Restoration in Arid and Semi-arid Area" was 30.15 million yuan in 2015 and 20.15 million yuan in 2016, and the budget for "Project for Recovery of Industry and Ecosystem to Escape Poverty in Arid Valleys" was 60.9 million yuan in 2017. The expenditures of these projects were the same as the budget. Institute of Forestry Research and Planning and Institute of Forestry Science Research have implemented ecological restoration projects commissioned by counties, and basically there have been no budget deficits according to both institutes. The budget from the counties varies depending on the scale of project. For example, the budget for an ecological restoration project commissioned to Institute of Forestry Research and Planning after the project completion has ranged from 19 million yuan to 500 million yuan. The budget data for Institute of Forestry Science Research is not available. At the Academy of Forestry, the budget for the training related to ecological restoration project in 2016 was 150 thousand yuan and the amount was sufficient as the training was implemented within the allocated budget. The budget data for the county/city bureaus of forestry in the project areas is not available, but, according to them, the budget has been sufficient because the budget for ecological restoration projects applying forestry Chisan is calculated based on the area requiring countermeasures and the budget is allocated as is calculated. No major change in financial sources is expected at the implementing agencies in near future. It is expected that the budget for ecological restoration projects will be continuously utilized until a new budget item for forestry Chisan is created through enforcement of the amendment of the "Forestry Law".

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved the Project Purpose ("Technical capacity of the related agencies of Sichuan Province, engaged in restoration projects for typical disaster-affected forests in the project areas, is improved"). The project effect has been continued and the Overall Goal ("Restoration projects for the disaster-affected forests are implemented in the earthquake-stricken areas in Sichuan Province in a sustainable and self-reliant way") has been achieved. Regarding the sustainability, although, in financial aspect, the budget data of some implementing agencies was not available, no problem has been observed in terms of the policy, institutional, and technical aspects to maintain the project effect. Considering all of the above points, this project is evaluated to be highly satisfactory. Considering all of the above points, this project is evaluated to be highly satisfactory.

III. Recommendations & Lessons Learned

Lessons Learned for JICA:

Through implementation of the project, the philosophy and technologies of Chisan were introduced in China, where the concept of Chisan had not been common. Although legal basis to secure the budget for implementation of Chisan projects was not available, the implementing agencies of Sichuan Province disseminated the philosophy and technologies of Chisan introduced by the project, utilizing the budget for ecological environment restoration projects. One of the contributing factors is technical guidelines ("Local Standard") on forestry Chisan technologies developed through the project and approved and adopted by the province. When introducing an activity, for which legal basis and/or budget item is not established, through technical cooperation project with the target area at provincial level in China, it would be possible to secure effectiveness/impact of the project by facilitating utilization of the existing budget through incorporation of development of technical guidelines ("Local Standard") in the project activities and inclusion of its approval/adoption in the Indicators at the planning stage as in the case of this project.

Test construction site of the project in Beichuan County

Independent construction site using the technology of the project in Beichuan County
(constructed during the project period)

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Thailand Office: June 2018

Country Name	Capacity Development and Institutional Strengthening for GHG Mitigation
Kingdom of Thailand	

I. Project Outline

Background	Although Thailand was not mandated to reduce greenhouse gas (GHG) emission under the Kyoto Protocol, it was actively tackling climate change. The Thailand Greenhouse Gas Management Organization (TGO) was established in 2007 and the "National Strategic Plan on Climate Change" (2008-2012) was developed in 2008. TGO was initially responsible for promoting and providing support to all GHG reduction activities but its work had so far been centered mainly on examination, awareness raising, training and information management regarding the Clean Development Mechanism (CDM). The role of TGO expected to perform were many. However, because it was a young organization, it did not have sufficient human resources and knowledge.		
Objectives of the Project	Through (1) training on climate change mitigation for TGO staff, (2) developing training curriculum and materials and conducting training by TGO, (3) conducting monitoring of selected pilot projects, and (4) improving website and database, the project aimed at developing capacity of human resources and strengthening institutional capacity on GHG mitigation, and thereby contributing to promoting GHG mitigation activities.		
	1. Overall Goal: GHG mitigation activities will be promoted in Thailand. 2. Project Purpose: Capacity development for human resources and institutional strengthening on GHG mitigation for TGO will be achieved.		
Activities of the project	1. Project site: Bangkok 2. Main activities: (1) Training on CDM, credit transfer, GHG mitigation in the relevant sector, UNFCCC (the United Nations Framework Convention on Climate Change) structure, carbon footprint, and GHG inventory to TGO staff, (2) Developing training curriculum and materials and conducting training, (3) Conducting monitoring of selected pilot projects, and (4) Improving website and database. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 10 persons 2) Trainees received in Japan: 30 persons 3) Equipment: photocopying machine, projector, PCs 4) Local cost: training expenses		Thai Side 1) Staff allocated: 52 persons 2) Provision of spaces: office spaces for experts and training spaces 3) Local cost: training expenses, office equipment, etc.
Project Period	January 2010-February 2012	Project Cost	(ex-ante) 240 million yen, (actual) 225 million yen
Implementing Agency	Thailand Greenhouse Gas Management Organization (TGO)		
Cooperation Agency in Japan	Oriental Consultants Co., Ltd.		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

・ Continuation status of Indicator 2 for Project Purpose was not confirmed as the indictor was set to measure the progress during the project implementation.

1 Relevance

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

The project was consistent with the development policy of Thailand. At the time of ex-ante evaluation "the 10th National Economic and Social Development Plan" (2007-2010) highlighted the need for controlling GHG emission. Strategies under "the National Strategic Plan on Climate Change" (2008-2012) included capacity development for human resources and strengthening institutional capacity for mitigation of GHG emission. At the time of project completion, draft 11th National Economic and Social Development Plan (2012-2016) highlighted the need for controlling GHG emission, and "the National Strategic Plan on Climate Change" (2008-2012) states that reduction of GHG emission was one of the goals.

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

The project was also consistent with the development needs for reduction in GHG emissions in Thailand. At the time of ex-ante evaluation, TGO was responsible for promoting all activities for reduction in GHG emissions in Thailand. However, TGO had lack of human resources and capacity. At the time project completion, the subjects selected for intervention, i.e., CDM, carbon trading, UNFCC and international negotiations, GHG mitigation measures, carbon footprint and GHG inventory corresponded with the core business and interests of TGO.

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

The project was consistent with Japan's ODA Policy to Thailand. Under "Japan's Economic Cooperation Program for Thailand" (May 2006), areas for technical cooperation included "responses to issues that emerge with maturity of society". Environmental management was one of the areas 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>

The Project Purpose was mostly achieved at project completion. At the time of project completion, through the training courses "GHG

Mitigation and Low Carbon Society" in the Climate Thailand Conference 2011 (CTC 2011)[1] conducted by TGO, capacity of human resources on GHG mitigation was enhanced (Indicator 1), although other than the above-mentioned CTC 2011, no regular training courses were conducted (indicator 3) by the time of the terminal evaluation. However, after the completion of the project TGO/CITC has conducted regular trainings every year. Capacity Assessment Tests conducted under Output 1 showed substantial advancement of knowledge level among TGO staff (indicator 2).

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

The effects of the project have continued after the project was completed. TGO has provided technical instruction via conducting CDM projects, and activities related to National Greenhouse Gas Inventories, particularly 1996 IPCC (Intergovernmental Panel on Climate Change) Guidelines. After the completion of the project, TGO set up the Climate Change International Technical and Training Center (CITC) and continued to provide training courses. In recent years, more than 12 training courses were provided per year, and around 500 trainees attended the courses. They have updated curriculum and materials. JICA conducted two succeeding technical cooperation projects, one from 2010/01 to 2012/02, the other from 2013/06 to 2016/05 and these succeeding projects contributed for the continuation of the effects.

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

The Overall Goal was achieved. TGO has promoted various projects including CDM projects. TGO has especially been promoting the Thailand Voluntary Emission Reduction (TVER) and the number of registered projects has been steadily increasing. The project as well as the above-mentioned succeeding projects contributed to the increase in numbers as a part of capacity building providers.

It is noticed that the knowledge or skills which were taught by TGO training have been applied and contributed to climate change policies, particularly as in the Climate Change Economic training, the Mitigation training, the Climate Change and the Negotiation session. For example, idea/opinion exchange in many training classes from various experts has increased the awareness on climate change issues of policy makers.

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

No negative impact on natural environment has been observed and there were no land acquisition and no resettlement under the project.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td rowspan="3">(Project Purpose)
Capacity development for human resources and institutional strengthening on GHG mitigation for TGO will be achieved.</td><td>Indicator 1: TGO can provide technical instruction, and can promote awareness of climate change mitigation policy to the other stakeholders.</td><td>Status of the Achievement: achieved (continued)
(Project Completion)
Training course "GHG Mitigation and Low Carbon Society" was implemented in CTC 2011 and 11 presentations were made.
(Ex-post Evaluation)
TGO has provided technical instruction via conducting CDM projects, and activities related to National Greenhouse Gas Inventories, particularly 1996 IPCC Guidelines.</td></tr>
<tr><td>Indicator 2: Capacity Development Progress Evaluation Check List on GHG Mitigation Policy, Carbon trading, UNFCCC individual sector</td><td>Status of the Achievement: achieved
(Project Completion)
- Number The number of TGO officials who can confidently give presentations to various audiences increased. Nine TGO officials presented at CTC 2011 and received fairy good feedbacks.
- Capacity Assessment Tests conducted under Output 1 showed substantial advancement of knowledge level among TGO staff. Comparison of two test results of 11 TGO staff indicates substantial improvement in understanding on most if not all subjects. Understanding level classified under 5-grade evaluation improved by more than one grade in average.</td></tr>
<tr><td>Indicator 3: Number of training course provided by TGO</td><td>Status of the Achievement: partially achieved (continued)
(Project Completion)
Other than CTC2011, no regular training courses were conducted.
(Ex-post Evaluation)
No. of training and attendants
<table>
<tr><th rowspan="2">Courses</th><th colspan="2">2015</th><th colspan="2">2016</th><th colspan="2">2017</th></tr>
<tr><th>No. of training</th><th>No. of attendants</th><th>No. of training</th><th>No. of attendants</th><th>No. of training</th><th>No. of attendants</th></tr>
<tr><td>Greenhouse Gas Inventory (Thailand)</td><td>1</td><td>96</td><td>1</td><td>58</td><td>2</td><td>81</td></tr>
<tr><td>Greenhouse Gas Inventory (ASEAN)</td><td>-</td><td>-</td><td>-</td><td>-</td><td>1</td><td>41</td></tr>
<tr><td>Climate Change and Sustainable Development (Thailand)</td><td>3</td><td>111</td><td>2</td><td>71</td><td>4</td><td>148</td></tr>
<tr><td>Climate Change and Sustainable Development (ASEAN)</td><td>-</td><td>-</td><td>1</td><td>39</td><td>-</td><td>-</td></tr>
<tr><td>Mitigation Mechanism (Thailand)</td><td>1</td><td>81</td><td>-</td><td>-</td><td>1</td><td>45</td></tr>
<tr><td>Mitigation Mechanism (ASEAN)</td><td>-</td><td>-</td><td>1</td><td>40</td><td>-</td><td>-</td></tr>
<tr><td>Climate Change Economics (Thailand)</td><td>1</td><td>54</td><td>1</td><td>49</td><td>2</td><td>87</td></tr>
<tr><td>Climate Change Economics (ASEAN)</td><td>-</td><td>-</td><td>1</td><td>56</td><td>-</td><td>-</td></tr>
<tr><td>Train The Trainer</td><td>2</td><td>74</td><td>1</td><td>15</td><td>-</td><td>-</td></tr>
<tr><td>E-Learning Course on Climate Change Economics</td><td>-</td><td>-</td><td>4</td><td>156</td><td>-</td><td>-</td></tr>
</table></td></tr>
</table>

[1] CTC is an international conference held in 2011. 1,149 participants attended including various ministries in Thailand, municipalities and universities, and also the representative from Ministry of Environment in Japan, Japan embassy in Thailand, EU and other countries, International organizations such as UNFCCC and World Bank, private companies and NGOs.

Climate Change Adaptation	-	-	-	-	1	30
Regional Workshop for Capacity Development on Low Carbon and Resilient Society in ASEAN Region	1	75	-	-	-	-
3rd CITC Regional Conference on Climate Change and Sustainable Development: "How to Accelerate Climate Actions in Asia through Capacity Building and Climate Finance"	-	-	1	115	-	-
The SETA 2017 (Sustainable Energy and Technology Asia 2017) Side-Event On "Climate Change: Taking Challenges And Turning Into Opportunities Through Regional Collaboration"	-	-	-	-	1	40
Total	9	491	13	599	12	472

(Overall Goal) GHG mitigation activities will be promoted in Thailand.	Indicator 1: Number of CDM projects submitted TGO for national approval.	(Ex-post Evaluation) achieved **The number of CDM and other projects submitted to TGO**

Projects	Registered (Projects)	Expect (tCO_2eq/year)	Issued (Projects)	Expect (tCO_2eq/year)
TVER	106	2,892,692	48	1,909,220
JCM*	4	-	1	-
CDM	154	7,414,236	64	12,880,327

*Joint Crediting Mechanism

Source：Interview and Questionnaire with 2 TGO staff members

3 Efficiency

Although the project cost was within the plan (the ratio against the plan: 94%), the project period slightly exceeded the plan (the ratio against the plan: 108 %). Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

There has been policy support for reduction in GHG emissions. At the 2015 United Nations Climate Change Conference, COP 21, held in Paris, Thailand committed to reduce greenhouse gas emissions by 20 percent by 2030; therefore, many government's policies/plans have been established, such as "the Twelfth National Economic and Social Development Plan" (2017-2021), "the National Climate Change Master Plan" (2015-2030) and others.

<Institutional Aspect>

For smooth operation of providing training courses, TGO has established CITC. However, due to constraint in hiring new staff (their permanent staff has reached the limit number as stipulated by the government policy), CITC staff members are facing the increase of workload burden; Although the number of training courses has increased by more than 30% from 2015 level, the number of staff has been the same. This is partly because CITC put more emphasis on the number of training courses. At present, no activity has been affected. However, some kind of consideration might be needed.

<Technical Aspect>

TGO staff has capacity to plan, implement and evaluate the training courses. Although they can be a lecturer of their training courses (except Climate Finance), they would rather invite lecturers from other organizations who have expertise in such topic. Counterpart personnel of this project who have been still working at TGO is 12 persons (6 permanent staff and 6 contract staff). TGO has not had particular mechanism for TGO staff to systematically maintain the necessary technical level for providing the training/guidance on controlling GHG emission, however, TGO staff, for their own capacity building, can join the training courses on Mitigation Mechanisms that they organize, as well as Train of Trainer courses for TGO/CITC and key stakeholders.

Within TGO, there are various opinions on how to conduct the training courses, i.e. they do not determine whether to conduct the training courses by themselves or to be just a training course organizer by inviting lecturers from other organizations. That might affect the motivation for TGO staff to improve their capacity.

<Financial Aspect>

Budgets allocated to TGO in the past 3 years are seemed to be sufficient for their activities in Thailand. However, activities have been largely supported by the succeeding technical cooperation projects as mentioned above, and they are also looking for in-kind support (such as dispatching lectures) or co-organization from other organizations to get some financial support for their activities in ASEAN and their further activities.

Budget of TGO

	2015	2016	2017
Approved budget	10 million baht	11.7 million baht	12 million baht

<Evaluation Result>

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

5 Summary of the Evaluation

The Project Purpose was mostly achieved at project completion, as through training course, capacity of human resources on GHG mitigation was enhanced and TGO has continued to provide training courses after the project was completed. The Overall Goal was achieved as TGO has promoted various GHG emissions reduction projects. As to the sustainability, partial problems have been observed in

terms of the institutional, technical and financial aspects; however, no problem has been observed in the policy aspect. As to efficiency, the project period slightly exceeded the plan; however, the project cost was within the plan.

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

III. Recommendations & Lessons Learned

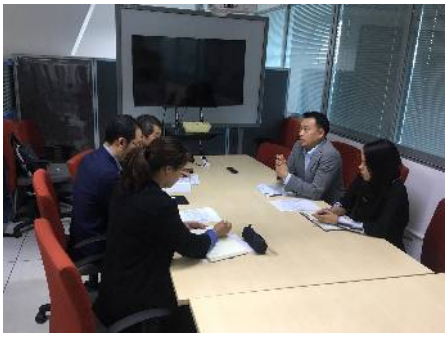
Recommendations for Implementing Agency:

- After the completion of the project, TGO set up CITC and continued providing training courses. CITC seems to be on a constant track towards the direction expected in terms of awareness raising of climate change and disseminating the knowledge to a wide range of stakeholders. In recent years, more than 12 training courses were provided per year, and as a result of many coursers that are currently being conducted, CITC staff members are facing the increase of workload burden. It is recommended to put more emphasis on outcome from the training courses, not the number of the training courses, and improving the impact of the training.
- It is noticed that the knowledge or skills which were taught by TGO training have been applied and contributed to mitigation actions and climate change policies. However, it is recommended to conduct a follow up survey and quantitatively evaluate the extent to which the result of the training has contributed.
- TGO staff has sufficient capacity to plan, implement and evaluate the training courses. They can join the training courses for their own capacity building. However, to maintain their motivation, it is recommended to have particular mechanism for TGO staff to maintain the necessary technical level for providing the training/guidance on controlling GHG emission.

  Also, TGO should clearly define the objective of their activities, so that they can know the direction they have to proceed in. They should determine whether to conduct the training courses by themselves or to be just a training course organizer (by inviting lecturers from other organizations.)

Lessons Learned for JICA:

- TGO has been very active in providing training courses and has promoted various GHG emissions reduction projects after the project was completed. Although TGO itself has a sufficient capacity in developing and managing training courses, and allocating budget, still TGO is partly dependent on JICA in terms of finance and contents for the ASEAN training program and further development of advanced programs. They are also looking for in-kind support or co-organization from other organizations to get some financial support for their activities in ASEAN and their further activities. Sustainability of the project shall depend on the national policy and budget allocation. At the completion of the project, it is important to urge the implementing agencies to secure their budget for further activities.



TGO staff answered and gave information.

conducted by Myanmar Office: April 2018

Country Name	**Project for Construction of Primary School-cum-Cyclone Shelters in the area Affected by Cyclone "Nargis"**
Republic of the Union of Myanmar	

I. Project Outline

Background	Myanmar was hit by the Cyclone Nargis on May 2008 and suffered from huge damages, totaling an estimated 4 billion US dollars (USD) with some 140,000 people killed or missing. Many buildings, including some 4,000 primary school buildings, collapsed in the disaster area stretching from the Ayeyarwady (Irawadi) Delta to Yangon. JICA conducted a project formulation survey in August 2008 and a preparatory study in November 2008, which found great needs for construction of school buildings with a function of evacuation at the cyclone-hit areas.			
Objectives of the Project	To improve the educational environment and ensure evacuation spots in the target schools by constructing 20 primary school buildings with a function as shelters at the time of cyclones in Townships of Labutta and Bogale of Ayeyarwady Region, thereby contributing to the increase in enrollment in primary schools and mitigation of the cyclone disaster risks in the nearby area.			
Contents of the Project	1. Project Site: Townships of Labutta and Bogale of Ayeyarwady Region 2. Japanese side: Construction of 13 school buildings with hygiene facility and procurement of classroom furniture. 3. Myanmar Side: Securing and leveling of construction sites and demolition work, installation of fences and gates, construction of access roads, etc.			
Project Period	E/N Date	December 4, 2009	Completion Date	June 18, 2013
	G/A Date	December 23, 2009		
Project Cost	E/N Grant Limit: 581 million yen		Actual Grant Amount: 581 million yen	
Executing Agency	Ministry of Education (MOE) (changed from the Ministry of Social Welfare, Relief and Resettlement in 2010)			
Contracted Agencies	Main Contractors: Trust & Gain Co., Ltd., Triangle Links Engineering Co., Ltd., System Engineering Co. Ltd., Marvels Wealth Construction Co., Ltd., Civil Tech Co., Ltd., Ngwe Eain Nin Co., Ltd. Main Consultant: Yachiyo Engineering Co., Ltd. Agent: Japan International Cooperation System			

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

- At the ex-ante evaluation, the target year was set as 2014 which was 3 years after the project completion. However, the project was completed in 2013, and therefore the target year was reset as 2016 at the ex-post evaluation.
- Qualitative indicators to assess effectiveness of the project were set as 1) improved educational environment, 2) reenrollment of the disaster-affected children, 3) improved learning, 4) mitigation of disaster risks and 5) living in peace. Among them, the Indicator 1) was used as a qualitative indicator. The Indicator 2) was verified as an impact indicator. The Indicator 3) was not used as it is an impact and there are many other factors affecting pupils' learning than the school infrastructure. Indicators 4) and 5) were used as indicators for the impact by asking in a more concrete way.
- While it took much time before the start of the project, due to the internal procedure at the Myanmar side such as the change of the implementing agency in August 2010 and personnel change after the general election in December 2010, all of the 20 school buildings which had been originally targeted at the time of the ex-ante evaluation had been constructed by the Government of Myanmar or other donors. As a result of the project detailed design study conducted by JICA, 14 schools which had not been equipped with sufficient functions of disaster-prevention facility were decided to be reconstructed by the project, and 13 schools were actually constructed. At the ex-post evaluation, achievement at the constructed 13 schools was verified for effectiveness/impact, and the excess of the project period and reduction of the outputs were considered for judgement of efficiency.

1 Relevance

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

After the Cyclone Nargis, the Government of Myanmar developed the "Post-Nargis Recovery and Preparedness Plan" (PONREPP) in 2008 to work for recovery from severe damages. In PONREPP, education was one of the priority areas and reconstruction of the schools damaged by the cyclone was included in the plan. In the "Myanmar Action Plan for Disaster Risk Reduction" (2009-2015) which was updated in October 2017, school safety and construction/maintenance of the multi-purpose community safe facilities are mentioned as prioritized programs. Thus, the project has been consistent with the development policy of Myanmar until the ex-post evaluation.

<Consistency with the Development Needs of Myanmar at the Time of Ex-Ante and Ex-Post Evaluation >

Myanmar was hit by Nargis on May 2008 and suffered from huge damages, totaling an estimated 4 billion USD with some 140,000-people killed or missing. Many buildings, including some 4,000 primary school buildings, collapsed in the disaster area stretching from the Ayeyarwady Delta to Yangon. It is located near the Bay of Bengal where many cyclones occur and therefore it easily suffers from them. Thus, there have been needs for disaster risk reduction since the ex-ante evaluation.

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

As the Japan's ODA policy for Myanmar, new economic cooperation projects had been suspended since 2003 considering the political situation in Myanmar, but there were exceptions of projects with urgency and humanitarian purposes and aiming at capacity building for democratization and economic structural reform to be implemented after careful consideration of project components. This project was consistent with humanitarian purpose of exceptional project to be implemented by Japan' ODA[1].

<Evaluation Result>

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

[1] Ministry of Foreign Affairs (2009), "ODA Databook 2008."

2 Effectiveness/Impact

<Effectiveness>

The project aimed at improving the educational environment and ensuring evacuation spots as shelters at the time of cyclones at the 14 target schools. It is judged that the project objective was mostly achieved from the following points. At the 13 schools constructed ultimately by the project, the number of the enrollment increased mostly to the planned figure in 2016, and the physical capacity for accommodating people at the time of cyclones was enlarged as planned.

As qualitative effects, firstly, the educational environment has been improved. All of the interviewed 23 teachers of the seven target schools answered that the constructed buildings had a "very good" or "good" teaching environment in terms of the space, lightness and ventilation, and eight pupils of the four schools answered that they enjoy a "very good" or "good" learning environment from the same viewpoints. Secondly, accessibility to the school as a shelter has been improved for community residents in the target sites. In all the target sites, according to the interviewed community leaders, consideration is given to the socially vulnerable groups. For example, persons with disabilities are given priority for evacuation to the school. All the residents have been informed on the evacuation use of the constructed schools by the community leaders working closely with the school committee.

<Impact>

Firstly, pupils have been motivated for schooling at school. Both the 23 interviewed teachers and 8 pupils of Grade 4-5from the four visited schools answered that they are "very motivated" or "motivated for studying at the improved environment (space, lightness and ventilation). Secondly, all of the 90 interviewed residents of the seven visited sites answered that they feel "very secure" or "secure" against disasters due to the shelters. In particular, the school in Shwe Goneis the only nearby evacuation place for the residents, where, before the project, it used to take them 5-6 hours by boat to reach the nearest safe place (Township of Labutta). Thirdly, it can be said that disaster risks have been mitigated. In fact, the people in the affected areas hit by three strong cyclones in 2016 and 2017 were safely evacuated to the school shelters constructed by the project and no one was killed. The numbers of evacuators were as follows: 4,155 persons for the Cyclone Roanu in May 2016, 1,528 for the Cyclone Kyant in October 2016 and 597 for the Cyclone Mora in May 2017), respectively.

<Evaluation Result>

In light of the above, although the less number of schools were constructed than planned, pupils' enrollment has increased mostly as planned and the capacity as a shelter for disaster prevention has been expanded as planned at the constructed schools. Furthermore, the educational environment has been improved and also the accessibility to the school as a shelter has been improved. Therefore, the effectiveness/impact of the project is high.

Quantitative Effects

Indicator	Baseline 2009 Actual	Target 2016 3 year after completion	Actual 2013 Completion year	Actual 2014 1 year after completion	Actual 2015 2 year after completion	Actual 2016 3 year after completion	Actual 2017 4 year after completion
1. Number of the pupils who were enrolled at the schools constructed by the project	0	2,932 (1,888)[1)]	1,633[2)]	1,712[2)]	1,718[2)]	1,754[2)]	2,158[2)]
2. Number of the persons who can be received by the schools constructed by the project at the time of cyclones	0	Approx. 25,000 (16,350)[1)]	16,350[3)]	16,350[3)]	16,350[3)]	16,350[3)]	16,350[3)]

Source: MOE.

Note: [1)] Construction of 20 schools was planned at the time of the ex-ante evaluation, but actually 13 schools were constructed after JICA's study and coordination with MOE. The target figures set at the ex-ante evaluation were those for 20 schools. At the ex-post evaluation, also target figures for the 13 constructed schools which are in parentheses were referred to. [2)] The figures are the numbers of the pupils who were enrolled at the 13 constructed schools. 3) 16,350 = Area for evacuation (4087.9 m^2) divided by the area necessary for one person's evacuation at the 13 constructed schools. (0.25 m^2).

3 Efficiency

Outputs were produced less than planned. In other words, as mentioned earlier, construction of 14 school buildings was planned at the time of the detailed design, but actually 13 school buildings were constructed by the project. Though the project cost was as planned (ratio against the plan: 100%), since there was deduction of one school from those planned, cost-efficiency can be judged fair. Meanwhile, with regard to the project period, as mentioned at the beginning, it took much time from the Grant Agreement (G/A) to the construct of the consultants, but after the contract of the consultants, construction work was completed more early than planned. Still, the project period in total exceeded the plan (ratio against the plan: 156%).

Therefore, the efficiency of the project as a whole is low.

4 Sustainability

<Institutional Aspect>

The Department of Basic Education (DBE) of MOE is responsible for operation and maintenance (O&M) of the schools constructed by the project. MOE has district offices in Labutta and Bogale which receive claims on the breakdown from the schools, but they cannot deal with technical matters because no engineer is assigned by DBE. Daily O&M is undertaken by each schools. At each of the 13 target schools, the Parent-Teacher Association (PTA) has been established, which is in charge of maintenance of the duct space, roof and septic tank. It has 9-13 members varying among PTAs, which is sufficient, according to interviewed PTA members. PTA forms the School Development Committee[2] (SDC) together with the principals, teachers, and community leaders for school management including supervision of O&M of the school buildings.

<Technical Aspect>

MOE has no sufficient knowledge and skills for inspection and supervision of the school buildings at either regional or district level, as no engineer has been assigned due to the personnel shortage. At the school level, minor breakdowns are solved by some skillful community members, including damaged window locks, door handles and water tank. When damages are beyond their capacity, they are repaired in

[2] Depending on each school, the name varies (School Development Committee, Community Development Group, School Development Council, and so on.)

alternative or downgraded ways, such as change of the door material from the wood to aluminum. Materials for repair can be purchased without difficulty by most schools, except two schools in the remote area of Bogale Township. DBE answered that they contact the private company when the breakdowns are severe, but so far they have been managed by each school.

<Financial Aspect>

The financial data of DBE was not available at the ex-post evaluation, but no financial support has been provided to the schools for O&M purposes by DBE. SDC of each school manages the School Development Fund from which expenses for the repair are borne as the miscellaneous item. The fund (around 50,000 kyat for six months) is given by MOE. Besides the fund, some schools ask community residents for financial contribution or gain profits by selling vegetables grown at the school land. However, the budget is not sufficient for repair which technically cannot be dealt with the community residents, according to SDC members of all of the seven interviewed schools.

<Current Status of Operation and Maintenance>

At all of the 13 target schools, all classrooms have been utilized, but there are some problems in most schools. For example, observation conducted at the ex-post evaluation found wall crack in 11 schools, water leak from the transom windows in 10 schools, damaged door handle in nine schools, damaged window lock in six schools, door distortion in five schools, and so on. O&M for checking the doors, windows, classrooms and toilets is conducted daily by teachers and pupils. Maintenance of the duct space and roof is conducted every month, and the septic tank, every year, by SDC under the responsibility of the principal.

<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, but not at the school level. Therefore, the sustainability of the project effect is fair.

5 Summary of the Evaluation

The project aimed at improving the educational environment and ensuring evacuation spots as shelters at the 20 target schools, but among these schools, buildings were constructed at 13 schools by the project. At the 13 constructed schools, the number of the enrollment increased mostly as planned, and the physical capacity for accommodating people at the time of cyclones was enlarged as planned. On the other hand, outputs (construction of schools) were produced less than planned and the project period much exceeded the plan. Regarding the sustainability, DBE has not assigned engineers and specific budgets for inspection and O&M of the constructed schools, while daily O&M and minor repair has been conducted by each school in collaboration with the community.

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

III. Recommendations & Lessons Learned

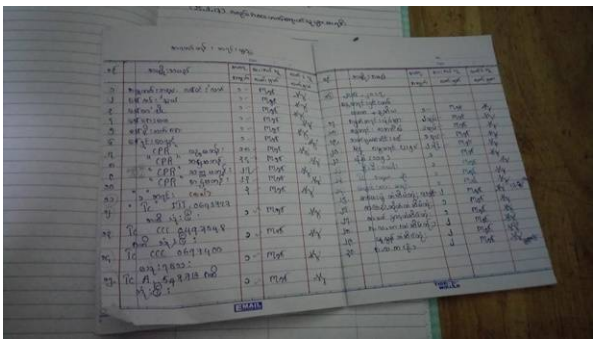
Recommendations to Implementing Agency:

- It is recommended to DBE to assign engineers at the regional level so that schools could receive technical advices when the facility breakdown is beyond their technical capacity for repair.

Lessons Learned for JICA:

- Due to the internal procedure at the Myanmar side, it took long time to initiate the project after G/A was exchanged. As a result, all of the 20 target school buildings had been constructed by the Government of Myanmar or other donors before detailed design survey. In the projects of facility construction as disaster recovery assistance, JICA should have asked the Government of Myanmar, even before G/A, to carefully coordinate various donors' support in order to avoid the duplication, as there might have been intensive assistance for disaster recovery. It was necessary to make sure to let the Government of Myanmar understand the scheme and process of the grant aid before the pledge was made. Furthermore, even after G/A, JICA should have collected information related to other donors' support in school construction in the chaotic period right after the disaster, and shared its support with other donors.

Classroom at Kyat Thang Chaung School



Facility check note at Chan Thar Kone School

conducted by Ghana Office: March 2019

Country Name	The Project for Improvement of Access to Basic Education in Deprived Areas
Republic of Ghana	

I. Project Outline

Background	The gross enrolment rate in Ghana had greatly improved to 95.2% for primary education and 78.8% for junior high school education during the fiscal year of 2007/2008. However, the regional differences in education and concerns for improving school completion rate had become obvious. Under the situation, Ghana conducted a ranking exercise for 138 districts in the country, assessing enrolment rate, number of teachers and educational infrastructure. As a result, 53 lower ranked districts were defined as Deprived Districts thereby aiming at improving the school retention rate, the school dropout rate and the enrolment rate in these Deprived Districts. One of the reasons accounting for the low ranking of Deprived Districts was the lack of secured and appropriate educational environment for learning.			
Objectives of the Project	To improve the quality of primary education environment of target schools in Northern Region and Central Region by constructing school facilities and procuring furniture			
Contents of the Project	1. Project Site: 33 schools* in **Northern Region**: Sawla Tuna Kalba, Bunkpurugu Yunyoo, Karaga, Central Gonja; and **Central Region**: Assin North, Assin South. *Although target schools were originally 37 schools, after the detailed design study, the total number of schools were reduced to 33 due to budget constraints originating from delays in constructions and price escalations. Out of the 33 schools, two primary schools (Dani-Uuri Primary and Konfali Primary) were not completed as there were substantial delays in construction by a contracting company. In the end, these remaining works were to be assumed by the Ministry of Education, however they were not completed at the time of ex-post evaluation. 2. Japanese side (1) Construction of school buildings (132 Unit classrooms in 33 schools) and toilets (112 booths), teachers' accommodation units (2) procurement of furniture (student desks/chairs) 3. Ghana side: Conducting demolition and removal of existing obstructions on Project school sites as well as land clearing works.			
Project Period	E/N Date	August 13, 2009	Completion Date	June 27, 2014 (Completion of the construction)
	G/A Date	August 13, 2009		
Project Cost	E/N Grant Limit / G/A Grant Limit: : 605 million yen			Actual Grant Amount: 605 million yen
Executing Agency	Ghana Education Service (GES)			
Contracted Agencies	Main Contractor(s): None Main Consultant(s): Construction Planning Co., Ltd. Japan International Cooperation System (JICS)* *As a result of significant delays in construction work, the original consultant was not able to continue the contract. Therefore, the contract was terminated and JICS assumed consultancy work after October 2012. Agent: JICS			

II. Result of the Evaluation

1 Relevance

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

The project has been consistent with the development policy of Ghana. At the time of ex-ante evaluation, Ghana had established "the Ghana Poverty Reduction Strategy (I & II)" and took human resource development up as the top priority theme. In response to the advocate of "Education for All" (EFA), the Government of Ghana had established "the Free Compulsory Universal Basic Education (fCUBE) Program" and "the Education Strategic Plan" (ESP) and realized completely free basic education by introducing the Capitation Grant since 2005 in order to realize fair access to education. At the time of ex-post evaluation, under "the Coordinated Programme of Economic and Social Development Policies (2017- 2024)", the focus of education is to improve inclusive and equitable access to and participation in education at all levels from primary schools to high schools. The ESP (2010-2020) also emphasizes improving equitable access to and participation in quality education at all levels.

<Consistency with the Development Needs of Ghana at the Time of Ex-Ante and Ex-Post Evaluation >

The project has been consistent with the development needs of Ghana for improving access to basic education as mentioned above. At the time of ex-post evaluation, although the education indicators in the target districts have improved, enrolment rate at some districts are still low and needs to be improved.

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

The project was also consistent with the Japan's ODA policy at the time of ex-ante evaluation. Improvement of basic social services including basic education in deprived areas was one of the strategic objectives for the prioritized area of "Accelerating rural development" under "the Country Assistance Program for Ghana (2006)".

<Evaluation Result>

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

2 Effectiveness/Impact

<Effectiveness>

The project mostly achieved its objective, "To improve the quality of primary education environment of target schools in Northern Region and Central Region", as targets of indicators set to measure the achievement of the objective such as "The number of classrooms in good environment" (indicator 1) and "the number of students per classroom" (indicator 2) were almost met, though the project did not achieve the targets as the construction of two schools were uncompleted, and four schools were excluded from the scope.

The number of classrooms in good environment increased from 18 to 144 after project completion. Facilities constructed under the project were confirmed by the respective District Education Directors and Circuit Supervisors to be in good condition. The six schools visited during the field visit through physical examination and observations were noted to be in good condition and were being properly used for teaching and learning activities. There was no case recorded or observed where the classrooms were not used for their intended purposes. From the field survey, some of the schools were making attempts through the work of the Parent Teacher Associations (PTA), School Management Committees (SMC) and the District Assemblies to provide additional classroom blocks which were at various levels of completion.

The number of students per classroom improved mainly because of the increased number of classrooms provided by this project and the Government of Ghana. The Government embarked on a program for removing "schools under trees" in the country by making available funding to construct school blocks and providing furniture for schools.

Interviews with teachers and pupils revealed that they were happy and glad for the structures provided. The pupils particularly made reference to the plywood provided for the construction of the ceiling which cooled the rooms during hot seasons. All the toilets surveyed during the field visits were being used properly and looked clean. Teachers and pupils alike confirmed that their hygiene situation had improved since there was no open defecation in and around the school. Some of the school furniture were still in good condition with a substantial number of them reported to be broken but were fixed and used.

<Impact>

Some head teachers, teachers and pupils attested to the fact that their academic results had improved because of the conducive environment of the classroom blocks provided though this assertion was without prove. However, all head teachers visited during the survey attested to the fact that the improvement in school environment had influenced positively the morale and improved attitude, motivation and behavior of pupils.

No negative impact on natural environment was observed and no land acquisition and resettlement occurred under this project.

<Evaluation Result>

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

Quantitative Effects

		Baseline (2009) Baseline Year	Target (2014) 3 years after Completion	Actual (2016) Year of Completion	Actual (2018) 2 years after Completion
Indicator 1: The number of classrooms in good environment*		18	162	144	144
Indicator 2: The number of students per classroom	Primary school	67.7	53.5	44.4	42.5
	Junior high school	63.1	39.5	35.2	32.6

Source：District Education Office

*Safe and clean classrooms

3 Efficiency

Although the total project cost was as planned (the ratio against the plan: 100%), as the number of schools was reduced from 37 to 33 and the construction of two schools was not completed, the project cost per Lot is deemed to have exceeded the plan. The project period significantly exceeded the plan (the ratio against the plan: 244%), as there were delays in construction due to re-bidding etc. based on nonperformance by some local contractors.

Therefore, the efficiency of the project is low.

4 Sustainability

<Institutional Aspect>

Operation and maintenance (O&M) of the facilities provided under the project have been carried out by SMC of each school under the guidance of the District Education Office. The school system has had the required organizational structure to sustain the effect of the project. The organizational structure at the district level has been made up of three staff (the District Director of Education, the Planning Officer and the Accountant). At the School level, the structure has been made of the head teacher, and two scheduled teachers. At the SMC level, there have been about six members who have been responsible of O&M activities of the school. The number has been adequately sufficient to undertake

repairs and maintenance.

<Technical Aspect>

In each school, staff and SMC members jointly undertake planning for repairs and maintenance activities. They rely mainly on artisans in the community to undertake these repair works. They have adequate know-how to undertake maintenance of these activities and therefore, no problem has been observed in terms of planning of repairs and maintenance activities.

<Financial Aspect>

Though the schools have received a certain amount of capitation grant, these were either inadequate or irregular in terms of disbursement from the national level.

Revenue and maintenance expenditure of the schools visited

(Unit: GHC)

School	2015		2016		2017	
	Revenue: Capital Grant (Capitation Grant)	Expenditure for maintenance	Revenue: Capital Grant (Capitation Grant)	Expenditure for maintenance	Revenue: Capital Grant (Capitation Grant)	Expenditure for maintenance
Krofofrodu M.A Primary	1,150	430	1,200	358	1,320	500
Adiambra Catholic Primary	1,380	360	1,439	454	1,458	543
Salimboukou B Primary	1,500	450	1,670	559	1,678	580
Konfali Primary	678	245	789	321	876	243
Kpabuso JHS	900	230	980	180	975	200
Karaga Primary	1,750	600	1,890	345	1,754	678

<Current Status of Operation and Maintenance>

The facilities installed under the project were confirmed by the District Education Offices to be in good condition. No major cracks or defects were reported by officials on all constructed schools under the project. The facilities of the schools visited during the survey were also observed to be in good condition except for minor defects such broken locks, weak hinges and loosen nails.

<Evaluation Result>

Therefore, the sustainability of the project effect is fair.

5 Summary of the Evaluation

The project achieved its objective i.e. “To improve the quality of primary education environment of target schools in Northern Region and Central Region”, as the number of classrooms in good environment increased as planned, and the number of students per classroom significantly improved. Teachers and students were satisfied with the structures provided through the project and hence an improvement in the learning environment. As to the sustainability, although some limitations have been observed in the financial aspect, there has been no problem in terms of the institutional and technical aspects. As for efficiency, project cost of each Lot is deemed to have exceeded the plan and the project period significantly 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:

- Two schools (Dani-Uuri Primary and Konfali Primary) earmarked under the project in the Sawla-Tuna-Kalba district were still uncompleted as at the time of project completion. As a result, the contracts with the contractors were terminated and the school blocks handed over to the Ministry of Education for completion. However, after initial efforts on the part of JICS and JICA to get MoE/GES started on completing these schools this completion exercise has been discontinued and no efforts are currently being made to complete them. There is the need for the Ministry of Education and the Ghana Education Service to engage the local authority (District Assembly) to make budgetary allocation for the completion of the school in the 2020 fiscal year. There is also the need for the communities to demand that the schools be completed to improve the teaching and learning environment in the district.

Lessons Learned for JICA

- The original challenge leading to the delay in construction of some schools had to do with price escalation due to high inflation and exchange rate effects at the time of construction. There is therefore the need for proper calculation of contract sums during the detailed design stage making adequate provision for price escalation due to inflation and exchange rate disparities.

Teachers Bungalow Constructed at Krofofordo M.A. Primary Assin North District

3-Unit Class Room block constructed at Samlimboukou B Primary School in the Bunkpurugu/Yunyoo District.

Internal Ex-Post Evaluation for Grant Aid Project

conducted by Djibouti Office: January2019

Country Name	**Le Projet De Promotion De L'Énergie Propre En Utilisant Le Système Solaire Photovoltaïque**
Republic of Djibouti	

I. Project Outline

Background	Djibouti depended 100% of energy on import in 2009. Djibouti Government's research into the use of renewable energy began as early as in the 1980s. For solar energy use, it formulated "National Strategy and Action Plans (2008-2012)" with assistance from UNDP, in which it clearly stated the intention to promote the use of solar energy as one of the pillars in the energy policy. The statement also mentioned the necessity of both soft and hard measures, including formulation of development projects, economic measures to nurture related markets, setting up a new agency in charge and institutional provisions. However, to put these measures in place, it would have to rely on technical and financial assistance from various external donors.			
Objectives of the Project	To increase power generation capacity, diversify power sources, and raise awareness of people of Djibouti for utilization 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 countries against climate change.			
Contents of the Project	1. Project Site: Centre d'Etudes et de Recherche de Djibouti (CERD) in the suburb of Djibouti ville (original procurement) and Zone de Gabode, Djibouti ville (additional procurement) 2. Japanese side: (1) (Original procurement) 300 kW PV generation system (PV modules, watt hour meter, junction box, circuit breaker, collecting box, transformer, cables, data management and monitoring system, display board and others) and PV system spare parts and maintenance tools; (2) (Additional procurement utilizing the remaining fund) 28 sets of Solar Power Street Lighting System for the 580m road section; (3) Technical assistance (soft component): Training on basic knowledge, technical characteristics, preventive inspection, operation and maintenance including the emergency response of grid connected PV system 3. Djibouti side: Clearing and levelling of the site, sending trainees of Ministries and Electricité De Djibouti (EdD) to the Training Programs to be held in CERD, etc.			
Project Period	E/N Date	December 2, 2009	Completion Date	(Original procurement) March 3, 2012 (Completion of Soft Component) (Additional procurement) November 29, 2014 (Handover)
	G/A Date	December 3, 2009		
Project Cost	E/N Grant Limit / G/A Grant Limit: : 610 million yen, Actual Grant Amount: 609 million yen			
Executing Agency	Ministère de l'Energie et des Ressources Naturelles (MERN) (Presently known as Ministère de l'Energie chargé des Ressources Naturelles)			
Contracted Agencies	Main Contractor(s): MARUBENI Corporation Main Consultant(s): NEWJEC Inc. / JAPAN TECHNO CO., LTD. (JV) Agent: Japan International Cooperation System			

II. Result of the Evaluation

1 Relevance

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

At the time of ex-ante evaluation, the project was consistent with "National Strategy and Action Plans (2008-2012)," which upheld the use of solar energy as mentioned in "Background" above. At the time of ex-post evaluation, the project is still consistent with development policy because Djibouti aims to become 100% renewable in 2035 under "Vision 2035" and Djibouti developed some PV projects after this project implementation. Also, the country has a law called "loi PIE (Independent Power Producer Law)" from 2015 for the independent power producer.

<Consistency with the Development Needs of Djibouti at the Time of Ex-Ante and Ex-Post Evaluation >

At the time of ex-ante evaluation, there was a need for solar energy development as mentioned in "Background" above. At the time of ex-post evaluation, Djibouti still depends on import energy from the Ethiopian grid although the degree of dependence is lesser than at the time of ex-ante evaluation: according to MERN, about 70% of energy demands are met from Ethiopian grid (generated by hydropower), and the remaining 30% of energy is generated in Djibouti using fossil energy.

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

Energy was one of the three important areas of Japan's assistance for Djibouti confirmed by the economic cooperation mission dispatched from the government of Japan in April 2009.[1] 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 to effectively promote global efforts against climate change. 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.

[1] ODA Country Data Book, 2010.

2 Effectiveness/Impact

<Effectiveness>

The objective of the project has been achieved. Regarding the quantitative effects, the power generation (Indicator 1) and CO2 emission (Indicator 2) targets have been achieved, except the year 2017 as the PV power system has been functioning with the expected capacity. Lower power generation and reduction of CO2 emission for 2017 is due to the breakage of the four air conditioners of the control room. This problem caused consequently the stoppage of the PV power system for more than six months because these type air conditioners did not exist in Djibouti (in six months they were replaced with the new ones purchased in a neighboring country and the power plant resumed operation). The part of generated electricity from the PV system that is not consumed by the buildings of CERD is directly injected into the EdD grid (reverse current occurs) as expected. Sometimes, when the grid faces a shortage, the PV power system is working on the stand-alone mode. The frequency of the stand-alone correspond to the frequency of power shortage and is in a decreasing trend from 202 hours in 2012 to 75 hours in 2016 in accordance with the increasing stability of grid power supply.[2] Also, we observed that the solar street lighting system (additional procurement) were properly functioning except a few units damaged (see "Current Status of Operation and Maintenance" below). The solar street lights are near a high school and are turned on at 6 PM as the students are leaving the school at night.

Regarding the qualitative effects, CERD confirmed from a recent study on the performance of Djibouti's solar power generation[3] that the PV technicians of CERD trained by the project properly operate and maintain the PV power system and that EdD is capable of handling of reverse current. Also, public awareness activities about the solar power generation by the PV system are conducted - PV power system receives more than ten visits from users, students and investors every year.

<Impact>

The PV power system has become a research and development tool for the Energy Laboratory (LENR) of CERD. It could be an incentive for the future development of grid-connected solar PV plant. The PV facility is currently being analyzed to provide a first estimate of degradation rate for the climate of Djibouti. In parallel, the results of this experimental study are being used to improve the reliability of PV sizing studies for the future power plant. As a contribution to demonstration of Japan's initiatives for promoting collaborative efforts by both developed and developing countries against climate change, the following case was found. The French Photovoltaic Scientific Institute and LENR use the PV Plant as their main referral research tool for their joint research and the results of this research are presented to international conferences, where the JICA project PV Plant is mentioned. There was no negative impact on the natural environment.

<Evaluation Result>

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

Quantitative Effects

Indicators	Baseline 2007 Baseline Year	Target 2015 3 Years after Completion	Actual 2013 1 Year after Completion	Actual 2014 2 Years after Completion	Actual 2015 3 Years after Completion	Actual 2016 4 Years after Completion	Actual 2017 5 Years after Completion
Indicator1: Power generation volume at transmission end (MWh/year)	0	460	502	519	492	478	243
Indicator 2: Estimated reduction of CO2 emission (ton/year)	0	330	359	372	352	342	174

Source: Ex-ante Evaluation Report; CERD

Note: Estimated CO2 emission was calculated as follows. Djibouti was 100% dependent on the imported fossil fuel for the primary energy of electricity at the time of ex-ante evaluation. Therefore, it was a diesel generator that should be considered as the alternative to this project. Unit CO2 emission of a diesel generator was calculated as 0.716kgCO2/kWh using "Guideline for Calculation of Greenhouse Gas Emission (March/2007)" published by the Ministry of Environment, Japan. Multiplying this unit to the annual generated energy of the PV system, 460MWh of the reduction of CO2 emission was obtained.

3 Efficiency

While the project cost was as planned, the project period significantly exceeded the plan (ratio against the plan: 100% and 186%, respectively). Out of the actual project period, the period for the original procurement was 127% of the plan for unknown reasons, and the period for the additional procurement was more than 200% of the plan (The plan was made during the project implementation) due to re-design and re-bidding after the first bidding, where the bidding price was higher than the available balance. Therefore, the efficiency of the project is fair.

4 Sustainability

<Institutional Aspect>

The organizational structure for operation and maintenance (O&M) of the project has been established as expected: LENR of CERD is responsible for O&M of the PV power system constructed by the project. LENR consists of one Supervisor, three Electrical technicians, and Four guards/PV array cleaners. The number of staff is sufficient according to CERD based on its experience. Regarding the solar street lighting system, it is part of public street lights under management and maintenance of the City of Djibouti Mayor's office (MERN was in charge of O&M of the street lights after project completion, but in 2015 a municipal legislation was passed for O&M of projects from donor countries whose facilities are located in public streets to be transferred from the executing agency of the project to the city). No information available on the number of staff allocated for O&M of the street lights.

[2] Daha Hassan Daher (head of PV Sciences at CERD as well as the PV power plant), thèse de doctorat, "Modélisation et analyse expérimentale d'une centrale solaire en milieu désertique maritime," INSA Lyon, Nov 2017.

[3] Ibid.

<Technical Aspect>

As mentioned in "Effectiveness" above, the technical level of CERD for O&M of the PV power system is sufficient. Four of the six staff trained under this project are working regularly for maintenance and troubleshooting of the PV system. Each technician recruited is trained in the maintenance and operation of the solar PV power system using the manuals provided under this project. In case of replacement of the condensers in 2019 (see below), for which technical know-how of installation is lacking, the installation can be done by the brand maker of the spare part. No information was available on the technical level of the O&M staff for the solar street lighting system.

<Financial Aspect>

The budget is for O&M of the PV power system is sourced from CERD, which is financially capable of the O&M. However, since there is no specific recurrent funding or a budget for the PV power system, the LENR makes an ad-hoc budget request to CERD when purchase of spare parts/repair is needed. No information was available on the budget for O&M of the solar street lighting system.

<Current Status of Operation and Maintenance>

At the time of ex-post evaluation, the components of the PV power system are in good condition except for a meteorological observation device.[4] Several PV panels were broken, but they have been replaced with spare panels. The power conditioner cubicle will need replacement of the condensers and some revision at the end of 2019, as its lifetime is eight years (The condensers are still functioning). CERD technicians conduct regular inspections consisting of Routine inspection (visual inspection of PV arrays, junction box, and the control room) every week and Periodic inspection (electrical inspection) every month. The spare parts, consumables and maintenance tools of the PV system are also properly maintained.

O&M budget for the PV system installed by the project (unit: DJF)

O&M Cost Items	2015	2016	2017
Personnel (salary*)	2,064,000	2,064,000	2,064,000
Maintenance	0	0	1,700,000**
Repair	0	0	0
Others	356,000***	0	0

Source: CERD

Notes: * Salary for guards & cleaners. ** Replacement of the four defective air conditioners with new ones for the control room of the PV system. *** New instrumentation for wind and module temperature measurement (anemometer, wind vane, thermocouples, data acquisition system)

The street lighting system is mostly in good condition except for one street light unit which was damaged from flying debris (crows dropped heavy objects such as animal bones) and one storage box which was damaged by road traffic and then removed. Inspection and maintenance are carried by Djibouti Municipality Mayor's office.

<Evaluation Result>

Therefore, the sustainability of the project effect is fair.

5 Summary of the Evaluation

The project achieved the objective of increasing power generation capacity with renewable energy with the grid-interconnected PV system (originally planned) and the solar street lighting system (additionally procured). Regarding the sustainability, information on O&M of the street lighting system is not available, while no problem is found in the institutional and technical aspects of the O&M of the PV system. As for the efficiency, the project period significantly exceeded the plan, but 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 the Executing Agency:

The Mayor of Djibouti/MERN Director of Energy Dept. are recommended to re-install the storage box and battery that were damaged as soon as possible because the street light is operable only with the installation of new storage box and battery.

Solar panels with the PV plant in the background (white cubic building) located at CERD

Solar street lights located on this segment of the belt road that JICA built in 1997

[4] The radiation sensor (pyranometer) sometimes has humidity intrusion and needs to be repaired, but no replacement equipment was planned in the project ex-ante. Nevertheless, it affects scientific research data but does not affect power generation.

Internal Ex-Post Evaluation for Grant Aid Project

conducted by Laos Office: January 2019

Country Name	The Programme for Forest Information Management
Lao People's Democratic Republic	

I. Project Outline

Background	Laos had abundant forest with ecological diversity and about 70% of its land was covered by forests in 1940s. However, due to over exploitation by swidden cultivation and illegal logging, its forest ratio[1] decreased from 49% in 1982 to 42% in 2002. In order to improve the situation, the government of Laos formulated the "Forestry Strategy to the Year 2020 of the Lao PRD" (FS 2020) in 2005 and targeted to recover the forest ratio to 70% by 2020. In addition, recognizing a countermeasure against global warming of the "Reducing Emissions from Deforestation and Forest Degradation in Developing Countries" (REDD[2]) as a highly effective means of forest conservation, the government of Laos was preparing for applying REDD by actively participating in conferences and workshops related.			
Objectives of the Project	To enhance the capacity to establish basic forest data at the national level by constructing the Forest Resource Information Center (FRIC) in the capital city of Vientiane and procuring equipment as well as establishing system for collection and analysis of forest resource information, thereby contributing to promotion of forest conservation in Laos.			
Contents of the Project	1. Project Site: Vientiane 2. Japanese side: 1) provision of grant necessary for construction of FRIC and procurement of equipment (PC, satellite imageries, geographical information system (GIS) software, imagery analysis software, etc.), 2) technical assistance/soft component of grant aid (on-the-job training (OJT) on satellite imagery analysis and field survey in sample plots, training for construction of a forest resource database, operation and maintenance (O&M) of facilities and equipment, and preparation for establishing a periodical forest resource information survey system) 3. Lao side: site for FRIC, logistical arrangements and clearances			
Project Period	E/N Date	March 4, 2010	Completion Date	December 4, 2014
	G/A Date	March 9, 2010		
Project Cost	E/N Grant Limit / G/A Grant Limit: 475 million yen, Actual Grant Amount: 475 million yen			
Executing Agency	Department of Forestry (DOF), Ministry of Agriculture and Forestry (MAF)			
Contracted Agencies	Main Contractor: Visouda Construction Main Consultant: Kokusai Kogyo Co., Ltd. Agent: Japan International Cooperation System			

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

- The ex-ante evaluation set the target year on 2016, three years after the project completion which was planned in 2013, for the expected quantitative effects. However, since the project completed in 2014, the target year can be 2017. Therefore, this ex-post evaluation verified the achievement of the project objectives based on the data and information in from 2014 to 2017.

1 Relevance

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

The project has been consistent with the Laos forestry strategy of FS 2020 and the approach of the government to implement REDD for forest preservation through experimental trading of carbon dioxide emission reduction at the time of ex-ante evaluation, and with the newly established acts and strategies including the Conservation Forest Decree (May 2015), the Village Forest Management Planning Guidelines (January 2016) and the National REDD+[3] Strategy (drafting) at the time of ex-post evaluation.

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

The project is consistent with the needs of Laos. While the Forest Inventory and Planning Division of DOF was in charge of forest information management in Laos, its equipment such as PCs for satellite imagery analysis were 1990's with low processing capacities for proper analysis and management of data required by REDD. Global positioning system (GPS) devices for positioning were also outdated and their accuracy was insufficient for forest survey.

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

The project was consistent with the Japan's ODA policy for Laos at the time of ex-ante evaluation. In the "Country Assistance Program for Lao PDR" (September 2006), developing rural regions and sustainable use of forest resources including implementation of policies and institution building in the area of agricultural and forest preservation was raised as one of the six priority areas of Japan's assistance policies for Laos.

<Evaluation Result>

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

[1] Forest ratio is the ratio of forest land to total land area. Forest area is defined as the area covered by forest of canopy density over 20%, tree height over 5m and area over 0.5ha. (Source: Ex-ante Evaluation Sheet, 2010)

[2] REDD is an international framework through which developing countries are rewarded financially for any greenhouse gas emissions reductions achieved associated with a decrease in the conversion of forests to alternate land uses. (Source: The REDD Desk, https://theredddesk.org/what-redd)

[3] REDD became REDD-plus (REDD+) in 2010, to reflect the new components including "policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries." (Source: The REDD Desk, https://theredddesk.org/what-redd)

2 Effectiveness/Impact

<Effectiveness>

The project has achieved its objectives by enhancing the capacity to establish basic forest data at the national level by constructing the building of FRIC, procuring equipment, and establishing system for collection and analysis of forest resource information in Vientiane. Utilizing equipment procured and the system established by the project, along with continuous assistance of JICA through the technical cooperation projects "Capacity Development Project for Establishing National Forest Information System for Sustainable Forest Management and REDD+" (2013-2015) and "Sustainable Forest Management and REDD+ Support Project" (2015-2020), FRIC has updated 1/25,000 scale nationwide basic forestry maps using satellite imageries of RapidEye and ALOS[4] by 2016 (Indicator 1), prepared structured forest inventory data based on the results of the National Forest Inventory Survey (2010-2011) and its guidelines by 2015 (Indicator 2), and completed benchmark maps (forest type maps) for REDD in 2017 (Indicator 3). Quality and accuracy of the maps and inventory data have been maintained high with the assistance of Japanese experts of the projects. The maps and data are fully utilized for monitoring forest situation, estimation of the amount of greenhouse gas emission, and for REDD+ preparations.

<Impact>

Recognizing REDD+ as an opportunity for forest conservation and better livelihood of the people depending on forests, the government of Laos established the National REDD+ Task Force and is actively working on various activities for REDD+ including formulation of the National REDD+ Strategy by 2018, revision of the FS 2020 by 2019, and documentation of Emission Reduction Program for obtaining fund from the Carbon Fund of the Forest Carbon Partnership Facility (FCPF)[5]. According to the Deputy Director of Forest Inventory and Planning Division of DOF, the basic forestry maps, forest inventory data and benchmark maps (forest type maps) produced in the operation environment improved by the project are major and indispensable resources for these activities. Although the forest ratio has not been increased yet because forest recovery depends on various requirements and takes long time, the project has made a significant contribution to the improvement of the foundation for forest recovery in future. No resettlement and land acquisition, and no other negative impact has been caused by the project.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is high.

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: 166%) due to the specification selections, tax exemption procedures and delivery required for the additionally procured equipment. Outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Institutional Aspect>

There was no significant change neither in organizational structures nor in responsibilities and mandates of FRIC since the time of ex-ante evaluation of the project, and the number of staff members has been slightly increased (Table 2). Out of 14 staff members trained by the project, 4 of them have been transferred to other divisions of DOF and 2 of them are currently studying abroad. Therefore, the number of staffs trained by the project staying in FRIC is 8, resulting some increase of work-load on the staff while it is manageable according to the interviews with the staffs of FRIC. Two staff members studying abroad are supposed to return to their jobs in 2019 and expected to make an active contribution to FRIC. There is no prospect of changing the institutional structures of DOF and FRIC in the near future.

Table 2. Number of Staff of FRIC

Year	2014	2015	2016	2017
Total number of staff members of FRIC	14	14	17	17
Number of technical staffs of FRIC	12	12	15	15

Source: DOF

<Technical Aspect>

According to the Deputy Director of FRIC, since the completion of the project in 2014, technical capacity of the staff of FRIC has been improving through the on-the-job and off-the-job training provided by the technical cooperation projects assisted by JICA. Besides, every time before a field survey, FRIC has organized training for local surveyors on forest inventory, GIS, and remote sensing with the support of the projects assisted by the World Bank, Dutsche Gesellschaft fürfur Interntionale Zusammenarbeit[6] (GIZ) and the Food and Agriculture Organization (FAO), thus the technical level of surveyors has also been improving. While technical sustainability has been founded on these improvement of the staffs' technical capability, according to the Deputy Director, the training for new staffs of FRIC, and the translation of the O&M manuals and O&M schedule prepared by the project from English to Lao language are needed. Some of the manuals were translated, but quality of the translation was not satisfactory so that they have not been fully utilized.

<Financial Aspect>

Budget for O&M for FRIC has been kept at around 1.3 billion Kip, while the total amount of annual budget for FRIC has been on a declining trend along with the nationwide economic situation (Table 3). According to the Deputy Director of the Forest Inventory and Planning Division of DOF, the bare minimum of fund has been provided by the Government, and this situation is not supposed to be drastically changed in future. While the budget for O&M has been maintained at a certain level, it has not necessary been sufficient. Including the budget for human resource development such as for training as seen above, the fund for operation of FRIC heavily depends on the support from donors. Securing the national budget and continuation of the assistance from development partners are the concerns for financial

Table 3. Annual Budget for FRIC

Unit: billion Kip

Year	2014	2015	2016	2017
Total amount of budget	2.46	2.26	2.10	1.90
Budget for O&M	1.0	1.3	1.6	1.2

Source: DOF

[4] RapidEye and ALOS are Japanese land observing satellites.

[5] FCPF is a facility to assist countries in their REDD+ efforts by providing them with financial and technical assistance in building their capacity to benefit from possible future systems of positive incentives for REDD+. (Source: FCPF, https://www.forestcarbonpartnership.org/, as of August 2018)

[6] German society for international cooperation

sustainability.

<Current Status of Operation and Maintenance>

Most of the facilities and equipment procured have been well-maintained and in full utilization, only with an adaptive maintenance conducted on an ad-hoc basis because the O&M manuals and schedule prepared by the project have not been fully utilized due to language problem. While it is a small part of the procured equipment, GPS devices and digital cameras were broken[7] but not replaced due to financial constraints. Because of the rapid progress of technology, PCs and software procured have already become obsolete and needed to be upgraded.

<Evaluation Result>

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

5 Summary of the Evaluation

The project has achieved its objectives by enhancing the capacity to establish basic forest data at the national level through the construction of the building, procurement of equipment, and technical training for the staff involved. Based on this capacity enhanced, with the continuous support from technical cooperation projects assisted by JICA, basic forestry maps, structured forest inventory data, and benchmark maps (forest type maps) for REDD have been prepared as planned indicating high performance of objective achievement of the project. As for sustainability, most of the facilities and equipment granted have been well-maintained and fully utilized with an adaptive maintenance conducted when needed. Technical level of staff has been improving with the assistance of development partners' projects. Since the fund for operation heavily depends on the financial support from development partners' projects, securing the national budget and continuation of the assistance from development partners are the concerns. 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 DOF to secure the budget to replace broken equipment and upgrade PCs and software.
- In order to make O&M manuals and O&M schedule functional, it is recommended for the staff of FRIC to improve the translation to usable level by themselves, and to start preventive maintenance with improved manuals and schedule.
- In order to sustain the technical level of FRIC, it is recommended for DOF and FRIC in collaboration with development partners' projects to take quick actions for providing education and training required to newly recruited staff of FRIC.

Lessons Learned for JICA:

- Along with the soft component of the project, with the technical cooperation project assisted by JICA, the forestry maps and database have been structured by utilizing the facilities and equipment procured by the project. This was a good example of a program approach which enhanced the project effects by formulating a collaboration of a grant aid project and a technical cooperation project. In this way, when it is hardly expected to realize adequate project effects only by a grant aid project, in order to make facilities and equipment procured fully functional and sustainable, collaboration with any technical cooperation project(s) is expected to be planned taking a program approach at the initial planning stage.

Forest Resource Information Center (FRIC)

Equipment for training/meeting

[7] Ten out of eighteen GPS devices and five out of twelve digital cameras procured by the project are out of order as of July 2018.

Internal Ex-Post Evaluation for Grant Aid Project

conducted by Tonga Office: December, 2018

Country Name	The Project for Introduction of Clean Energy by Solar Home System
Kingdom of Tonga	

I. Project Outline

Background	Tonga had promoted the installation of solar home system (SHS) under support from Australia and the EU, etc. on remote islands since the 1990s. However, most of the 169 remote islands including those in Vava'u and Tongatapu islands had remained unelectrified or with deteriorated and unusable SHS that had been installed in the 1990s. In tandem with support for a sustainable energy supply setup on remote islands, there was also a need to utilize the know-how accumulated in these projects with a view to developing a mechanism for realizing clean energy utilization appropriate for supporting measures to address climate change.			
Objectives of the Project	To improve the electrification rate, diversify power sources, and raise awareness of people of Tonga for utilization of renewable energy by procurement of photovoltaic (PV) system and related equipment in part of the Tongatapu and Vava'u islands 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 countries against climate change.			
Contents of the Project	1. Project Site: Three islands in Tongatapu Group and 12 islands in Vava'u Group[1] 2. Japanese side (1) 552 sets of SHS (PV module, panel mounting structure, charge controller, storage battery, box for battery and controller, terminal box, lighting fixture (indoor), lighting fixture (outdoor), DC/DC converter, wiring/interconnects) installed at households or institutional buildings; PV system spare parts and maintenance tools. *The number of SHS was increased from the originally planned 512. (2) Technical assistance (soft component): Training on basic knowledge, technical characteristics, preventive inspection, operation and maintenance of SHS-type PV system. 3. Tonga side: Securing of the equipment installation site, ground leveling and removal of obstructions on the site, fences and gates, parking area works, road works, etc.			
Project Period	E/N Date	March 12, 2010	Completion Date	October 2013 (Completion of Soft Component)
	G/A Date	March 22, 2010		
Project Cost	E/N Grant Limit / G/A Grant Limit: : 590 million yen, Actual Grant Amount: 590 million yen			
Executing Agency	Ministry of Metrology, Energy, Information, Disaster, Environment and Climate Change (MEIDECC) (Ministry of Lands, Environment, Climate Change and Natural Resources in October 2012-May 2014; Ministry of Land Survey and Natural Resources (MLSNR) before October 2012)			
Contracted Agencies	Main Contractor(s): ITOCHU Corporation Main Consultant(s): YACHIYO Engineering Co. Ltd. / ICONS International Cooperation Inc. / SHIKOKU Electric Power, Co., Inc. (JV) Agent: Japan International Cooperation System			

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

According to the Ex-ante Evaluation Sheet, the target year for the indicators is set at "2013 (3 years after project completion)." However, this seems to be a mistake considering that this project was planned to complete in around March 2012. Since "3 years after project completion" seems to be correct according to similar Grant Aid projects in other countries, this evaluation interprets that the Ex-ante Evaluation Sheet meant to set the target year of 2015. In addition, since the actual project completion date was 2013, the target values are accordingly compared to the actual values of 2016.

1 Relevance

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

At the time of ex-ante evaluation, the Government of Tonga was aiming to develop renewable energy as stipulated in Renewable Energy Act (enacted in 2008 as the first such legislation in the Pacific region) under support from the Pacific Islands Energy Policy and Strategic Action Plan (PIEPSAP) and the Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP), etc. At the time of ex-post evaluation, the plans/policies such as Tonga Strategic Development Framework 2015-2025, Tonga Energy Roadmap 2010-2020, Nationally Determined Contribution 2015-2030, and MEIDECC Corporate Plan 2018-2019 aim to derive 50% of electricity generation from renewable sources by 2020 and 70% by 2030.

<Consistency with the Development Needs of Tonga at the Time of Ex-Ante and Ex-Post Evaluation >

At the time of ex-ante evaluation, there was a need for sustainable energy supply setup on remote islands as mentioned in "Background" above. At the time of ex-post evaluation, obviously Tonga is still pursuing its renewable energy agenda. According to MEIDECC, Tonga at this stage is generating renewable electricity averaging to 10% of national electricity supply, and shift from the traditional reliance on fossil fuels to climate-resilient renewable energy systems coupled with battery energy storage system and reduced greenhouse gas emissions is ongoing with development partners.

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

Based on the Islanders' Hokkaido Declaration made at the fifth Pacific Islands' Leaders Meeting (PALM 5) in May 2009 for Pacific

[1] Tongatapu Group: Tongatapu (office of the executing agency), Atatta, and Eueiki; Vava'u Group: Neiafu (office of the executing agency), Hunga, Ovaka, Lape, Nuapapu, Matamaka, Otea, Falevai, Kapa, Taunga, Olo'ua, and Ofu.

Islands Forum members, the Japanese government set out the cooperation policy for Tonga mainly in the following areas: (a) education, (b) sustainable economic development, (c) health, (d) measures against climate change, and (e) disaster prevention.[2] Also, the Japanese government 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 to effectively promote global efforts against climate change.

<Evaluation Result>

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

2 Effectiveness/Impact

<Effectiveness>

The objective of the project has been achieved. All quantitative indicators, i.e., power generation volume and hypothetical saving of CO2 emission, fossil fuel consumption and electricity cost (that could not have been saved if the target area had been electrified with fossil fuel generation)[3] as well as household electrification rate of the target area, achieved the target. At the time of ex-post evaluation, MEIDECC confirmed through its annual monitoring that all the 552 sets of SHS are still in use. Regarding qualitative effects, the soft component of this project enhanced the technical sustainability of the project effects (see below). Also, public awareness about solar power generation has been raised. For example, Department of Energy (DoE) of MEIDECC (formerly known as Energy Planning Unit of MLSNR) showcases its SHS electrification schemes in the outer islands, including the ones installed under this project, at Annual Agricultural and Industrial show, Environment Week and other public exhibitions.

<Impact>

Contribution to demonstration of Japan's initiatives for promoting collaborative efforts by both developed and developing countries against climate change was observed as expected. SHS in Vava'u and Tongatapu provided by this micro-grid project as well as Japan's Pacific Environment Community (PEC) Fund Project in Ha'apai are cases in point of demonstration of Japan's initiative.

There was not negative impact on the natural environment. Proper disposal of batteries has now been planned and is expected to be executed when most of batteries are failed around 2025 year.

Huge positive impacts on women and persons with disabilities have been witnessed from the field visits as the number of mats (handicraft) being woven were increased compared with the years prior to the commissioning of the systems. Hours for handicraft making have in fact extended to night time as electricity supply is now on 24 hours/7 days. Women tend to be more productive in terms of income generation activities. On the other hand, some negative impacts have realized in families as men, as head of the family, spend more hours in drinking kava (traditional drink) and other social activities in night time as better quality lights are available in the village.

<Evaluation Result>

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

Quantitative Effects

Indicators	Baseline 2010 Baseline Year	Target 2015 3 Years after Completion	Actual 2014 1 Year after Completion	Actual 2015 2 Years after Completion	Actual 2016 Target year 3 Years after Completion	Actual 2017 4 Years after Completion
Indicator 1: Power generation volume at transmission end (MWh/year)	-	108.3	109	109	109	109
Indicator 2: Estimated reduction of CO2 emission (ton/year)	-	117.3	118.156	118.156	118.156	118.156
Indicator 3: Estimated reduction of fossil fuel consumption (ton/year)	-	37.9	43.6	43.6	43.6	43.6
Indicator 4: Estimated reduction of electricity cost (thousand yen/year)	-	4,100	4,709	4,709	4,709	4,709
Indicator 5: Household electrification rate of the target area	-	100	100	100	100	100

Source : Annual Monitoring Survey (2018), conducted by Department of Energy under MEIDECC

3 Efficiency

While the project cost was as planned, the project period significantly exceeded the plan (ratio against the plan: 100% and 191%, respectively). The delay was caused by bidding failures. The Outputs of the project were slightly increased from the plan (the number of SHS was increased from 512 to 552 using the balance of the funds). Therefore, the efficiency of the project is fair.

4 Sustainability

<Institutional Aspect>

The organizational structure for operation and maintenance (O&M) of the project has been established as expected: Tongatapu Outer Islands Solar Electricity Incorporated (TOISEI), chaired by CEO of MEIDECC, and Vava'u Outer Islands Solar Electricity Incorporated (VOISEI),[4] chaired by the Governor of Vava'u, are responsible for O&M of SHS (including fee collection) in Tongatapu Group and Vava'u Group, respectively, under the supervision and management by DoE. Users of SHS are responsible for replacing faulty components inside the houses (switches, light holder and bulbs, wires) and paying monthly fees. According to MEIDECC, the number of staff of each

[2] Ministry of Foreign Affairs, ODA Country Data Book 2009.

[3] As the target area had not been electrified even with household-size diesel generators before this project, the mentioned 'saving' does not really mean actual cost saved by the beneficiaries.

[4] TOISEI and VOISEI were formerly known as Tongatapu Outer Islands Solar Electricity Society (TOISES) and Vava'u Outer Islands Solar Electricity Society (VOISES), respectively.

organization (7 at DoE, 4 at TOISEI and 22 at VOISEI) is sufficient for the O&M activities.

<Technical Aspect>

There were two technicians from each island, trained by the project. They currently do O&M of the SHS and assist users on their respective island. Regular trainings for local technicians have been conducted each year by DoE and hands-on training provided during DoE's annual monitoring trip. Annual Meeting of TOISEI and VOISEI, respectively, is usually hosted together with a training. Such efforts mitigate impacts of migration of technicians and engagement on other attractive wages jobs, which has been an issue. The manuals prepared by the project are kept in the main office of Neiafu and used for O&M training of new replacement of local technicians. The technical level of the O&M staff is considered sufficient based on these training practice and the good conditions of all SHS.

<Financial Aspect>

The budget mentioned in the tables below sufficiently cover O&M of SHS. Besides, DoE's annual monitoring trip to each island, for which inter-island transportation cost is high, is funded by the Government every year.

O&M budget for the SHS (unit: Tongan Pa'anga)

	Tongatapu Group				Vava'u Group			
	2014	2015	2016	2017	2014	2015	2016	2017
Income								
Initial installation cost collected from users	11,300	0	0	0	89,400	0	0	0
Monthly payment from users	5,130 (6 months)	10,440	10,440	10,440	100,370	60,751	52,574	41,568
Expenditure								
Personnel	3,051	3,051	3,051	3,051	22,978.8	22,978.8	22,978.8	22,978.8
Parts	0	0	0	0	0	0	0	0
Others	1,200	2,400	2,400	2,400	7,675.2	7,675.2	7,675.2	7,675.2
Balance	12,179	4,989	4,989	4,989	159,116	30,097	21,920	10,914

Source: DoE

<Current Status of Operation and Maintenance>

All the technical components of SHS are still in good conditions after five years from the commissioned date, while some houses were abandoned as dwellers migrated (Town Officers are yet to decide the second owner of the SHS). Two system operators (above-mentioned local technicians) employed by TOISEI or VOISEI in each island conduct regular maintenance, and DoE monitors all SHS every year. All the spare tools and spare parts at the DoE's equipment storage in Nuku'alofa (Tongatapu) and Neiafu (Vava'u) are properly stored and used. However, tools distributed to the islands were not properly managed as some tools were gone missing. System operators in every island reported all failure components to MEIDECC office and must be replaced with the spare parts stored at TOISEI or VOISEI. Recent renewable energy project of DoE on the same villages (as those targeted by this JICA project) also provided additional tools to the island technicians. A new storage container box was also procured for all DoE equipment storage in Tongatapu and Vava'u.

Although they are not the issues of this project itself, there are some issues reported from the islands visited: increasing loads to 6-7 (1.5 watts) bulbs (the system was designed for 5 bulbs of 1.1 watts or higher), community consultation concerning with the slacking payments, and some cases including invertors connected to the systems, which show people's increasing demand for more electricity.

<Evaluation Result>

Therefore, the sustainability of the project effect is fair.

5 Summary of the Evaluation

The project achieved the objective of increasing power generation capacity with renewable energy by installing 552 SHS in unelectrified villages in 12 islands. A problem was found in the technical aspect of the sustainability, i.e., drain of skills due to the migration of technicians, while no problem was found in the institutional and financial aspects of the O&M of the SHS. As for 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 to the Executing Agency:

Since there are no major problems found, no need to improve except below:

1) Keep securing the cost of transportation i.e. hiring the boat is very expensive.
2) Increase the capacity/power of electricity. People want to use more electricity like city dwellers.
3) Decide the second owners of the houses that were abandoned due to migration (but the SHS are still well functioning).

SHS next house 1

SHS next house 2

SHS box clean and well kept

Internal Ex-Post Evaluation for Grant Aid Project

conducted by Laos Office: February 2019

Country Name	The Project for Introduction of Clean Energy by Solar Electricity Generation System
Lao People's Democratic Republic	

I. Project Outline

Background	Lao PDR had challenged the reduction of greenhouse gas emission and prepared "Climate Change Strategy" in December 2009. The Government of Lao PDR set forth that electrification attains 90% by the year 2020 by means of grid connection and generation by renewable energy, such as solar power, wind power, and micro hydropower.			
Objectives of the Project	To increase power generation capacity, diversify power sources, and raise awareness of people of Lao PDR for utilization of renewable energy by procurement of photovoltaic (PV) system and related equipment in the Wattay International Airport in Vientiane Capital 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 countries against climate change			
Contents of the Project	1. Project Site: Wattay International Airport and Electricite Du Laos (EDL) premises/Vientiane Capital 2. Japanese side (1) 236kW PV generation system (PV modules, watt hour meter, junction box, circuit breaker, collecting box, transformer, cables, data management and monitoring system, display board and others) and PV system spare parts and maintenance tools (2) Additional purchase of 178 kW PV generation system at EDL premises (installation of grid-connected PV system) (The output was added by using the residual amount of the E/N limit amount) (3) Technical assistance (soft component): Training on basic knowledge, technical characteristics, preventive inspection, operation and maintenance (O&M) of PV system including emergency response 3. Lao side: Land preparation, other expenses related to procurement of equipment and contracted agent which were not covered by grant aid and others			
Project Period	E/N Date	March 4, 2010	Completion Date	March 3, 2013 (Original purchase) June 10, 2014 (Additional purchase)
	G/A Date	March 9, 2010		
Project Cost	E/N Grant Limit / G/A Grant Limit: : 480 million yen			Actual Grant Amount: 467 million yen
Executing Agency	- Lao Airport Authority (LAA) under Ministry of Public Works and Transport, Department of Civil Aviation (DCA) under Ministry of Public Works and Transport - Electricite Du Laos (EDL)			
Contracted Agencies	Main Contractor(s): NEWJEC Inc Main Consultant(s): ITOCHU Corporation Agent: Japan International Cooperation System			

II. Result of the Evaluation

1 Relevance:

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

The project has been consistent with the development policy of Lao PDR such as the "Power Development Plan 2007" and the existing "Renewable Energy Development Strategy" which was established in 2011 and still effective. Lao PDR has been aiming at increasing the share of renewable energies of the total energy consumption.

<Consistency with the Development Needs of Lao PDR at the Time of Ex-Ante and Ex-Post Evaluation >

The project has been consistent with the development needs of Lao PDR for the renewable energy. Due to the geographical situation (the mountainous area accounted for about 80%), low population density, and financial constraints, it has been difficult to promote electrification in the national grid. As Lao PDR dependents on hydropower, there has been a problem that the amount of electricity generation decreases in dry season. Thus solar power can be an alternative energy sources during the dry season.

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

The project was consistent with Japan's ODA Policy at the time of ex-ante evaluation. Development of socio-economic infrastructure including power sector is one of the prioritized areas for assistance under the "Country Assistance Program for Lao PDR" (2006). 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

<Evaluation Result>

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

2 Effectiveness/Impact:

<Effectiveness>

The project has achieved its objectives. Quantitative effects such as "Net power generation" (indicator 1), "Reduction of CO2 Emission" (indicator 2), and "Reduced electricity cost" (indicator 3) have been obtained, meeting the targets set at the time of Ex-Ante Evaluation.

Although the actual power generation achieved the target from 2013 to 2015, the volume slightly dropped in 2016 and 2017, because the ongoing construction work of domestic terminal and expansion of international terminal of the Wattay International Airport sometime requires for shutting down the Photo Voltage (PV) system installed by the project. Nonetheless, the ratio against the target in 2016 and 2017 are approximately 90% of the target figure. Similarly, both power generation volume at EDL office of 2016 and 2017 were less than 2015.The main reason is the thunderstorm in rainy season that caused the shutdown of EDL grid power system affected to the PV System.

As to the capacity enhancement by the project, during 2013-2016, there were seven trained Lao Airport Authority (LAA) staff members responsible for operation and maintenance work of the PV system. After two years, only one remains, as some resigned and some were transferred to other assignment. However, the present technical staffs usually uses O&M manual and follow up Preventive Maintenance Report Sheet for routine and periodic inspection work of PV system, and there has been no problem on condition of PV system and its O&M activities. Five staff members of EDL who were trained under the project have continuously been engaged in O&M by utilizing the manual.

It was expected that by installing the PV system at Wattay International Airport, many people would have a chance to raise their awareness for renewable energy. The PV system has been demonstrated as the project envisaged, as the number of passengers using International Terminal of Wattay International Airport increased a lot from 658,000 persons in 2012 to 1,898,112 persons in 2017.

<Impact>

While this project was expected to show Japan's initiative on climate change measures, it was unable to confirm if the project was introduced as a model case at symposiums and other occasions by the time of ex-post evaluation. Nevertheless, the model of this project was recognized as a showcase project by stakeholders who play a role for power generation facilities development in Lao PDR, as many PV generation systems have been implemented/will be implemented. For example, a survey team from a joint venture company of Laos and German companies who run the PV business in Laos visited the site.

No negative impact on natural environment was observed. No land acquisition and resettlement occurred under this project.

<Evaluation Result>

Given the above mentioned facts, the effectiveness/impact of the project is high.

Quantitative Effects

(1) Original PV System (236kW)

	Baseline 2012 Baseline Year	Target 2016 3 Years after Completion	Actual 2013 1 Years after Completion	Actual 2014 2 Years after Completion	Actual 2015 3 Years after Completion	Actual 2016 4 Years after Completion	Actual 2017 5 Years after Completion
Indictor 1: Power generation volume at transmission end MW/year)	0	288.2	299	294	295	269	262
Indicator 2: Reduction of CO2 emission (ton/year) *1	0	198	206	203	203	185	180
Indicator 3: Reduced electricity cost (million JPY/year) *2	0	2.6	3.28	3.22	3.23	2.94	2.87

Source: PV system Office of LAA

*1 The expected CO2 emission reduction is estimated provided that diesel engine generators in Laos produce the same power energy with those of PV system by using the unit CO2 emission rate for burning fuel and for plant operation released by “Central Research Institute of Electric Power Industry”.

*2 Multiplying the average power tariff of 835 Kip/kWh which LAA pays EDL and expected power generation by the PV system.

(2) Additional PV System (178kW)

	Baseline 2012 Baseline Year	Target*	Actual 2015 1 Year after Completion	Actual 2016 2 Years after Completion	Actual 2017 3 Years after Completion
Indicator 1: Power generation volume at transmission end (MWh/year) *	0	n.a.	214	208	201
Indicator 2: Estimated reduction of CO2 emission (ton/year)	0	n.a.	147	143	139
Indicator 3: Reduced electricity cost (million JPY/year)	0	n.a.	2.25	2.18	2.11

Source：PV system Office of EDL Office.

*No targets were set.

3 Efficiency:

Although the project cost was within the plan (the ratio against the plan: 97%), project period significantly exceeded the plan (ratio against the plan: 165%) partly because of expansion of the capacity of PV system. The outputs of the project were produced as planned (with expansion of the capacity). Therefore, efficiency of this project is fair.

4 Sustainability:

<Institutional Aspect>

The Power Supply Center (PSC) of LAA and the PV System Office, the Administration Department of EDL has been responsible for O&M of the 236 kW PV system and the 178 kW PV system respectively. No problem has been observed in the institutional setup. As to

LAA, nine staff members have been assigned to PSC, including the Head Office, the Deputy Head Office and an administrative staff respectively. Three technicians have been assigned to the terminal building and another three members have been assigned to the PV System Office. According to the PV System Office, three staff members have been sufficient for taking care of routine inspection and maintenance work of PV System. Sometime, if the maintenance work is required more than three persons, the additional supporting staff could be temporally shifted from other divisions under LAA for couple of days of working.

As to EDL, the PV System Office is one of six operation offices under the Administration Department which has about 65 officers/staff. There were seven technical staff members work for the PV System Office, five technical staff members who had been trained at the time of project implementation have continued work for the PV System Office including two more staff recruited in 2016. The number of staffs has been sufficient for carrying out O&M according to the operating condition of the PV system that has been operated for four years.

<Technical Aspect>

As mentioned in "Effectiveness" above, the present technical staffs of LAA usually use O&M manual and follow up Preventive Maintenance Report Sheet for routine and periodic inspection work of the PV system, and there has been no problem on condition of the PV system and its O&M activities. However, the effective use of these tools has been somewhat limited, as LAA has only one staff member who was trained during project implementation and has not been trained since project completion. The technical staff had limited capacity to handle the technical problems that happened with the PV system. There was no training system in place, and they were mostly trained as OJT and instructed by trained staff for daily work, weekly and monthly inspection of PV system by filling in the Preventive Maintenance Report Sheet.

As to EDL, five technical staff members who were trained during the project has continuously worked for the PV System Office, and the provided manual has been properly used that could be ensured the high efficiency of O&M work. Even though no training course has been conducted since project completion, they have been able to handle effective O&M work. In addition, the PV System Office also received technical advices and support from the EDL Training Center which has various electrical engineers and trainers who can share and provide knowledge and experiences to PV technical staff.

<Financial Aspect>

The budget has not been fully secured by LAA for O&M works of the PV system that is why the proposed items of spare parts of electrical devices had never been procured for 3-4 years. Fortunately, for the time being, the serious damage has not occurred yet as the PV system assumed still being in good condition since it has just been operated for 4-5 years. As mentioned above, the technical staff had limited capacity to handle the technical problems that happened with the PV system. Therefore, the secured budget of LAA is needed for outsourcing technical services in order to ensure smooth operation and to maintain efficiency of the PV system for its long useful life.

The PV System Office of EDL has continuously received annual budget of 30 million kips for O&M of the PV system after the project completion. According to the situation of operating and technical condition of the PV System, the provided annual budget of 30 million kips has been sufficient. However, EDL has not made procurement plan for spare part of electrical devices so far. Because, the PV system is well operated at this moment. In the near future, the planed budget of O&M might be increased higher than 30 million kip to cover procurement amount of spare part.

Table 1. PV O&M Cost of LAA

(Unit: million kips)

Cost Items	2014	2015	2016	2017
Personnel	-	6	6	6
O&M	0	0	0	0

Table 2. PV O&M Cost of EDL

(Unit: million kips)

Cost Items	2015	2016	2017	2018
Personal	11.9	11.9	11.9	11.9
O&M	30	30	30	30

<Current Status of Operation and Maintenance>

As to 236 kW PV system at Wattay International Airport, the inspection and regular maintenance activities have mainly carried out by three staff members of PV System Office. The facilities of the PV system at Wattay International Airport have been generally in good condition. The small problems were observed with the Power Conditioner and Display device. The observed technical problems were as follows: (1) One of air conditioner was not functioned automatically to start and stop the compressor. This problem has been noted in for two years. (2) The displayed number of Power Active (kWp) on the Display Device was not activated. But its recorded data could be printed out from Monitoring Device Center. The problem has been noted for three years. Technical staff did not know how to solve the problems, and PV system Unit did not have budget for services fees if asking for outsources technical service for checking and fixing the mentioned problems. Some kind of electric devices were supposed to be procured as spare parts for replacement if necessary; however, the request of required equipment/electrical devices had never been approved by LAA for procurement for three years.

As to 178 KW system at EDL premise, all provided equipment items of PV system have been still in good condition and also the proper maintenance work has been effectively carried out. The procured spare parts (PV modules, power conditioners), consumables and maintenance tools procured by the project have been properly maintained and kept in the stored room. The procured spare parts, tool and equipment have not been used for replacement yet due to no broken and damage occurred yet in the PV system. However, EDL has to think and start to prepare procurement plan and additional annual budget to cover procurement amount in the future.

<Evaluation Result>

Some problems have been observed in terms of the technical and financial aspects of LAA. Therefore, the sustainability of the project effect is fair.

5 Summary of the Evaluation:

The project has achieved its objectives, "To increase power generation capacity, diversify power sources, and raise awareness of people of Laos for utilization of renewable energy", as the targets of indicators were met. The model was recognized by stakeholders and the many PV generation system have been implemented after the project was completed. As for sustainability, some problems have been observed in

terms of the technical and financial aspect; however, there has been no problem on the institutional aspect. As for efficiency, although the project period exceeded the plan, the project cost was within the plan.

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

III. Recommendations & Lessons Learned.

Recommendations to Executing Agency:
LAA is required to take immediate action to secure budget for O&M of PV system. The knowledge and skill of in-charged technical staff also need to be maintained and improved in order to maintain the reliability and sustainability of PV power generation. Therefore, the plan for conducting training course should be considered.

(PV system at EDL building)

(Top view of PV system)

Internal Ex-Post Evaluation for Grant Aid Project

conducted by Ghana Office: March, 2019

Country Name	The Project for Introduction of Clean Energy by Solar Electricity Generation System
Republic of Ghana	

I. Project Outline

Background	Until the mid-1990s, Ghana obtained its domestic electricity supply and even exported electricity by hydroelectric power generation utilizing abundant water resources from Lake Volta to the neighboring countries of Cote d'Ivoire and Togo. However, since Ghana had become unable to satisfy the growing domestic power demand through domestic hydroelectric power alone, it had recently responded by promoting construction of thermal power plants and electric power interchange with Cote d'Ivoire via an international interconnected grid. Furthermore, climate change had triggered frequent droughts in recent years and the generation capacity of the Akosombo Hydropower Plant, which was a main power source in Ghana, had been declining. In response, the Government of Ghana had adopted diversification of energy sources and promotion of renewable energy as policy targets and was striving to strike a balance between improving the energy supply situation and mitigating environmental loads.			
Objectives of the Project	To increase power generation capacity, diversify power sources, and raise awareness of people of Ghana for utilization of renewable energy by procurement of photovoltaic (PV) generation system and related equipment in the Noguchi Memorial Institute for Medical Research (NMIMR) 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 countries against climate change.			
Contents of the Project	1. Project Site: Accra (NMIMR) 2. Japanese side (1) 315kWp PV generation system (PV module, PV module frame, Junction box, Collecting box, Power conditioner, Step-up transformer, Display unit, Data management system, Wiring materials, Grounding works materials) and PV generation system replacement parts, maintenance parts and test apparatus. (2) 400 kWp additional PV generation system (The output was added by using the residual amount of the E/N limit amount) (3) Technical assistance (soft component): Training on basic knowledge, technical characteristics, preventive inspection, operation and maintenance (O&M) including emergency response of PV system 3. Ghana side: (1) To secure a disposal site for excavated earth, sewage, waste oil and recovered equipment and materials during the works period (if necessary), (2) To secure the safety and provide guidance and education to local residents and related officials of the University of Ghana and NMIMR during the works period, and others			
Project Period	E/N Date	March 12, 2010	Completion Date	- Original component: April 22, 2013 (Completion of soft component) - Additional procurement: August 13, 2014 (Handover of the equipment)
	G/A Date	March 12, 2010		
Project Cost	E/N Grant Limit / G/A Grant Limit: 610 million yen			Actual Grant Amount: 610 million yen
Executing Agency	The Noguchi Memorial Institute for Medical Research (NMIMR), University of Ghana			
Contracted Agencies	Main Contractor(s): Marubeni Corporation Main Consultant(s): Yachiyo Engineering Co., Ltd Agent: Crown Agents			

II. Result of the Evaluation

1 Relevance

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

The project has been consistent with the development Policy of Ghana to raise the share of renewable energy such as "the Strategic National Energy Plan 2006-2020 (SNEP)" "the Coordinated Programme of Economic and Social Development Policies (2017–2024)" and "The Ghana Energy Policy 2017" (Draft)

<Consistency with the Development Needs of Ghana at the Time of Ex-Ante and Ex-Post Evaluation >

The project has been consistent with the development needs of Ghana for the renewable energy. At the time of ex-ante evaluation, Ghana had previously advanced the introduction of small-scale independent PV generation systems not connected to the grid in order to supply electricity in non-electrified areas, however, it had not introduced any large-scale grid-connected PV generation systems. At the time of ex-post evaluation, the Government has tried to increase the installation of grid connected PV, though Ghana has been still dependent on hydro and thermal power generation.

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

The project was also consistent with the Japan's ODA policy at the time o ex-ante evaluation. Under "the Country Assistance Program for Ghana (2006)", support for infrastructure including energy was one of the strategies for the prioritized support area of "Promoting Industrial Development". 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 CO_2 emission and economic growth in order to effectively promote global efforts against climate change.

<Evaluation Result>
In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Effectiveness>

The project has mostly achieved its objectives. Quantitative effects such as “power generation volume” (indicator 1) and “reduction of CO_2 emission” (indicator 2) have almost been meeting the targets set at the time of ex-ante evaluation. Power generation volume increased significantly and almost achieving the target with the average ratio against the target of approximately 85%. The target was not met due to a national power rationing. The PV is a grid connected system and it is designed that when the power grid goes off, the PV generation also stops. There have been frequent power outages (national power rationing) over the past years and the target power generation volume did not consider the power outages. It was confirmed during the site visit that operation of the PV generation system in accordance with manual and training material was generally good.

There has been increased public awareness about the PV generation system installed among users and visitors for the project site. Many organizations and individuals including students of the School of Engineering Sciences of the University of Ghana and Japanese visitors visited the PV generation facilities since the installation was done. School of Engineering Sciences, the University of Ghana sent approximately 80 students in the past and there are plans to send 100 more students in 2018. In addition, the Vice Chancellor of the University of Ghana and the Director of the Institute referred to the PV generation systems during symposiums held at the Institute. One of which is the ninetieth (90th) anniversary celebration of arrival of Dr. Hideyo Noguchi to Ghana.

It was expected that the experience of the personnel who acquired knowledge and experience on PV generation equipment under the project was going to contribute to dissemination of the PV generation system in Ghana, as they were to be involved in the planning, installation and maintenance of grid-connected PV generation system equipment. After the project was completed, the Government of Ghana has been facilitating installation of grid-connected PV generation systems including the installation of 200,000 rooftop solar PV generation systems in residential facilities (homes) under the Capital Subsidy Scheme. The primary objective of the program is to provide 200MW peak load relief on the national grid through solar PV generation technology in the medium term. According to the Ministry of Energy, data from the project were analysed as part of preparation towards this program.

<Impact>

This project was expected to contribute to demonstrating Japan's initiative on climate change measures. However, cases led by the Government of Japan have not been confirmed at the time of Ex-Post Evaluation. Similarly, there has not been a dedicated symposium due to budget constraint on the part of Ministry of Energy. That said, this project has been helpful to the government of Ghana on the promotion of renewable energy and climate change mitigation, as described above. The project is highly acknowledged by the Ministry of Energy.

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 high.

Quantitative Effects

(1) Original 315kWp PV generation system

	Baseline 2010 Baseline Year	Target 2015 3 Years after Completion	Actual 2014 1 Year after Completion	Actual 2015 2 Years after Completion	Actual 2016 3 Years after Completion	Actual 2017 4 Years after Completion
Indicator 1: Power generation volume at transmission end (MWh/year)	0	382	325	282*2	333	365
Indicator 2: Estimated reduction of CO_2 emission (ton/year) *1	0	220	187	162	191	210

Source: NMIMR

*1 Estimated CO_2 emission is calculated as follows

According to statistics from the Ghana Energy Commission, the base unit of CO_2 emissions in power generation in 2007 was 0.575 t CO_2/MWh. As a result of the PV power generation in the Project, it is estimated to reduce CO_2 emissions by 219.8 tons per year.

[Formula] 0.575 t CO_2/MWh x 382,227 kWh/year ÷ 1,000 = 219.8 t CO_2/year

*2 National power rationing was at its peak in 2015.

(2) Additional 400kWp PV generation system

	Baseline	Target*1	Actual 2015 1 Year after Completion	Actual 2016 2 Years after Completion	Actual 2017 3 Years after Completion
Power generation volume at transmission end (MWh/year)	0	n.a.	258*2	376	109*3

Source: NMIMR

*1 No target was set. *2 January and February data not available *3 Data covers January to April. Data management system broke down in April 2017 (generation system itself continued working).

3 Efficiency

Although the project cost was within the plan (ratio against the plan: 100%), the project period significantly exceeded the plan (the ratio against the plan: 295%), as the project installed additional PV generation system. Even taking consideration of the added output (the ratio against the plan: 227%), the project period is deemed slightly exceeded the plan. Therefore, the efficiency of the project is fair.

4 Sustainability

<Institutional Aspect>

The Maintenance Unit of NMIMR has been responsible for the O&M of the PV generation systems installed under the project and has three (3) staff members responsible for the PV generation system. They have collaborated with the cleaning section of NMIMR to conduct O&M activities. The Maintenance Unit reports to the administrator and the Director of the NMIMR. Some technical issues have been discussed with the Dean of School of Engineering Sciences, University of Ghana. Collaboration between the Maintenance Unit and the IT Unit has been weak, as minor problem of the display unit of the 400kWp PV generation system had not been repaired until JICA intervened, which could have been resolved by the IT Unit if these two units would had coordinated well. Also, issues such as insufficiency of personnel were observed. No activity has been constrained due to the insufficiency, but usually staff have been over tasked.

<Technical Aspect>

The technical staff trained by the project have been continuously engaged in O&M. The manuals prepared by the project has been properly used for O&M. However, the configuration of the systems, the original 315kWp and the additional 400kWp, are different, and therefore understanding of the O&M of 400 kWp system is somewhat limited, it has caused additional burden to the Maintenance Unit of NMIMR as the staff members have to understand two different systems. With the O&M training given to staff during the project, the same kind of training and knowledge can be imparted to newly assign technical staff to disseminate the skills.

<Financial Aspect>

NMIMR secured budget for their personnel responsible for O&M as well as budget for infrastructure maintenance. NMIMR is able to incur cost for replacement/repair of the equipment when necessary. The air conditioner installed in the power conditioner room of the 315 kWp system installed by the project broke down. However, two new air conditioners were installed to replace the old one on February 2018 with the budget from NMIMR. Total cost was 8,000 cedis.

Budget of NMIMR

(Unit: cedis)

O&M Cost Items	2015	2016	2017
Personnel*	18,000	18,000	30,000
Maintenance	n.a.	n.a.	n.a.

*Personnel amount is the estimated cost for NMIMR internal personnel.

<Current Status of Operation and Maintenance>

Inspection and regular maintenance activities have been carried out properly. Routine maintenance has been done almost every working day, while periodic maintenance has been done annually by the Maintenance Unit of NMIMR. O&M status of equipment/facilities are generally in good condition and actions have been taken for problems including the above-mentioned air conditioner. Spare parts, consumables and maintenance tools procured by the project are properly maintained and utilized for the facility. So far, there have not been any management and procurement problems. Three power conditioners of the 400kW system were faulty. All the faulty power conditioners had the same problem of cooling fan. The faulty cooling fans have been replaced and the system is working normally. It has taken a time to solve some problems with the data management system of the additional 400kWp system, though it doesn't affect power generation itself. The operating system has been corrupt and needed to be repaired but the corrupt might have been caused by the capability of PC, therefore, it is better to consider if the current system unit ought to be replaced with a more stable system unit to and avoid regular break down.

<Evaluation Result>

Some problems have been observed in the institutional and technical aspects of the implementing agency. Therefore, the sustainability of the project effect is fair.

5 Summary of the Evaluation

The project has mostly achieved its objectives, "To increase power generation capacity, diversify power sources, and raise awareness of people of Ghana". Quantitative effects such as "power generation volume" and "reduction of CO2 emission" have almost been meeting the targets set at the time of ex-ante evaluation. Public awareness has been increased, as many organizations and individuals have visited the PV generation systems. As for the sustainability, some problems have been observed in the institutional and technical aspects, however, no problems have been observed in the financial aspects. As for the efficiency, although the project period exceeded the plan, the project cost was within the plan.

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

III. Recommendations & Lessons Learned

Recommendations to Executing Agency:

- The display unit of the 400kWp PV generation system was faulty since September 2017 and was recently repaired with JICA's intervention. The problem was found to be a minor IT problem. If the IT Unit of NMIMR had been involved, the problem could have been resolved much earlier. Therefore, the Management Unit of NMIMR is recommended to report all IT related issues to IT Unit as soon as they are discovered. In general, collaboration between the Maintenance unit and IT Unit of NMIMR needs to be strengthened to resolve promptly all IT related issues.
- The Maintenance Unit's understanding of the 400kWp system is relying on their understanding of the 315kWp system to operate and maintain the entire facility. Since the configuration of the systems are different, it will be appropriate to check the O&M manual particularly for the 400kWp PV generation system, that was not well organized, for both maintenance and IT units of NMIMR.
- It has taken a time to fix the broken-down Data Management System of the 400kWp system. The operating system is plausibly corrupt (Some boot files are faulty) according to IT technician. With communicate with Japanese contractor and find the cause of the problem, then in the long term, the operating system should therefore be considered to be replaced with a higher capacity system.

Lessened Learned

- When the new system is different from existing system or Phase 1, development of O&M manual and training should be more detailed and focused on the differences of each system.

315kWp Original PV System

400 kWp Additional PV System

conducted by Balkan Office:October, 2018

Country Name	**Project on Development of Integrated System for Prevention and Early Warning of Forest Fires**
The Former Yugoslav Republic of Macedonia	

I. Project Outline

Background	Rate of occurrence of forest fires was high in Macedonia. In order to carry out prevention and early warning of forest fires properly, it was necessary to centrally manage information at Crisis Management Center (CMC), an independent administrative organization established under Crisis Management System (CMS) of the government of Macedonia, from which analysis results and recommendations based on such information should be reported to the decision-making body of the CMS. At the time of outbreak of large-scale forest fires, prompt issuance of instructions to the relevant institutions and public as well as well-coordinated measures were required. However, CMC did not have sufficient capacity for collecting, storing, and analyzing information for prevention and early warning of forest fire. Its ability of coordination to promote collaboration among the relevant institutions that own or use such information was also insufficient.		
Objectives of the Project	The project aimed at strengthening of the capacity of CMC in Macedonia for transmitting information to domestic relevant institutions[1] for prevention[2] and early warning of forest fire and coordinating them, through (i) development of national system for forest fire risk assessment[3] with the use of integrated Geographic Information System (GIS)[4] and (ii) reinforcement of national coordination mechanism of information sharing and cooperation among domestic relevant institutions, thereby strengthening the social capacity for prevention and early warning of forest fire. 1. Overall Goal: The occurrences of massive forest fire are reduced by strengthening the social capacity for prevention and early warning of forest fire. 2. Project Purpose: The capacity of CMC for transmitting information to domestic relevant institutions for prevention and early warning of forest fire and coordinating them is strengthened.		
Activities of the Project	1. Project Site: Skopje and model areas[5] 2. Main Activities: (i) Design and documentation of risk assessment methodology, collection of the relevant data/information, development of the integrated GIS, development of methodology on assessment of damages and consequences of forest fire, training on the integrated GIS & forest fire risk assessment tools; and sharing information from CMC to the relevant institutions through the integrated GIS; (ii) Development of coordination mechanism, organization of periodic Technical Coordination Group (TCG)[6] meetings, baseline survey on coordination of information sharing and cooperation at the model areas, monitoring & assessment of the effectiveness of the integrated GIS at the model areas, and identification of supplementary measures. 3. Inputs (to carry out above activities) (*As of Terminal Evaluation in December 2013) Japanese Side 1) Experts: (long-term) 2 persons; (short-term) 7 persons 2) Trainees Received: 7 persons 3) Equipment: servers for Integrated GIS, 111 PCs, 15 automatic weather stations (AWSs), etc. 4) Local Activity Costs: maintenance cost of the provided equipment, training cost, etc. Macedonian Side 1) Staff Allocated: 14 persons (10 from CMC; 4 from 2 Regional CMCs (RCMCs) for model areas) 2) Land, Building, Facilities: project office for experts at CMC 3) Administrative and Operational Cost: cost for maintaining project office and information transmission		
Project Period	May 2011 - May 2014	Project Cost	(ex-ante) 300 million yen, (actual) 293 million yen
Implementing Agency	Crisis Management Center (CMC)		
Cooperation Agency in Japan	Ministry of Agriculture, Forestry and Fisheries; Institute of Industrial Science, the University of Tokyo; YSK Consultants Co.,Ltd.; Kokusai Kogyo Co.,Ltd.		

II. Result of the Evaluation

<Special Perspective Considered in the Ex-Post Evaluation>

・ The Overall Goal in the PDM consists of two levels, i.e., means ("by strengthening the social capacity for prevention and early warning of forest fire") and effects ("occurrences of massive forest fire will be reduced"). In the ex-post evaluation, the former shall be regarded as "Overall Goal" and the

[1] "Domestic relevant institutions" targeted by the project were Ministry of Agriculture, Forestry and Water Economy (MAFWE), Public Enterprise Macedonian Forests (PEMF), Directorate for Protection and Rescue (DPR), municipal government, local fire fighting forces and others as required.
[2] "Prevention" included risk reduction among others.
[3] Concept of "forest fire risk assessment" consisted of four elements (hazard, exposure, vulnerability, and capacity and measure).
[4] The integrated GIS developed by the project is known as "Macedonian Forest Fire Information System (MKFFIS)".
[5] Two model areas were selected in Kichevo and Strumica.
[6] TCG consisted of CMC and MAFWE, PMEF, DPR, and Hydro Meteorological Service (HM).

latter shall be treated as "Super Goal". In this connection, an Indicator of the Overall Goal related to reduction of occurrence of massive forest fire (i.e. Indicator 2 "Rate of forest fire that reaches massive level[7] will be reduced") shall be regarded as an Indicator of "Super Goal"; therefore, its achievement status shall be checked under "Other Impact".

- As Supplementary Information for the Overall Goal, improvement status of coordination/cooperation among the domestic relevant institutions, including the status of "strengthening of cooperation with local governments and regional offices of the relevant institutions", which was recommended by the terminal evaluation as a key to strengthened "social capacity" stated in the Overall Goal, shall be examined.

1 Relevance

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

The project was consistent with Macedonia's development policies such as "prevention of all national threats including forest fires, early warning and effective countermeasures based on the coordination with related agencies" as set forth in "Law on Crisis Management (LCM)" (2005) and "establishment of an efficient system for early warning and suppression of forest fire" in "Strategy for Sustainable Development of Forestry (SSDS)" (2006) at the times of both ex-ante evaluation and project completion.

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

The project was consistent with Macedonia's development needs for improvement of prevention and early warning of forest fires 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 for Macedonia in 2010, which set environmental conservation as one of the priority areas[8].

<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 activities of the project, the integrated GIS called "Macedonian Forest Fire Information System (MKFFIS)", storing 8 forest fire risk assessment tools[9], as well as MKFFIS Public, storing 4 out of the 8 tools[10], was launched. In order to make MKFFIS fit in the legislative framework, modifications of a rulebook of Ministry of Agriculture, Forestry and Water Economy (MAFWE) were made and adopted by the relevant authorities (Indicator 1). Data/information contained in the forest fire risk assessment tools of MKFFIS were continuously updated by CMC with pre-determined frequency (Indicator 2). MKFFIS was utilized by CMC and the principal information users (i.e. Public Enterprise Macedonian Forests (PEMF), Directorate for Protection and Rescue (DPR), and MAFWE)[11] with agreed access rights (i.e. IDs and Passwords), and MKFFIS Public was utilized by other relevant institutions without access rights (Indicator 3).

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

The project effects have been continued. Modifications of the rulebook of MAFWE related to MKFFIS have been published in the "Official Gazette". Data/information stored in MKFFIS has been updated by CMC with pre-determined frequency. MKFFIS has been fully utilized by CMC and most of the principal information users, and MKFFIS Public by other relevant institutions. According to DPR, it does not have direct access to MKFFIS anymore because the initial IDs and Passwords issued during the project implementation have not been renewed after their expiration. It is noted that DPR indirectly utilizes the information stored in MKFFIS as Regional DPRs (RDPRs) receive the necessary information from RCMCs through collaborative relationship and provide it to the headquarters. DPR also utilizes the information stored in MKFFIS Public. TCG meetings, formalized through the project, have been discontinued as they have been transformed into communication and consultation among the relevant institutions on the regular basis. According to CMC, it has taken actions for improvement of coordination/cooperation among the relevant institutions using MKFFIS as recommended by the project based on the monitoring results of the model areas.

<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. All the institutions interviewed by the ex-post evaluators confirmed that data/information provision from CMC has become more prompt since MKFFIS connects all the relevant institutions into a single information platform where the data/information is exchanged, and that the provided data/information has become more adequate by using web-based application software since all data is analyzed automatically (Indicator 1). According to them, the overall cooperation and coordination among the relevant institutions at central as well as regional and local levels, including local governments, has been strengthened by using MKFFIS. However, according to DPR, coordination and information sharing between CMC and DPR at central level needs to be improved further as DPR's access to MKFISS is limited (Supplementary Information).

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

No negative impacts of the project have been observed. As to other positive impacts, the achieved results of the project as well as the knowledge and experiences gained by CMC have been shared to 5 countries in Balkan region (i.e. Albania, Montenegro, Bosnia and Herzegovina, Kosovo and Serbia), which have common needs for strengthening national capacities and regional cooperation for prevention and early warning of forest fires, through a Third Country Training Program (TCTP) of JICA "Development of Integrated System for Prevention and Early Warning of Forest Fires" (2015-2017). Reduction of occurrence of massive forest fire ("Super Goal") could not be confirmed due to lack of the data on the rate of forest fire that reached massive level (i.e. frequency of forest fires in which burnt area is over 200 ha).

<Evaluation Result>

7 "Rate of forest fire that reaches massive level" is defined as "frequency of forest fires in which burnt area is over 200 ha" as per the PDM.

8 The Country Data Book of Ministry of Foreign Affairs of Japan (2010).

9 Hot spot map and vegetation dryness map, covering all land of Macedonia; forest vegetation map and fire history map, covering 90% of forests in Macedonia; Fire Weather Index (FWI) map and suppression resource table, covering all land of Macedonia; damaged forest value table, covering 90% of forests; and topographic map.

10 Hot spot map, FWI map, vegetation dryness map, and topographic map.

11 Principal information users targeted by the project are the relevant institutions to which the equipment for information users is provided.

In light of the above, through the project, the Project Purpose was achieved at the time of project completion. The project effects were continued, and the Overall Goal was achieved 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 capacity of CMC for transmitting information to domestic relevant institutions for prevention and early warning of forest fire and coordinating them is strengthened.	1. By the Project end, modifications in the existing government procedures, necessary to fit the integrated GIS, in legislative framework, are adopted by the relevant authorities.	Status of the Achievement: achieved (continued) (Project Completion) -Modifications of the relevant rulebook of MAFWE were adopted by the relevant authorities. (Ex-post Evaluation) -Modifications of the rulebook of MAFWE was published in the "Official Gazette" in May 2015 and they are still effective.
	2. By the Project end, information contained in forest fire risk assessment tools of the integrated GIS at CMC is updated with pre-determined frequency for transmission to the relevant institutions.	Status of the Achievement: achieved (continued) (Project Completion) (Ex-post Evaluaton) -Information contained in the forest fire risk assessment tools of MKFFIS at CMC updated with pre-determined frequency for transmission to the relevant institutions.
	3. By the Project end, data/information from CMC based on the integrated GIS is utilized by the domestic relevant institutions for prevention and early warning of forest fire.	Status of the Achievement: achieved (mostly continued) (Project Completion) -Data/information of MKFFIS was utilized by CMC, PEMF, DPR, and MAFWE. Data/information of MKFFIS public was utilized by other relevant institutions. (Ex-post Evaluation) -Data/information of MKFFIS has been fully utilized by CMC, PEMF, and MAFWE. According to DPR, it does not have direct access to MKFFIS anymore because the initial IDs and passwords issued during the project implementation have not been renewed after their expiration. It is noted that DPR indirectly utilizes the information stored in MKFFIS as RDPRs receive the necessary information from RCMCs through collaborative relationship and provide it to the headquarters. Data/information of MKFFIS Public is utilized by DPR and other relevant institutions such as– police and central and local fire departments.
(Overall Goal) The social capacity for prevention and early warning of forest fire has been strengthened. .	1.Data/information provided from CMC to institutions under CMS will become more promptly and adequately. -"more promptly" means "more promptly than before the integrated GIS was introduced" -"more adequately" means "by using web based application software"	(Ex-post Evaluation) achieved -According to the relevant institutions, data/information provision has become more prompt since MKFFIS connects all the relevant institutions into a single information platform where the data/information is exchanged, and the provided data/information has become more adequate by using web-based application software since all data is analyzed automatically

Sources: Terminal Evaluation Report; questionnaire and interview to CMC, MAFWE, PEMF, DPR, RCMC Kichevo, Regional PEMF (RPEMF) Kichevo, and RDPR Kichevo.

3 Efficiency

Both the project period and the project cost were within the plan (ratio against the plan: 100% and 98%). Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

LCM (2005) and SSDS (2006) mentioned in "Relevance" is still effective and in line with the aim of the project at the time of ex-post evaluation. In addition, modifications of a rulebook of MAFWE related to MKFFIS have been published as stated in "Effectiveness/Impact".

<Institutional Aspect>

Organizational mandate and structure of CMC for coordination and information provision for prevention and early warning of forest fire have not been changed since the project completion. Information provision system based on MKFFIS, developed under the project, has been maintained. Through MKFFIS, CMC continuously receives the data/information from the principal information providers (i.e. PEMF and Hydro Meteorological Service (HM)) and transmits it to the relevant institutions. The number of staff allocated for the information provision at each organization, including system administrators, is 75 at CMC, 67 at 35 RCMCs, and 78 at PEMF/RPEMFs. At HM, there is always one person on duty in charge of MKFFIS. As for 2 RCMCs for the model areas, 5 and 7 staff members are allocated at Kichevo and Strumica respectively. The number of staff of these institutions is considered sufficient since MKFFIS has been functioning without a problem.

<Technical Aspect>

CMC and most of the principal information providers/users of MKFFIS have sufficient skills and knowledge to sustain the project effect. At CMC and the 2 RCMCs for the model areas, the staff allocated for the project remains with the respective organizations and

works with MKFFIS, and all the staff working with MKFFIS at CMC and 35 RCMCs have attended and passed the 2-level training courses for MKFFIS. They maintain the skills and knowledge through constant operation and with use of manual prepared by the project. CMC and RCMCs also sustain the capacity to implement training for MKFFIS. Since the project completion, 21 trainings were conducted at central and regional levels for about 160 participants from RCMCs and other relevant institutions. As for the principal information providers/users, PEMF, HM, and MAFWE consider that the staff members working with MKFFIS have necessary skills and knowledge because they have been trained for MKFFIS. However, DPR does not think the staff members maintain the skills and knowledge acquired through the project as they do not utilize them due to limited access to MKFFIS as stated in "Effectiveness/Impact".

Regarding the provided equipment, persons in charge of the management have been assigned at CMC and all the principal information providers/users. According to the persons in charge and observation by the ex-post evaluators, most of the equipment is properly maintained and utilized. However, 3 out of 15 AWSs provided to HM are out of order. Information about causes of breakdown and repair/replacement plan was not available, but the Director of HM and the person in charge of the equipment management stated that HM will do its best to repair them as AWS is very important equipment for the institution. According to them, the area of the broken AWSs is covered by other AWSs so that there is no negative impact on the information provision to CMC.

<Financial Aspect>

Annual budget and expenditure of CMC for the information provision through MKFFIS were 500,000 Macedonia Dinar (MKD) in 2015 and 400,000MKD in 2016 and 2017. They include the costs for training at central and regional levels and operation and maintenance (O&M) of the equipment provided to CMC and the 2 RCMCs for the model areas. Since MKFFIS has been functioning and training has been continuously implemented, CMC is considered to have secured sufficient budget to sustain the project effect. In addition, most of the principal information providers/users are considered to have secured necessary budget for O&M of the provided equipment. DPR allocates annual budget of 300,000 MKD for O&M of all the PCs, including the ones provided by the project. Though the budget data is not available, PEMF secures the O&M budget of the provided equipment according to its Plan for Public Procurement and, at MAFWE, IT sector has the budget for O&M of all the PCs, including the ones provided by the project. HM, however, considers that necessary budget is not secured because additional budget for O&M of the provided equipment is not allocated by the government: it must manage with the existing budget. It is not clear if HM has budget for repair/replacement of the broken AWSs mentioned above.

<Evaluation Result>

In light of the above, slight problems have been observed in terms of technical and financial aspects of the principal information providers/users of MKFFIS. Therefore, the sustainability of the effect through the project is fair.

5 Summary of the Evaluation

The project achieved the Project Purpose (i.e. The capacity of CMC for transmitting information to domestic relevant institutions for prevention and early warning of forest fire and coordinating them is strengthened). The effect of the project has been continued, and the Overall Goal (i.e. The social capacity for prevention and early warning of forest fire has been strengthened) has been achieved. Regarding the sustainability, no problem has been observed in terms of the policy and institutional aspects. Although slight problems have been observed in terms of technical and financial aspects of the principal information providers/users of MKFFIS (e.g. concern of DPR about maintenance of the skills and knowledge due to limited access to MKFFIS, lack of information about the plan and budget for repair/replacement of the broken AWSs provided to HM, and lack of budget data to judge financial aspect except for DPR), no problems have been observed in these aspects of CMC.

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

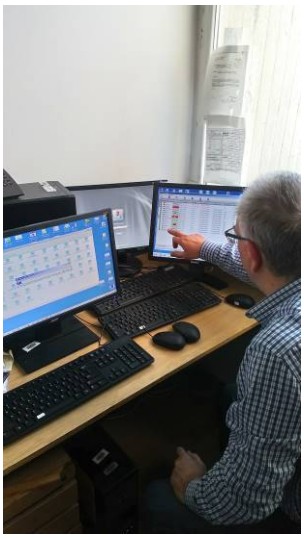
III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

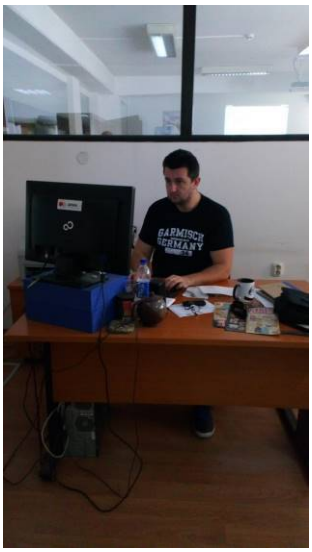
It is recommended that CMC explain to DPR the procedure for renewal of the initial IDs and Passwords issued during the project implementation so that MKFFIS can be fully utilized.

Lessons Learned for JICA:

The Western Balkan countries have common needs for strengthening national capacities and regional cooperation for prevention and early warning of forest fires. After the project completion, CMC took initiative to develop a TCTP in cooperation with JICA to share the experience, knowledge and results related to development of integrated system for prevention and early warning of forest fires with the Western Balkan countries (i.e. Albania, Montenegro, Serbia, Bosnia and Herzegovina, and Kosovo). The main benefit was that CMC, from the implementing agency of the project and the recipient of the assistance, became the provider of knowledge related to forest fires risk reduction through TCTP. Another achievement was that some of the participating countries recognized the benefits of development of national forest information system, such as MKFFIS, and got the opportunity to propose similar cooperation to JICA following the good example of MKFFIS. They are also utilizing the knowledge they gained through TCTP. Therefore, development and implementation of a TCTP by the Implementing Agency should be encouraged after the completion of the technical cooperation project if neighboring countries have common needs.



Utilization of MKFFIS in daily work at HM



CMC employee in charge of maintenance of MKFFIS

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Indonesia Office: February 2019

Country Name	Project for Research and Education Development on ICT in ITS (PREDICT-ITS) Phase 1 and 2
Republic of Indonesia	

I. Project Outline

Background	There were disparities of growth between the Western and the Eastern Part of Indonesia (EPI), and development of industries and communities in EPI was one of the most important issues for the sustainable economic growth. The Government of Indonesia has prioritized development of Information and Communication Technology (ICT)-related industries, and the Institut Teknologi Sepuluh Nopember (ITS) is recognized as a leading institute which contributes to stable socio-economic development of EPI. JICA implemented the "Project for Research and Education Development on Information and Communication Technology in ITS (Phase 1)" (2006-2010). ITS strengthened research and educational capacity of ICT related engineering departments through Labo-based Education (LBE) and joint researches. The request for the succeeding project (Phase 2) was made to further strengthen international level researches and LBE as well as expanding them to EPI universities.		
Objectives of the Project	Through introduction of LBE and joint research activities, the project aimed at strengthening ITS' education and research capabilities in the ICT-related engineering fields as a resource university in EPI, thereby contributing to capacity building of the industries, other universities and government institutes in EPI. 1. Overall Goal: 1) ITS will provide industries, other universities and government institutes in EPI with human resources having the state-of-the-art technologies and skills in the fields of ICT; 2) Universities in EPI will enhance their education and research capabilities. 2. Project Purpose: ITS strengthens its education and research capabilities in the ICT-related engineering fields as a resource university in EPI. (Project Purpose of PREDICT-ITS 1 and 2). Note: The objectives of the two projects restructured for the ex-post evaluation as explained in the "Special Perspectives Considered in the Ex-post Evaluation."		
Activities of the project	Project site: ITS 1. Main activities: Introduction of LBE, implementation of joint researches with Japanese and other EPI universities, joint activities with private companies and government institution, application of patents, training of the academic staff of other EPI universities, etc. 2. Inputs (to carry out above activities) Japanese Side Phase 1: 1) Experts from Japan: 15 persons 2) Training in Japan: 33 persons 3) Equipment: office equipment, etc. 4) Operation cost. Phase 2: 1) Experts from Japan: 10 persons 2) Training in Japan: 21 persons 3) Equipment: network server, software, etc. 4) Operation cost. Indonesian Side Phase 1: 1) Staff allocated: 22 persons 2) Land and facilities: Office space, laboratory, etc. 3) Operation cost for participation fees for the conferences and seminar, application of patents, scholarship for the researchers, etc. Phase 2: 1) Staff allocated: 65 persons 2) Land and facilities: Office space, etc. 3) Equipment for exploration and analysis 4) Operation cost.		
Project Period	Phase 1: April 2006 to March 2010 Phase 2: January 2012 to December 2014	Project Cost	Phase 1: (ex-ante) 330 million yen, (actual) 354 million yen Phase 2: (ex-ante) 199 million yen, (actual) 251 million yen
Implementing Agency	Directorate General of Higher Education, Ministry of Education & Culture (Restructured to the Ministry of Research Technology and Higher Education (RISTEKDIKTI) in 2014), Institut Teknologi Sepuluh Nopember (ITS).		
Cooperation Agency in Japan	Kumamoto University		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-post Evaluation >

- In the ex-post evaluation, the two projects were considered as one intervention since they shared the direction, and the Project Purpose and Overall Goal were restructured to verify achievement of the two projects as one intervention, as follows. Development of industries and communities in EPI was verified as a supposed impact. Efficiency was judged on the total project cost and period of the two projects, not by calculating the cost and period of each project separately.

1 Relevance

<Consistency with the Development Policy of Indonesia at the time of ex-ante evaluation and project completion>

The project was consistent with Indonesia's development policies from the time of the ex-ante evaluation of the Phase 1 to the project completion of the Phase 2, as capacity development of tertiary level educational institutions in the science and engineering fields was prioritized in the "National Mid-term Development Plans (RPJMN)" (2004-2009) (2010-2014).

<Consistency with the Development Needs of Indonesia at the time of ex-ante evaluation and project completion>

Although technical innovation in ICT was critical for sustainable development of the island-studded country, there were not sufficient number of technicians and researchers in EPI. Even after the Phase 1, there were still needs for further strengthening of international level researches and LBE in ITS as well as expanding them to other EPI universities. Thus, the project was consistent with the development needs of Indonesia from the time of the ex-ante evaluation of the Phase 1 to the project completion of the Phase 2.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

In "the Country Assistance Program for the Republic of Indonesia" (2004), one of the priority areas was set as "assistance to realize sustainable growth driven by private sector." Also, one of the focuses of human resource training is the personnel in industry and regional positions. In particular, development of human resources for the industry is considered necessary to achieve economic growth.

<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 mostly achieved. Among 24 joint research teams, six papers co-authored by researchers of ITS and EPI who belonged to the JICA joint research teams were posted in international journals. It is possible that more than six were submitted (Indicator 1). It was pointed out by the terminal evaluation team that contribution of EPI researchers was small due to insufficient research equipment. As well, ITS strengthened its educational functions, as many S2[1] students participated in regular laboratory meetings and answered that LBE would bring good future careers (Indicator 2). The average number of semesters needed to complete the master's thesis in the certified LBE laboratories decreased from 4.21 (2009) to 4.06 (2013) (Indicator 3), while it increased in all laboratories from 4.41 (2009) to 4.56 (2013).

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

The project effects have continued. Since the project completion, the number of joint researches and the number of the papers co-authored by researchers of ITS and EPI both increased (Indicator 1). Joint researches have been uploaded on the website[2]. As an output of the Phase 1, ITS exchanged agreements with four EPI universities for joint researches, which has been extended to the network with 23 EPI universities (EPI-UNET). Regarding ITS' educational functions, any students' satisfaction survey has not been conducted. However, based on the facts of the increase in the number of LBE certified laboratories, it can be assumed that quality LBE has been sustained in ITS (Indicator 2). In 2017, 75% of S2 students graduated within four semesters (Indicator 3).

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

The Overall Goal has been achieved. The number of academic staff who had gained degrees from ITS has been on an increasing trend ~~increased~~ (Indicator 1). In 2015, S2 degree and S3 degree holders were 99 and 42 in EPI universities, respectively, and it is presumed that the number has been increasing. According to the survey in the ex-port evaluation, the number of papers which are produced by the four EPI universities posted in academic journals increased from 79 in 2015 to 172 in 2017 (Indicator 2). Regarding the academic collaboration with the industry sector, among the four EPI universities, one has conducted 7 joint researches with private companies and the other, 2 joint activities, which have been increased compared to before the project (Indicator 3). For capacity building of EPI universities, ITS has annually conducted seminars, through EPI-UNET, particularly in the areas of joint research, quality assurance and internationalization. EPI-UNET has organized annual meetings with participation of the Directorate General of Institutional Affairs for Science Technology and Higher Education of RISTEKDIKTI.

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

First, ITS has applied more and more patents (22 in 2015, 38 in 2016 and 52 in 2017), and some have been commercialized as innovate products including one related to CAD (computer-aided design). Second, through intervention in EPI-UNTE, the Directorate General of Institutional Affairs for Science Technology and Higher Education of RISTEKDIKTI has improved performance in processing publication and patent, according to observation of ITS. Third, though no exact data was available, according to ITS, the number of female lectures increased as LBE leaders at ITS. Female researchers trained in the Phase 1 were encouraged to take responsible positions, and nine of them were appointed as LBE leaders in the Phase 2.

<Evaluation Result>

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

Achievement of the Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td rowspan="2">(Project Purpose)
ITS strengthens it education and research capabilities in the ICT-related engineering fields as a resource university in EPI.</td><td>1. At least one research paper, co-authored by researchers of ITS and EPI universities, is submitted to an international journal by each JICA joint research team. (Indicator 1 of the Project Purpose of PREDICT-ITS 2)</td><td><u>Status of achievement: Partially achieved (Continued).</u>
(Project Completion)
- Among 24 JICA joint research teams, six papers co-authored by researchers of ITS and EPI universities were "posted" in international journal, though it is possible that more papers would have been "submitted".
(Ex-post Evaluation)
- ITS has conducted researches and submitted papers to international journals, co-authored with researches of EPI universities.
<table>
<tr><td></td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>No. of joint researches</td><td>9</td><td>12</td><td>19</td></tr>
<tr><td>No. of the submitted papers</td><td>9</td><td>12</td><td>19</td></tr>
</table></td></tr>
<tr><td>2. More than 60% of students are satisfied with LBE of ITS. (Indicator 2 of the Project Purpose of PREDICT-ITS 2)</td><td><u>Status of achievement: Achieved (Partially continued).</u>
(Project Completion)
- 73% of S2 students considered that their participation in LBE would bring them good future careers in 2013.
- 90% of S2 students participated in more than 80% of the regular laboratory</td></tr>
</table>

[1] S2 (Sarjana 2) is equivalent to the master's degree. S3 is the doctor's degree.

[2] http://monitoring.epiunet.its.ac.id/ (Information is available in Indonesian only.)

<table>
<tr><td></td><td></td><td>meetings in 2013.
- 65% of S2 students conducted research activities for more than 30 hours per week in 2013.
(Ex-post Evaluation)
- Since the project completion, no survey on students' satisfaction has been implemented.
<Supplemental information>
- The percentage of the LBE-certified laboratories has increased: 28% (2015), 30 (2016) and 36% (2017), based on which it is presumed that LBE has been accepted by more students</td></tr>
<tr><td></td><td>3. The percentage of S2 students who complete his/her master's thesis at the end of 4th semester increases. (Indicator 3 of the Project Purpose of PREDICT-ITS 2)</td><td><u>Status of achievement: Achieved (Continued).</u>
(Project Completion)
- The average semester number needed to complete the master's thesis decreased from 4.21 (2009) to 3.66 (2012), 4.06 (2013).
(Ex-post Evaluation)
- The ratio of S2 students who complete his/her S2 course in 4 semesters has been increasing, according to ITS. In 2017, 75% of S2 students graduated within 4 semesters.</td></tr>
<tr><td rowspan="3">(Overall goal)
1. ITS will provide industries, other universities and government institutes in EPI with human resources having the state-of-the-art technologies and skills in the fields of ICT.
2. Universities in EPI will enhance their education and research capabilities.</td><td>1 The number of academic staff of universities in EPI in ICT-related engineering fields graduated from ITS with master's and/or doctoral degrees increases. (Indicator 1 of the Overall Goal of PREDICT-ITS 1 and 2)</td><td><u>Status of achievement: Mostly achieved</u>
(Ex-post Evaluation)
- The number of academic staff who gained S2 and S3 degree in ICT-related engineering fields from ITS has been on an increasing trend.
- Data of academic staff who gained S2 and S3 in EPI universities in 2016 and 2017 were not available. However, it is presumed that the number has been increasing, since their staff continued studies for S2 and S3 in 2016 and 2017.
<table>
<tr><td></td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>Academic staff with S2 degree in ITS</td><td>33</td><td>18</td><td>36</td></tr>
<tr><td>Academic staff with S3 degree in ITS</td><td>14</td><td>9</td><td>17</td></tr>
<tr><td>Academic staff with S2 degree in EPI universities</td><td>99</td><td>NA</td><td>NA</td></tr>
<tr><td>Academic staff with S3 degree in EPI universities</td><td>42</td><td>NA</td><td>NA</td></tr>
</table></td></tr>
<tr><td>2 The number of research papers produced by academic staff of EPI universities and published in journals increases. (Indicator 2 of the Overall Goal of PREDICT-ITS 2)</td><td><u>Status of achievement: Achieved.</u>
(Ex-post Evaluation)
- The number of research papers produced by researchers of ITS and EPI universities and published in journals has increased.
<table>
<tr><td></td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>Published papers by EPI university staff</td><td>79</td><td>167</td><td>172</td></tr>
</table>
Note: Data were collected from the University of Mataram, University of Nusa Cendana, Sam Ratulangi University and University of Cendrawasih.</td></tr>
<tr><td>3. The number of joint researches with industries conducted by EPI universities increases. (Indicator 3 of the Overall Goal of PREDICT-ITS 2)</td><td><u>Status of achievement: Partially achieved.</u>
(Ex-post Evaluation)
- Among the four surveyed universities, two (University of Nusa Cendana, Sam Ratulangi University) have newly conducted joint researches with industries.</td></tr>
</table>

Source: Terminal Evaluation Report, ITS Website, and information provided by ITS.

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: 114%). The outputs were produced as planned. Therefore, the project efficiency is fair.

4 Sustainability

<Policy Aspect>

Development of education and research at ITS and EPI universities in ICT-related fields is prioritized in RPJMN (2015-2019), and ICT is described as a strategic research field in "ITS Master Development Plan" (RENIP) (2016-2040) and "ITS Strategic Plan" (RENSTRA) (2016-2020).

<Institutional Aspect>

ITS has sustained an appropriate organizational structure to promote LBE and joint research. ITS Research Institute (LPPM) set under the rector is responsible for LBE at ITS. Every August, LPPM receives application for LBE certification from laboratories and selects those which meet qualifications, to which funds are granted. In 2018, 63 laboratories (35% of the total) were LBE-certified. LBE performance is monitored by LPPM. There has been a sufficient number of staff to support LBE, such as laboratory heads and PhD holder lecturers, according to ITS. Besides EPI-UNET, ITS has kept the network with Japanese universities[3] for joint researches, double degree program, student/staff exchange

<Technical Aspect>

LBE leaders and academic staff of ITS have sustained sufficient knowledge for promoting LBE and joint researches, as more S2 and S3 graduates have joined and published more research papers. For laboratories which are not yet LBE-certified, LPPM annually conducts trainings and share best practices of LBE laboratories. Guidelines for Defining LBE and its Criteria and Guidelines for

[3] ICT has kept the network with Kumamoto University, Kobe University, Osaka University, Hiroshima University, Kyushu University, Tohoku University, Tokyo Institute of Technology, Tokyo University, Saga University, Soka University, Wakayama University, and so on.

Monitoring and Evaluating LBE have been utilized by LPPM.

<Financial Aspect>

ITS has secured sufficient budgets for development of ICT infrastructure and promotion of LBE and joint researches with EPI universities: 250 million Indonesian Rupiahs (IDR) each year since 2015. Besides, since 2016, ITS has annually provided EPI-UNET with research funds for its collaborative research activities (300 million IDR). Although there has been no budget allocation from RISTEKDIKTI to EPI-UNET, research activities have been successfully conducted among ITS and EPI universities, as mentioned earlier.

<Evaluation Result>

Therefore, the sustainability of the effects is high.

5 Summary of the Evaluation

The Project Purpose was mostly partially achieved, and the project effects have continued. ITS strengthened its education and research capabilities, as indicated in the increase in the number of the produced academic papers and LBE-certified laboratories and decrease in the duration of S2 and S3 students to complete the program. Also, ITS has continued academic exchanges with EPI universities through the officially established network. Regarding sustainability, ITS has sustained an appropriate organizational structure and technical level to support LBE and joint researches. As for the project efficiency, the project cost exceeded the plan.

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

III. Recommendations & Lessons Learned

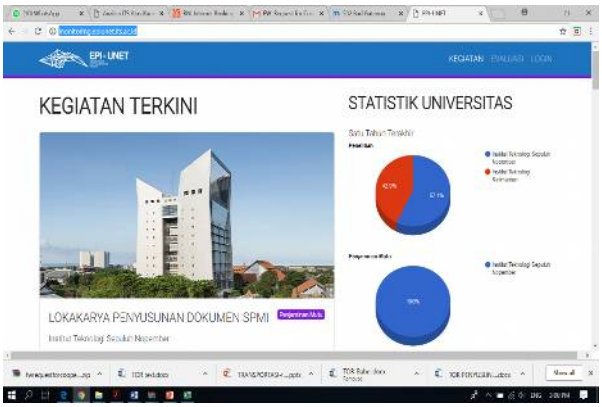
Recommendations for Implementing agency:

- It is recommended to the Directorate General of Institutional Affairs for Science Technology and Higher Education of RISTEKDIKTI to share the project experience with EPI universities in other fields than ICT, so that they could learn about joint researches and networking in the region. It is important to monitor progresses of collaboration of ITS and EPI-UNET on the degree programs for lecturers, LBE and joint researches.
- It is recommended to ITS to establish the database on successful cases of LBE and joint researches, including data such as the number of female researchers, students' satisfaction, and so on, and then to share the data within ITS and also with other EPI universities in order to further encourage LBE and joint researches. With regard to this, it is also recommended to ITS to organize a monitoring team which would coordinate with EPI universities to measure the progress of EPI-UNET and collect such data including the number of published research papers, workshop results, applied patents, and so on.
- It is recommended to EPI-UNET to strengthen further collaboration with ITS for utilizing LBE for joint research and involve other EPI universities in EPI-UNET so that their lecturers would participate in S2 and S3 programs at EPI universities.

Lessons learned for JICA:

- Through the activities of the Phase 1 and Phase 2, ITS strengthened its education and research capabilities and extended its experience with EPI universities through EPI-UNET. Official establishment of EPI-UNET has been attributed to the project efforts for involving EPI universities from the Phase 1, though the project mainly targeted at capacity development of ITS. Joint researches among ITS and EPI universities have been based on ITS experiences in joint researches with Japanese universities during the project period. Thus, in the projects, which aim at strengthening a certain institution as a center for capacity development of nearby institutions after the project completion, it is important to involve those nearby institutions and promote their networking during the project period, so that the target institution could learn how to disseminate the experience after the project completion. (either for Degree program for lecturer and or LBE utilization and or Research)
- Indicators for projects which are implemented in the remote areas shall be set carefully so as to avoid inefficient data collection for verification of target achievement after project is completed. In case sufficient data is not collected, project achievement cannot be verified or judged appropriately. Sending a team of monitoring after the project completion is one of the ways to update information on the project effects. Or, JICA offices should contact the implementing agency and make sure that it is monitoring the project effects based on set indicators.

EPI UNET workshop on outcome-based education in Surabaya in February 2018



Website of EPI-UNET

Internal Ex-Post Evaluation for Development Planning Project

conducted by Cambodia Office: November,2018

Country Name	**Project for Comprehensive Urban Transport Planning in Phnom Penh Capital City**
Kingdom of Cambodia	

I. Project Outline

Background	Traffic condition in Phnom Penh Capital City (PPCC) had been deteriorating due to rapid increase of vehicles mainly spurred by the country's vital economic growth. Through JICA's "The Study on the Transport Master Plan of the Phnom Penh Metropolitan Area in the Kingdom of Cambodia" (2001), the Master Plan with the target year of 2015 was developed in 2001 ("2001 MP") and the "Project for Traffic Improvement in Phnom Penh City in the Kingdom of Cambodia" (2007-2010) was implemented under 2001 MP. However, traffic congestion and traffic accidents increased due to rapid increase of vehicular traffic and lack of public transport. In order to solve the transport problems in PPCC, it was necessary to update 2001MP and to develop a comprehensive urban transport plan.		
Objectives of the Project	This project aims to formulate a comprehensive urban transport plan of PPCC, of which the target year is 2035, and its short- and mid-term action plans, to select priority projects and implement pre-feasibility study (pre-F/S), and to transfer techniques regarding survey methods and planning in PPCC, thereby improving traffic condition in PPCC, by way of institutionalization or implementation of the proposed comprehensive urban transport plan as a development plan of transport sector of PPCC and implementation of the selected priority projects.		
	1. Expected Goals through the proposed plan[1]: Traffic condition is improved in Phnom Penh Capital City (PPCC) through implementation of projects according to the plan proposed by the project. 2. Expected utilization of the proposed plan : Institutionalization or implementation of the proposed comprehensive urban transport plan as a development plan of transport sector of PPCC and implementation of the selected priority projects.		
Activities of the Project	1. Project Site : The whole administrative area of PPCC 2. Main Activities: -1)Survey on current situation of urban transportation and traffic demand forecast, formulation of urban transport master plan, including selection of priority projects, formulation of implementation plan and short-term and mid-term action plans, pre-FS on priority project(s); 2) Formulation of capacity development plan for promotion of the plan and technical transfer to the relevant staff regarding survey methods and planning 3. Inputs (to carry out above activities) Japanese Side 1) Members of Study Team: 16 persons 2) Trainees Received: 15 persons Cambodian Side 1) Staff Allocated: 8 persons from Department of Public Works and Transport		
Project Period	March 2012 – December 2014 (Extended period: April - December 2014)	Project Cost	(ex-ante) 380 million yen (actual) 287 million yen
Implementing Agency	Department of Public Works and Transport, Phnom Penh Capital City (DPWT)		
Cooperation Agency in Japan	METS Research & Planning, Inc.; International Development Center of Japan, INC.; Oriental Consultant Co. Ltd..; Tonichi Engineering Consultants, INC.		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

- As per the Ex-Ante Evaluation Sheet, ex-post evaluation was planned after the fifth year from the completion of the project. Therefore, the target year for the expected utilization of the proposed plan shall be set to be 2019 (the fifth year from the completion of the project).
- Indicator 1 ("The number of cases of institutionalization or implementation of the proposed comprehensive urban transport plan as a development plan of transport sector of PPCC"):"The number of cases of institutionalization or implementation" shall be modified into "Institutionalization or implementation" since only one "comprehensive urban transport plan" was proposed as a development plan of transport sector in PPCC. "Institutionalization" shall be defined as the official approval of the plan by Phnom Penh Capital Hall (PPCH), and subsequently by the Government of Cambodia as part of Phnom Penh's 2035 Comprehensive Urban Master Plan, which was planned to be submitted by PPCH at the time of project completion. Indicator 1 shall be evaluated to be achieved if either "institutionalization" or "implementation" is achieved.
- Indicator 2 ("The number of the selected priority projects implemented"): "Priority projects" in this Indicator shall be defined as 3 "urgent programs" of the proposed comprehensive urban transport plan, for which short- and mid-term action plans were prepared (i.e. city bus operation program phase 1

[1] 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).

& phase 2 and 100 signalized intersections upgrading program), and F/S for "the highest priority program" of the proposed plan (i.e. development of rail transit system), recommended by the project. Considering that the target year is set to be 2019, the evaluation shall be judged mainly on the achievement status of the priority projects with short-term goal (i.e. city bus operation program phase 1) and F/S for rail transit system. In view of the above, the target number shall be set to be at least 2.

・ Institutional, Technical, and Financial Aspects of Sustainability shall be judged mainly on the implementation of the "priority projects" defined above.

1 Relevance

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

The project was consistent with the development policy of Cambodia both at the time of ex-ante evaluation and project completion, as development and improvement of transportation in PPCC was regarded as a priority action issue from the viewpoint of improving the investment environment in the "Rectangular Strategy for Growth, Employment, Equity and Efficiency" Phase II (2009-2013) and Phase III (2014-2018) of the Royal Kingdom of Cambodia.

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

The Project was consistent with the development needs of Cambodia to improve traffic conditions in PPCC as mentioned in the "Background" above at the time of ex-ante evaluation. The continuity of the needs at the time of project completion was confirmed by DPWT through the questionnaire for the ex-post evaluation.

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

The Project was consistent with Japan's Country Assistance Program for the Kingdom of Cambodia (2002), which includes "promotion of development of socio-economic infrastructure" under one of the four priority areas ("Sustainable economic growth and realization of a stable society").

<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. A comprehensive urban transport plan with the target year of 2035 (i.e. the Phnom Penh Urban Transport Master Plan 2035 (PPUTMP 2035)), including short-term and mid-term action plans[2], was developed. Four priority projects were selected (i.e. city bus operation program phase 1 & 2, 100 signalized intersections upgrading program, and F/S for development of rail transit system) and a Pre- F/S for development of rail transit system was implemented. Techniques of survey methods and planning were transferred to the relevant C/Ps during the cooperation period. The Final Report of this project was received/accepted as the project output in the final meeting of Joint Coordinating Committee (JCC) .

<Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

The Proposed Plan is utilized at the time of ex-post evaluation. Although PPUTMP 2035 has not been approved by PPCH[3], it has been implemented as a development plan of transport sector of PPCC because all of its short- and mid-term action plans have been or are being implemented. Some other programs proposed by PPUTMP 2035 have been or are being implemented, too (Indicator 1). One priority project (i.e. city bus operation program phase 1) has been already completed and the other 3 are ongoing (Indicator 2).

<Status of Expected Goal through the Proposed Plan at the time of Ex-post Evaluation>

According to DPWT and City Bus Authority (CBA), the traffic congestion in PPCC has been already reduced to some extent through implementation of 3 priority projects i.e. city bus operation program phase 1 & phase 2 and 100 signalized intersections upgrading program. Especially, introduction and expansion of city bus service has contributed to the reduction of private transport modes that cause the traffic congestion in the city. The number of bus users has increased by around 30-40% every year and amounted to be about 3.2 million in 2017.

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

No negative impacts have been observed.

<Evaluation Result>

In light of the above, through the project, the Objectives were achieved at the time of project completion. The Proposed Plan is utilized, and the Expected Goal through the proposed plan was already partially achieved at the time of ex-post evaluation. Therefore, 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

Aim	Indicators	Results
(Utilization of Proposed Plan) Institutionalization or implementation of the proposed comprehensive urban transport plan as a development plan of transport sector of PPCC and implementation of the selected priority projects	Indicator 1 Institutionalization or implementation of the proposed comprehensive urban transport plan as a development plan of transport sector of PPCC	(Ex-post Evaluation) achieved -PPUTMP 2035 has not been officially approved by PPCH. -All of the short- term and mid- term action plans of PPUTMP 2035 have been or are being implemented. In addition, some other programs proposed by PPUTMP 2035 have been or are being implemented, including road expansion and ring road development projects (RR2 and RR3) by PPCH and operation of water taxi and expansion of commuter train services to the Phnom Penh international airport by MPWT.
	Indicator 2 The number of the selected priority	(Ex-post Evaluation) achieved <Utilization status of the priority projects selected by the project >

[2] Short-term and mid-term action plans includes city bus operation phase 1&2, 100 signalized intersection upgrading, improvement of parking and sidewalk, and introduction of one-way road.

[3] According to DPWT, it is under review and discussion among the relevant authorities.

	projects implemented or being implemented (at least 2)	**Priority Project**	**Progress/Plan**
		City bus operation program phase 1 (2014-2016)	(Completed) -City Bus Authority set up in 2014. Three bus routes with 57 bus fleets became operational. (One-month public experiment of city bus operation supported by the project)
		City bus operation program phase 2 (2017-2020)	(Ongoing) -Bus routes expanded to 8 in 2017. Total of 157 bus fleets in operation.at the time of ex-post evaluation. -80 more bus fleets planned to be in operation by the end of 2018. Bus routes to be expanded to 10 by 2020. (The program supported by JICA's technical cooperation for "Project for Improvement of Public Bus Operation In Phnom Penh" (2017-2020)). Procurement of 80 bus fleets supported by Japanese grant aid for "Project for Improvement of City Bus Operation in Phnom Penh" (2016-2018))
		100 signalized intersection upgrading program (2015-2018)	(Ongoing) -115 new signals and a Traffic Control Center with central control system of traffic signal system are being installed -Central control system planned to be launched in September 2018 (The program supported by Japanese grant aid for "Project for Development of Traffic Management System in Phnom Penh" (2016-2018))
		F/S for development of rail transit system (2017-2018)	(Ongoing) - F/S is being conducted. The final report planned to be submitted by January 2019. (F/S supported by JICA's "Preparatory Survey for Phnom Penh Urban Railway Development Project" (2017-2019)).

Source：DPWT

3 Efficiency

While the project cost was within the plan (ratio against the plan: 76%), the project period exceeded the plan (ratio against the plan:138%) because of implementation of an additional activity (i.e. stated preference survey) for verification of the target public transport modal share, which was set during formulation of PPUTMP 2035. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

Development and improvement of transportation in PPCC is consistent with the "Rectangular Strategy for Growth, Employment, Equity and Efficiency" Phase III (2014-2018)[4]as stated in "Relevance". However, PPUTMP 2035 has not been approved by PPCH yet, According to DPWT, it is under review and discussion among the relevant authorities.

<Institutional Aspect>

City bus operation program phase 2 (2017-2020) is supported by JICA's technical cooperation, "Project for Improvement of Public Bus Operation in Phnom Penh" (2017-2020), and implemented by CBA, which was established for operation and management of city bus under phase 1 of the program. There are 46 staff members at CBA headquarters, including 5-6 persons in charge of the program. The number of staff is considered appropriate as the program has been implemented as planned and the city bus service has been operated without a serious problem. According to CBA, the current number of staff at the headquarters is sufficient for expansion of the bus routes until 10, targeted by the program and additional drivers and mechanics will be hired for 80 more bus fleets expected to be operational by the end of 2018.

One-hundred signalized intersection upgrading program (2015-2018) is supported by a Japanese grant aid, "Project for Development of Traffic Management System in Phnom Penh" (2016-2018), and DPWT is the Implementing Agency. Although the number of allocated staff is not available, it is considered appropriate as the program has been implemented without a serious problem. Under the program, Traffic Control Center (TCC) is planned to be established in September 2018 to operate and manage a new traffic control system being installed. According to DPWT, 11 staff members from DPWT, PPCH and traffic police are planned to be assigned to TCC; however, the number of staff would not be sufficient to operate the system smoothly so that it is necessary to hire contract staff from private sector who has related skills necessary for management, operation and maintenance.

The F/S for development of rail transit system is conducted through JICA's "Preparatory Survey for Phnom Penh Urban Railway Development Project" (2017-2019) , and Road Infrastructure Division (RID) of MPWT is the main Implementing Agency to work with the survey team. There are more than 100 staff members at RID and around 3-4, including the Director, are assigned as C/Ps to coordinate with other concerned government organization, including preparation and hosting JCC, which is a very significant platform for decision making. JCC is chaired by Secretary of State of MPWT. Organizational structure for urban railway would be formed up based on the recommendation of the F/S.

<Technical Aspect>

CBA, DPWT, and MPWT have basic capacity to implement the respective priority projects, considering that the projects have been implemented without a serious problem. As for city bus operation program, capacity of CBA for bus operation and maintenance and bus business management is expected to be further enhanced through on-going JICA's technical cooperation ("Project for Improvement of Public Bus Operation in Phnom Penh" (2017-2020)). Regarding 100 signalized intersection upgrading program, the staff to be assigned to TCC has acquired basic skills and knowledge to operate the traffic control system through training provided under the grant aid project. However, according to DPWT, the staff does not have sufficient skills and knowledge to fully utilize the system, including the ones for

[4] Draft of "Rectangular Strategy" Phase IV (2019-2023) was not available at the time of ex-post evaluation.

traffic management, traffic safety planning, application of data/information obtained from the system to actual traffic management and safety administration, which are urgently needed for them to deal with serious traffic congestion and accidents[5].

<Financial Aspect>

Regarding city bus operation program, the total budget is not disclosed, but necessary amount is considered to be secured as the program has been implemented as planned. Although city bus operation has not made profit, PPCH has provided subsidy of approximately 50,000 US$ per month to CBA to maintain the service since 2014. As for the required investment, it has been partly supported by another Japanese grant aid ("Project for Improvement of City Bus Operation in Phnom Penh" (2016-2018)), for which Japan agreed to provide 1,369 million yen for the procurement of 80 bus fleets (20 bus fleets already procured). Although detailed information is not available, PPCH has secured the specific amount of budget necessary for implementation of the grant aid project, including construction cost for a new bus depot. It has also secured the budget to employ additional drivers and mechanics to operate 80 bus fleets to be provided by the grant. In view of the above, the budget is likely to be secured for implementation of the city bus operation program even for the remaining period.

As for 100 signalized intersections upgrading program, budget is supported by the Japanese grant aid ("Project for Development of Traffic Management System in Phnom Penh"), for which Japan agreed to provide 1,727 million yen. According to PPCH, it will secure necessary budget to operate 100 traffic signal system, including operation cost of TCC, after completion of the program in December 2018.

Budget for the F/S for development of rail transit system is supported by JICA through the Preparatory Survey. The planned budget is approximately 3 million US$. As for the proposed rail transit system development program, cost estimation would be presented in the Final Report.

<Evaluation Result>

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

5 Summary of the Evaluation

This project achieved its objectives at the time of project completion since PPUTMP 2035 was proposed, 4 priority projects were selected, and a pre- F/S of a priority project was implemented. The proposed plan has been utilized by the time of ex-post evaluation: all of the short-term and mid-term action plans of PPUTMP 2035 and all of the selected priority project have been or are being implemented. Regarding sustainability, slight problems have been observed in the policy aspect (i.e. pending of approval process of PPUTMP 2035) institutional aspect (i.e. lack of skillful staff for management, operation, and maintenance of the TCC system), and technical aspect (i.e. insufficient skills of personnel of DPWT to fully utilize traffic control system to be launched in September 2018). Nevertheless, no major problem has been observed in the financial aspect. 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:

- Urban transport development is a new sector for Cambodia. Therefore, to sustain the effect of the priority projects, human resource allocation and capacity building to improve technical skills and knowledge of the staff members is very important. In view of the above, it is recommended that PPCH/DPWT allocate the sufficient number of technically qualified staff at new TCC, including contract staff with related skills for management, operation, and maintenance of the traffic control system to be launched and train the staff to enable full utilization of the system before completion of 100 signalized intersection upgrading program in December 2018.

Lessons Learned for JICA:

- One of the Indicators of the project included "institutionalization" of the proposed master plan (PPUTMP 2035). Although the PPUTMP 2035 has been utilized, it has not been institutionalized/approved by PPCH. The implementing agency has not effectively followed up for approval of the PPUTMP.
  - At the project planning stage, a time frame for approval of the master plan prepared by a development study project should be mentioned in the official document shared by both sides (i.e. the implementing agency and JICA) such as R/D, especially when approval of the proposed master plan after project completion is included in the Indicators.
  - The project should also have a strong monitoring tool/system in order to follow up the progress of approval and implementation of the master plan. A particular Working Group to review the master plan approval process by the Government of Cambodia should be established before or at the time of the completion of the project. At the project planning stage, establishment of such a working group should be agreed in the official document shared by both sides.
  - Furthermore, basically, official or legal documents should be drafted in Khmer language in Cambodia. Therefore, the master plan related documents should be in Khmer as well as English, if the documents aim at official approval. In this project, however, only English documents were prepared. After the project completion, Khmer translation of the Final Report (Executive Summary) was prepared by JICA Cambodia Office and provided to PPCH upon their request. Preparation of critical PPUTMP 2035 related documents in Khmer language should have been added in M/M and/or terms of reference for the consultants at the project planning stage. As the integration with other Phnom Penh master plans is essential for the PPUTMP 2035 to be approved, the project should have needed more involvement of urban design/planning division of the implementing agency. This could have made the PPUTMP 2035 added in the same process of the approval of the Phnom Penh Land Use Master Plan 2035, which was approved in 2016.

[5] Recognizing the need for further capacity development, DPWT has officially requested for a technical assistance to JICA for capacity development for traffic management planning and TCC.

Installation of new traffic light system at one of intersections in Phnom Penh

One of the bus fleets provided under Japanese grant aid project (Test-Drive)

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Cambodia Office: March, 2019

Country Name	Agricultural Productivity Promotion Project in West Tonle Sap
Kingdom of Cambodia	

I. Project Outline

Background	Agriculture is an important sector in Cambodia, but agricultural production is still low due to a number of factors, and one major factor is extension service delivery. Against such background, JICA technical cooperation projects, namely, "Battambang Agricultural Productivity Enhancement Project (BAPEP)" (2003-2006) and "Battambang Rural Area Nurture and Development Project (BRAND)" (2006-2010) were implemented. The projects resulted in the increase in crop yield of rice and the efficiency in seed use (reduction of seed rate[1]) in its target areas. Meanwhile, the number of extension workers with sufficient knowledge and skills to disseminate newly acquired rice cultivation technologies was still limited. This made it difficult for the techniques to be disseminated to the whole Battambang Province and beyond.		
Objectives of the Project	Through capacity development of extension workers, promotion of farm management, improving agricultural production techniques, promotion of seed production and distribution, and improvement of rice distribution, the project aimed at improving agricultural productivity and income of participating farmers (Demo-farmers as the core farmers and training-participating farmers) in the target areas in the three provinces in West Tonle Sap, thereby improving agricultural productivity and income in the target areas. 1. Overall Goal: Productivity and income of farmers in the target areas in the three provinces in West Tonle Sap are improved. 2. Project Purpose: Productivity and income of farmers who participate in the Project activities in the three provinces in West Tonle Sap are improved.		
Activities of the Project	1. Project Site: 37 communes[2] in Battambang, Pursat, and Kampong Chhnang Provinces 2. Main Activities: Training for the staff of Provincial Department of Agriculture (PDA) and extension workers; support for communes' planning activities; implementation of extension activities such as Farmers Field School (FFS); seed production; support to selected pilot groups for rice distribution activities, etc. 3. Inputs (to carry out above activities) Japanese Side 1. Experts: 7 persons 2. Equipment: vehicles, office equipment, agricultural equipment (threshers, etc.) 3. Local cost Cambodia Side 1. Staff allocated: 52 persons 2. Project office and training facilities 3. Utility cost for the project office		
Project Period	October 2010 - March 2015	Project Cost	(ex-ante) 440 million yen, (actual) 361 million yen
Implementing Agency	Ministry of Agriculture, Forestry and Fisheries (MAFF); Provincial Department of Agriculture, Forestry and Fisheries (PDAFF) of the three target provinces (Battambang, Pursat, and Kampong Chhnang Provinces). * Provincial Department of Agriculture (PDA) was renamed as PDAFF in 2016 by Prakas (Ministerial Ordinance) No. 609 dated on September 27, 2016 of MAFF.		
Cooperation Agency in Japan	None		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

- The indicators for the Overall Goal and the Project Purpose are the same (i.e., rice productivity and sales) but the target groups are different (i.e., the target communes for Overall Goal and participating farmers in the target communes for Project Purpose). For assessment of the continuation status of project effects at the time of ex-post evaluation, we approximated the indicator for Project Purpose with those for Overall Goal as specific data on participating farmers was not available. Furthermore, since commune-level data was not available, we used the district-level data as an alternative.
- The Project Purpose Indicators 3 and 4 and the Overall Goal Indicator 2 mention "sales prices" and it was defined as "sales price = average annual yield x average cultivated areas x average sales price" in the project plan. However, the terminal evaluation used sales amount per hectare to verify this indicator. This ex-post evaluation followed the terminal evaluation and used sales amount per hectare.
- Together with the continuation status of the Project Purpose Indicators, we assessed the degree of continued extension and use of the project's techniques and seed production in sampled target communes (i.e., continuation status of selected indicators of Outputs 1, 3 and 4) to make sure if the increased rice productivity and sales are effects of this project.

1 Relevance

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

Agricultural and rural development is positioned in Cambodia's development policies such as the "National Strategic Development Plan (NSDP)" (2006-2010), the "Agricultural Sector Strategic Development Plan" (2006-2010), the "Rectangular Strategy for Growth, Employment, Equity and Efficiency Phase III" (2014-2018) and the "Agricultural Strategic Development Plan" (2014-2018) as an important area for poverty reduction.

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

There were needs for improvement of rice cultivation techniques through enhancement of the extension service delivery as mentioned

[1] Seed rate refers to the amount of seeds sown on a unit of land.

[2] A commune is an administration unit under a district.

in “Background” above. The terminal evaluation of this project confirmed the continuing needs throughout the project implementation period.

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

Japan’s Country Assistance Program for the Kingdom of Cambodia (2002) held a theme, “sustainable economic growth and poverty reduction,” under which agricultural and rural development and improvement in productivity were aimed. This project is a measure to attain this end.

<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 annual Indica rice yields of Demo-farmers achieved the planned target, and the income significantly increased (Indicators 1 and 3). Also, the income of participating farmers also improved and their annual Indica rice yields almost reached the target as planned despite the extensive drought (Indicators 2 and 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. The project techniques/methods are still extended to farmers, and those techniques have been utilized in other projects such as “Rural Irrigation Agricultural Productivity Improvement Project (RIAPEP)” (IMF, 2016-2019), “Boosting Food Production (BOOSTING)” (Government Fund, 2016-2019), and “Agriculture Service Program for Innovation, Resilience and Extension (ASPIRE)” (IFAD, 2014-2021). At least 60% of farmers adopted those techniques and MAFF, the targeted PDAFF and District Office of Agriculture (DOA) officers have monitored those techniques. In addition, new JICA Technical Cooperation titled “Project on Rice Seed Production and Promotion (RSPP)” (2017- 2022) has been utilizing the results and outcomes of the APPP such as rice seed manuals and human resources trained and developed by APPP since its pilot phase in Battambang from January 2018. The outcomes of APPP have also be utilized by the Soft Component for Agriculture Extension Activities of JICA ODA Loan Project “West Tonle Sap Irrigation and Drainage Rehabilitation and Improvement Project” (2011-2019) covering the targeted provinces Kampong Chhnang, Pursat and Battambang. On the other hand, according to the Kampong Chhnang PDAFF, one of the rice distribution pilot groups formed under this project does not exist as it was unable to continue to apply the recommended techniques due to high costs that were not acceptable by rice millers that used to take prices with traditional methods.[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. The productivity (Indicator 1) and income (Indicator 2) of Indica rice in the target districts have been increased and improved. According to the targeted PDAFFs, the promoting factors include the quality seed usage (supplied by seed-growers’ groups (SGGs) formed under this project) and that the farmers have followed the recommended techniques introduced by the project. Also, the farmers use the modern equipment and the updated manuals to cope with current conditions such as climate change, so the seeds have more resilience and better yield.

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

No negative impacts of the project were observed. As a positive impact on gender, the project promoted women participation among farmers and extension officers.[4]

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td rowspan="4">(Project Purpose) Productivity and income of farmers who participate in the Project activities in the three provinces in West Tonle Sap are improved.</td><td>Indicator 1: The Indica rice yields of Demo-farmers will increase from 2.75 ton/ha in 2010 to 4.00 ton/ha.</td><td>Status of the Achievement: achieved (continued)
(Project Completion)
Average yields of Indica rice (unit: ton/ha)
<table><tr><th></th><th>2010</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th></tr><tr><td>Demo-farmers (Indicator 1)</td><td>2.75</td><td>4.5</td><td>4.3</td><td>4.4</td><td>4.1</td></tr><tr><td>Participating farmers (Indicator 2)</td><td>2.75</td><td>2.7</td><td>2.9</td><td>3.3</td><td>3.1</td></tr></table>Note: The reason for the decline in 2014 was an extensive drought.
(Ex-post Evaluation) * See Overall Goal Indicator 1.</td></tr>
<tr><td>Indicator 2: The Indica rice yields of farmers who participated in training will increase from 2.75 ton/ ha in 2010 to 3.50 ton/ ha.</td><td>Status of the Achievement: mostly achieved (continued)
(Project Completion) * See Project Purpose Indicator 1.
(Ex-post Evaluation) * See Overall Goal Indicator 1.</td></tr>
<tr><td>Indicator 3: Gross output (converted to sales price) of Indica rice production of Demo-farmers increase.</td><td rowspan="2">Status of the Achievement: both indicators were achieved (continued)
(Project Completion)
Average sales amount per hectare of Indica rice (unit: USD/ha)
<table><tr><th></th><th>2010</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th></tr><tr><td>Demo-farmers (Indicator 3)</td><td>1,207</td><td>2,086</td><td>2,271</td><td>2,191</td><td>2,276</td></tr><tr><td>Participating farmers (Indicator 4)</td><td>1,207</td><td>1,364</td><td>1,340</td><td>1,592</td><td>1,333</td></tr></table></td></tr>
<tr><td>Indicator 4: Gross output (converted to sales price) of Indica rice</td></tr>
</table>

[3] The contract farming system had not been well developed during the project implementation period. The government issued the Sub-Decree on Contract Farming in February 2011, but it was March 2017 when MAFF issued an instruction circular to implement the Sub-Decree, namely, on the procedures for implementation of contract farming in order to contribute to resolve some bottlenecks and to gain trust, ensure price, quantity and quality of the products.

[4] For example, in the training of trainers and chief extension officers, which resulted in the percentage of women participants being at least 50% (According to the law, a third is supposed to be women in the community leader). Also, according the annual report of MAFF “In 2016, the staffs of department of agricultural extension and other technical department of MAFF have been providing the training to 64,637 farmers including 41,388 women (64% of women) in good seed using, crop/farm practice, management.” (Annual Report for Agriculture Forestry and Fisheries 2016-2017 and Direction 2017-2018.)

<table>
<tr><td></td><td>production of farmers who participated in training increase.</td><td>(Ex-post Evaluation) * See Overall Goal Indicator 2.</td></tr>
<tr><td rowspan="2">(Overall Goal) Productivity and income of farmers in the target areas in the three provinces in West Tonle Sap are improved.</td><td>Indicator 1: The Indica rice yields of farmers in the target areas will increase from 2.75 ton/ha in 2010 to 3.00 ton/ha.</td><td>(Ex-post Evaluation) achieved
Average yield of Indica rice in the targeted districts (aggregated by province) (unit: ton/ha)
<table>
<tr><th>Province</th><th>2015</th><th>2016</th><th>2017</th></tr>
<tr><td>Battambang</td><td>2.92</td><td>3.15</td><td>3.33</td></tr>
<tr><td>Pursat</td><td>2.91</td><td>3.22</td><td>3.34</td></tr>
<tr><td>Kampong Chhnang</td><td>3.19</td><td>3.36</td><td>3.42</td></tr>
</table></td></tr>
<tr><td>Indicator 2: Gross output (converted to sales price) of Indica rice production of farmers in the target areas increase.</td><td>(Ex-post Evaluation) achieved
Average sales amount per hectare of Indica rice in the targeted districts (aggregated by province) (unit: Riel/ha)
<table>
<tr><th>Province</th><th>2015</th><th>2016</th><th>2017</th></tr>
<tr><td>Battambang</td><td>2,628,900</td><td>2,832,300</td><td>3,994,800</td></tr>
<tr><td>Pursat</td><td>2,764,500</td><td>2,415,000</td><td>3,339,000</td></tr>
<tr><td>Kampong Chhnang</td><td>3,513,400</td><td>3,362,000</td><td>4,446,000</td></tr>
</table>
Notes: The average sales amount per hectare in each district is calculated based on the confirmation of the average sale price per ton by target PDAFFs at the provincial level as a whole as a substitute to sales price per ton in the target districts. Calculation of the average sales amount: Average sales amount $_{i,t}$ = (average yield $_{i,t}$ x average price per ton $_{i,t}$) where i= Target district, t= year.
The average sales amount of Indica rice has fluctuated because of the quality seed usage, time of harvesting, and the middlemen.</td></tr>
</table>

Source: Terminal Evaluation Report; Project Completion Report; interview with PDAFFs and former extension officers

3 Efficiency

Both the project cost and the project period were within the plan (ratio against the plan: 82% and 100%, respectively). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

There is an emphasis in the "Agriculture Extension Policy" (2015) that Agricultural Extension programs and activities are to be developed to address national, provincial, and district agricultural development needs and priorities. Also, the "Agricultural Extension Strategic Action Plan and Implementation Guideline for Policy on Agricultural Extension in Cambodia" (2018), which is to be aligned with the goals of the "Agriculture Master Plan 2030," have relevant components related to such as human resource development, extension materials development, and extension services delivery. Furthermore, each targeted province has its five-year budget strategic plan to implement the program and sub-program of MAFF related to agricultural productivity, diversification, and agricultural commercialization.

<Institutional Aspect>

There is the established organization structure for agricultural extension as shown in the table. However, the number of staff is not sufficient to do the extension service because the extension service needs more workforce to cover the target areas and it aims to have 2,100 staff members by 2030.

Number of staff allocated for agricultural extension

MAFF	Department of Agricultural Extension, General Directorate of Agriculture (GDA)	50
Provincial level	Agriculture Extension Office, Battambang PDAFF	10
	Agriculture Extension Office, Pursat PDAFF	4
	Agriculture Extension Office, Kampong Chhnang PDAFF	5
District level	DOA Battambang, extension officers	10
	DOA Pursat, extension officers	24
	DOA Kampong Chhnang, both extension and other officers	26

Source: PDAFFs; GDA organization chart

<Technical Aspect>

Most of the extension officers who received technical transfer under this project still work on extension activities. With the support from other project activities such as ASPIRE (which has supported 28 training courses in the target provinces so far), PDAFFs have provided trainings on rice cultivation, vegetable, livestock to the extension officers and farmers, and on financial planning to extension officers. According to PDAFFs, all the manuals developed under the project are used by extension workers and farmers as well as SGGs, and part of them have been updated to fit into the situation (e.g., resilience to the climate change). Furthermore, GDA has kept strengthening its partnership with Cambodia Agricultural Research and Development Institute (CARDI) and International Rice Research Institutes (IRRI) for better addressing potential challenges such as diseases and pests, as recommended by the terminal evaluation of this project.

<Financial Aspect>

The funds for extension activities consist of the government budget (allocated to MAFF from the agricultural service program; 2 billion Riel annually in 2015-2017) and support from ADB, IFAD, and the World Bank (data not available). At the target provinces, the funds come from MAFF (15 million Riel annually in 2015-2017 to Battambang PDAFF; data not available on other provinces) and IFAD (data not available). The budget is insufficient for extension activities. The effects of lack of budget are the limited coverage areas and broadcasting capacity for extension activities and lack of technical training to farmers. Target PDAFFs try to request more budget to MAFF every year, but the allocation is still limited.

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved the Project Purpose of improving the agricultural productivity and income of participating farmers by the time of project completion. The Overall Goal of improving the agricultural productivity and income of farmers in the target areas have been achieved as well. Regarding the sustainability, problems were observed in the institutional and financial aspects mainly due to insufficient staffing and budget for extension activities. However, no problem was found in the policy and technical aspects. Considering all of the above points, this project is evaluated to be highly satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

GDA, Department of Agricultural Extension, and PDAFFs are recommended to continue their ongoing efforts as follows:

- Improve extension activities through allocating workforce and budget both from government and development partner's budget since these are extremely important for strengthening extension services.
- Keep improving technical manuals and extension materials to fit with the current situation, then widely distributed and disseminated to farmers.
- Provide the necessity training to farmers, especially rice cultivation techniques and marketing that are important for maintaining good yield and sales.

Lessons Learned for JICA:

- For future project design and implementation, JICA should take into consideration of securing the human resources and continued budget allocation to sustain project effects (from MAFF for extension activities in case of this project) through mutual discussion and agreement with government. The terminal evaluation team of this project was aware of the issue of insufficient human and financial resources. JICA should keep discussion with counterparts in order to encourage them to allocate necessary human resources and national budget.
- In the post project implementation, JICA had better make sure if there is an appropriate legal framework to support beneficiaries of the project (a secure contract farming system with potential buyers such as rice millers should have been in place in case of this project to ensure continuity of motivation among farmers to practice the techniques introduced by the project).

Warehouse of Phnom Touch Samaki SGG to store the produced seed (Banan District, Battambang Province)

Winnower used by Muong Ruessei SGG during the field visit (Muong Russei District, Battambang Province)

Internal Ex-Post Evaluation for Technical Assistance under Finance and Investment Account

conducted by China Office: December, 2018

Country Name	**The Project for Development of the Capacity on Water Environmental Management in Heihejinpen Dam River Basin**
People's Republic of China	

I. Project Outline

Background	Heihe Source Protection Zone of Water Source located in Xi'an City in Shaanxi Province in the People's Republic of China (hereinafter referred to as "China") was the main source of drinking water for Xi'an City. Water quality of Heihe basin was relatively good. However, in the upstream area, pollution sources such as houses, agricultural land, mines etc. were scattered and waste dumping was increasing. In Xi'an City, Xi'an Environmental Protection Bureau was in charge of pollution countermeasures and unexpected water pollution accident in the upstream area, Xi'an Water Affairs Bureau was responsible for policy and institutional aspects of water quality management of water sources, and Xi'an Water Group Company Limited , a water supply company, was responsible for operation and management of Heihejinpen Dam, which was the major water intake, according to the relevant regulations such as "Ordinance on Conservation of Heihe Water Conveyance System in Xi'an City" (August 2008) etc. However, in terms of organizational, institutional and technical aspects, their capacity to implement water environmental management was not sufficient. In addition, information sharing among the related organizations was not sufficient.		
Objectives of the Project	The project aims to establish and operate integrated[1] water environmental management system, aiming at securing safe and appropriate-quality raw water for drinking water, in Heihejinpen Dam River Basin, which provides a model[2] for others, through enhancement of daily water quality management system, enhancement of system and implementing capacity to respond to unexpected water pollution accidents, and introduction of models which can be shared with other river basins having similar challenges through seminars, thereby sharing of experiences of the project in China and initiating efforts towards water environmental conservation in other water source areas.		
	1. Overall Goal: Experience of the project is shared in China and efforts towards water environmental conservation are initiated in other water source areas. 2. Project Purpose: Integrated water environmental management system, aiming at securing safe and appropriate-quality raw water for drinking water, is established and operated in Heihejinpen Dam River Basin, which provides a model for others.		
Activities of the Project	1. Project Site: Heihejinpen Dam River Basin in Xi'an City in Shaanxi Province. 2. Main Activities: 1) Training in Japan on water quality management; review and identification of issues on Japanese and Chinese laws, organizational structures, technologies and implementation status of water source management of dam lakes; review of existing studies on the project site; study on current status of water pollution and risk assessment of the project site,: development of water quality improvement plan (organization and technical aspects) for the project site; implementation of priority countermeasures; and improvement of operation and management method of Heihejinpen Dam. 2) Training in Japan on unexpected water pollution countermeasures; review and identification of issues on Japanese and Chinese laws, organizational structures, technologies and implementation status of unexpected water pollution countermeasures; review of emergency forecasting and warning system in the project site and unexpected water pollution accidents in the river basin in the past; identification of potential accident sources on the map; identification of potential pollutants; damage assumption of serious accidents; development of countermeasure plans (organization and technical aspects); implementation of priority countermeasures; and preparation of draft revision of the relevant manuals. 3) Organization of Japan-China water quality management technology seminar; identification of issues in other river basins; extraction of models from 1) and 2) above, implementation of seminar for the organizations in charge of other river basins with similar problems and sharing of the models. 3. Inputs (to carry out above activities) Japanese Side (at the time of project completion) 1) Experts: 8 persons 2) Training Received: 42 persons 3) Equipment: vehicles, a toxic sensor, a boom, a ship gate 4) Local Cost Chinese Side (at the time of terminal evaluation in August 2014) 1) Staff Allocated: 67 persons (Xi'an Science and Technology Bureau, Xi'an Environmental Protection Bureau, Xi'an Water Affairs Bureau, and Xi'an Water Group Company Limited, etc) 2) Land and Facilities: project office, etc. 3) Local Cost: surveillance cameras, toxicity measurement equipment, design and installation costs of boom etc.		
Project Period	March 2012 - March 2015	Project Cost	(ex-ante) 300 million yen, (actual) 267 million yen.

[1] "Integrated" means a state in which information concerning Heihejinpen Dam River Basin is shared and cooperation mechanism is established among the related agencies.

[2] "Model" means mechanism, countermeasure technologies and dam operation and management method centering on water quality, which are applicable to other river basins with similar problems.

Implementing Agency	Xi'an Municipal People's Government (Major related agencies[3]: Xi'an Science and Technology Bureau, Xi'an Environmental Protection Bureau, Xi'an Water Affairs Bureau, and Xi'an Water Group Company Limited)
Cooperation Agency in Japan	CTI Engineering International Co., Ltd.; Incorporated Administrative Agency Japan Water Agency

II. Result of the Evaluation

<Constraints on Evaluation>

·As for Indicator 3 for the Overall Goal ("Experience of the project is referenced at dams in other river basins"), achievement status could not be sufficiently confirmed because, due to human resource and time constraints and restriction on foreigners' entry, the data could not be collected directly from the stakeholders in other river basins, including those who had participated in the model sharing seminar implemented in the project and those who had made site visits to observe the project achievements.

<Special Perspective Considered in the Ex-Post Evaluation>

· The Project Design Matrix (PDM) does not state the timing of achieving the Overall Goal. In this ex-post evaluation, it shall be defined to be March 2018 since the timing of ex-post evaluation is set to be in 3 years after the project completion in the ex-ante evaluation sheet.

·For all of three Indicators for Overall Goal, expected level to be achieved and its criteria for judgement are not clearly stated so that the exact level of achievement cannot be confirmed. Therefore, in this ex-post evaluation, whether the actual result is sufficient in light of description of the Overall Goal shall be confirmed.

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 and project completion, the project was consistent with China's development policy of enhancement of protection of drinking water sources as set forth in "National Plan for Environment Protection of Urban Drinking Water Source" (2008-2020) and "Regulation on Pollution Control and Management for Drinking Water Protected Area" (2010 revision).

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

At the time of ex-ante evaluation and project completion. Heihejinpen Dam Lake was an important source of water in Xi'an City, and the project, which aimed to establish and operate integrated water environmental management system for securing safe and high-quality raw water for drinking water in Heihejinpen Dam River Basin, was consistent with the local needs.

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

The project was consistent with Japan's ODA policy on "cooperation for dealing with global problems such as environmental problems" under the main development agenda of "realizing sustainable development" in the Economic Cooperation Plan for China (2001).

<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. From May 2014, Heihe Water Source Protection Meeting, consisting of Heihejinpen Dam Management Corporation (formerly Jinpen Management Center), Heihe Water Source Environment Protection and Management General Station (Heihe General Station), and Heihe Police Station, was organized regularly and information on hydrology and water quality of dam lake and river basin was shared to ensure integrated management of Heihejinpen Dam River Basin constantly (Indicator).

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

Achievement status of the Project Purpose has been continued at the time of ex-post evaluation. Heihe Water Source Protection Meeting has been organized regularly (around 4 or 5 times a year) and information on water quality and security of dam lake and river basin has been shared. In addition, the pumped aeration equipment[4] improved in the project has been continuously operated as a daily water quality protection measure, and a toxic sensor introduced as a measure against an unexpected water pollution accident has been continuously operated[5]. Furthermore, the technical manual for operation of Heihejinpen Dam developed in the project has been continuously utilized in dam operation, including pumped aeration equipment, etc.

<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. Experience of the project has been shared with the relevant bureaus of other cities through WSB and Xi'an Environmental Protection Bureau and with the relevant departments of the central government (Ministry of Science and Technology and Ministry of Water Resources) through Xi'an Science and Technology Bureau and Xi'an Water Affairs Bureau. However, the experience has not been disseminated further through the central government. According to the implementing agencies, it is attributable to the fact that it is not common in China's administration to share information and make requests from the local level to the central level (Indicator 1). Total of 6 organizations in other river basins (of which 4 from outside Xi'an City) have made field visits to observe the project achievements (3 during the project implementation and the other 3 after the project completion). According to the implementing agencies, the number of visits is limited after the project because it has become difficult to conduct field observations and exchange among provinces/cities due to strict budget management in the recent years (Indicator 2). According to the

[3] Under Xi'an Science and Technology Bureau, Xi'an Regional Science and Technology Exchange Centre was mainly in charge of the project. Field activities in Heihejinpen Dam River Basin was conducted by Heihe Water Source Environment Protection and Management General Station under Xi'an Water Affairs Bureau as well as Heihejinpen Dam Management Corporation (formerly Jinpen Management Center) under Xi'an Water Group Company Limited.

[4] Equipment to take in water mass with low dissolved oxygen (DO) concentration in the lower part, to improve the DO concentration by aerating it, and to send it back to the lower part.

[5] As for the boom and the ship gate installed in the project in order to prevent waste disposal, they have been temporarily removed since the end of 2017 because the effect of the boom was not exerted as expected for the damming of the drifting in water rising period due to extremely strong wind blowing over Heihejinpen Dam Lake in the recent years. It is noted that, at the time of ex-post evaluation, the drifting objects are removed by manpower and operation of the dam is not disturbed.

implementing agencies, the experiences of the project have been referred to at 2 dams in other river basins in Xi'an City, which participated in the model sharing seminar and the field observation organized by the project (Integrated management has been implemented at Lijiahe Reservoir based on the experiences of the project, and pumped aeration equipment has been introduced to Lijiahe Reservoir and Shibianyu Reservoir). Information on dams in other river basins outside Xi'an City could not be confirmed at the implementing agencies (Indicator 3).

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

According to the implementing agencies, since the project completion, the results of all water quality monitoring items in Heihejinpen Dam River Basin have continuously met the standards set by the Central Government, and an accident such as inflow of contaminant into Heihejinpen Dam Lake has not occurred. In addition, it is confirmed that the quality of water has improved at Lijiahe Reservoir and Shibianyu Reservoir, which have installed pumped aeration equipment with reference to the experience of the project. Also, knowledge and experience of the stakeholders of the project was referred when revising local laws and regulations such as the "Ordinance on Pollution Control and Management for Urban Drinking Water Source in Xi'an City" (2014 revision). Meanwhile, negative impact of the project has not occurred.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td>(Project Purpose)
Integrated water environmental management system, aiming at securing safe and appropriate-quality raw water for drinking water, is established and operated in Heihejinpen Dam River Basin, which provides a model for others.</td><td>(Indicator) Heihe Water Source Protection Meeting, consisting of Jinpen Management Center, Heihe General Station and Heihe Police Station, is organized regularly and information on hydrology and water quality of dam lake and river basin is shared to ensure integrated management constantly.</td><td>Status of the Achievement: achieved (continued)
(Project Completion)
-From May 2014, Heihe Water Source Protection Meeting was conducted regularly in odd month and information was shared.
(Ex-post evaluation)
-Heihe Water Source Protection Meeting is conducted regularly (about 4-5 times a year) and information is shared.</td></tr>
<tr><td rowspan="3">(Overall Goal)
Experience of the project are shared in China and efforts towards water environment conservation are initiated in other water source areas.</td><td>(Indicator 1) Experience of the project is shared with relevant departments/bureaus of other cities, other provinces, and the central government.</td><td>(Ex-post Evaluation) partially achieved
-Experience of the project has been shared with the relevant bureaus of other cities through Xi'an Water Affairs Bureau and Xi'an Environmental Protection Bureau and with the relevant departments of the central government (Ministry of Science and Technology and Ministry of Water Resources) through Xi'an Science and Technology Bureau and Xi'an Water Affairs Bureau. However, the experience has not been disseminated further through the relevant departments of the central government.</td></tr>
<tr><td>(Indicator 2) Stakeholders in other river basins conduct site visits to observe project achievements.</td><td>(Ex-post Evaluation) partially achieved
<Organizations in other river basins which observed project achievements through Heihe General Station and Xi'an Water Group Company Limited > (as of March 2018)
<table>
<tr><th></th><th>Organizations in other basins</th><th>Major achievements observed.</th></tr>
<tr><td>During the project</td><td>3 organizations (2 from Xi'an City and 1 from another city in Shaanxi Province)</td><td>Upstream area management system, boom and ship gate, pumped aeration equipment</td></tr>
<tr><td>After the project</td><td>3 organizations (from Hubei Province, Qinghai Province, and Yanan City)</td><td>Structure and management of pumped aeration equipment and toxic sensor, water source management, operation and management of Heihejinpen Dam.</td></tr>
</table></td></tr>
<tr><td>(Indicator 3) Experience of the project is referenced at dams in other river basins.</td><td>(Ex-post Evaluation) partially achieved
- In Xi'an City, integrated management based on the experience of the project has been carried out at Lijiahe Reservoir and pumped aeration equipment has been introduced at Lijiahe Reservoir and Shibianyu Reservoir.</td></tr>
</table>

Source: Terminal Evaluation Report, Project Completion Report, questionnaire survey and interview to Xi'an Environmental Protection Bureau and Heihe General Station, Xi'an Science and Technology Bureau and Xi'an Regional Science and Technology Exchange Centre, Xi'an Water Affairs Bureau, Xi'an Water Group Company Limited, and Heihejinpen Dam Management Corporation.

3 Efficiency

Both project cost and project period were within the plan (ratio against the plan: 89%, 100%). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

Importance of protecting drinking water sources is set forth in such policy documents as "National Plan for Environment Protection of Urban Drinking Water Source" (2008-2020), "Regulation on Pollution Control and Management for Drinking Water Protected Area" (2010 revision), and "Action Plan for Prevention and Control of Water Pollution" (2015) at the national level, and "Plan for Environmental Protection of Drinking Water Source in Xi'an City" (2010-2020), "Ordinance on Pollution Control and Management for Urban Drinking Water Source in Xi'an City" (2014 revision) at the level of Xi'an City. In addition, "Implementation Plan for Water Quality Improvement Measures for Heihe Water Source" (2013), formulated utilizing the knowledge acquired in training in Japan under this project is

continuously effective. According to the implementing agencies, major changes are not expected in these policies in the future.

<Institutional Aspect>

Since the project completion, there has been no change in the organizational structure and roles of each implementing agency for daily water quality management and response to unexpected water pollution accidents in Heihejinpen Dam River Basin. The implementing agencies have carried out their work and have cooperated with each other according to the above-mentioned "Implementation Plan for Water Quality Improvement Measures for Heihe Water Source". As for the implementing agencies at the central level, the number of the staff at the relevant departments is 3 in Xi'an Environmental Protection Bureau, 4 in Xi'an Water Affairs Bureau, and 2 in Xi'an Water Group Company Limited, all of which is less than the quota. However, these implementing agencies consider that the necessary number of people is allocated because their duties have been accomplished without a problem. At the field level, the number of the staff is 110 in Heihe General Station and it is according to the quota. In Heihejinpen Dam Management Corporation, 17 regular staff members are allocated, and additional 25 contract staff members have been employed since 2018 because the regular staff members used to concurrently serve more than one task. Cooperation between the related agencies has been strengthened through Heihe Water Source Protection Meeting convened 4 to 5 times a year and an annual joint training for unexpected pollution accidents. According to the implementing agencies, the above-mentioned organizational structure is expected to continue in the future.

<Technical Aspect>

At the implementing agencies, there has been no massive turnover since the project completion. The C/Ps leaving their office as part of routine rotation have transferred the matters related to the project to their successors, and the knowledge and skills obtained in the project as well as the reports and technical manuals developed in the project have been utilized in day-to-day work. It is considered that technical level necessary to sustain the project effect is maintained at each implementing agency because the result of water quality monitoring has been continuously meeting the standard in Heihejinpen Dam River Basin and no serious accident such as influx of pollutants in Heihejinpen Dam Lake has occurred. At Heihejinpen Dam Management Corporation, the relevant training and learning activities have been continued to maintain and further enhance the capacity improved through the project. Regarding the provided equipment, from the interview to the implementing agencies and the field observation, it was confirmed that a person in charge of maintenance and patrol inspection has been assigned for the toxic sensor, which has been properly maintained and continuously utilized, while the boom and the ship gate have been temporarily removed in response to change in the local natural environment (see footnote 4).

<Financial Aspect>

According to the implementing agencies, necessary budget has been secured because their work related to day-to-day water quality management and response to unexpected water pollution accidents in water sources, including Heihejinpen Dam River Basin, has not been disturbed seriously due to budget constraint. It is unlikely that there will be changes in budget allocation so that necessary budget is expected to be secured for the future.

<Budget and expenditure related to day-to-day water quality management and response to unexpected water pollution accidents>

(Unit: ten thousand yuan)

	Xi'an Environmental Protection Bureau		Xi'an Water Affairs Bureau		Xi'an Water Group Company Limited		Heihejinpen Dam Management Corporation		Heihe General Station	
	Budget	Expenditure	Budget	Expenditure	Budget	Expenditure	Budget	Expenditure	Budget	Expenditure
2015	N/A	602.02	N/A	241.32	199.6	146.79	82.9	82.9	N/A	306.78
2016	N/A	297.65	N/A	885.61	111.0	100.49	75.99	66.99	N/A	406.61
2017	N/A	245.56	N/A	186.7	116.0	108.09	88.68	83.68	N/A	400.69

Source: questionnaire and interview surveys to each implementing agency

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved the Project Purpose ("Integrated water environmental management system, aiming at securing safe and appropriate-quality raw water for drinking water, is established and operated in Heihejinpen Dam River Basin, which provides a model for others"). The effect of the project has been continued, and the Overall Goal ("Experience of the project is shared in China and efforts towards water environmental conservation are initiated in other water source areas") has been partially achieved. Regarding the sustainability, no problem has been observed in terms of the policy, institutional, 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:

· The Overall Goal of the project states that the experience of the project shall be shared with other river basins. The experience has been shared in some basins, but the number of such cases has been limited; therefore, further promotion of sharing is desirable. A major achievement of the project is the enhanced coordination of the related agencies that manage Heihejinpen Dam River Basin in addition to introduction of technologies such as pumped aeration equipment and toxic sensor. For example, coordination has been strengthened through organization of Heihe Water Source Protection Meeting, consisting of the related agencies, and joint training for unexpected water pollution accidents as well as division of roles and coordination according to "Implementation Plan for Water Quality Improvement Measures for Heihe Water Source", etc. Such system for coordination among the related organizations would be useful enough in other river basins. It is desirable that the implementing agencies of the project (Xi'an Environmental Protection Bureau, Heihe General Station, Xi'an Water Affairs Bureau, Xi'an Water Group Company Limited, and Heihejinpen Dam Management Corporation) continuously share the experience of the project and coordination among the related agencies to the relevant organizations in other river basins. For example, it is an idea to invite the relevant organizations in other river basins to Heihe Water Source Protection Meeting and joint training for unexpected water pollution accidents.

Lessons Learned for JICA:

· The effect of the project is sustained in the project site. One of the important factors is the policy on protection of drinking water sources, which has been continuing over the long term. At the time of formulation of the project, detailed study was conducted on the plans, ordinances, regulations, etc. of the central government and local government in the project site regarding protection of drinking water sources. Among them was "National Plan for Environment Protection of Urban Drinking Water Source" (2008-2020), which was planned to continue even after the project completion (i.e. March 2015) and could provide policy support for the activities of the in sustainable way. In view of the above, sustainability of a project of JICA after the project completion is considered to be further enhanced by studying the policies of the country as much as possible from a long-term perspective, looking ahead to post-project period, and by examining the project period, activities, inputs, etc. in considering of such policies at the time of project formulation.
· In the administration of China, information and instructions are sent from the central level to the local level, and information sharing and requests from the local level to the central level are not common. In the case of this project, information sharing to the central level after the project completion has not been promoted so much and information sharing through the central-level organizations has not been done. When dissemination of the project experience, involving the central-level organizations, is expected in the post-project period, it is necessary to thoroughly examine the measures to be taken at the time of project completion, taking into account of the above-mentioned Chinese administration system. It would be necessary for JICA to provide support because the local-level implementing agencies have a limitation in promotion of information sharing through the central-level organizations due to their organizational relationship. For example, the following measures are considered important: JICA, in response to the request from the implementing agencies, would accompany them on their visits to the central-level organizations for information sharing; and, after the information sharing, JICA would monitor the status of sharing of the project experience via the central-level organizations and provide further support as appropriate.
- The level of achievement of the Overall Goal of this project could not be confirmed in the ex-post evaluation because criteria for judging the achievement level of the Indicators were not clearly stated. Therefore, it is important to clearly set the criteria for judging achievement level of the Indicators at the planning stage of technical cooperation projects.

Heihejinpen Dam Lake. Good quality of water is maintained.

The toxic sensor installed in the upper stream area of Heihejinpen Dam Lake. No failure occurred since installment.

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Turkey Office: November, 2018

Country Name	The Project for Traffic Demand Management of Historical Area in Istanbul
Republic of Turkey	

I. Project Outline

Background	In accordance with the economic growth and rapid population increase, the number of passenger cars significantly increased in Istanbul. However, transportation facility development had not kept up with the speed of this rapid motorization, amplifying urban problems such as chronic traffic congestion, frequent traffic accidents, and exhaust gas emissions. Under such circumstances, in response to the request of the Government of Turkey, JICA conducted "The Study on Integrated Urban Transportation Master Plan for Istanbul Metropolitan Area in the Republic of Turkey" (the Study) in 2007-2009 . Upon completion of the Study, the Government of Turkey requested a technical cooperation project in response to a component of "implementation of appropriate traffic management" under the Study.		
Objectives of the Project	Through (i) identifying issues on transportation planning, (ii) planning, implementing, evaluating and analyzing social experiments of Traffic Demand Management (TDM) measures, and (iii) summarizing the results of the social experiments as guidelines, the project aimed at strengthening Transportation Department's implementation capacities of TDM measures for the Istanbul historical area and there by contributing to implementing appropriate TDM measures in the Istanbul historic area and creating comfortable city environment.		
	1. Overall Goal: Appropriate TDM measures will be implemented in the Istanbul historical area to create comfortable city environment. 2. Project Purpose: Transportation Department's implementation capacities of TDM measures for the Istanbul historical area are strengthened.		
Activities of the project	1. Project site: Istanbul 2. Main activities: (i) identifying issues on transportation planning, (ii) planning, implementing, evaluating and analyzing social experiments of TDM measures, and (iii) summarizing the results of the social experiments as guidelines 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 10 persons 2) Trainees received in Japan: 13 persons 3) Equipment: Equipment: Photocopying machines, PC, and printers 4) Operational Expenses: salaries of project staff, training expenses Turkish Side 1) Staff allocated: 17 persons 2) Provision of spaces: office space 3) Local cost: costs for social experiment, gasolines and others		
Project Period	July 2011 – July 2014 (Extended Period: December 2013 -July 2014)	Project Cost	(ex-ante) 250 million yen, (actual) 356 million yen
Implementing Agency	Transportation Department, Istanbul Metropolitan Municipality (IMM)		
Cooperation Agency in Japan	Ministry of Land, Infrastructure, Transport and Tourism, Hiroshima University, The University of Tokyo, ALMEC Corporation, PADECO Co., Ltd.		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

・ Continuation status of the Project Effects was verified under the Overall Goal, as the Overall Goal is set to verify how the enhanced capacities of TDM actually utilized for implementation.

1 Relevance

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

The project was consistent with the development policy of Turkey both at the time of ex-ante evaluation and project completion. The project was planned and implemented in line with Turkey's national development plan, "the Nineth Development Plan of Turkey" (2007-2013), particularly relating to its Development Axes of Increasing Competetiveness. Likewise, the project was one direct response to the "IMM's Strtegic Plan of Istanble Metropolitan Municipality" (2010-2014), where estblishment of smart transportation system for controlled and systematic pedestrian and vehcle traffic was evnisaged.

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

The project was consistent with the development needs of Turkey for resolving traffic problems. At the time of ex-ante evaluation, the number of passenger cars significantly increased in Istanbul. However, transportation facility development had not kept up with the speed of this rapid motorization, amplifying urban traffic problems. At the time of project completion, the problems and peculiarities of rapid urbanization were present, as they had been constantly present in Istanbul over the past decades.

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

Prioritized areas agreed under the economic cooperation policy dialogue by Turkey and Japan in 2008 include human resource development for economic and social development[1].

[1] Source: ODA Country Databook 2011

<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. It was confirmed that 80% of the staff of the Transportation Department that worked with the project as counterparts had evaluated that their technical capacity on TDM was enhanced through their participation in the social experiment (smart parking system[2]) under the project, as the indicator set to measure the achievement of the Project Purpose envisaged. However, the 2nd social experiment (which was planned to solidify their skills acquired through the process of the first experiment) was not carried out. Lack of strong ownership from high decision makers (such as Mayor, Secretary General, Deputy Secretary General) in the municipality at the planning stage, during implementation and the post project period could be one factor for this result.
<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>
The Overall Goal was partially achieved. No additional TDM other than smart parking has been implemented, because smart parking area project was expanded to whole Istanbul based on the results/experience of the first social experiment implemented in historical area under the project. This measure have been implemented based on the experience of the project and in accordance with the guidelines prepared. Nevertheless, traffic congestion is still an agenda.
<Other Impacts at the time of Ex-post Evaluation>
No land acquisition and resettlement occurred under the project and no negative impact was observed.
<Evaluation Result>
Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Transportation Department's implementation capacities of TDM measures for the Istanbul historical area are strengthened.	Indicator 1: More than 80% of staffs of the transportation department evaluate that implementation capacities of TDM measures are strengthened.	Status of the Achievement: achieved (Project Completion) 80% of the staff of the Transportation Department evaluated that worked with the project as counterparts had evaluated that their technical capacity on TDM was enhanced through their participation in the implementation of the social experiment (smart parking system) under the project.
(Overall Goal) TDM measures will be implemented in the Istanbul historical area to create comfortable city environment.	Indicator 1: More than two (2) TDM measures are implemented in the Istanbul historical area.	(Ex-post Evaluation) partially achieved - No other measures than smart parking system have been implemented as TDM measure in historical area. - Following the completion of the project, smart parking system was implemented and enhanced to whole Istanbul in collaboration with Traffic Coordination Center and ISBAK (Istanbul Informatics and Smart Cities Technologies-one of IMM's corporations) in 2013.
	Indicator 2: Visible improvement is realized by the TDM measures in the Istanbul historical area.	(Ex-post Evaluation) partially achieved - The parking areas in historical area became more of proper for ordinary vehicles. Smart banners on which fullness-emptiness ratio is shown and its web application are very beneficial for drivers to guide them to the closest available smart parking area. - On the other hand, traffic congestion caused by commercial vehicles still keeps its importance. Ways to alleviate this problem is on the agenda of IMM.

Source：JICA documents, Questionnaire and interviews with Transportation Department, IMM

3 Efficiency

Both the project cost and project period exceeded the plan (the ratio against the plan: 142%, 123%), as planning of the station plaza and transfer facility of Yenikapi station was added to activities. The outputs were produced mostly as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>
The policy support for traffic management is consistent. "Effective use of traffic demand management policies", "Dissemination of smart transportation systems and signaling", "Alleviation of traffic accidents, traffic congestion, air and noise pollution, gasoline consumption, and time lose" are stipulated in plans/regulations/laws such as the "Istanbul Metropolitan Municipality Strategic Plan" (2015-2019), the "Regulation on Principles and Procedures for Energy Efficiency Increasing (2016)", the "Municipal Law on Low Emission Area Implementations, Amendments on Metropolitan Municipality Law", and "Environment Law"
<Institutional Aspect>
There are four directorates under the Transportation Department. As for TDM-related projects, the Transportation Planning Directorate becomes a leader, and a project implementation unit is established in collaboration with other relevant directorates and corporations of IMM. Collaboration among parties when implementing a project is very strong which is very crucial from sustainability point of view. However, TDM is a continuous matter. Therefore, some staff of IMM thinks that instead of a project-based team, permanent establishment of TDM team is more desirable. Each directorate has consisted of competent number of staff with 50 members in the Transportation Planning Directorate. The number is sufficient, as IMM aims to keep the capacity and capability of each directorate at certain level in order to implement and sustain the on-going and prospective projects.
<Technical Aspect>

[2] Introduction of parking information service by a website, cellular phones, and parking information boards

The Transportation Department has enough capacity, most of staff has master degree either on transportation or on city/urban planning, to follow technological developments in the sector, to detect the problems, to propose ways of solutions and to implement the pilot survey studies in collaboration with other relevant departments of IMM. Four counterpart members of the project are still working at Transportation Planning Directorate. Some of them have transferred to other relevant departments (due to human resources policy) of IMM where their connection is still being kept. There is a mechanism at IMM to maintain and upgrade the technical capacity. As for TDM projects, experienced technical staff members and/or outsourced experts disseminate the experience through training, and acquired experience is consolidated through project implementation in collaboration with other IMM directorates.

<Financial Aspect>

Whole budget of IMM is higher than that of 18 ministries in Turkey. There seems no problem for budget allocation for any approved project.

Budget of IMM and Transportation Department

(Unit: million TL)

	2013	2014
IMM planned budget	8,000	9,100
IMM realized budget	8,600	12,500
Transportation Department's planned budget	112	151
Transportation Department's realized budget	176	369

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved its Project Purpose at the time of project completion, as 80% of the counterparts had evaluated that their capacity was enhanced through the participation in the project. The Overall Goal was partially achieved, as smart parking system which was implemented by the project has been implemented in other areas after the project was completed. As for the sustainability, there are slight problems in terms of institutional aspect. As for the efficiency, both the project cots 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:

Under the coordination of the Transportation Planning Directorate, the Transportation Department is recommended to implement varieties of social experiments such as pricing measures (road pricing, public transport fare structure), innovative measures (card operating car, dial & ride, car pooling), regulatory measures (access control, traffic calming zones, cycling, public transportation promotion), supplementary measures (high occupancy vehicle lane, ramp metering) depending on the area and necessity in whole Istanbul. Contents of social experiments may be diversified depending on the target area. The reason for traffic congestion varies from area to area.

Lessons Learned for JICA:

- The project organized regular workshops/seminars during the implementation of the project, especially for the third parties, for sharing the progress/receiving comments which brought success for the dissemination of implemented social experiment "smart car parking project". Therefore, in order to reflect the result of social experiments and the results of capacity development into practical implementation, organizing this kind of regular workshops/seminars are important.

In order to reflect the social experiment into actual measures, the Turkey side could have taken the following actions:

- Strong presence especially from high level decision makers of the municipality is a must for the strong ownership of the project regardless of the bigness of the municipality and availability of budget and human resources. Since traffic congestion has various effects on environment, rapid urbanization, and life styles of humans etc., wide spectrum approach would be more effective. Therefore; multidisciplinary collaboration among economists, psychologists, traffic engineers and policy analyst from universities and other relevant organizations is a must as a team member to reduce the traffic congestion, environmental pollution and human stress level, in the planning / implementation / post-implementation stages of the project.

Smart parking system information signboard

Smart parking car entrance/exit

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Kenya Office: September 2018

Country Name	Project for Strengthening Community Health Strategy
Republic of Kenya	

I. Project Outline

Background	The Government of Kenya developed the Community Health Strategy (CHS) in 2006 to establish an effective community health service system, develop capacity of community health personnel, promote people's behavior change on utilization of health services including immunization, safe delivery and nutrition, and strengthen linkages between communities and health facilities. On the other hand, the Community Health Units (CHUs) were not established as planned and some of the existing CHUs were not fully functioning. Under such circumstances, the Ministry of Public Health and Sanitation (Restructured to the Ministry of Health (MOH) in 2013) needed to develop necessary guidelines, framework of CHS monitoring and evaluation (M&E), and community-based health information system, and so on, in order to accelerate implementation of CHS in the country.		
Objectives of the Project	Through 1) networking of CHS-related stakeholders, 2) development of guidelines and tools for CHS implementation and M&E, and 3) verification of these guidelines and tools through operational researches, the project aimed at strengthening an evidence-based policy cycle for implementation of CHS, thereby contributing to acceleration of roll-out of effective CHS implementation. Note: CHS was developed in 2006 and revised in 2014 to support implementation of the national health strategy for strengthening the health system at the community level. Its major components include: i) establishment of CHUs, ii) Training of the oversight committee (Community Health Committee (CHC)), health personnel (Community Health Volunteers (CHVs) and Community Health Extension Workers (CHEWs), and iii) Networking of community and dispensaries/health centres as link facilities for the CHUs.		
	Overall Goal: Roll-out of effective CHS implementation is accelerated. Project Purpose: Evidence-based policy cycle for implementation of CHS is strengthened through national capacity development.		
Activities of the project	1. Project site: Nairobi, Kiambu, Embu and Isiolo Counties[1]. 2. Main activities: Development of guidelines and tools for CHS implementation and communication strategy, development of CHS M&E plan, conducting of operational researches, etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts from Japan: 9 persons 2) Training in Japan: 7 persons 3) The third country training (Ghana): 6 persons 4) Equipment: vehicles, equipment for data management, etc. 5) Operation cost for workshops, materials/equipment, hiring local consultants, etc. Kenyan Side 1) Counterpart Staff allocated: 6 persons 2) Land and facilities: Office space for JICA experts and Kenyan staff, etc. 3) Operation cost for electricity and water services, fuels, etc.		
Project Period	October 2011 to September 2014	Project Cost	(ex-ante) 360 million yen, (actual) 421 million yen
Implementing Agency	Ministry of Public Health and Sanitation		
Cooperation Agency in Japan	Global Link Management, Inc.		

II. Result of the Evaluation

[Special perspectives considered at the ex-post evaluation]

- For verification of continuity of the project effects, continuity of Indicator 2 for the Project Purpose (approval of CHS policy related documents and products) was not confirmed but interpreted by verifying the utilization status of the policy related documents (Indicator 1).
- Indicator 3 of the Project Purpose (number of innovative approaches adopted for CHS based on findings from CHS implementation) did not have a target figure. For verification of its achievement and continuation at the ex-post evaluation, if there was any adopted approach (more than one) at the project completion, it was judged that it was achieved. If any adopted approach has been sustained, it was judged that it has continued.

1 Relevance

<Consistency with the Development Policy of Kenya at the time of ex-ante evaluation and project completion>

The project was relevant with the development policy of Kenya, prioritizing prevention and health promotion and capacity building at the community level for decentralization of health service provision set forth in the "Vision 2030", the "National Health Sector Strategic Plan II" (2005-2012) and the "2nd Medium Term Plan (MTP II)" (2012 - 2017), at the time of the ex-ante evaluation and project completion.

<Consistency with the Development Needs of Kenya at the time of ex-ante evaluation and project completion >

CHU coverage was at 32.4% (2009) and there were needs to develop guidelines and tools for roll out of CHS countrywide. After devolution of health services in 2013, there were needs to strengthen MOH's capacity to perform leading, supporting and checking functions for implementation of CHS. The project was consistent with development needs of Kenya at the time of both the ex-ante evaluation and project completion.

[1] Following the devolution in 2013, former eight provinces were restructured into 47 counties. Counties are divided into sub-counties.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

The "Country Assistance Program for the Republic of Kenya" (2000) identified the health sector as one of the prioritized areas for support Thus, the project was relevant with Japan's ODA policy at the time of the 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 project completion, more CHS policy-related documents were developed than planned, and two documents were revised (Indicator 1). Most of these documents were approved or officially accepted by MOH (Indicator 2). Furthermore, eight innovative approaches for CHS implementation were adopted (Indicator 3).

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

It can be judged that the project effects have continued. First, most of the documents and products developed by the project and surveyed at the ex-post evaluation have been fully utilized (Indicator 1). The number of CHUs has increased countrywide, and the training packages for CHVs[2] and CHCs are utilized when new CHUs are established or when CHU functionality is strengthened. Some development partners including Amref Health Africa digitized CHV training materials so that CHVs could learn using their mobile phones. Community Health Assistant (CHA) training curriculum was piloted at Kenya Medical Training College (KMTC) in 2017, and it is planned to be introduced as part of in-service training for CHAs. On the other hand, according to community health-related workers in the visited counties for the ex-post evaluation, the CHS Communication Strategy has been partially implemented. MOH uploaded various materials including the CHS Communication Strategy on the website but has not actively disseminated it to the counties due to budget constraints. The "CHS Brief," a brochure published during the project to show CHS-related progresses and issues has not been newly published and distributed due to the financial constraints. Second, most of the innovative approaches applied by the project have been utilized (Indicator 3). One of the good examples is "participation of CHS field-level implementers in community health conferences and related meetings." In Embu county, CHVs and CHC members participated in seminars on health rights and advocacy and water sanitation and hygiene, and in Garissa county, field-level workers are invited to quarterly dialogues with UNFPA to learn and share experiences. The "role of the Goodwill Ambassador for CHS in advocacy activities" is not specifically targeted, but her roles have been taken over by the officers at the national, county and sub-county levels. There is a plan to identify CHS Champions at the county level who perform the Ambassador's role. On the other hand, "support for journalists for CHS dissemination" has not been conducted due to financial constraints.

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

It is judged that the Overall Goal has been achieved from the following reasons. All the available health indicators were improved compared to the period before the project (Indicator 1)[3]. According to the Community Health Development Unit (CHDU) of MOH, this improvement has been attributed to CHUs' functionality and high performance. For example, CHVs play an important role in identifying pregnant women at household levels and referring them to health facilities. In addition, CHVs and CHC members actively conduct awareness campaigns on immunization and defaulter tracing. According to MOH data on status of CHUs and the interviewed head of CHDU, as a result of continuing CHS-related policies and approaches, the total number of CHUs has increased and the national coverage reached 55% in 2018. The country-wide percentage of the fully functional CHUs did not reach the target (Indicator 2), but the percentage increased over time in the surveyed counties.

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

Involvement of CHVs has brought several impacts. As positive impacts, first, by recruiting young CHVs, their busy CHS activities have reduced potential for social crimes committed by the idle youth within communities (Nairobi County). Under the national government initiative for community-based security management, CHVs are able to identify and report crimes and other security risks to relevant authorities. Second, in Nairobi and Embu Counties, some former CHVs and CHC members gained popularity through CHS activities and got elected as members of the County Assemblies. This is an advantageous situation for CHS Focal Persons (coordinator for CHS at the county level to advocate for funds for CHS implementation through the County Assemblies. Third, CHVs are selected from both genders, which has enabled them to work in a harmony and complementary manner in order to handle different health issues at the community level. As negative impacts, some CHVs are relied upon by members of poor households and have to incur personal expenses for provision of food items or transportation to health facilities. Also, there were reports of conflicts of responsibilities between some public health officers at the community level and CHVs, but it is expected that this friction will be resolved by clear job descriptions at County Departments of Health.

<Evaluation Result>

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

Achievement of the Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Evidence-based policy cycle for implementation of CHS is strengthened through national capacity development.	Indicators: 1. At least 9 CHS Policy related document/products are developed and 4 document/products are revised based on findings from CHS implementation by the end of the Project. (Baseline: 0)	Status of achievement: Achieved (Continued). (Project Completion) - 24 documents (guidelines and tools) were newly developed, among which 15 were technically and financially supported by the project. Two documents (CHV basic training facilitator's guide and four CHIS tool) were revised. Note: CHIS: Community Health Information System. (Ex-post Evaluation) - Among 11 documents and products surveyed , seven have been fully utilized (CHV

[2] CHVs are selected among community residents and support CHAs' (ex-CHEW) work for provision of health services. CHAs are employed by the County Government.

[3] With regard to the indicator of fully immunized children, it decreased from 2013/14 to 2016/17, though it was still larger than 2008/09. One of the reasons was temporary service disruption due to the nationwide strikes by nurses in the period after devolution of services in 2013.

<table>
<tr><td></td><td></td><td>Training Package, CHEW (CHA) Training Package, CHC Training Package, CHV Technical Modules, CHIS Tools, CHS Research Agenda and M&E Plan), and three have been partially utilized (CHS Communication Strategy, Communication Health Service Standards and MCUL documents). One has not been maintained (CHS Brief).
Abbr: MCUL: Master Community Unit List (Database for functional CHUs).</td></tr>
<tr><td></td><td>2. At least 50% of CHS policy related documents and products, which are developed and/or revised, are approved by CHS Inter-agency Coordinating Committee and presented to Health Sector Coordination Committee by the end of the Project (Baseline:0)</td><td>Status of achievement: Achieved.
(Project Completion)
- Among the 24 developed documents and two revised documents, 21 (80%) were approved by the Interagency Coordinating Committee, presented by MOH or officially signed by the Minister of Health.</td></tr>
<tr><td></td><td>3. No. of innovative approaches adopted for CHS based on findings from CHS implementation.</td><td>Status of achievement: Achieved (Continued).
(Project Completion)
- Eight innovative approaches were adopted.
a) Operational researches in three different environments.
b) Identification of important CHS-related survey items and national research agendas for prioritization.
c) Participation of CHS field-level-implementers in community health conferences and opportunities for information sharing.
d) Utilization of CHS website as information sharing platform.
e) Utilization of CHIS indicators and reference sheets.
f) Involvement of the CHS Ambassador in advocacy activities.
g) Financial support for journalists for CHS diffusion.
h) Capacity development, review and assessment of the health personnel.
(Ex-post Evaluation)
- Among the eight innovative approaches, four have been fully sustained (a, b, c, e), and two have been partially sustained (d, h). One has been substituted by an alternative (f). One has not been sustained (g).</td></tr>
<tr><td>(Overall goal)
Roll-out of effective CHS implementation is accelerated.</td><td>1. Key indicators (e.g. immunization, exclusive breastfeeding, ANC+4, skilled delivery, utilization of FP, ITN, latrine coverage, water treatment) are improved (Baseline: CHS Evaluation Report, 2010)</td><td>Status of achievement: Achieved.
(Ex-post Evaluation)
- There is an increasing trend in all of the available indicators.
<table>
<tr><td></td><td>2008/09</td><td>2013/14</td><td>2016/17</td></tr>
<tr><td>Delivery in health facilities</td><td>43%</td><td>61%</td><td>72%</td></tr>
<tr><td>Pregnant women attending ANC (4+ visits)</td><td>42%</td><td>49%</td><td>49%</td></tr>
<tr><td>Fully immunized children</td><td>77%</td><td>84%</td><td>79%</td></tr>
<tr><td>Infants (0-5 months) on exclusive breastfeeding</td><td>13%</td><td>32%</td><td>61%</td></tr>
<tr><td>Targeted pregnant women provided with LLITNs</td><td>49%</td><td>80%</td><td>88%</td></tr>
<tr><td>Households with improved sanitation</td><td>n.a.</td><td>48%</td><td>59%</td></tr>
</table>
Note: Data of “Kenya Demographic and Health Survey 2008/09” was used as the baseline since that of 2010 was not available.</td></tr>
<tr><td></td><td>2. Proportion of fully functional Community Units in Kenya is increased from 28% in 2012 to 100% in 2017</td><td>Status of achievement: Partially achieved.
(Ex-post Evaluation)
- The proportion of fully functional CHUs in the country increased from 28% in 2012 to 75% in 2018. The data for 2017 was not available.
- In the three counties visited (Nairobi, Embu and Isiolo), the proportion of fully functional CHUs increased/decreased from 2012 to 2017 (28% to 99%, n.a. to 100% and a reduction from 55% to 47%, respectively).</td></tr>
</table>

Source: Project Completion Report, CHU data provided by CHDU and CHS Focal Persons of Nairobi, Embu and Isiolo Counties.

3 Efficiency

Outputs were produced as planned. Although the project period was as planned (ratio against the plan: 100%), the project cost exceeded the plan (ratio against the plan: 117%). Therefore, the project efficiency is fair.

4 Sustainability

<Policy Aspect>

Community health promotion is prioritized in the national development plan, “Kenya Health Policy” (2012-2030), “Kenya Health Sector Strategic Plan,” and the “MTP III of Vision 2030” (being drafted as of April 2018).

<Institutional Aspect>

Following the devolution of health services in 2013, institutional structure for CHS implementation has changed, but functions have remained same and shared between the national and county governments. CHDU at MOH is responsible for formulation of policies and strategies, guidelines and capacity building of counties. At the county level, the County Health Management Team (CHMT) and the Sub-county Health Management Team (SCHMT) develop annual work plan and budget, coordinate resource mobilization from development partners, support CHU establishment, functionality and review their work. The number of the personnel at CHMT varies from 10-18, and it is sufficient to perform their duties, according to the interviewed CHMTs. At the community level, CHVs conduct CHS activities such as health talks and assessment at households, message delivery to households, and referral, and so on. CHCs provide oversight while CHVs’ work is supervised by CHAs. Ten CHVs are assigned for each CHU as per the guidelines, but the number is not sufficient to meet all health needs of community residents. There are issues of demotivation or dropout of CHVs. The number of CHAs

varies among CHUs, but the total number in the country (4,000) is much less than the target (45,000).

<Technical Aspect>

CHMT personnel including the CHS Focal Persons have sufficient knowledge and skills for supervising CHS implementation, as training on supervision is part of the regular capacity building activities targeting CHMTs. CHMT personnel receive sensitization sessions while the CHS Focal Persons attend training on CHS supported by development partners. Training packages for CHAs, CHVs and CHCs developed by the project have been utilized, as explained earlier. Besides training opportunities given by MOH, some counties have a plan to incorporate training on CHS within their own planning and budgeting.

<Financial Aspect>

Both MOH and the County Departments of Health (CDOHs) pay only staff salaries and costs for utilities and services such as communication and electricity and allocate funds from development partners for project activity implementation. At MOH, there is no specific budget for community health, but funds are budgeted and disbursed under programs for family health or those that target issues such as malaria, nutrition and reproductive health. In the counties surveyed (Nairobi, Embu and Isiolo), current budgets are not sufficient to cover all the community health activities, although the overall budget allocation for the health sector has been increasing. Efforts have been made such as legislative frameworks for creation of financial incentives for CHVs, and budget proposals have been made for increased funding for CHS implementation in Nairobi, Kiambu, Embu and Isiolo Counties: 100 million Kenya Shillings (KES) for the next five years, 5 million KES for one year and 50 million KES for one year, respectively.

<Evaluation Result>

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

5 Summary of the Evaluation

Through the project activities, the Project Purpose was achieved. In other words, the evidence-based policy cycle for CHS implementation was developed with outputs such as CHS-related policy documents and approaches. This achievement has mostly continued for roll-out of CHS implementation nationwide. As a result, the number and percentage of the fully functional CHUs have increased, which leads to improvement in key health indicators. Regarding the sustainability, issues of shortage in the number of CHVs and CHAs were identified, and more funds were needed to expand CHS implementation at the community level, but CHS-related personnel have sustained sufficient skills. 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:

- For further expansion of CHS implementation at the community level, it is recommended to MOH to: 1) create a budget line for CHDU and allocate resources for CHS policy, strategy and technical support to counties in the annual MOH budget; 2) conduct advocacy activities for the County Governments by utilizing CHS advocacy kit; and 3) mobilize resources within KMTC for training of CHAs.
- It is recommended to CDOHs to: 1) expand community health activities in the annual work plan; 2) increase budgets for training and recruitment of more CHAs and; 3) provide financial and material compensation for CHVs. CDOHs should also initiate dialogue with members of the health committee at County Assemblies to rally their support for increasing funding to CHS. It would be effective to pass an act at County Assemblies for CHS promotion in order to provide the legal framework to secure certain budgets for community health activities.
- It is recommended to MOH and CHDU to inform CHMTs and SCHMTs on the available CHS-related materials on the website and promote their use as long as they have access to the internet.
- There is a plan to identify CHS Champions at the county level who perform the advocacy role. It is recommended to CDOH to specify their responsibilities for CHS advocacy and assign necessary budgets, in collaboration with the County Governments.

Lessons learned for JICA:

- After the general election in 2013, devolved governance was introduced and 47 counties were established. In line with the devolved health system, while MOH retains responsibilities for development of health policies and standards and capacity development of counties, functions of service provision were delegated to County Governments. The project was not negatively affected by this devolution, as it aimed at capacity development of MOH for the evidence-based policy cycle for CHS implementation and developed policy documents including training packages for community-level health workers. Thus, it successfully resulted in expansion of CHUs and good performance of CHCs. These successes were underpinned by careful selection of multiple partners ranging from the national level (MOH) to the community level (CHCs), which could retain principal responsibilities for CHS roll-out including capacity building of the county- and community level health personnel. In order to avoid negative influences of devolution or other political and administrative changes, at the project formulation stage, political situations and prospects should be carefully examined and the implementing agency needs to be carefully selected from those that would not be adversely affected by political changes and governance systems.

CHVs Action Plan at Tupendane CHU, Isiolo County


Handwashing Facility at Community

Internal Ex-Post Evaluation for Development Planning Project

conducted by Nigeria Office: November, 2018

Country Name	**Project for Review and Update of Nigeria National Water Resources Master Plan**
Federal Republic of Nigeria	

I. Project Outline

Background	The former "National Water Resources Development Plan" formulated with the support of JICA in 1995 ("M/P1995") was outdated and it required an urgent update as new issues emerged. Actual water resource potentials showed considerable differences from the M/P1995, while the demand for water in Nigeria increased coupled with a growing population and economic development. Moreover, effects of climate change needed to be taken into consideration in the management and development of water resources. In addition, new institutional needs occurred in 2008. The Nigeria Integrated Water Resources Management Commission (NIWRMC) was established to supervise the water resource management. Catchment Management Offices (CMOs) in 8 hydrological areas (HAs) under NIWRMC became the key decentralized arms of the water administration system. Under these situations, the government of Nigeria requested the government of Japan for a technical cooperation to support reviewing and updating the M/P 1995.		
Objectives of the Project	Through formulation of a new National Water Recourse Master Plan ("M/P 2013") and drafts of catchment management plan (CMP) for the two selected Hydrological Areas (HAs) of HA-1 (Niger North) and the Ogun-Oshun Basin in the western area of the HA-6 (West Littoral) as well as transfer of necessary skills and knowledge to the counterparts in the formulation of M/P and CMPs, the project aimed at adoption of the M/P 2013 as a national policy document and finalization of the CMPs based on agreements among local stakeholders in the HAs, thereby contributing to implementation of water resource management and development projects based on the M/P 2013 and the CMPs proposed by the project. 1. Expected Goals through utilization of the proposed plan[1]: 1) Water resources management and development projects are implemented in adherence with the budget allocated based on the M/P 2013, 2) Water resources management and development projects are implemented based on the CMPs. 2. Expected utilization of the proposed plan by the project: 1) The M/P 2013 is adopted as a national policy document of Nigeria, 2) The draft CMPs are finalized based on agreements among local stakeholders in the HAs.		
Activities of the Project	1. Project site: the whole country composing of the 8 HAs, HA-1 (Niger North) and Ogun-Oshun Basin in HA-6 (West Littoral) 2. Main activities: 1) Survey and analysis of the current status of the water sector; 2) Evaluation of water resources potential and making a projection on water supply demand balance; 3) Formulation of the National Water Resources Master Plan (M/P 2013); 4) Draft of the Catchment Management Plan for 2 HAs (HA-1, Ogun-Oshun Basin in HA-6); 5) Transfer of technology and knowledge to the counterpart personnel. 3. Inputs (to carry out above activities) Japanese Side 1) Mission members: 14 persons 2) Equipment: Software for survey analysis 3) Local cost: Cost for 4 surveys (socioeconomic survey, selected large stored dam, well inventory and ground water level monitoring), and cost for workshops and stakeholder meetings Nigerian Side 1) Staff allocated: 25 persons 2) Land and facility: Office space 3) Equipment: Necessary office equipment 4) Local cost: Cost for drivers		
Project Period	August, 2011 to January 2014	Project Cost	(ex-ante) 520 million yen, (actual) 513 million yen
Implementing Agency	Federal Ministry of Water Resources Nigeria Integrated Water Resources Management Commission (NIWRMC)		
Cooperation Agency in Japan	Yachiyo Engineering Co., Ltd., CTI Engineering International Co., Ltd., Sanyu Consultants Inc.		

II. Result of the Evaluation

1 Relevance

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

The project was consistent with Nigeria's development policy of the "Vision 20: 2020" consisting a variety of plans, including the use of water resources for achieving the target such as 100% water supply rate by 2020, and the "National Water Resources Policy" (revised in 2009) and "Nigeria Water Sector Roadmap" (2011) to achieve the policy targets on the water sector at the time of ex-ante evaluation and project completion.

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

The project was consistent with the Nigeria's development needs to update the M/P1995 in order to reflect the growing demand on water resource development for irrigation, drinking water and hydropower generation, the climate change impacts on water resources and

[1] 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).

their management as well as institutional changes in water resource allocation at the time of ex-ante evaluation and there was no change in the development needs at the time of 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 Nigeria based on the 3rd policy dialogue between Nigeria and Japan which had agreed to sustain the basic policy discussed by the 2nd policy dialogue, prioritizing support for water supply as one of the 5 priority areas. 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 Project Completion>

The study for reviewing and updating the M/P1995 was completed by the project as planned. Based on the study, the M/P 2013, which was composed of the water resources development plan, water resources sub-sector development plan, water resources management plan and the implementation program, was formulated. In addition, the CMPs were drafted for the two hydrological areas of HA-1 and Ogun-Oshun Basin in the HA-6. However, it was not confirmed whether transfer of necessary skill and knowledge to conduct study and analysis for formulating the master plan had been completed or not due to no available information.

<Utilization Status of the Proposed Plan at the Time of Ex-post Evaluation>

The plans proposed by the project have been utilized. The M/P 2013 has been approved by the Federal Executive Council comprising the President and Ministers on –July 23rd, 2014 and adopted as a Nigerian national policy document. However, the draft CMPs have not been finalized yet since stakeholder workshops are yet to be organized due to low budgetary allocation for the Nigeria Integrated Water Resources Management Commission which has a mandate to finalize the draft CMPs. The M/P 2013 has been utilized as a reference point for all documents of FMWR, including the "Water Resources Roadmap" (2016-2030) and the "National Irrigation Development Programme" (2016-2030), the Draft National Water Resources Bill and so on. It is also used by consultant working for FMWR. In addition, FMWR has committed to align all FMWR's future projects in accordance with the M/P 2013. The CMPs will be requested to get an approval from the Federal Executive Council after the stakeholder workshops.

<Status of Achievement for Expected Goals through the Proposed Plan at the Time of Ex-post Evaluation>

The expected goals were not verified at the time of ex-post evaluation since the number of the implemented project by State governments is not monitored without integrated database although some of them are under development. However, results of monitoring exercise currently carried out by the Department of Water Resource Planning and Technical Support Services (WRP/TSS) show that some projects listed in the M/P2013 have been currently implementing by FMWR. In addition, the number of communities with access to the improved facilities increased from 695 in 2013 to 729 in 2016. For irrigation, the number of irrigation schemes also increased from 21 for 202 farmers in 2013 to 28 for 378 farmers in 2016. The number of surface water monitoring station constructed increased from 213 to 294 for the same period. Therefore, in view of the fact that the M/P 2013 has been utilized for the national program, the project has been contributing to promote the implementation of water-related projects in the country.

<Other Impact 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 fair.

Status of Achievement of Utilization Status of the Proposed Plan and Expected Goals through the Proposed Plan

Aim	Indicators	Results
(Expected utilization of the Proposed Plan) 1. The M/P 2013 is adopted as a national policy document of Nigeria.	Adoption of the M/P 2013 as a national policy document of Nigeria.	Status of achievement: Achieved. (Ex-post Evaluation) The M/P 2013 was adopted as a Nigerian national policy document and has been utilized for the following policy documents - Water Resources Roadmap 2016-2030 - National Irrigation Development Programme 2016-2030 - Draft National Water Resources Bill, etc.
2. The draft CMPs are finalized based on agreements among local stakeholders in the Hydrological Areas (HAs)	Finalization of draft CMPs based on agreements among local stakeholders in the Hydrological Areas (HAs).	Status of achievement: Not achieved. (Ex-post Evaluation) - The drafted CMPs have not been finalized yet.
(Expected Goals through the Proposed Plan) 1. Water resources management and development projects are implemented based on M/P 2013.	Number of water resources management and development projects based on the M/P 2013 implemented.	Status of achievement: Partially achieved. (Ex-post Evaluation) -FMWR has started monitoring the implementation of the projects listed in the M/P2013. The results show that some projects has been implementing according to the M/P 2013.
2. Water resources management and development projects are implemented based on Catchment Management Plan (CMP)	Number of water resources management and development projects based on Catchment Management Plan (CMP) implemented.	Status of achievement: Not achieved (Ex-post Evaluation) - CMPs are yet to be finalized.

(Source) Interviews with FMWR and NIWRMC

3 Efficiency

Although the outputs were produced as planned and the project cost was within the plan (ratio against the plan: 99%), the project period exceeded the plan (ratio against the plan: 111%). Therefore, the efficiency of the project is fair.

4 Sustainability

<*Policy Aspect*>

Under the "Nigeria Vision 2020" (2009-2020), prioritizing adequate provision of sustainable access to potable water and basic sanitation, the M/P 2013 was adopted as a national policy document and has been utilized as a reference document for other policy documents such as the "Water Resource Road Map" (2016-2030) and the "National Irrigation Development Programme" (2016-2030) as well as the drafted amendment of National Water Resources Bill (2016). Therefore, the implementation of the M/P 2013 proposed by the project has been endorsed by those policy documents.

<*Institutional Aspect*>

Basically, there is no change in the institutional system for implementation of the proposed plans by the project while the drafted National Water Resources Bill will allow the state government and private companies to construct dams under licenses issued by FMWR. For rehabilitation and construction of boreholes, the State Water Utilities for urban areas and the State Rural Water Supply and Sanitation Agencies (RUWASAs) for rural areas are responsible under state governments. No data on the total number of staffs in FMWR and other related federal and state agencies for implementation of the M/P 2013 was available, because the country has been decentralized and there is no integrated monitoring system by the federal government. For water allocation, management and regulation, the Nigeria Integrated Water Resources Management Commission (NIWRMC) is responsible. NIWRMC increased their staff to 150 at the time of ex-post evaluation from the time of project implementation, but all of them are not engaged in the technical works. According to the focal point of NIWRMC interviewed by the ex-post evaluation, the number of technical staff has not been sufficient to conduct activities related to water allocation and regulation covering all the 8 Catchment Management Offices in the country.

Based on the recommendation by the project, the Project Monitoring Unit (PMU) had been established under the Department of WRP/TSS of FMWR and has commenced their work on 21st May 2014. However, at the timing of ex-post evaluation, the unit does not function at all due to inadequate funding and retirement of the core members of the counterpart personnel of the project. Currently, their function is temporarily being taken over by WRP/TSS. WRP/TSS is now re-establishing a PMU under the directive of the Honorable Minister of FMWR. The PMU would primarily consist of two teams; a technical team of engineers and a steering team of high-level staff. The members would be drawn from all departments of FMWR and other agencies implementing the M/P 2013 including NIWRMC. For CMPs, the implementing structure will be discussed and agreed at the stakeholder workshops planned by NIWRMC.

<*Technical Aspect*>

The composition of the PMU would be a technical team of experienced engineers who have received training from the European Union (EU) on monitoring of M/P 2013 between 2012 and 2017. Some members of the WRP/TSS engaged in and M/P 2013 as well as participated on the EU training, thus it suggests an experienced set of people who are knowledgeable on implementing and monitoring the M/P 2013 are still working with the FMWR.

<*Financial Aspect*>

Although it is impossible to trace their budget record since the Nigerian government has no integrated database which can track the actual expenditure and budgeted amount by the federal, 36 states and Federal Capital Territory (FCT) governments, only 30% of the approved budget of NIWRMC is executed in most cases and the budget is not enough to implement the projects in accordance with the M/P2013 and CMPs. However, FMWR has committed to align all FMWR's future projects in accordance with the M/P 2013 and the budget allocation is expected to improve as the Nigerian economy is gradually recovering. Some of the projects mentioned in the M/P2013 have been funded in FMWR budget of year 2016 and 2017. Budget of 2018 is yet to be executed.

The budget for recruitment of consultant who requires conducting the review of the draft CMPs and holding stakeholder workshop (public hearing) to finalize the draft CMPs had not been approved until 2016 since the Nigerian government had been in recession since 2015 and their budget was not enough to cover all the requests from government organizations. The consultant has been hired at the beginning of 2018 and has started work already.

<Evaluation Result>

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

5 Summary of the Evaluation

In the project, the M/P 2013 formulated by the project has been adopted as ~~a~~ Nigerian national policy and utilized as a reference for other policy documents to promote adequate water resources development and management in Nigeria. On the other hand, stakeholder meetings for finalization of the drafted CMPs have not been organized yet due to serious budget shortage of the Nigerian government since 2015. However, the necessary budget for holding the meetings has been approved in 2017 and the consultant to do the job has started work in 2018. The two draft CMPs are expected to be finalized in 2018 and submitted to the Federal Executive Council for its approval. As for sustainability, the set-up of the new PMU who have been trained by the EU are expected to effectively manage the monitoring of the M/P 2013. 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:

- FMWR needs to oversee the progress of finalization of the draft CMPs to ensure effective utilization of the outputs under the project. In addition, to achieve the expected goals planned under the project, FMWR is recommended to revive the Project Monitoring Unit and strengthen the monitoring system of M/P 2013.
- NIWRMC needs to hold stakeholder workshops for each CMPs in 2018 and agree the implementation and monitoring structure for the CMPs among local stakeholders.

Lessons Learned for JICA:

- When JICA supports the development of masterplan / development plan in Nigeria, the necessary process and expected duration for getting the approval in the Nigerian government needs to be examined more carefully. In the case of organizing stakeholder workshops, those events should be held with financial support by JICA by the project's end.
- Masterplan should consider the order of projects' implementation based on the timing and amount of the budget, since this country

takes a long time to reach consensus among other stakeholders and secure the necessary budget for newly proposed actions/projects.

- In case that there is no reliable monitoring structure in implementing agencies, JICA should support implementation and monitoring of masterplan for the first few years because it is difficult to project whether adequate number of staff members is going to be ensured or not at the time of project implementation for preparing MP..

Internal Ex-Post Evaluation for Development Planning Project

conducted by Djibouti Representative Office: November, 2018

Country Name	The Master Plan Study Project for Sustainable Irrigation and Farming in Southern Djibouti
Republic of Djibouti	

I. Project Outline

Background	Djibouti was a typical nation depending on transit trade economy, of which service sector such as intermediate trading, service activities at Djibouti port and others covered the large part of Djibouti's Gross Domestic Product (GDP). Because of its severe natural condition, its GDP from primary industry sector, agricultural production, was quite small. Thus, a rate of the food self-sufficiency was very low and most of food for the population depended on imports from outside. More than half of local population depended mainly on animal husbandry, however, the number of livestocks decreased partly due to the effects of climate change and the severe droughts which had caused the reduction of natural pastures in the grazing land. Thus, many livelihoods of pastoral people were supported by labor workings of family members such as works at the port in Djibouti City. Its chance and income of labor working, therefore, were not stable. In order to cope with these severe situations, the Government of Djibouti set a policy that livelihood of the local pastoral people should be improved through agricultural activities. Accordingly, the Ministry of Agriculture, Water, Fisheries, Livestock and Marine Resources (MAEPE-RH) instructed the project formation of irrigation and agriculture development in southern regions where water resources for agriculture products were not abundant with limited agricultural technology. Therefore, it was urgently needed to establish and develop sustainable irrigation farming by obtaining stable water resources and establishing farming system applicable to the local condition.		
Objectives of the Project	Through verification of the pilot projects, the project aims to formulate a Master Plan (M/P) of sustainable agriculture development, including water resources development in the arid area (southern three regions), thereby contributing to increasing the agricultural production and agricultural income for target areas by utilization of M/P. 1. Expected Goals through the proposed plan: Agricultural production volume in the target area and agricultural income for the people of target areas are increased. 2. Expected utilization of the proposed plan: Measures on irrigation and agriculture utilizing the Master Plan developed by the project are implemented and the program of actions by Djibouti government or development partners are implemented. **Above are translated from Japanese ex-ante evaluation sheet as no English versions are available.*		
Activities of the Project	1. Project Site: Southern three regions of Djibouti, namely Arta, Ali Sabieh and Dikhil regions Pilot project site: Kourtimalei (Arta region), Hambokto (Ali Sabieh region), and Afka Arraba (Dikhil region) 2. Main Activities: (1) To formulate a Master Plan of sustainable agriculture development, including water resources development in the arid area, through verification of the pilot projects (2) To develop the capacity of concerned government organizations on planning and project implementation through the Master Plan study and the implementation of the pilot projects 3. Inputs (to carry out above activities) Japanese Side 1) Mission members: 5 persons 2) Trainees received* **The number is not available in the Final Report* Djibouti Side 1) Staff allocated from MAEPE-RH* **The number of staff is not available in the Final Report.* 2) Land and facilities: Office space		
Project Period	January 2012 - December 2014	Project Cost	(ex-ante) 240 million yen, (actual) 252 million yen
Implementing Agency	Ministry of Agriculture, Water, Fisheries, Livestock And Marine Resources (MAEPE-RH)		
Cooperation Agency in Japan	NTC International Co., Ltd		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

[Issues to be clarified for Effectiveness/Impact]

1) How to evaluate the Utilization Status of the Proposed Plan at the time of Ex-post Evaluation

- According to the Ex-ante Evaluation Summary Sheet, specific indicators to examine the progress of utilization status are stated as "Progress of measures on irrigation and agriculture utilizing the M/P developed by the project" and "Progress of program of actions implemented by Government of Djibouti or Development Partners". Considering the length of implementation of M/P stated as 20 years, in this evaluation study, the progress of implementation should be examined according to the overall schedule of the project implementation of M/P Study specified in Final Report.
- Sites of the M/P were classified based on its priorities for implementation. The first 5 years is used for the development of sites evaluated as Rank A. While the second 5 years is for the Rank B. Another 10 years is for the Rank C and Rank D. In order to examine project activities that may be carried out other than Rank A area, "Have any project activities been carried out outside of Rank A area?" is used as Supplemental Information 1. Furthermore, in order to examine the motivation of MAPEP-RH to proceed the project proposed by the M/P, "Has the implementing agency been satisfied with the M/P?" is used as Supplemental Information 2.

2) How to evaluate the Expected Goal to be achieved by utilization of the proposed plan at the time of Ex-post Evaluation

- Assuming that the Expected Goals are not yet realized within 3 years after the project completion (unless it is defined so clearly in the ex-ante evaluation), the status and its achievement level are examined based on the information collected from the project implementing agency. If no relevant information is collected, no further analysis is required under this evaluation study.

1 Relevance
<Consistency with the Development Policy of Djibouti 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 such as "The National Initiative for Social Development (INDS) (2008-2012)" in which promoting harmonious, balanced local development/preserving the environment is listed as one of four pillars. At the time of project completion, the "National Food Security Program (PNSA) (2012-2017)" formulated by the government with supports from international agencies contains "the Ensuring the Food Security" as one of the priority subjects. Based on the basic concept of the INDS and PNSA, "The Development Plan for the Primary Sector (2010-2020) (PDDSP)" was formulated by MAEPE-RH containing the strategies for each sub-sector, such as water, agricultural production, animal husbandry and fishery sub-sectors.

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

This project was consistent with Djibouti's development needs for sustainable agriculture development at the time of ex-ante evaluation as described in "Background" above. No information or report indicates the change of Djibouti's development needs for sustainable agriculture development to the time of project completion.

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

The Japanese government set its policy of assistant on the basic infrastructure development to secure the basic human needs, which led to the overall economic and social development of the Republic of Djibouti.[1]

<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 formulate the M/P of sustainable agriculture development at the time of project completion. The M/P was developed and various trainings, such as onsite demonstration workshop and study tour on model farm visit, etc., were conducted, and the capacity of concerned government organizations on planning and project implementation was strengthened through implementation of the pilot project.

<Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

The M/P has been utilized as planned by the time of ex-post evaluation. The M/P was authorized by the Government of Djibouti in 2014 and officially named as Master Plan of Irrigation. The implementation structure of the program of actions of the M/P has also been established as planned (Indicator 1). The program of actions was implemented in 9 out of 16 sites of the areas that are evaluated with the highest priority, namely as Rank A. The remains are on the preparation (Indicator 2). Also, the program of actions in some sites with lower priority (Rank B or C) was completed or in progress (Supplemental Information 1). Furthermore, the implementing agencies are quite satisfied with the M/P and the varieties of the fundamental research data accumulated by the project (Supplemental Information 2).

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

Through the proposed plan, the Expected Goal, "the agricultural production volume in the target area and agricultural income for the people of target areas are increased", has been progressed. On average for three regions, both of the agricultural production volume and agricultural income steadily increased during the years from 2014 to 2017 showing the increase by 112.4% (Indicators 1 and 2).

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

Several impacts were identified by the study. With thorough discussion among communities and MAEPE-RH, the land acquisition was successfully carried out to implement the irrigation system and agriculture. Interviews with Technical Adviser of MAEPE-RH revealed that local communities especially nomads or semi-nomads who had suffered from the effects of the climate change learned through the project on how to engage in agriculture and keep their lives. "Technical Manual for Establishing Irrigated Farmland" and "Farming Manual" developed by the project were so practical that the MAEPE-RH, with their owns funds and some assistance from external donors, made four hundred copies and distributed them to all agricultural groups, each of which contains 5 to 7 farmers. It is estimated that approximately 2,000 to 3,000 farmers have become manual users. In this way, farmers in non-targeted regions have learned through those manuals about the effective ways of living in rural areas. High officials of the MAEPE-RH commented that those manuals have also served to attract the various program funds of external donors who take advantage of using them at the workshops of their own programs.

It was identified by the study that the project also contributed to the women's participation. According to the interview with high officials of the MAEPE-RH, wells constructed by the project have made women in Djibouti, who used to spend six hours to fetch water, gain more time for other activities. The project encouraged women to actively participate in the workshops for planting and vegetable cultivation, so that they have acquired the farming techniques to gain income for their children's school fees.

<Evaluation Result>

In light of the above, through the project, the M/P was developed by the project completion, and it has been utilized by the time of ex-post evaluation. Furthermore, the Expected Goal, "the agricultural production volume in the target area and agricultural income for the people of target areas are increased" at the time of ex-post evaluation has shown some progress.

Therefore, 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

Aim	Indicators	Results
(Utilization Status of the Proposed Plan) Measures on irrigation and agriculture utilizing the Master Plan developed by the project are implemented and the program of actions by Djibouti government or development partners are	(Indicator 1) Progress of measures on irrigation and agriculture utilizing the M/P developed by the project	Status of the Achievement: Achieved. (Ex-post Evaluation) The M/P was authorized by the Government of Djibouti in 2014 and officially named as the Master Plan of Irrigation. The implementation structure for the program of actions in the M/P (projects) has been established as planned. MAEPE-RH has executed the role as project promotion office as planned under the M/P by providing the allocation and execution of the project budget and management of project implementation and coordination among concerned agencies. Regional Sub-Directorates have also executed the role to confirm the implementation at each site, coordinate and consult with local authorities and those concerned, monitor the progress and select the participants for various trainings as well.

[1] Source: ODA Databook in 2012

implemented.

Current implementation structure of the program of actions of the M/P

Organization		Number of members	
		Planned	Actual
MAEPE-RH		2 (1 Director and 1 assistant)	4
Regional sub directorates	Arta	2 (1 Regional Director and 1 Assistant)	2
	Ali Sabieh		2
	Dikhil		2

(Indicator 2)
Progress of program of actions implemented by Government of Djibouti or Development Partners

Status of the Achievement: Partially achieved
(Ex-post Evaluation)
It was confirmed through the study that the implementation has been completed or in progress for 9 out of 16 sites in Rank A which are supposed to be completed by next year (2019). Most of sites in Arta, and Ali-Sabieh region have shown the progress, however, some sites in Dikhil, a region far from Djibouti City, have not yet started the implementation. Because of its logistical difficulties, those sites are often considered as less attractive for the program of external donors which provide the funds for implementation.
As for the sites of Rank B, C and D which are supposed to be completed by spending another five years or another ten years after 2019, the implementation of program of actions has already been completed or in progress for 7 of 10 sites in Rank B, 3 of 17 sites in Rank C and 1 of 6 sites in Rank D (Supplemental Information 1). What determines the implementation priorities are often the preference of the program of funds attached, urgencies deemed for sites, etc.
The progress of implementation for the sites of Rank A is shown below by symbols such that the implementation is "completed" as "◎", in progress "○", not yet started "△", and the plan was not materialized "×".

Progress of Implementation of the program of actions for sites of Rank A (16 sites)

Component 1	Arta Region 3 sites			Ali Sabieh Region 3 sites			Dikhil Region 10 sites									
1-1 Construction of water resource/irrigation facilities	○	◎	◎	◎	○	◎	△	△	○	◎	○	△	△	△	△	△
2-1 Supply of seeds/farming tools to beneficiaries	○	◎	◎	◎	×*	◎	△	△	◎	◎	◎	△	△	△	△	△
3-1 Implementation of on-farm instruction	◎	◎	◎	◎	◎	◎	△	△	◎	◎	○	△	△	△	△	△
3-2 Study tour to advanced farms	◎	◎	◎	◎	◎	◎	△	△	○	◎	○	△	△	△	△	△
4-1 Study tour to agricultural cooperatives	○	◎	◎	◎	○	◎	△	△	○	◎	○	△	△	△	△	△
4-2 Leader trainings	○	◎	◎	◎	○	◎	△	△	○	◎	○	△	△	△	△	△
4-4 Application of official registration of agricultural cooperatives	○	◎	◎	◎	○	◎	△	△	○	◎	○	△	△	△	△	△

Note: As for one site in Ali Sabieh Region, the activity of 2-1 (supply of seeds) is currently stopped because the community decided to expand the field. So, once the work is finished, the distribution will start again.

(Expected Goals through the Proposed Plan)
Agricultural production volume in the target area and agricultural income for the people of target areas are increased.

(Indicator 1)
Increase of agricultural production volume of target area (Rank A)

(Ex-post Evaluation)
Agricultural Production Volume

Unit: kg

Regions \ Year	1st year	2nd	3rd	4th	Average volume for 4 years
	2014	2015	2016	2017	
Arta Region	680	677	750	825	733
Ali Sabeih Region	340	365	380	470	389
Dikhil Region	250	302	320	350	306
Total	1,270	1,344	1,450	1,645	1,428
Increase (%) since 1st year	*na*	*105.8%*	*114.2%*	*129.5%*	*112.4%*

	(Indicator 2) Increase of agricultural income for the people of target area (Rank A)	(Ex-post Evaluation) Agricultural Income Currency Unit: Djibouti Francs (DJF) in Millions

Regions \ Year	1st year	2nd	3rd	4th	Average Income for 4 years
	2014	2015	2016	2017	
Arta Region	136	135.4	150	165	146.6
Ali Sabeih Region	68	73	76	94	77.8
Dikhil Region	50	60.4	64	70	61.1
Total	254	268.8	290	329	285.5
Increase (%) since 1st year	*na*	*105.8%*	*114.2%*	*129.5%*	*112.4%*

Note: Agricultural Income is calculated based on the Agricultural Production Volume as follows:
Agricultural Income data = Agricultural Production Volume x 200DJF/kg

Source：Final Report, Questionnaire and Interview with MAEPE-RH

3 Efficiency

While the project period was within the plan, the project cost slightly exceeded the plan (ratio against plan: 100%, 105%). Outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The national development program, PNIASAN (Programme National d'investissement Agricole et de Securite Alimentaire et Nutritionelle) (2016-2020), focuses on the expansion of agriculture for keeping peoples' life in rural areas. The program was created by MAEPE-RH with the support of international agencies by referring to "Comprehensive Africa Agriculture Development Program of African Union" and "New Partnerships for Africa's Development". Recently, Resilience Project against Dry Land is financed by Germany and European Development Fund. The idea of resilience is quite important for the dry land such as Djibouti. MAEPE-RH plans to include this idea in the PNIASAN and continue to implement the components of the M/P.

<Institutional Aspect>

The implementation structure of the program of actions has been established as planned under the M/P as MAEPE-RH deploys the necessary number of people for the implementation of the project component. Also, MAEPE-RH makes offices and directions to have its own roles and manages to keep good relations among them. The network among the M/P promotion office under MAEPE-RH and regional governments of three provinces has been functioned effectively to implement the program of action of the M/P.

<Technical Aspect>

MAEPE-RH successfully conducted the training for their staffs and the farming instructors, by using the manual developed by the project. As for the trainings in terms of project implementation and management, the training on "Irrigation System for Vegetable" was conducted for staff of MAEPE-RH. Best practical approaches for agriculture were shared among 140 participants who learned the techniques of irrigation system for vegetable planting and cultivation. As for the trainings in terms of technical instruction, the training on "Irrigation System and Economy of Water" was conducted and capacity development for 20 farming instructors was achieved. Combined with those trainings, the manuals developed by the project for the cultivation of vegetable which serve as the guidance of agriculture training for Nomad Djiboutiens have contributed to sustaining the technical aspect of project effects.

<Financial Aspect>

MAEPE-RH can keep the budget for payroll, administration, management and regional directorates. In terms of the implementation of the program of actions of the M/P, 20 over 49 sites have been implemented and finance for another 4 sites has already been secured by international agencies. Furthermore, it is likely that the financial support is continued from international agencies as they place the considerable emphasis on the M/P.

Budget of MAEPE-RH — Unit of Currency: DJF in Thousands

Cost items		2009	2014	2015	2016	2017
Government Funds	Payroll	372,000	450,000	462,000	531,000	*na*
	Administration & Management	133,000	213,000	302,000	302,000	*na*
Donor's Contribution (Project in the M/P)		410,000	12,418,000	5,109,000	8,000,000	*na*
Total		1,355,000	13,082,000	5,874,000	8,835,000	*na*

Source: MAEPE-RH

Budget of regional directorate per year (budget related to projects in the M/P) — Unit of Currency: DJF in Thousands

Regions	2014	2015	2016	2017	2018
Arta region	500	500	500	500	500
Ali Sabieh region	500	500	500	500	500
Dikhil region	500	500	500	500	500
Total	1,500	1,500	1,500	1,500	1,500

Source: MAEPE-RH

<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

Through verification of the pilot projects, the Master Plan of sustainable agriculture development, including water resources development in the arid area (southern three regions) was developed by the project as the proposed plan, and it has been utilized by the time of ex-post evaluation. Through the utilization of the proposed plan, the Expected Goal, “Agricultural production volume in the target area and agricultural income for the people of target areas are increased” have shown some progress at the time of ex-post evaluation. As for sustainability, no problems have been observed in terms of policy, institutional, technical and financial aspects. As for efficiency, the project cost slightly exceeded the plan.

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

Overview of vegetable garden with pond irrigation,
Didjan Der tributary in Arta region

A deputy leader of Agriculture Group explained the growth of Okra.
Didjan Der tributary in Arta region

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Madagascar Office: February, 2019

Country Name	**The Project for Capacity Development of the National School of Fisheries (Projet de Renforcement de Capacité de L'Ecole Nationale de Pêche)**
The Union of Comoros	

I. Project Outline

Background	In the Comoros, the fishery sector is one of the important industries. Since the territory of the country is composed of small volcanic islands, arable lands and forestry resources are very limited. Utilization of coastal resources is valuable for livelihood of rural population. On the other hand, overfishing has been serious in the coastal areas in the country. In addition, while offshore fishing using small fishing boats were increasing, various problems, such as frequent accidents, malfunctioning boats, increasing volumes of putrid fish and wasted ones have occurred. Therefore, it was essential to provide the local fishery workers extension services and training opportunities in order to make use of limited fishery resources. The National School of Fisheries (L'Ecole National de Pêche: ENP), which used to be the Fishery Training Center constructed by the grant aid by Japan, is the sole training institute for the fishery sector. It was upgraded to a vocational training institute in 2008 and restarted their operation in April 2009 after an interruption by the political turmoil since 1999. However, ENP had various operational issues, including lack of training materials, undeveloped training curriculums and so on. Under those situations, the Government of the Comoros requested the Government of Japan a technical cooperation project to support curriculum development and to enhance school management of ENP.		
Objectives of the Project	Through rehabilitation of training facilities, installation of training equipment, development of training materials, modules and textbooks, and trainings for teaching staff as well as preparation of annual budget plan and financial report of ENP, the project aimed at improvement of training and management capacity of ENP, thereby contributing to promotion of practice of safe and effective utilization of fishery resources by the local fishery workers and improvement of engagement of alumni of ENP into the fishery sector. 1. Overall Goal: 1) The trained local fishery workers practice safe and effective utilization of fishery resources. 2) The engagement of alumni with diploma of the long-term training program into the fishery sector is improved. 2. Project Purpose: The capacity of the National School of Fisheries to provide adequate trainings is improved.		
Activities of the Project	1. Project Site: Whole country of the Comoros 2. Main Activities: 1) Rehabilitation of training facilities, installation of training equipment and development of training materials, 2) Development of training module and preparation of text books and materials, 3) Training for teaching staff of ENP, 4) Preparation of annual budget plan and financial report of ENP 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 10 persons 2) Trainees Received: 9 persons 3) Training in the third country: 3 persons (Morocco), 4 persons (Réunion and Mayotte, France) 4) Equipment: 9m training boats, 6m training boats, maintenance equipment and tools, outboard engines, etc. 5) Local expenses: Cost for rehabilitation of the facilities, training materials, translators, etc. Comorian Side 1) Staff allocated:31 persons 2) Land and facilities: Project office 3) Local expenses: payrolls for part-time instructors, cost for repair of the facilities, food costs for trainees		
Project Period	March 2011 – October 2014	Project Cost	(ex-ante) 317 million yen, (actual) 373 million yen
Implementing Agency	National School of Fisheries (ENP)		
Cooperation Agency in Japan	Ministry of Agriculture, Forestry and Fisheries		

II. Result of the Evaluation

<Special perspective to be considered in the ex-post evaluation>

[Verification of the level of achievement of the Overall Goal 1at the time of ex-post evaluation]

At the time of terminal evaluation, it was difficult to verify the level of achievement of the two indicators for the Overall Goal 1 since the results of the end-line survey had not been compiled and the target value had not been fairly defined. In addition, although the end-line survey with 620 ex-participants was compiled after the terminal evaluation, no comparable data of the Indicator 1 for the Overall Goal 1 was available at the time of ex-post evaluation. Therefore, the achievement level of the Overall Goal 1 was judged by qualitative data collected through interviews with the director and teaching staff of ENP as well as ex-participants.

1 Relevance
<Consistency with the Development Policy of the Comoros at the Time of Ex-Ante Evaluation and Project Completion> The project was consistent with the Comorian development policies of "Poverty Reduction and Growth Strategy Paper (PRGSP)" (2010) prioritizing the fishery sector to increase production and employment creation as well as the GDP share and the "Fishery Development Plan" (2004) including human resource development using function of ENP. <Consistency with the Development Needs of the Comoros at the Time of Ex-Ante Evaluation and Project Completion > The project was consistent with the Comorian development needs of training opportunity for local fishery workers and improvement of

operation of ENP to provide better trainings s for fishery workers in order to make use of limited fishery resources in the country.

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

The project was consistent with Japan's ODA policy to the Comoros prioritizing support for basic human needs area including the fishery sector[1].

<Appropriateness of Project Design/Approach>

Since the main project activities were mainly conducted at ENP located in Anjouan Island which is the different island from the Grande Comore, where the capital is situated, the communication between the project team and the ministries at the national level was limited and there were limited chances for the decision makers of the ministries to recognize importance of human resource development in the fishery sector through trainings delivered by ENP. As a result the project limitedly affected the political decision and advocacy especially in terms of securing the sufficient budget for the school operation. Although the project design to improve training capacity of ENP was adequate to fill the development needs, there had been a room for improvement of communications between the project team and the key ministries, in particular for considering necessary arrangements for the post project period in order to enhance sustainability.

<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 regular training program was smoothly implemented for two academic years by using textbook and teaching materials developed by the project (Indicator 1). The total number of students completed the training program and certified (Indicator 2) was more than the target value of 60. Also, 661 participants, which far exceeded the target number of 180, completed the short-term training course developed by the project and obtained a certificate (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. The regular training course was redesigned from one-year course introduced by the project to two-year training course in the academic year[2] of 2016/17. The decision was based on the observation that the 1 year is too short for the student to acquire necessary knowledge, skills, and competences. On the other hand, the textbooks and the teaching materials have been utilized for the two-year course. The number of participants for the regular training course decreased from 30 in the academic year of 2014/15 to 18 in 2015/16 for the one-year course and from 12 in 2016/17 to 6 in 2017/18 for the two-year course. There is no single definitive reason to explain this decrease in the number of the students. However, according to the interview with the teaching staffs and students, after the project completion, when all the technical assistance including the dispatch of Japanese experts was complete, the attractiveness of the training course gradually waned leading to the decline in reputation. The short-term training courses for local fishery workers have been delivered on an ad hoc basis. Although no short-term training course was implemented in the academic years of 2014/15 and 2015/16, 3 courses in 2016/17 and 10 courses in 2017/18 were delivered by financial support of the World Bank (WB). However, the courses in 2017/18 were not the short-term training course developed by the project.

Training equipment installed by the project, such as an icemaking machine and training boats, have been continuously utilized. The icemaking machine has been used for students to get knowledge and skills about ice production. Four boats (two 6m-boats and two 9m-boats) provided by the project have been in good conditions but have been partially used for the trainings for 2 days/week because of some parts such as out-boat motor and motor cover, have been damaged or malfunctioning and have not been repaired yet.

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

It can be judged that the Overall Goal 1 (practice of safe and effective utilization of fishery resources by fishery workers) has been partially achieved though no quantitative data available. According to the interview to the 5 ex-participants by the ex-post evaluation survey, they considered that the short-term training really contributed decrease in the number of accidents. They are aware of lots of measures to be taken which does not require any cost, such as for example, checking the weather in advance, sharing their outgoing plan with their families and fishery folks, taking the mobile phone with them, checking the status of the motors before departure, and so on (Indicator 1.1). Although there still exist young people who are overconfident and willing to take risks to show their powers, which often lead to the accident, many fishing communities succeeded in decreasing the accidents which are predictable and preventable. From the interviews, it was found that one who took the short-term training understand well the necessity of resource management while it is not easy to diffuse to the entire fishing community. For the partnership of the government, the result of the end-line-survey by the project was not very positive with some varieties among islands. From the interviews with the director, teaching staffs, and the ex-participants it was found that the tendency remains same showing the weak partnership with the government in general (Indicator 1.2).

The Overall Goal 2 has been partially achieved. The number of alumni of the regular training course working for the fishery sector increased after the project completion compared to during the project period. However, since the number of participants in the regular training course decreased from the academic year of 2014/2015 to 2015/16, the number of alumni working for the fishery industry also decreased. Also, they have been engaged in the fishery sector on not permanent work but contract basis. The CoreSUD Project (World Bank) hired 14 graduates (old and newly graduates) after March 2014 and the SWOFish Project (World Bank) also hired at least 3 graduates of the regular training course at ENP. A few are self-employed or working in the small factories financed by EU project.

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

No other positive and negative impact of the project was not confirmed at the time of ex-post evaluation.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) The capacity of the	1. Training program is smoothly implemented for two academic years by using newly	Status of the Achievement: Achieved (Continued) (Project Completion)

[1] Ministry of Foreign Affairs, "ODA Databook 2011"

[2] The academic year starts September.

<table>
<tr><td>National School of Fisheries to provide adequate trainings is improved.</td><td>introduced teaching materials and textbooks.</td><td>By using the newly developed textbooks and teaching materials, training programs were successfully implemented for the following two academic years:
➢ The academic year of 2012/13 (two-year program)
➢ The academic year of 2013/14 (newly introduced one-year program)
(Ex-post evaluation)
● From 2016/2017, they changed the training course from 1 year to 2 years and ENP has been delivering the two-year program again in the academic year of 2016/17 and 2017/2018.
● The textbooks and teaching materials have been utilized.</td></tr>
<tr><td></td><td>2. 60 students complete their regular training program and obtain a certificate of competence.</td><td>Status of the Achievement: Achieved. (Not continued)
(Project Completion)
The number of students completed the program and certified was follows:
➢ The academic year of 2011/12-2012/13 (two-year program): 35
➢ The academic year of 2013/14 (one-year program): 32
(Ex-post evaluation)
[The number of participants in the training program]<table><tr><td></td><td>2014/15</td><td>2015/16</td><td>2016/17*</td><td>2017/18*</td></tr><tr><td>No. of participants in total</td><td>30</td><td>18</td><td>12</td><td>6</td></tr><tr><td>No. of female participants</td><td>0</td><td>2</td><td>1</td><td>2</td></tr><tr><td>No. of graduates certified in total</td><td>30</td><td>18</td><td>12**</td><td>N.A.***</td></tr><tr><td>No. of female graduates certified</td><td>0</td><td>2</td><td>1</td><td>N.A.***</td></tr></table>Note 1:* Two-year training program
Note 2: **8 already validated +4 expected
Note 3: *** They are entering 2nd year from September, 2018</td></tr>
<tr><td></td><td>3. 180 local fishers complete their short-term training course and obtain a certificate of attendance.</td><td>Status of the Achievement: Achieved (Partially continued)
(Project Completion)
● In total, 661 participants, including 36 female participants, completed for the short-term programs of 35 courses in total.
● Certificates of attendance were printed and they were distributed to the participants by the end of the project.
(Ex-post evaluation)
[The number of short-term training program and participants]<table><tr><td></td><td>2014/15</td><td>2015/16</td><td>2016/17</td><td>2017/18</td></tr><tr><td>No. of short-term programs</td><td>0</td><td>0</td><td>3</td><td>1</td></tr><tr><td>No. of participants</td><td>0</td><td>0</td><td>180</td><td>14</td></tr><tr><td>No. of female participants</td><td>0</td><td>0</td><td>N.A.</td><td>1</td></tr><tr><td>No. of participants completing and certified</td><td>0</td><td>0</td><td>180</td><td>14</td></tr><tr><td>No. of female participants completing and certified.</td><td>0</td><td>0</td><td>N.A.</td><td>1</td></tr></table>● In 2016, they conducted 3 short-term training programs financed by the World Bank. They were conducted for three subjects for three islands.
● In 2017, again financed by the World Bank, newly recruited 14 extension workers employed under the World Bank Project from 3 islands were trained for 19 days. However, it was not short-term training program developed under the Project, but it was special training courses, which summarize the contents of the regular training course.</td></tr>
<tr><td>(Overall Goal)
1. The trained local fishery workers practice safe and effective utilization of fishery resources.</td><td>1.1 The number of fishers who use the principle of security at sea increases</td><td>(Ex-post Evaluation) Not verified
● No data was available but the 5 respondents recognized that the number of accidents decreased by the measures which they had learned at ENP</td></tr>
<tr><td></td><td>1.2. The fishers understand more about necessity of resource management and partnership with the government.</td><td>(Ex-post Evaluation) Achieved.
● Proportion of the ex-participants of short-term training program responding understanding on necessity of interaction with government officials for resource management in 2014/15: 20% in Grande Comore, 40% in Anjouan, 18% in Moheli
● Proportion of the ex-participants short-term training program responding satisfaction with the fishery administration including resource management: 35% in Grande Comore, 55% in Anjouan, 15% in Moheli</td></tr>
<tr><td>2. The engagement of alumni with diploma of</td><td>2.1 The number of alumni who work for the fishery activities increases from the ones for</td><td>(Ex-post Evaluation) Partially achieved.
[No. alumni of t(he one-year)regular training program working for the fishery sectors]</td></tr>
</table>

the long-term training program into the fishery sector is improved.	the period from 2009 to 2011.	2009-2011	2014/15	2015/16	2016/17	2017/18
		3 out of 32	15> out of 30	5 out of 18	---*	N.A .out of12
		*Since regular training program was changed to two-year from 2016/17, there is no new graduate that year.				

Source：Terminal Evaluation Report, Project Completion Report, Interview with ENP, ex-participants

3 Efficiency

The project cost and period exceeded the plan (ratio against the plan: 117% and 102%, respectively). The outputs were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

Under the "Accelerated Growth and Development Strategy (Stratégie de Croissance Accélérée et de Développement Durable: SCA2D)" (2018-2021), the fishery sector is regarded as an important sector that will make an important contribution to the structural transformation of the Comorian economy, the well-being and the food for the populations by a sustainable management of the fishery rent and an accelerated development of the production of the sub-sector. The government also intends to put human capital development at the center of SCA2D's priorities. Therefore, the necessity of trainings at ENP has been endorsed by the government policy.

<Institutional Aspect>

ENP has mostly sustained necessary organizational setting for delivery of trainings and operation and management (O&M) of the training equipment provided by the project. The school management committees, such as the Advisory Committee, the Training Boat Management Committee, the Library Committee and Material Management Committee, have been fully functioning or functioning except the Ice Committee. Since ice production and sales activities has been stagnated due to decrease in ice demand in the area of ENP, the Ice Committee has not been functioning and the responsibility of book keeping on ice sales was transferred to the administrative section. The reason of the decreasing demand for ice is electrification in the area of ENP which enables neighboring households to produce ice at home. While the number of teaching staff (7 permanent instructors and 2 contract-based instructors) has been sufficient, the number of administrative staff (18 permanent and 10 contract-based) has been sufficient or maybe too many for the work load. Only two instructors trained by the project left ENP after the project.

<Technical Aspect>

The instructors sustained necessary knowledge and skills to deliver the one-year training course and the short-term training courses. The competency of the instructors is also recognized by the partner organizations and the Regional Office of the Ministry of Fishery. At the same time, it is noteworthy that almost all the instructors mentioned the need to have the further training to update their knowledge which could adapt to the recent development in the sector. There are just two instructors newly recruited. However, there is no training system for the newly recruited instructors because the school believes that they recruited for the one competent enough to deliver the training course.

<Financial Aspect>

Currency Unit in KMF

	2014/15	2015/16	2016/17	2017/18 (plan)
Budget from the Ministry of National Education[3]	-	N.A.	N.A.	-
Sales of ice	1,690,000	1,472,150	1,474, 200	1,340,150
Entrance fee of the one-year regular program	69,000	195,000	245,000	275,000
Dormitory fee	300,000	225,000	125,000	104,500

The serious problem is that there is no comprehensive financial data available to assess financial position of ENP. ENP insisted that they lost all the data because the hard disk of the PC was broken and that they did not keep any backup nor hardcopy with them. All the data collected by this ex-post evaluation survey was from the treasury note on the ice selling and the fee collection from the students. However, without the detailed data, it was found during the ex-post evaluation that no budget other than payroll of the staffs has been distributed to the school for the last few years. The revenue from the ice selling has been used for the operation of the school especially for the electricity bills and the fuel (of the boats used in the practical training), but when all the expenses cannot be covered by the revenue, the gaps often needs to be filled by the director's pocket. There is no budget for replicating the training manuals and maintaining the equipment which leads to the deterioration of the quality of the training in the long run. There is no special finance arrangement borne by the partnership agreement in the fishery sector between the EU and Comoros, which had been the important source of the revenue for the ENP during the project, since the partnership agreement was denounced in 2017.

<Evaluation Result>

Therefore, there is a serious problem of the financial aspect of the implementing agency, the sustainability of the effects through the project is low.

5 Summary of the Evaluation

The project partially achieved the Project Purpose and partially achieved the Overall Goal to develop human resources for the fishery sector and to disseminate practices for safe and effective use of fishery resources in the Comoros through delivery of trainings by ENP. As for the sustainability, there is a serious financial problem of ENP. As for the efficiency, the project cost and period exceeded the plan.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

(For Ministry of National Education)

In order to operate ENP supported under the project, it is necessary that ENP receives the operational budget. Without any operational budget, ENP is having difficulty for the payment (ex. Water and Electricity, Fuel for the boat, maintenance of the equipment, duplication of the textbooks and materials). In addition, in order to maximize the utilization of the equipment provided by the Project, the Ministry should work with the ENP to repair the training boats damaged. As ENP is under the Ministry of Education, the Ministry should distribute the

[3] The Ministry of National Education, Research, Culture, Arts for Youth and Sports

necessary operational budget to ENP as soon as possible.

Lessons Learned for JICA:

- It is important that the result of the end-line survey is ready by the time of project completion, which makes it possible to identify the necessary actions to be taken before and/or after the end of the project. It also allows some time for the adjustment, if the result does not show the sufficient data necessary to conduct the post-evaluation especially in terms of level of achievement of the Overall Goal. Therefore, it is essential to plan and design baseline and end-line surveys at the time of project planning as well as to firmly conduct the surveys to collect necessary data for verification of project effects.
- For the project site(s) is away from the capital of the country, it is necessary to consider strategically how to advocate the good result of the project to the central ministry/ministries or how to communicate with them in order to solve the problems at the project sites. Those elements should be well taken into consideration at the planning stage, for example, placing one short-term expert in the central ministry, setting up the regular meeting in the capital. In addition, activities to enhance communication among stakeholders and to facilitate decision makers to mobilize resources, including budget allocation for the implementing agency should be incorporated in project component.

The equipment provided under the project
, operated by the teaching staffs

The boats provided under the Project

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Kenya Office: March, 2019

Country Name	**Establishment of Rural Electrification Model Using Renewable Energy**
Republic of Kenya	

I. Project Outline

Background	Although the Government of Kenya aimed at electrifying 650,000 households in nonelectrified areas from 2008 to 2013, through grid extensions and installation of off-grid power sources, the actual number of households electrified was only 60,000 for the period from 2003 to 2008. Meanwhile, renewable energy had been regarded as important means of electrification in the nonelectrified areas. However, development of models for small-scale off-grid electrification was necessary to promote the use of the renewable energy.		
Objectives of the Project	Through (1) Implementing pilot projects to develop a practical model* for PV (photovoltaic) electrification of health service institutions in nonelectrified areas, (2) Implementing pilot projects to develop a practical model for PV electrification of schools in nonelectrified areas, (3) Conducting technical training for Rural Electrification Authority (REA)/Ministry of Energy–MOEn (formerly Ministry of Energy and Petroleum (MoE&P) staff on Micro Hydro Power (MHP), Biogas and Wind, and (4) making recommendations for necessary policy and institutional frameworks for rural electrification using renewable energy, the project aimed at establishing rural electrification models using renewable energy and thereby disseminating the models in the country. * Practical modes are basically composed of (1) a system design (PV system for lighting, battery charging services and others), (2) sustainable O&M (REA, MOEn, Ministry of Health (MOH)/ Ministry of Education (MOE),(formerly Ministry of Education, Science and Technology (MoEST) and county government), and (3) sustainable financial plans (including income from battery charging services)		
	1. Overall Goal: Rural electrification models using renewable energy are disseminated in the country to improve the quality of Kenyan's life. 2. Project Purpose: Rural electrification models using renewable energy are established.		
Activities of the project	1. Project site (Pilot projects): 10 sites in Kajiado County, Narok County and Samburu County 2. Main activities: (1) Implementing pilot projects to develop a practical model for PV electrification of health service institutions in nonelectrified areas, (2) Implementing pilot projects to develop a practical model for PV electrification of schools in nonelectrified areas, (3) Conducting technical training for REA/MOEn staff on MHP, Biogas and Wind, and (4) making recommendations for necessary policy and institutional frameworks for rural electrification using renewable energy 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 11 persons 2) Trainees received (Japan): 3 persons 3) Training in the third country: 4 persons in India, 3 persons in Thailand 4) Equipment: a current meter, satellite phone, computers, photocopiers, etc. 5) Local cost: Salary and allowances, vehicle related expenses, workshop and seminars, etc. Kenyan Side 1) Staff allocated: 19 persons 2) Land and facilities: An office space 3) Local cost: per diem for training		
Project Period	March 2012 – February 2015	Project Cost	(ex-ante) 570 million yen, (actual) 437 million yen
Implementing Agency	Ministry of Energy (MOEn)), Rural Electrification Authority (REA)		
Cooperation Agency in Japan	Nippon Koei and KRI International Corporation		

II. Result of the Evaluation

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 policies of Kenya both at the time of ex-ante evaluation and project completion. The "Vision 2030" was designed as a vehicle for accelerating transformation of the country into an industrialized middle-income nation. To achieve this goal, electricity was/is identified as one of the drivers where it is expected to achieve 100% electrification rate by 2030. The "Rural Electrification Master Plan (REMP) 2009-2018" aimed at attaining 40% of rural electrification rate by 2020 promoting grid extension and off-grid electrification.

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

The project was consistent with the development needs of Kenya for PV electrification. At the time of ex-ante evaluation, though the Government of Kenya promoted electrification in nonelectrified areas, rural electrification was 12% in 2010 relative to the target (20% by 2010). In order to promote dissemination of the renewable energy, issues such as utilization and dissemination of appropriate technologies for renewable energy, making models for dissemination, strengthening the capacity of the public and private sectors that were involved with improvement of safety and sustainability of electrified facilities through appropriate maintenance were addressed. At the time of project completion, Kenya had just experienced unprecedented rapid grid extensions under an accelerated government policy for connectivity targeting Public facilities such as schools and dispensaries with the aim to achieve over ambitious 100% electricity access by

2020. Moreover, many Primary school were connected with grid electricity for those located near the grid and with PV system for those in off-grid areas to facilitate digital learning for class one pupils.

Under the new accelerated electricity connectivity programme, schools with installed PV systems became grid connected earlier than envisaged to implement government policy on digital learning.

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

The project was consistent with Japan's ODA Policy to Kenya. Under the "Country Assistance Program for the Republic of Kenya (2000), infrastructure development including energy was one of the prioritized areas of assistance.

<Appropriateness of Project Design/Approach>

Although the project was affected by the change of the government policy, the approach was appropriate. The project is considered to have met the development needs of Kenya, , however, some of the pilot sites were being covered by extension plans. At the time of inception, the relevance was high based on the Rural Electrification Master Plan 2008 and the REA Strategic plan 2008-2012. However, the situation changed in 2014/15 following the new government policy for digital learning in primary schools.

<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. Among the indicators set to measure the achievement of the Project Purpose, "Renewable energy facilities installed by the Project are operated and maintained properly with sustainability." (Indicator 3), "Implementation structures of national/county governmental agencies and local stakeholders are established." (Indicator 4), and "Variety of expertise in renewable energy is increased among members of C/P (C/Ps)." (Indicator 5) were achieved, however, "The developed guidelines and manuals are applied to the projects implemented by the REA and MOEn (C/P)." (Indicator 1) was partially achieved and "The Outputs of the Project are incorporated into implementation of REA Annual Renewable Energy Work Programme (Performance Contract)." (Indicator 2) was not achieved.

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

The effects of the project have partially been continued. Many of the facilities installed by the project have been partially or non-functional. Main reason is that the battery life-span of 3-4 years has expired but no replacement. Since Memoranda of Understanding (MOUs) which intended to transfer the Operation & Maintenance (O&M) responsibility to County health office and to Ministry of Education (MOE) have not been signed, no O&M budget has been secured. With battery failure, the systems have been more or less abandoned. Another reason for lack of interest is the grid connection in schools and establishment of hybrid mini-grids by REA with high capacity power through solar and diesel.

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

The Overall Goal was partially achieved. In 2014/15 and 2015/16, REA's focus was on electrification of public primary schools to support the Government's Digital Learning Programme utilizing grid extension to those schools within grid network and installation of PVs in off-grid public facilities. So far, 4,500 primary schools have been electrified using the 12V, 24V and 48V PV system designs and experiences introduced through this project. However, the dissemination structure of national and county governmental agencies has not been established and neither MOH and MOE has signed MOU with REA/MOEn on O&M.

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

A positive impact has been observed, as safe delivery of babies during the day and at night became possible after the installation of PV systems in dispensaries.

No land acquisition and resettlement occurred under the project. There has been no negative impact on natural environment so far. However, this could change after life spans of some components of the system expire like the batteries, fluorescent tubes, etc where their disposal might have a negative impact on the natural environment. The relevant Kenyan authorities are developing a safe way of disposing waste from the PV system installed in the public primary schools and the ones installed by the project will also be covered.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Rural electrification models using renewable energy are established.	Indicator 1: The developed guidelines and manuals are applied to the projects implemented by the REA and MOEn (C/P).	Status of the Achievement: partially achieved (partially continued) (Project Completion) Target was achieved to some extent as the level of utilization of the three out of four Guidelines/Manuals for PV system, MHP, and Biogas was reported to be moderate. However, Wind Guidelines was not utilized as REA and MOEn did not have small wind project. (Ex-post Evaluation) Guidelines and manuals for PV system have been utilized by (i) the institutions where models were installed and still functioning, (ii) 3 public primary schools installed with the 48V systems by REA, and (iii) newly recruited REA engineers and technicians to learn PV systems
	Indicator2: The Outputs of the Project are incorporated into implementation of REA Annual Renewable Energy Work Programme (Performance Contract).	Status of the Achievement: not achieved (not continued) (Project Completion) At the project completion, 2015/2016 Annual Renewable Energy Work Program did not incorporate the implementation of the demonstration project using the developed model due to the completion of guidelines towards the end of project completion. (Ex-post evaluation) Not incorporated, but practiced.
	Indicator 3: Renewable energy facilities installed	Status of the Achievement: achieved（partially continued) (Project Completion)

	by the Project are operated and maintained properly with sustainability.	There was a clause on O&M in the handover agreement from JICA to REA. (Ex-post Evaluation) **O&M status of the facilities**

County	Community	Facility	PV size (kW)	Functional or unfunctional*
Kajiado	Klkilyeti	Dispensary	1.4	Non-functional
Narok	Iltumtum	Primary School	4.2	Only the charging kiosk is functional. The other systems are non-functional
	Olkinyei	Dispensary	1.1	Non-functional
	Olemoncho	Primary School	3.0	Non-functional
Samburu	Tuum	Primary School	5.2	Functional
	Illaut	Primary School	5	Only the staffroom is functional. The other systems are non-functional
	Marti	Primary School	6.75	Functional
	Latakweny	Dispensary	2.5	Non-functional
	South Horr	Dispensary	0.5	Functional
	AngataNanyokei	Dispensary	0.75	Non-functional

	Indicator 4: Implementation structures of national/county governmental agencies and local stakeholders are established.	Status of the Achievement: achieved (Project Completion) Implementation structures of national/county governmental agencies and local stakeholders were established. According to the changes in external conditions, REA will modify the structures. (Ex-post Evaluation) Refer to Indicator 2, Overall Goal.
	Indicator 5: Variety of expertise in renewable energy is increased among members of C/P (C/Ps).	Status of the Achievement: achieved (partially continued) (Project Completion) Technical transfer on MHP, Biogas and Wind were conducted to the counterpart. Expertise is increased among member of C/Ps. (Ex-post Evaluation) - MHP: Knowledge acquired was used in carrying out of feasibility studies for Ndanu Falls in Siaya and Chemosit Hydropower Construction Project in Kericho. - Biogas: The knowledge acquired was used in the re-assessment, quantification and costing of the scope of works required in the rehabilitation of the two pilot biogas projects established by REA in Mangu High School in Thika and Moi Girls High School Isinya in Kajiado. - Wind: Knowledge acquired has not been utilized as there were no wind projects undertaken by REA since the project was completed
(Overall Goal) Rural electrification models using renewable energy are disseminated in the country to improve the quality of Kenyan's life.	Indicator 1: Number of public facilities who apply and follow the model has increased all over the non-electrified areas in Kenya.	(Ex-post Evaluation) achieved **The number of public facilities which apply and follow the model**

	2014/2015 No. of		2015/2016 No. of		2016/2017 No. of		2017/2018 No. of	
	counties	facilities	counties	facilities	counties	facilities	counties	facilities
Dispensary	03	05	03	05	03	05	03	05
School	35	2571	15	327	20	908	6	38

	Indicator 2: Dissemination structure of national and county governmental agencies is established.	(Ex-post Evaluation) not achieved - Dispensaries: Draft MOUs are being formulated stating that the assets belong to REA but O&M to be taken care of by MOH at the counties. - Schools: REA intends to transfer the O & M of the PVs systems to MOE through the MOEn. The schools under the project will be included. A letter together with a revised MOU is being prepared on the subject matter.

Source：JICA documents, questionnaire and interview with REA

3 Efficiency

Both project cost and project period were within the plan (the ratio against the plan: 77%, 100%). Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

Off-grid electrification has been a policy for increasing access to electricity services in underserved counties in Kenya as stipulated in policy documents such as the "Vision 2030" and "the National Electrification Strategy" (2016-2022). Meanwhile, electrification of the rural areas through grid extension has been moving very fast with REA. Off-grid power source is a stop gap measure in the electrification plan and when the grid arrives it replaces the off-grid power source. However, where appropriate, the grid power runs in hybrid mode with the off-grid power source due to the occasional unreliability of the grid power. As to the direction of MOE and MOH for installation of PV system in schools and dispensaries, plans have been underway to discuss with MOE on the O&M of the PV systems in public primary schools for the Digital Learning Programme. There has been also a window to discuss with the counties in the off-grid areas the electrification of health centres in these areas with PV systems under a REA matching facility program.

<Institutional Aspect>

The Renewable Energy Department under the Directorate of Technical Services of REA is responsible for disseminating the rural

electrification models developed by the project, while the MOEn is responsible for policy formulation and overall energy sector coordination. The number of staff in REA has been insufficient in terms of meeting the devolved functions of Rural Electrification and Renewable Energy Corporation (REREC) in 47 counties. REA was expected to transit into REREC based on the Energy Bill 2015, however, the Bill has not been enacted, and actual experience of working with counties has been still uncertain[1]. The Bill is expected to come into force by the end of 2018. Although it was expected that MOE and MOH would be responsible for O&M of the PV facilities, it was not realized. The demarcation among REA and MOE has been unclear with respect to the PV facilities developed under Digital Learning Program.

<Technical Aspect>

The Renewable Energy Department of REA has had sufficient skills to disseminate the rural electrification models developed by the project. Training by the project during the project implementation, further targeted training in the University of Nairobi on solar modules and working with the major solar contractors in the country during the implementation of the public primary schools electrification programme has strengthened the capacity of the Renewable Energy Department. Also, the renewable energy technical personnel of the MOEn are expected to be transferred to REA after the new Energy Bill becomes law.

<Financial Aspect>

REA has been relatively well funded from the Exchequer and especially because of the implementation of the Presidential Laptop project (under the umbrella of Digital Learning Programm), in all primary schools. After transition to the new REREC, REREC will be financed by Exchequer-from rural electrification levy, which is 5% levy on the cost of the units of power consumed by every connected customer. With a plan of electrification of public institutions in the off-grid areas, the budget is secured for the future activities.

Applied and approved O&M budget

(Unit: million Kshs)

	2016/17	2017/18	2018/19
Applied budget	100	680	n.a.
Approved budget	68	30	300

<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 at the time of project completion, as the renewable energy facilities under the project were operated and maintained, and implementation structure of dissemination of the models was established, and C/Ps gained various expertise in renewable energy, though some manuals/guidelines developed under the project was not utilized and REA Annual Renewable Energy Work Programme did not incorporate the project outputs, though practiced. As a result of the project, the Overall Goal was partially achieved, as the REA PV systems installed in 4,500 primary schools relied heavily on the design system and skills introduced through the project. As for the sustainability, slight problems have been observed in terms of institutional aspect with respect to O&M, however no problem has been observed in policy, technical and financial aspects.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

Most of them (est. 90%) of systems are not working mainly because of the “dead” wet-flood type batteries. Adopting the use of “maintenance free” batteries could help to reduce the budgetary burden for buying distilled water. REA could recommend this point to whomever takes over the O&M through MOUs signed between MOH and or MOE with REA/MOEn.

Lessons Learned for JICA:

- The Project Purpose was rather ambitious especially regarding the financing model for O&M. The preparatory missions reports on expected financial viability for O&M was rather overstated noting the economic status of the surrounding communities. It was also rather surprising that most of the project sites came to be covered by the national grid within the life-span of the project due to the Presidential Laptop project and therefore more consultations with MOEn and REA were necessary to identify alternative sites with little chance of being covered by National grid or Mini-grids by REA.
- At the time of ex-post evaluation, it was found that many of the sites were not functional after the project was completed due to the expiration of battery life without replacement. It is normal for batteries to expire after such a period of service irrespective of design. However, under the circumstances, where neither REA nor MOH and MOE are fully responsible for O&M, a change of design to utilize "Maintenance–free batteries” could have minimized the O&M budget and eliminate the purchases of distilled water (not always available in remote areas) and need for a specific person to be assigned for the work to for basic maintenance of the batteries.
- On the grid extensions by REA, it is difficult to avoid site overlapping even if there are close communications with counterpart due to some political reasons. About these small PV systems, to transfer them to other sites is not so difficult. It would be possible to build up a consensus with a partner country in advance, which makes the partner country side responsible to create a plan for transferring the system in case the system becomes unnecessary by grid extension.

[1] REREC will oversee the implementation of the Rural Electrification Programme by providing the necessary technical know-how for the energy reticulation at the counties. However, counties under the constitution have the powers to decide what resources to be developed when and how through the county plans. So, work of REREC will very much depend on close collaboration with the counties.

Students in Tuum Primary school, Samburu

Well maintained PV system in South Horr Dispensary, Samburu County

Internal Ex-Post Evaluation for Grant Aid Project

conducted by South Africa Office:July ,2018

Country Name	**The Project for Introduction of Clean Energy by Solar Electricity Generation System**
The Kingdom of Lesotho	

I. Project Outline

Background	The power supply of Lesotho heavily depended on the main power generation plant of the Muela Hydropower Generation Plant. However, the maximum peak load reached to 123 MW (2010) which exceeded the generation capacity of the Muela Power Generation Plant with 72 MW and the shortfall of the power demand had been covered by the power purchase from the Southern African Power Pool. The total power consumption of 613 GWh in 2008/2009 was supplied by the Muela Power Generation Plant (489 GWh) and the Southern African Power Pool (South Africa and Mozambique) (124 GWh). On the other hand, other neighboring countries had also been facing power shortage and the power supply in the region became tight. Under those situations, Lesotho needed to increase domestic power sources in order to secure stable power supply in the country.			
Objectives of the Project	To enhance power generation capacity, diversify energy sources and increase awareness among the people of Lesotho on the utilization of renewable energy by procurement and installation of grid-connected Photovoltaic (PV) system as well as capacity building of engineers in the Moshoeshoe I International Airport (MIA), thereby contributing to demonstrating the initiatives of Japan to promote efforts by developed and developing countries towards climate change.			
Contents of the Project	1. Project Site: Moshoeshoe I International Airport, Maseru 2. Japanese side: (1) Provision of grant necessary for procurement and installation of PV system (280kW) Equipment of PV System: PV Module, Power Conditioner, Mounting structure for PV Array, Data Logging Device, Monitoring system, Display panel, Junction box, Connection box, Low voltage distribution board, Control House, Spare parts, etc. (2) Technical Assistance (soft component of Grant Aid) Training on basic knowledge about interconnecting PV system and its operation and maintenance (O&M) including daily /periodic maintenance check-ups, data logging system/data analysis and management 3. Lesotho side: Site for installation of PV system, provision of soil disposal site and moulded case circuit breakers for low voltage systems, temporary offices for contractor and consultant, utilities for the construction site, and necessary costs including personnel for implementation of the project except the ones the Japanese side's defrayment			
Project Period	E/N Date	March 16, 2011	Completion Date	October 31, 2013
	G/A Date	April 11, 2011		
Project Cost	E/N Grant Limit / G/A Grant Limit: 297 million yen, Actual Grant Amount: 277 million yen			
Executing Agency	Department of Energy (DOE) of Ministry of Energy, Meteorology and Water Affairs Moshoeshoe I international Airport			
Contracted Agencies	Main Contractor and Agent: Sojitz Corporation Main Consultant: Nippon Koei Co., Ltd.			

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation> >

[Target year to measure the effects]

- According to the ex-ante evaluation sheet, the target year to measure the expected quantitative effects was set one year after the project completion, and it was expected to be 2013. However, as the project was eventually completed in October 2013, the target was changed to 2014. Therefore, this ex-post evaluation verified the achievement level of project objectives based on the data for the period from 2014 to 2016.

[Appropriateness of quantitative indicator to verify project effects]

- In the ex-ante evalaution sheet, one of the quantitative indicators to verify the project effects is reduction of CO2 emission by solar power generation using the PV system installed by the project. However, since the main power source of Lesotho is hydropower generation without CO2 emission and no thermal power plant supplies electic power through the power system in the country, the reduction of CO2 emission may be expected indirectly at thermal power plants supplying in the South African Power Pool. In addition, the power generation volume by the PV system istalled by the project (350,000 kWh) is negligble level against the total power consumption in Lesotho (613 GWh, 1GW=1,000,000kW). Therefore, the estimated theoretical values of annual reduction of CO2 emission by the project were calculated as an impact of the project.

1 Relevance

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

The project has been consistent with the "Lesotho Energy Policy" (2003) prioritizing rural electrification at the time of ex-ante evaluation and kept consistent with the policies at the time of ex-post evaluation. In "the National Strategic Development Plan (NSDP)" (2012/13-2016/17), promotion of wind, solar and biomass energy to complement hydropower energy was one of the eleven priority items to adapt to climate change. In addition, the "Lesotho Energy Policy" (2015-2025) aims at the improvement of access to renewable energy sources and technologies in order to improve the energy security by reducing reliance on fossil fuels and imported electricity.

<Consistency with the Development Needs of Lesotho at the Time of Ex-Ante and Ex-Post Evaluation >

The project has been consistent with Lesotho's development needs of introduction of solar power generation, in particular in rural areas

in order to increase rural electrification by renewable energy source and to reduce CO2 emission by use of biomass fuel at both of the time of ex-ante evaluation and ex-post evaluation.

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

The project was consistent with Japan's ODA policy to support improvement of access to clean energy including utilization of solar power generation under the financial mechanism for "the Cool Earth Partnership" which was launched in 2008. The project was implemented under a scheme of "Program Grant Aid for Environment and Climate Change", which the Government of Japan newly introduced in 2008 in order to support developing countries with willingness to contributing to mitigation of climate change but with lack of technologies and funds to balance between their economic growth and greenhouse gas reduction." The Japan's ODA policy for Lesotho has prioritized assistance for efforts against climate change in the fiscal year of 2011.

<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. As all the solar panels installed by the project have been functioning, the PV system installed by the project has generated more than the target value of electricity (350,000 kWh) a year for the period from 2014 to 2016. The generated electricity has been used by MIA and the surplus electricity has been transmitted to the Lesotho Electricity Company Ltd (LEC). MIA has realized cost savings incurred for electricity due to own power generation from the PV system installed by the project.

The PV system installed by the project raised awareness of solar as an energy source of electricity generation to visitors to Lesotho. For example, almost all visitors at MIA have noticed the PV system installed at MIA and have made inquries about the PV system in relation to the company which built the facility and the funder of the installation. . There are at least 3 time visits per month by primary and secondary school students to see the PV system installed by the project. The electricians operating the failicty get a chance to explain how the PV system works to these students. University students and lecturers have done some analysis on the performance of the PV system and produced articles for publication.

<Impact>

Some positive impacts were observed at the time of ex-post evaluation.The project has contributed to demonstration of the initiatives of Japan to promote global collaborative efforts towards climate change in Lesotho. Through the policy dialogue between the Government of Lesotho and the Government of Japan, the discussion about renewable energy is continuing and there have been installations of small scale off-grid PV systems (1.1kW) in hospitals and schools by the Government of Lesotho since the project completion. Despite the fact that contribution of electricity generated from solar is still limited to only 0.38% of the total power generation in the country, DOE and other relevant organizations have gained confidence on utilization of PV system in Lesotho through operation of the grid-connected PV system at MIA installed by the project. As a result of the project, there is also a lot of interest from the private sector to generate electricy from renewable solar which can improve local power generation. The project has been demonstrating that electricity can be produced from solar.

In addition, it is assumed that the power generation by the PV system has contributed to the reduction of CO2 emission as an indirect impact on thermal power plants supplying power for the South Africa Power Pool from South Africa, in particular (Estimated value of reduction of CO2 emission: 161 tons in 2014, 167 tons in 2015 and 124 tons in 2016)[1].

<Evaluation Result>

In light of the above, the effect of the project has been observed mostly achieved as planned. Therefore, the effectiveness/impact of the project is high.

Quantitative Effects

Indicators	Baseline 2009 Baseline Year	Target 2014 1Years after Completion	Actual 2014 1 Year after Completion	Actual 2015 2 Years after Completion	Actual 2016 Year of Ex-post Evaluation
Indicator 1: Total power generation volume at transmission end (kWh/year)	0	350,000	489,158.4	505,753.4	376,146.1
Indicator 2: Annual savings of electricity cost by the PV system installed by the project	0	40,654 Maloti	39,412.1	48,251.7	35,886.3

Source : Ex-Ante Evaluation Sheet (JP), Preparatory Survey Report (EN), data provided by MIA

3 Efficiency

The project cost was within the plan (ratio against the plan: 97%), however, the project period exceeded the plan (ratio against the plan: 147%). The reason for the project period exceeded the plan was that local contractor took longer period by ordering wrong materials, and the construction process was ill-organized because the local contractor did not submit the construction procedure specification even Japanese side pointed over and over. At the later stage, Japanese contractor changed this local contractor to another one in order to manage the plan. Therefore, the efficiency of the project is fair.

4 Sustainability

<Institutional Aspect>

MIA has been responsible for operation and maintenance of the PV system installed by the project. MIA deploys 5 electricians for O&M of the PV system who are in charge of maintenance of electric facilities in MIA. According to the Lesotho Electricty and Water Authority (LEWA), the Government of Lesotho is preparing regulations on PV sytems in Lesotho as planned in the project. This regulation

[1] The volume of contribution to annual CO2 reduction is estimated by multiplying CO2 reduction unit by the annual power generation volume of the PV system. The CO2 reduction unit used by the ex-ante evaluation was the CO2 emission factor for the power sector in Japan to attain the 2020 goal for the greenhouse gas as of 2009.

is expected to be approved by the end of year 2018. DOE and LEC often visit MIA (at least once a month) to collect data such as energy efficiency from the PV system in order to formulate other PV system projects.

<Technical Aspect>

The electricians of MIA have sustained their technical level for daily check of the PV system based on the necessary knowledge and skills obtained from the trainings by the project and they properly conduct daily check. In addition, they were able to fix the power conditioner when it was broken in 2016 and 2017 in accordance with the manuals prepared by the project. Althought there is no clear and documented training program for electricians to maintain the PV system, the trained electricians provide a training for the newly hired electricians.

<Financial Aspect>

According to the electricians, there is no specific budget for O&M of the PV system installed by the project since the PV system had no major issues requiring budget so far. MIA can allocate budget for small costs such as failures of air conditioning of the PV system. Some minor operational problems were solved by using spare parts provided by the project and a limited amount of budget was required to fix air conditioners for the PV system. In addition, due to the plenty of spare parts, there is no necessity to procure additional spare parts for at least 10 years.

<Current Status of Operation and Maintenance>

By the time of ex-post evaluation, all the equipment procured by the project have been fully functioning and utilized.

<Evaluation Result>

In light of the above, no problem has been observed in any aspects of the implementing agency. Therefore, the sustainability of the project effect is high.

5 Summary of the Evaluation

The project has achieved its objective to enhance power generation capacity, diversify energy sources and increase awareness among the people of Lesotho on the utilization of renewable energy. As for efficiency, the project period exceeded the plan.

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

III. Recommendations & Lessons Learned

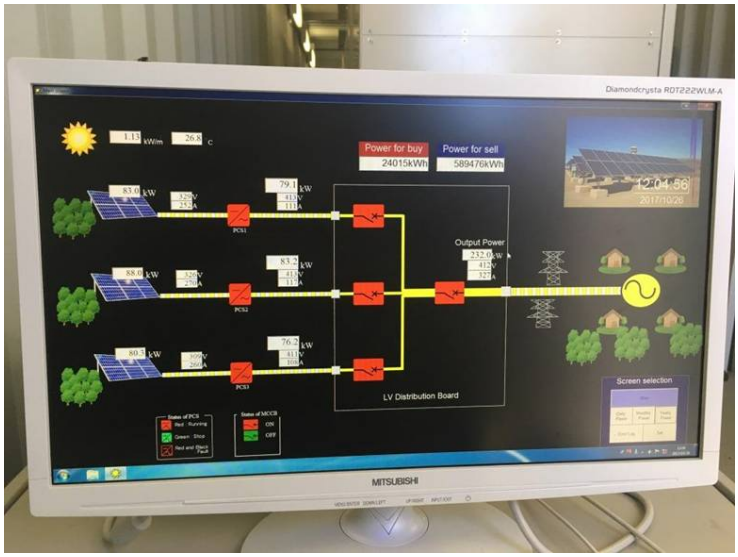
Recommendations to Implementing Agency:

- DOE is requested to continuously provide technical advice and feedback as well as further technical trainings to the electricians of MIA that will contribute to enhance the sustainability of the project. In order to establish a technical backstop system for MIA, it is preferable to sign a memorandum of understanding (MOU) between DOE and MIA which specifically spellout responsibilities and obligations of the two institutions regarding operation and maintenance of the PV system. By the effective technical backstop system, it is expected that the electricians of MIA will be able to have opportunities to deepen their technical knowledge for improvement.
- MIA should conclude a power purchase agreement with LEC as recommended by the project for sales of electricity generated by the PV system installed by the project once a legislative and/or regulatory framework are concluded. MIA will be able to earn some revenue from the sales of electricity injected into the LEC's transmission system. Since the project was considered as a pilot, LEC didn't have a plan to purchase the electricity from MIA. LEC is just receiving the energy from MIA without paying money.

Lessons Learned for JICA:

- It is important to select the proper local contractor in order to complete the project within the plan. Therefore, the advise from the implementing agency and the record of contractor in JICA office will help concluding a contract with a proper local contractor.

PV panels installed at MIA



Data logging system to showing generating electric power by the PV system

Internal Ex-Post Evaluation for Grant Aid Project

conducted by Morocco Office: October 2018

Country Name	The Project for Flood Forecasting and Warning System in High Atlas Region
The Kingdom of Morocco	(Le Projet de Système de Prévision et d'Alerte aux Crues dans la région du Haut Atlas)

I. Project Outline

Background	In Morocco, the major rivers start from the precipitous High Atlas mountains and the flows induced river floods and mudslides and damaged in the river basin areas. The large-scale disasters, such as the mudslides in the Ourika Valley in 1995 (more than 200 dead) and the heavy rains in 2002 (more than 60 dead and the property damage of equivalent to more than 800 million JPY) occurred in the areas. Since 1995, the Government of Morocco made efforts to mitigate flood damages, including erosion control and construction of sediment control facilities, and requested the Government of Japan to establish flood forecasting and warning system in High Atlas Region.			
Objectives of the Project	To establish flood forecasting and warning system in High Atlas Region by procurement and installation of hydrological observation and data collection subsystem, data analysis, and flood information transmission subsystem and warning and transmission subsystem as well as capacity building of operation and maintenance of the systems, thereby contributing to the mitigation of flood damages.			
Contents of the Project	1. Project Site: Ourika and Rheraya river basins of Tensift River (16 sites of telemeter observation stations including 5 existing sites, 1 site of flood forecasting and warning center, 13 sites of warning stations, 1 site of warning center, and 3 sites of data monitoring stations) 2. Japanese side: (1) Procurement of hydrological observation and data collection subsystem, data analysis and flood information transmission subsystem and warning and transmission subsystem. (2) Technical Assistance (soft component of Grant Aid) for capacity building for operation and maintenance of the systems and evacuation drills. 3. Moroccan side: (1) Removal of any obstacles and secure the land use on the construction sites and the installation of the system. (2) Provision of electricity, water supply and other necessary utilities for the Project.			
Project Period	E/N Date	March 23, 2011	Completion Date	December 5, 2013
	G/A Date	March 23, 2011		
Project Cost	E/N Grant Limit / G/A Grant Limit: : 586 million yen, Actual Grant Amount: 463 million yen			
Executing Agency	Ministry of Energy, Mines, Water and Environment (the name of the ministry changed to the Secretary of State in charge of Water under the Ministry of Equipment, Transport, Logistics and Water, on April 5, 2017)			
Contracted Agencies	Main Contractor(s): Marubeni Corporation Main Consultant(s): CTI Engineering International Co., Ltd.			

II. Result of the Evaluation

1 Relevance

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

The project was consistent with Morocco's development policies highlighting importance of flood risk management to reduce vulnerability set in policy documents such as "The Action Plan of Integrated Water Resources (GIRE: Le Plan de Gestion Intégrée des Resources en Eau" (2009-2030) and "The National Plan of Protection against Flood (PNPI: Le Plan National de Protection contre les Inondations" (2012). The current new law of Water Act No.36-15 (2016) prioritize water-related risk management and expansion of flood forecasting and warning systems in flood-prone areas at the time of ex-post evaluation.

<Consistency with the Development Needs of Morocco at the Time of Ex-Ante and Ex-Post Evaluation >

The project was consistent with Morocco's development needs of mitigation of human casualties, significant economic damages in the country's large urban centers, disruption of economic activities, and damages to infrastructure at the time of ex-ante evaluation. There are still needs of reduction of the risk of flooding in order to avoid human losses.

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

The project was consistent with Japan's ODA Policy for Morocco[1] supporting the 6 priority areas confirmed by both governments of Morocco and Japan in 1999, including support for the environment sector for ensuring sustainable development.

<Evaluation Result>

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

2 Effectiveness/Impact

<Effectiveness>

The project partially achieved its objective at the time of the target year of 2015 and mostly achieved it at the time of ex-post evaluation. The proportion of the flood warnings issued by the flood forecasting and warning system upon precipitation exceeding the predetermined level (Indictor 1) was 70% in 2014 and 2015, and it reached to 90% in 2016 and maintained the same level at the time of ex-post evaluation in 2017. In some cases where the water level exceeded the predetermined level, no flood warning or alert was issued. On the other hand, all of the telemeter observation stations, flood forecasting warning stations, warning center, and data monitoring stations had been functioning well, except for the observation station in Tizi-n-Likemt which was damaged by the snow storm in 2016 and has been shut down since then. Namely, the indicator 1 of less than 100% did not necessarily mean the unfunctional or malfunctional system.

[1] Source: Ministry of Foreign Affairs, "ODA Databook" (2009), p. 359

According to the Agency of Tensift Hydraulic Basin (ABH-T: Agence du Bassin Hydraulique de Tensift), since they use not only the flood forecasting system installed by the project but also by the conventional system of ABH-T[2], the decision making on issuing flood warning is based on comprehensive analysis on telemetry data transmitted through the system installed by the project as well as the direct visual observation by the operators.

The project also has contributed to increasing awareness of flood warning and evacuation among the local population and decreasing the number of casualties damaged by floods. ABH-T conducted awareness raising sessions and evacuation drills once a year in the targeted river basins from 2013 to 2016. Actual evacuations from flooding based on the flood forecasting and warning system had been conducted twice in each year between 2013 and 2017.

<Impact>

Some positive impacts and a minor negative impact were observed at the time of ex-post evaluation. Because of regular sensitization of population by ABH-T as mentioned above and better coordination among relevant organizations for flood events, the number of casualties by flood was limited to one each in 2013 and 2014 and none since 2015. In addition, the flooding risk reduction led to an increase in the number of tourists and promoted touristic activities among residents, especially women, in the targeted river basins. On the other hand, there were some cases that false flood warnings were issued, which disrupted the tourism in the target area.

<Evaluation Result>

In light of the above, the effect of the project has been observed mostly as planned. Therefore, the effectiveness/impact of the project is high.

Quantitative Effects

Indicators	Baseline 2009 Baseline Year	Target 2015 3 Years after Completion	Actual 2014 2 Years after Completion	Actual 2015 3 Years after Completion	Actual 2016 4 Years after Completion	Actual 2017 Ex-post Evaluation Year
Indicator 1: Proportion of flood warnings upon precipitation excess over the predetermined level (%)	0	100	70	70	90	90

Source : Data provided by ABH-T

3 Efficiency

The output of the project was produced as planned. Although the project cost was within the plan (ratio against the plan: 79%), the project period exceeded the plan (ratio against the plan: 136%) in order to take measures against land acquisition and technical problems in the data transmission subsystem. Therefore, the efficiency of the project is fair.

4 Sustainability

<Institutional Aspect>

[AHB-T]

AHB-T has been obligated to set up flood forecasting and warning systems under the Water Act No. 36-15 of August 2016. To this end, ABHT has been annually increasing the number of staff in charge of the flood forecasting and warning system management (Systeme de Prevision et d'Alerte aux Crues: SPAC) which shifted from one managing officer to a team of 4 managers including 1 supervisor/electro-mechanic engineer for follow-up and exploitation of the system, 1 hydrological chief technician for flood forecasting, analysis and transmission, 1 technician for water resources management and data analysis and 1 technician for telemetry and communication. In addition, ABHT is implementing regular maintenance and monitoring procedures for the facilities and equipment installed by the project in order to fulfill the recommendations of JICA experts and ensure the sustainable operation of the system. Yet, the number of technical staff remains insufficient to conduct operation and maintenance (O&M) for the flood forecasting and warning system. Therefore, Preventive and curative maintenance is now systematic and done at an annual basis and controlled by the external agents who have been outsourced by ABH-T.

[Al Haouz Province]

Al Haouz Province has 1 manager for system management (flood risk management) and 1 transmission agent and 1 computer engineer for system development and regular maintenance. They have the insufficient number of staff members as well.

<Technical Aspect>

The staff members of ABH-T and Al Haouz Province have a certain level of knowledge and skills for operation and maintenance (O&M) of the flood forecasting and warning systems without serious problems because of their experiences of O&M of their own flood warning system in addition to the technical assistance by the project although no technical trainings were conducted after the project.

The flood forecasting and warning system was developed in two phases, namely a pilot system under JICA development study (2001-2003) and a full-scale system under grant-aid project (2011-2013). Two suppliers were involved in the implementation of the project, one for the pilot phase and another for the full scale phase and each of suppliers provided different type of equipment. As a result, there were some difficulties in interconnection between the two systems to establish one integrated system at the beginning of the full scale phase. In addition, lack of translated key documents and manuals in French provided by suppliers and consultants, have constrained timely maintenance of the system because the AHB-T staffs have difficulty to understand the English documents.

<Financial Aspect>

[AHB-T]

The actual expenditure for the O&M, including cost for maintenance service and periodic inspection and repair, increased from 0.132 million Moroccan Dirham (MAD) in 2014 to around 2.9 million MAD in 2017. Sufficient budget has been allocated to operation and

[2] The conventional system uses visual checks by the operators of the observation stations, communication by fax or radio between the observation stations and ABH-T and communication between ABH-T and the provincial offices for flood warning and evaluation.

maintenance of the system from 2014 to 2017 with a remarkable increase every year which gives hope to the continuity of getting enough adequate budget in the future.

<Current Status of Operation and Maintenance>

As mentioned above, all of the major equipment installed by the project has been functioning well, except for equipment installed in the Tizi-n-Likemt observation station which had been damaged by strong snow storm. And Temporary restoration works have been made but it has been unfunctional since 2016. The maintenance of this station was judged to be very difficult due to heavy snow in winter season. As a matter of fact, at the time of ex-post evaluation, ABHT has been planning to relocate this station

In terms of periodic inspections, overhauls, and repairs in case of troubles for the equipment, ABH-T has entrusted an external local agency. The agency has conducted the annual periodic inspections for all the stations/centers, except for the warning center, and conducted the overhauls once a year for all the stations/centers. Also, the agency has repaired the telemeter observation stations 3 times and the data monitoring stations 1 time so far.

<Evaluation Result>

In light of the above, some challenges have been observed in terms of the institutional and technical aspects of the implementing agency. Therefore, the sustainability of the project effect is fair.

5 Summary of the Evaluation

The project has mostly achieved its objectives to establish flood forecasting and warning system in High Atlas Region. As for sustainability, the O&M staff of AHB-T and Al Haouz Province has a certain level of technical skills and knowledge for O&M of the flood forecasting and warning system installed by the project. However, the number of O&M staff for each organization has not been sufficient and the O&M works have been outsourced to the external agents by AHB-T. . 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 Implementing Agency:

- The lack of data information recorded because some technical problems in the system installed by the project resulted in the damage of some equipment in many alert stations by major flood in 2014 and reparation of these equipment delayed. To secure sustainability of the project, the observation sites with equipment installed by the project should be regularly visited and checked or examined. In addition, when certain equipment are broken down, they must be repaired or replaced with correct ones as soon as possible. Furthermore, it is recommended that ABHT strengthen its organization and conduct drills to further operate the system as a whole, including the conventional system as well.

Lessons Learned for JICA:

- The project has been well planned to respond to the real needs of the Moroccan government and population. As a matter of fact, it has been duplicated to other flood risk river basins in the country. However, to further reinforce sustainability of project effects, it is recommended to conduct trainings for O&M staff by using key documents provided by the Japanese experts, consultants and suppliers in order to make not only the O&M staff but also managing staff understand legal and technical matters for O&M of the system precisely. In addition, technical documents, including O&M manuals and technical guides to be provided by suppliers and consultants, should be translated into understandable language for the O&M staff in order to ensure trainings effects and to avoid misunderstandings. . Concerning insufficient staff at ABHT and Al Haouz province, it is very important for JICA if similar projects are implemented in the future to examine the executing agency's capacity to secure necessary staff for O&M of the project at early formulation stage as well as its capacity to manage outsourcing contracts when external personnel is hired.
- At the planning and implementation stage, it is essential to consider interconnection of telemetry system which is a key to transmit data for flood forecasting and warning. Also, it is better to consider single supplier to procure unified equipment for ensuring integrity of the system in order to avoid interference of system integration. At the same time, it is necessary to carefully consider adequate project period to cover required time for necessary project activities, such as land acquisition process and works for system integration and interconnection.

Imlil alarm station in Rheraya valley

Tinetine Radar station in Rheraya valley

	
Tazitounte alarm station in Ourika valley	Setti Fadma alarm station in Ourika valley

conducted by Viet Nam Office: March, 2019

Country Name	**Project for Strengthening Capacity of Inspection System for Ensuring Safety of Agro-Fishery Foods**
Socialist Republic of Viet Nam	

I. Project Outline

Background	Viet Nam joined the World Trade Organization (WTO) in 2007, and it became urgent issues to supply safe foods which comply with international standards under the conditions of more active cross-border trade and human health. In order to meet the hygiene and safety criteria based on Sanitary and Phytosanitary (SPS) measures, the Vietnamese Government decided to strengthen proper inspection and monitoring system, and submitted requests for technical cooperation to the Japanese Government. Responding to above request, an SPS Policy Adviser was dispatched between October 2009 and October 2011 to advise on the policy and systems for food hygiene and safety management. It was found out that inspection and monitoring of domestic foods were limited to certain target areas, food groups, inspection parameters and implementation periods and not comprehensively conducted in the existing monitoring program, and the necessity of strengthening testing-capacity in the laboratories and enhancing inspection system became apparent.
Objectives of the Project	Through strengthening the testing capability of agro-fishery foods in the laboratories of National Agro-Forestry Fishery Quality Assurance Department (NAFIQAD) in Ho Chi Minh and Can Tho, improving the National Monitoring Program (NMP) for food safety of agro-fishery foods, and developing capacities of government officers engaged in safety of agro-fishery foods, the project aimed at enhancing the continuous inspection system for ensuring safety of agro-fishery foods in NAFIQAD, thereby contributing to improving food safety of agro-fishery foods. 1. Overall Goal: Contribute to improve food safety of agro-fishery foods by the enhanced National Monitoring Program (NMP). 2. Project Purpose: The continuous inspection system for ensuring safety of agro-fishery foods is enhanced in NAFIQAD.
Activities of the Project	1. Project Site: Hanoi, Ho Chi Minh and Can Tho cities 2. Main Activities: (1) Conduct trainings on advanced analytical methodologies and Good Laboratory Practice (GLP) for officers of NAFIQAD and establish Standard Operational Procedures (SOPs) for standardization of the analytical methods; (2) Select and categorize monitoring parameters, conduct and evaluate a trial of the monitoring program for agro-fishery foods at pilot sites and make a proposal for the improvement of the NMP; and (3) Conduct OJT in pilot sites and echo-training for technical experts in targeted laboratories through project counterparts (C/Ps) who acquired advanced technology by OJT etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 2 persons (long term) and 10 persons (short term) 2) Trainees Received: 31 persons 3) Equipment: gas chromatography / mass spectrometer system, ultra-performance liquid chromatography system, rotary evaporator, CCD camera, ultrapure water maker etc. 4) Local operation cost: travel expenses, accommodations, meeting expenses etc. Vietnamese Side 1. Staff allocated: 29 persons 2. Project office and training space 3. Local operation cost: chemicals, equipment, office facilities, allowances etc.
Project Period	December 2011 - November 2014 / Project Cost: (ex-ante) 350 million yen, (actual) 277 million yen
Implementing Agency	National Agro-Forestry-Fishery Quality Assurance Department (NAFIQAD), Ministry of Agriculture and Rural Development (MARD)
Cooperation Agency in Japan	Ministry of Health, Labour and Welfare

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

- [Supplemental Information for Overall Goal] While the indicator for Overall Goal (NMP for food safety of agro-fishery foods is revised annually based on the result of previous year's program.) verifies the continuation status of Indicator 2 of Project Purpose, it is not specific enough to verify the achievement of Overall Goal (Contribute to improve food safety of agro-fishery foods by the enhanced NMP.) towards the achievement of improved food safety in Viet Nam in future (achievement of improved food safety in Viet Nam would be a Super Goal in the context of this project). Thus, in the ex-post evaluation, the indicator for Overall Goal (=annual revision of monitoring program) is broken down into several details, namely; (1) whether monitored objects and parameters (test substances) have been increased, (2) whether necessary measures to effectively implement the regulations of traceability have been taken to trace back violated testing results (products), and (3) whether the database system developed under the project has been updated and managed properly to further improve or maintain the improved monitoring system, are checked as supplemental information.

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 policies such as "strengthening the inspection and strict control for securing

safety of agro-fishery products" as set forth in "National Socio-Economic Development Plan (2006-2010)", "MARD Five Year Plan (2006-2010)" and "National Strategy for Food Safety in the period of 2011-2020 and a vision toward 2030" etc.

<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 supplying safe agro-fishery products through systematizing inspection 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 strengthening of the quarantine system and other efforts to secure safety for agricultural and fisheries products and foods).

<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. Within NAFIQAD, Division of Quality Assurance for Fishery Products was in charge of NMP of fishery products, and Division of Quality Assurance for Agro-Forestry Products and Salt was in charge of NMP of other products (Indicator 1). Trial Monitoring Program (TMP) was conducted in the pilot sites as one year program, which was completed in April 2014. The evaluation results of TMP were reflected in 2015's implementing plan of NMP. Particularly, the monitoring of antibiotics residues detected in aquaculture fishery products in TMP was strengthened and methods developed under TMP including how to determine the number of monitoring samples and multi-pesticide residues analysis on plant products were applied in 2015's implementing plan of NMP (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. There has been no change on divisions in charge of NMP stated above since project completion (Indicator 1). NMP for food safety of agro-fishery foods has been revised annually based on the results of the previous year's programs and the evaluation results of NMP have been reflected in next year's implementing plan of NMP since project completion. For example, many test substances have been added in NMP, while the number of monitoring samples for some test substances has been reduced in NMP based on the risk assessment that no residue of such substances has been detected and no violation has been notified by importing countries in the previous three years (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. The number of test substances has been increased from 192 in total at the time of project completion to 431 in total (181 for veterinary drugs residue and 250 for pesticides residue) at the time of ex-post evaluation. Moreover, MARD issued Circular No.08/2016/TT-BNNPTNT, stipulating the measures for handling cases where testing results of monitoring product samples fail to ensure food safety (tracing back to food producers). Based on the Circular, in 2017, producers whose products failing to meet safety criteria had their establishments inspected on an unexpected basis. On the other hand, MARD issued Circular No. 31/2015/TT-BNNPTNT to provide for the monitoring of toxic residues in animal and agro-fishery products. This Circular requires new monitoring procedures and formats, thus the database system developed under the project has no longer been utilized. Annually, NAFIQAD has developed the simple database of the previous years' program implementation results based on reporting procedure as regulated by Circular No. 31/2015/TT-BNNPTNT and guidance.

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

The number of food safety non-compliance cases of exported fishery foods that received warnings by competent authorities of the importing countries, including the EU, Korea, China, Brazil, US, Japan and Australia, has been reduced from 323 cases in 2014 to 180 cases in 2015, and then to 125 cases in 2017.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) The continuous inspection system for ensuring safety of agro-fishery foods is enhanced in NAFIQAD.	1. Relevant Divisions and Centers of NAFIQAD which implement the National Monitoring Program are stipulated.	Status of the Achievement: achieved (continued) (Project Completion) Within NAFIQAD, Division of Quality Assurance for Fishery Products and Division of Quality Assurance for Agro-Forestry Products and Salt were stipulated as in charge of NMP. (Ex-post Evaluation) No change on the above since project completion.
	2. Trial Monitoring Program (TMP) is conducted in the pilot sites (HCMC and Can Tho city), and the evaluation results of TMP are reflected in next year's implementing plan of the National Monitoring Program.	Status of the Achievement: achieved (continued) (Project Completion) TMP was conducted in the pilot sites and the evaluation results of TMP were reflected in 2015's implementing plan of NMP. (Ex-post Evaluation) The evaluation results of NMP has been reflected in next year's implementing plan of NMP.
(Overall Goal) Contribute to improve food safety of agro-fishery foods by the enhanced National Monitoring Program (NMP).	National Monitoring Program for food safety of agro-fishery foods is revised annually based on the result of previous year's program.	(Ex-post Evaluation) achieved NMP for food safety of agro-fishery foods has been revised annually based on the results of the previous year's programs.
	(Supplemental Information 1) Whether monitored objects and parameters (test substances) have been increased	(Ex-post Evaluation) Monitored test substances have been increased since project completion.
	(Supplemental Information 2) Whether necessary measures to effectively implement the regulations of traceability have been taken to trace back violated testing results	(Ex-post Evaluation) MARD issued Circular No. 08/2016/TT-BNNPTNT, which requires to trace back testing results of monitoring product samples which failed to ensure food safety.

	(products)	
	(Supplemental Information 3) Whether the database system developed under the project has been updated and managed properly to further improve or maintain the improved monitoring system	(Ex-post Evaluation) Due to the new regulation, which requires new monitoring procedures and formats, the database system developed under the project has no longer been utilized. However, NAFIQAD has annually developed the simple database of the previous years' program implementation results based on reporting procedure in accordance with the regulation issued by MARD.

Source: Terminal Evaluation Report, questionnaire survey and interview with NAFIQAD

3 Efficiency

Both the project cost and the project period were within the plan (ratio against the plan: 79% and 100%, respectively). Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

"National Strategy for Food Safety in the period of 2011-2020 and a vision toward 2030" is still effective at the time of ex-post evaluation, and the needs for securing safety of agro-fishery foods are also stated in "The Plan of Establishment and Development of Safe Agro-Forestry-Fishery Food Supply Chain throughout the Country (2013-2020)" and "The Plan of Food Safety Assurance during Transport and Slaughter of Cattle and Poultry during the period of 2014-2020".

<Institutional Aspect>

Regarding securing safety of agro-fishery foods in Viet Nam, NAFIQAD, which is the primary C/P of this project, is responsible for conducting inspection (testing) of agro-fishery foods, and managing, revising and coordinating NMP for food safety in an integrated manner etc. Plant Protection Department (PPD) under MARD is responsible for conducting policy planning for plant protection, research on management of pesticides, licensing on pesticides and their use, and inspection (testing) of pesticide residues, heavy metal and microorganism etc. in agro-foods. Department of Animal Health (DAH) under MARD is responsible for conducting formulation of sanitation standards/criteria for epidemiology, quarantine, veterinary sanitation, livestock farms and meat processing factories, management of veterinary medicines and vaccinations, and inspection (testing) of bacteria, antibiotics and aflatoxin in animal products and melamine in dairy products. According to NAFIQAD, PPD and DAH, the number of staffs in these organizations is sufficient to perform the above duties[1].

<Technical Aspect>

Most of staffs in NAFIQAD have bachelor's degrees to PhD degrees in relevant fields[2]. NAFIQAD's laboratories have been able to maintain and expand the criteria of ISO17025 and recognized as an official inspection agency in Viet Nam by other countries such as Japan, the EU, Canada and China etc. Thus, the skill level of staffs in NAFIQAD is sufficient. According to PPD, most of its staffs have more than five years of work experience and bachelor's degrees to PhD degrees in relevant fields[3]; thus, their skill level is sufficient to properly perform the above duties. According to DAH, many of its staffs have over ten years' work experience in relevant fields and they are generally capable of performing the above duties. As for trainings, NAFIQAD has conducted 18 training courses[4] throughout the country, with participation of more than 1,000 persons from various agencies in charge of safety and quality control of agro-fishery products since project completion. DAH has also conducted five training courses on sampling, inspection and monitoring for its provincial sub-departments and two other training courses on inspection for its regional departments and centers with the cooperation of foreign partner since project completion. PPD has not organized training courses by itself since project completion due to lack of budget, however, its staffs have participated in training courses organized by other departments/units including NAFIQAD under MARD. SOPs developed under the project are still utilized and updated in NAFIQAD, PPD and DAH. Equipment procured under the project are also maintained and utilized at NAFIQAD.

<Financial Aspect>

According to NAFIQAD, the amount of revenues from collected inspection fees has been steadily increasing year by year at the time of ex-post evaluation, and NAFIQAD has approximately 200 billion to 300 billion VND of annual income including budget allocation from MARD and revenues from collected inspection fees, which is sufficient to properly perform the above duties. According to PPD, the amount of annual budget allocation from MARD is limited, however, PPD has managed to perform the above duties except for conducting trainings for its staffs by itself. According to DAH, the amount of annual budget allocation has been sufficient to perform the above duties.

<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: the inspection system for ensuring safety of agro-fishery foods was enhanced and has been functioning through annual revision of NMP. For sustainability, efficiency and relevance, no major problem was observed.

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

III. Recommendations & Lessons Learned

Lessons Learned for JICA:

- As stated above, a simple database has been used instead of the database system developed under the project, as MARD issued a new regulation, by which monitoring procedures and formats have been changed and NAFIQAD has been able to analyze information of

[1] The number of staffs in NAFIQAD headquarters and its branches is 465 staffs in total, and the number of staffs in PPD headquarters and its regional departments and centers is 621 staffs in total, while the total number of staffs in DAH was not available.

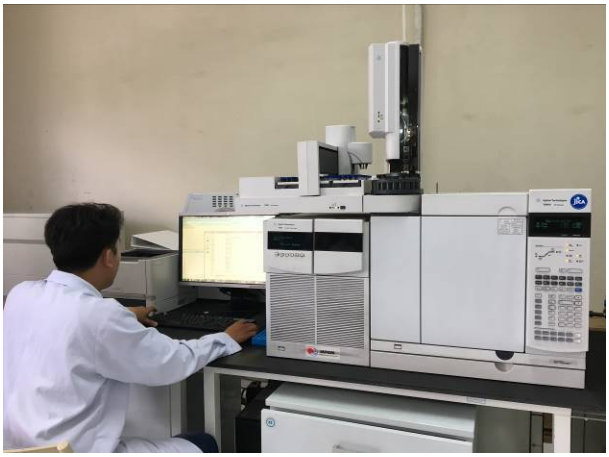
[2] Among 465 staff in total in NAFIQAD, six staff have PhD degrees, 76 staff have master's degrees and 299 staff have bachelor's degrees in relevant fields.

[3] Approximately 90% out of 621 staff in total of PPD have bachelor's degrees to PhD degrees, among whom 16 staff have PhD degrees.

[4] Contents/themes of these trainings were quality control of plant products and animal products, assessment/appraisal of quality management system, food safety in accordance with Good Agricultural Practice (GAP), Good Manufacturing Practice (GMP), Hazard Analysis and Critical Control Point (HACCP), sampling, food safety monitoring, inspection, classification and certification of establishments with food safety conditions etc.

the result of previous year's NMP without any difficulty due to their years of experiences. Since the database is useful tool for effective management especially when the amount of data becomes big, the project preparatory survey team and the project team should properly consider to what extent the database can be modified by implementing agencies to accommodate regulatory changes in future when including development of a database in project's activities.

- As stated above, supplemental indicators were set for the Overall Goal in this ex-post evaluation, as the original indicator is not specific enough to verify the achievement level of the Overall Goal. It is important for future projects to set an appropriate goal and indicators, so that a project can be evaluated properly based on such indicators.



Staff of NAFIQAD Branch 4 in Ho Chi Minh city is conducting analysis on GC-MS/MS equipment.

LC-MS/MS equipment in NAFIQAD Branch 6 in Can Tho.

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Ghana Office: November, 2018

Country Name	**Project for Formulating a Strategic Model for Quality/Productivity Improvement through Strengthening BDS for MSEs**
Republic of Ghana	

I. Project Outline

Background	In Ghana, the private sector was dominated by a very large number of micro, small and medium enterprises (MSMEs). Especially, MSMEs accounted for 98.5% of the manufacturing sector. However, MSMEs in general lacked working capital, capable human resources and managerial/technical knowledge/skills. This affected and lowered the quality of their products as well as their productivity. These were often considered as main reasons why the private sector in Ghana had remained uncompetitive both locally and internationally. The Government of Ghana intended to foster the competitiveness of private sector. Under this policy direction, JICA conducted the preparatory survey in 2010, and suggested the needs and effectiveness to develop capacities of Business Advisory Centres (BACs) of the National Board for Small Scale Industries (NBSSI) in order to provide and facilitate Business Development Service (BDS) for micro and small enterprises (MSEs), by introducing KAIZEN methods as one of the additional contents of their BDS.		
Objectives of the Project	Through (1) Designing workflow of NBSSI Ashanti Regional Office and making the necessary arrangements to implement the workflow, (2) Conducting workshops/seminars/training and On the Job Trainings (OJTs) on BDS including KAIZEN, and (3) preparing reference materials for, formulating a nation-wide expansion plan of the “Strategic Model” and conducting seminars on it, the project aimed that the "Strategic Model"* for sustainable capacity development of BACs' BDS provision/facilitation is established in the Ashanti Region, and the arrangements to replicate the model in the whole of Ghana are in place (project purpose level), and thereby the activities to replicate the "Strategic Model" in the whole of Ghana are initiated by Ministry of Trade and Industry (MOTI) and NBSSI, which contributes to enhancing the development of MSEs (overall goal level). *1 The Project Design Matrix (PDM) defines the “Strategic Model as follows. “Strategic Model” is composed of (1) the established process to strengthen BAC’s capacity for BDS provision/facilitation backed by the actual examples of BACs with strengthened capacities (Output 2) and (2) the established framework and ability of NBSSI Regional Office to “continuously” implement the process mentioned in (1) and make use of the examples mentioned in (1) above (Output 1)		
	1. Overall Goal: The activities to replicate the "Strategic Model" in the whole of Ghana are initiated by Ministry of Trade and Industry (MOTI) and NBSSI, which contributes to enhancing the development of MSEs. 2. Project Purpose: The "Strategic Model" for sustainable capacity development of BAC Business Development Service (BDS) (including KAIZEN related BDS) provision/facilitation is established in Ashanti Region, and the arrangements to replicate the model in the whole of Ghana are in place.		
Activities of the project	1. Project site: Ashanti Region 2. Main activities: (1) Provision of Business Development Services in the Ashanti Region, (2) Developing training curriculum and materials and conducting training 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 8 persons 2) Trainees received in Japan: 15 persons 3) Equipment: PCs, printers, photocopying machines, digital cameras and others Ghanaian Side 1) Staff allocated: 25 persons 2) Land and facilities: office space 3) Local cost: utilities and activity costs 4) Equipment: procured office equipment and vehicle		
Project Period	April 2012-April 2015	Project Cost	(ex-ante) 360 million yen, (actual) 339 million yen
Implementing Agency	National Board for Small Scale Industries (NBSSI)		
Cooperation Agency in Japan	PADECO Co., Ltd, Global Development and Management Consultants		

Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

・ As the continuation status of the project purpose overlaps with the Overall Goal, the information was collected and verified under the Overall Goal.

1 Relevance

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

The Project was consistent with Ghana's development policies. At the time of ex-ante evaluation, "Ghana Shared Growth and Development Agenda (GSGDA)", which was formulated in 2010, prioritized strengthening the competence of the private sector. "Industrial Sector Support Programme (ISSP) (2011- 2015)", which was an action plan for "Industrial Policy (IP)", mentioned the importance of promoting MSMEs, and aimed at strengthening BDS and introducing techniques and mechanisms to improve productivity. At the time of project completion, the Ghana Industrial Policy was formulated in 2011 by MOTI and this together with the Trade Policy aimed at accelerating private sector and industrial development.

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

The Project was consistent with the development needs of Ghana for strengthening capacity of MSMEs. At the time of ex-ante evaluation, MSMEs in general, lacked working capital, capable human resources, managerial/technical knowledge/skills, which affected the quality/productivity of their products. At the time of project completion, the quality of products produced in Ghana was still low and needs to be improved.

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

The Project was consistent with Japan's ODA Policy to Ghana. In "the Country Assistance Program for the Republic of Ghana" (revised in 2006), importance of assistance to small and medium enterprises are mentioned under the prioritized areas for industry 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 time of project completion as the indicators set to measure the effects of the Project, "NBSSI Headquarters recognizes the "Strategic Model" as a nationwide applicable practice, (Indicator 1)" and "NBSSI Officials of regions other than Ashanti show interest(s) to replicate the "Strategic Model" (Indicator 2)" were achieved.

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

The effect of the Project has being sustained and the Overall Goal was achieved. Through implementation of the succeeding (Phase 2) Project, the Strategic Model has been implemented in the Northern, the Brong Ahafo and the Central Regions. Various workshops and OJTs for the workflow and KAIZEN introduced by the Project have been conducted, and the workflow was introduced there. Basic KAIZEN training was added to the menu of BDS provided by pilot BACs in the three regions.

NBSSI issued annual work plans that commenced the use of the Strategic Model for BAC activities countrywide. Work plans are also incorporated into the annual plan of MOTI as part of the budgeting process.

Besides, MOTI and NBSSI have been actively engaged in policy making on SME development including MOTI's 10-point pillar (2016) aimed at industrial transformation. One key policy decision made is to convert BACs to Business Resource Centers (BRCs) to manage additional BDS components at the district level.

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

Some positive impacts were observed. Based on NBSSI policy on gender that 40% of beneficiaries of all projects should be women, the Project ensured that majority of women entrepreneurs benefitted from its interventions. Enterprises improved their production processes and increased productivity through the Strategic Model and KAIZEN activities. Some enterprises which applied KAIZEN testify about changes in workers' attitude to time and work processes. They have become more conscious of achieving more within shorter time frame (reduced lead times) as well as finding ways to reduce waste in their production processes. Predominantly, 5S KAIZEN activities have been consistently practiced.

No land acquisition and resettlement occurred under this Project, and no negative impacts on the natural environment 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) The "Strategic Model" for sustainable capacity development of BACs' Business Development Service (BDS) (including KAIZEN related BDS) provision/facilitation is established in Ashanti Region, and the arrangements to replicate the model in the whole of Ghana are in place.	Indicator 1: NBSSI Headquarters recognizes the "Strategic Model" as a nationwide applicable practice.	Status of the Achievement: Achieved (Continued) (Project Completion) The Strategic Model was formulated, and NBSSI HQ commenced preparatory works for national expansion of the Model. (Ex-post Evaluation) Verified as achievement of the Overall Goal.
	Indicator 2: NBSSI Officials of regions other than Ashanti show interest(s) in replicating the "Strategic Model"	Status of the Achievement: Achieved (Project Completion) During project implementation, the Regional Managers who are stationed outside Ashanti have been involved in some of the activities such as Study-Tour and workshop for the Regional Managers. According to the Executive Director of NBSSI HQ, the Regional Managers showed interest in acquiring more knowledge and skills with the KAIZEN methodology.

<table>
<tr><td rowspan="7">(Overall Goal)
The activities to replicate the "Strategic Model" in the whole of Ghana are initiated by Ministry of Trade and Industry (MOTI) and NBSSI, which contributes to enhancing the development of MSEs.</td><td rowspan="6">Indicator 1: Activities to replicate the “Strategic Model” in the regions outside Ashanti, and content of BDS implemented by BACs in those Regions are improved</td><td colspan="5">(Ex-post Evaluation) Achieved
1. Number of activities implemented for replication.</td></tr>
<tr><td>Activities</td><td>Number of regions/participants</td><td>2015</td><td>2016</td><td>2017</td></tr>
<tr><td>Workflow workshop</td><td>24 people from 3 regions</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Training related to Workflow implementation</td><td>24 people from 3 regions</td><td>0</td><td>2</td><td>2</td></tr>
<tr><td>Basic KAIZEN Training (Lecture and OJT)</td><td>22 officers from 3 regions</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Advanced KAIZEN Training (Lecture and OJT)</td><td>21 BAC Heads</td><td>0</td><td>1</td><td>2</td></tr>
<tr><td colspan="5">2. Basic KAIZEN was added to BDS menu in the Northern, the Brong Ahafo and the Central Region, and advanced KAIZEN was added to BDS in the Ashanti Region.
(i) Ashanti= 33 districts, (ii) Regions other than Ashanti: Northern= 32 districts, Brong Ahafo= 17 districts, Central=15 districts</td></tr>
<tr><td>Indicator 2: Statements of MOTI and/or NBSSI to replicate the “Strategic Model” in the whole Ghana are issued.</td><td colspan="5">(Ex-post Evaluation) Achieved
NBSSI issued annual work plans that commenced the use of the strategic model for BAC activities country wide. Work plans are also incorporated into the annual plan of MOTI for budget.</td></tr>
<tr><td colspan="7">Source：JICA internal document, questionnaires and interviews with NBSSI Headquarters, and NBSSI Ashanti</td></tr>
</table>

3 Efficiency

Both the project cost and the project period were within the plan (the ratio against the plan: 94%, 100%). Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

There is policy support for promoting MSMEs. Rural Enterprise Programme (REP) fund (2012-2020) increased promotion of MSMEs in the rural areas, offering opportunities for BACs to provide more BDS. MSME development policy is one of the pillars of MOTI’s 10-point pillar (2016 to date) for industrial transformation. This has allowed for formulation of an SME Policy draft currently being considered at cabinet (to be launched in 2018).

<Institutional Aspect>

The demarcation of roles and responsibilities among the related entities is clear. NBSSI Headquarters (HQ) is responsible for policy formulation and general oversight for the Board’s activities nationwide. At the time of ex-post evaluation, there is an establishment of a “KAIZEN Unit” at NBSSI HQ with the central manpower to supervise replication of the Strategic Model nationwide. NBSSI Regional Offices supervise the implementation of the Strategic Model, and BACs deliver/facilitate BDS required in starting and improving businesses at the district level. In total, 54 BAC staff have been trained and still at post. Out of that, 46 BAC Heads have obtained skills to replicate the Strategic Model to other BACs. Although the number of staff members is sufficient so far, it is still limited to scale up the Strategic Model to all 530 BACs.

<Technical Aspect>

There are Officers whose capacity has been enhanced through the project by implementing specific roles under the Project and they have been available at all levels at the HQs, Regional and BAC levels. This situation has ensured the achievement of the targets set until now.

Forty-six (46) BAC staff have been sufficiently trained to replicate the strategic model to all 530 BAC staff using the peer training approach.

<Financial Aspect>

The current replication of the Strategic Model has been implemented under the JICA supported Phase 2 Project. Also, funds for self-implementation activities have been secured to a large extent from the International Fund for Agricultural Development (IFAD) under the REP. Since it is anticipated that once KAIZEN is publicized adequately, there will be increased demand for training which will be delivered at a fee. Funds would therefore be generated internally to fund the expansion. However, for the time-being, the funding source is limited to support replication of model nationwide with funding from development partners.

<Evaluation Result>

Therefore, the sustainability of the effects through the Project is fair, primarily to challenges in the technical and financial aspects.

5 Summary of the Evaluation

The Project achieved its Project Purpose at project completion, as the Strategic Model was recognized by NBSSI HQs and NBSSI Officials in regions other than Ashanti showed interest, as stipulated in the indicators. Overall Goal was achieved, as the Strategic Model has been replicated in four Regions. Positive impact such as improvement in the production processes in some enterprises was observed. As for the sustainability, some problems were observed in the technical and financial aspects, though there are no problems in the policy and institutional aspect. Considering all of the above points, this Project is evaluated to be highly satisfactory.

II. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

NBSSI is recommended to sustain the institutionalization of the "Strategic Model" highly for it to be a recognized model of BDS for enterprise productivity and growth. Replication of the Model must also be conducted in the remaining 6 Regions (out of 10 Regions nationwide) of the country (including the Greater Accra where some selected companies have been added to OJT). Create more publicity and PR on the benefits of Strategic Model and KAIZEN related BDS nationwide to attract more interest from MSE clients. There will be Internally Generated Funds (IGF) to promote training nationwide and patronage as well.

Lessons Learned for JICA:

During the project implementation, the budget allocated for the actual capacity enhancing activities did not allow for much more tangible demonstration of what improvement activities the project can do to affect positively the operations of the enterprise. It seems most of the recommended improvement activities are left for the enterprise owners to implement which may never be realized. In a KAIZEN related project, it is necessary to ensure resources are devoted to the actual delivery of activities to the beneficiary enterprises that received OJT from BACs so they have evidence of tangible results which could be a leverage to attract more enterprises to subscribe to KAIZEN activities.

BAC head of Ejisu, Ashanti Region conducting follow up for owner of enterprise

BAC head of Asokore –Mampong,Ashanti Region sharing his feedback on the impact of the training in strategic model. Two National Service Persons'
(interns: University students are required to take part in internship for one year right after graduating from universities) capacity have been enhanced to support BAC activities in the District.

Internal Ex-Post Evaluation for Development Planning Project

conducted by Kenya Office: February, 2019

Country Name	Project on Integrated Urban Development Master Plan for the City of Nairobi
Republic of Kenya	

I. Project Outline

Background	The long term national development plan, "Vision 2030," shows the long-term national development strategy of Kenya, aims at becoming a middle income country by 2030 and provides the baseline of the economic, social, and political frameworks. Nairobi City plays an important role not only as a political centre but also as a model for economic and social development. The urban development plan of Nairobi City, on the other hand, had not been updated since 1973 and its direction was not clearly defined. Besides, the population growth in Nairobi, urban problems such as perennial traffic congestion, expansion of slum areas, and environment deterioration had been left unsolved for a long time and were already causing negative impacts on the economic activities and daily lives of the people in Nairobi City. In order to accelerate sound and sustainable development, an integrated urban master plan was needed for improvement of the transport network, water supply and sewerage, solid waste management, and living environment have to be improved.		
Objectives of the Project	By developing the urban development master plan for 2030 and policies, systems and guidelines for urban development in the city of Nairobi, the project contributes to implementation of urban infrastructure projects based on the integrated urban plan and sustainable development and live environment improvement in the city of Nairobi.		
	1. Expected Goals through the proposed plan[1]: Through implementation of the proposed plan, appropriate land use and urban facilities development will be promoted. 2. Expected utilization of the proposed plan: The master plan proposed by the project is approved by the government as the fourth Nairobi Unban Development Plan.		
Activities of the Project	1. Project site: City of Nairobi 2. Main activities: 1) situational analysis related to urban development in Nairobi City, 2) analysis of development potential and future constraints and issues, 3) development of the social and economic framework for 2030, 4) development of vision and structure plans, 5) environmental assessment, 6) development of the land use plan, 7) development of capacity development framework, etc. 3. Inputs (to carry out above activities) Japanese Side 1) Mission members: 13 persons 2) Equipment: office equipment, etc. Kenyan Side 1) Staff allocated: 8 persons 2) Operation cost.		
Project Period	November 2012 to December 2014 (Extended period: February 2014 to December 2014)	Project Cost	(ex-ante) 310 million yen, (actual) 372 million yen
Implementing Agency	Ministry of Lands, Housing and Urban Development (Changed from the Ministry of Local Government due to the government restructuring in 2013), Nairobi City County (NCC)		
Cooperation Agency in Japan	Nippon Koei Co. Ltd, International Development Center of Japan Incorporated, Eight-Japan Engineering Consultants, Inc.		

II. Result of the Evaluation

<Constraint of Evaluation>

- First, due to the limited time and resources for the ex-post evaluation survey, sufficient information and data were not collected from the agencies which implement projects proposed by the project. It was attributed to the absence of data accumulation at the Government of NCC (NCCG). Second, effects of the projects proposed by the project could not be confirmed, since few has just started due to the delayed approval of the master plan. Therefore, judgement of the project effectiveness/impact and sustainability was based on the obtained data and information.

1 Relevance

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

The project was consistent with Kenyan development policies, as development of a strategic investment plan for the urban area was prioritized in the "First Medium Term Plan" (2008-2012) of the national plan "Kenya Vision 2030." The "Second Medium Term Plan" (2013-2017) targeted development of a framework for preparation of 47 County Spatial and Urban Development Plans and finalization of the National Urban Development Policy. Thus, the project was consistent at time of both the ex-ante evaluation and project completion.

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

While the population of Nairobi was growing, urban problems were left unsolved and are causing negative impacts like perennial traffic congestion, expansion of slum areas, insecurity, poor urban governance, and environment deterioration. An integrated urban master plan was needed to improve infrastructure such as transport network, water supply, sewerage reticulation energy, and so on.

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

In the Country Assistance Policy for Kenya (2012), one of the priority areas was economic infrastructure development. Thus, the project was consistent with Japan's ODA policy at the time of the ex-ante evaluation.

[1] 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).

<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. Through the project activities, the master plan for 2030 (NIUPLAN) was drafted which included land use policy, road network development policy, urban infrastructure development strategies, capacity development framework, besides proposed programs and projects. The capacity development framework includes training goal, target, timeframe and approaches. According to the Urban Planning Chief Officer, NIUPLAN has been useful as a general guide for the city development, while detailed plans for the sub centers need to be prepared to allow for the implementation of the master plan at the district and lower levels. For implementation of NIUPLAN, the framework of capacity development of NCC was prepared.

<Utilization Status of the Proposed Plan at the Time of Ex-post Evaluation>

NIUPLAN was approved by the government as the fourth Nairobi Urban Development Plan in August 2016. In NIUPLAN, 38 projects were proposed, prioritizing 20 projects of the five sectors. As of December 2018, among the five high priority projects for the intermediate term (2-3 years)[2], two projects of the urban transport sector have been planned, while three have been at the preparatory study phase because it has taken time for establishment of an inter-agency coordination mechanism. Regarding priority projects for the short term (4-5 years), three of 14 have been planned or implemented. For example, the preparatory survey for the Nairobi Viaduct and Road Improvement Project has been implemented by JICA as NIUPLAN's flagship project. Further, the World Bank has supported the ITS City Master Plan, which is one of the short term projects. Also, the detailed land use plan for Kilimani District was prepared, which has been under public consultation with technical assistance by JICA Urban Planning Advisor (2016-2018).

<Status of Achievement for Expected Goals through the Proposed Plan at the Time of Ex-post Evaluation>

Since NIUPLAN was approved in August 2016, no proposed project has been completed as of the ex-post evaluation, and therefore, its effects cannot be confirmed. Regarding capacity development on urban development administration of the Government of NCC (NCCG), after NIUPLAN was approved, presentation and sensitization sessions were conducted for the County Assembly and representatives of the implementing agency. On the other hand, the technical level of the Urban Planning Department of NCCG on urban development has not been sufficient, because skill transfer from the project was not enough due to their limited capacity development provided by JICA mission during the project period.

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

There was one case of land acquisition, in which the Wakulima market traders are expected to be affected under the proposed project "Nairobi Viaduct and Road Improvement Project." A new market site for relocating the traders will be established nearby.

As an institutional impact, for NIUPLAN implementation, the national and county governments established the Nairobi Metropolitan Urban Transport Authority in 2017 for coordination on urban transport, which is awaiting the parliament approval at the time of the ex-post evaluation.

<Evaluation Result>

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

Utilization of the Proposed Plan and Achievement of Expected Goals through the Proposed Plan

Aim	Indicators	Results
(Utilization Status of the Proposed Plan) The master plan proposed by the project is approved by the government as the fourth Nairobi Unban Development Plan.	1. The master plan proposed by the project is approved by the government as the fourth Nairobi Unban Development Plan.	Status of achievement: Achieved. (Ex-post Evaluation) - NIUPLAN was approved by the government as the fourth Nairobi Urban Development Plan in August 2016.
	2. Number of the master plan and implemented projects of land development and urban facilities development which were proposed by the project	Status of achievement: Partially achieved. (Ex-post Evaluation) - 38 projects were proposed in the master plan. Among the five high priority projects for the intermediate term (2-3 years), two have been planned. Three more high priority projects for the short term (4-5 years) have been planned or implemented. Besides, one feasibility study has been implemented, and one land use plan was developed.
(Expected Goals through the Proposed Plan) Through implementation of the proposed plan, appropriate land use and urban facilities development will be promoted.	1. Status of the infrastructure development based on the land use plan	Status of achievement: Not achieved. (Ex-post Evaluation) - No project has been completed as of the ex-post evaluation.
	2. Mitigation of the traffic congestion	Status of achievement: Not verified. (Ex-post Evaluation) - No project has been completed as of the ex-post evaluation.
	3. Improvement of the water supply coverage rate	Status of achievement: Not verified. (Ex-post Evaluation) - No project has been completed as of the ex-post evaluation.
	4. Capacity development on urban development administration (planning and update)	Status of achievement: Partially achieved. (Ex-post Evaluation) - After the approval of NIUPLAN, presentation and sensitization sessions have been conducted by the Director of Urban Development of NCCG and JICA expert (Policy Advisor) for the Country Assembly and representatives of the implementing agencies of the proposed projects. - According to the Chief Officer of the Urban Planning Department, the technical level of the Urban Planning Department of NCCG on urban development has not been

[2] Priority projects for the intermediate and short terms are expected to be planned and/or implemented in 2-3 years and 4-5 years, respectively, after the inception of NIUPLAN.

		sufficient and requires further capacity building.

(Source) Project Completion Report, and data/information obtained from NCCG.

3 Efficiency

Both of the project cost and period exceeded the plan (ratios against the plan: 120% and 173%, respectively). This is mainly because implementation of SEA was additionally required (increase of the output), since Nairobi City was upgraded to a country. This resulted in seven month-extension of the project period (ratio against the changed plan: 136%). Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

Urban Planning is required as per the County Government Act of 2012. The "National Urban Development Policy" (2018) regulates devolution, classification and management of urban areas, including popular participation. Through the project, NIUPLAN was approved by the government as the fourth Nairobi Urban Development Plan in August 2016.

<Institutional Aspect>

At NCCG, there have been seven officers in the section in charge of NIUPLAN and the number of officers has not been sufficient to fulfill responsibilities, according to themselves. Demarcation among NCCG and other related agencies have been clear, they have lacked a coordination mechanism. Data on the staff number were not available from the implementing agencies.

<Technical Aspect>

While the Urban Planning Department of NCCG has not gained sufficient skills on urban development and management, a follow up technical support to coordinate implementation of NIUPLAN and project monitoring was done through the Project on Detailed Planning of Integrated Transport System and Loop Line Project in the Nairobi Urban Core (2017-2018) and JICA Urban Planning Advisor (2016-2018). Further, individual executing agencies for the proposed priority projects have gained experience through other JICA projects. For example, the Kenya Urban Roads Authority has had opportunities for capacity building from the Ngong Road Development Project I (2012) and II (2017).

<Financial Aspect>

Financial data were not available from the implementing agencies of the projects proposed by NIUPLAN. NCCG could not obtain such data, as most of the projects are still under formulation.

<Evaluation Result>

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

5 Summary of the Evaluation

In the project, the master plan for 2030 (NIUPLAN) was developed, including 38 proposed projects for urban development. After the project completion, NIUPLN was approved by the government as the fourth Nairobi Urban Development Plan in August 2016. As of the ex-post evaluation, few proposed projects have been implemented, so it was too early to confirm their impacts. Capacity development of NCCG has not been sufficiently realized for urban development and management but, as additional technical support was provided by JICA expert. Regarding sustainability, there have been issues such as staff shortage, lack of institutionalized inter-agency coordination. With regard to the project efficiency, 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:

- It is recommended to NCCG to set up a coordination mechanism among NCCG and other related agencies, in order to speed up planning and implementation of the proposed projects and monitor the progress, in which they could share NIUPLAN's goal and proposed projects and discuss detailed plans for implementation.
- It is recommended to NCCG to conduct trainings for the Urban Planning Department staff on urban development and management, based on the capacity development framework prepared by the project.

Lessons Learned for JICA:

- NIUPLAN was drafted by the project completion in December 2014 and officially approved as the fourth Nairobi Urban Development Plan in August 2016. As of the time of the ex-post evaluation, among the five high priority projects for the intermediate term (2-3 years), two projects of the urban transport sector have been planned, and besides, three priority projects for the short term (4-5 years) have been started. On the other hand, some intermediate projects have been at the preparatory study phase because of the late approval of NIUPLAN and also inter-agency coordination. In projects for development of the master plan, it is desirable that the master plan would not only propose projects but also have an opportunity to explain proposed projects and necessary human and financial resources to concerned agencies during the project period, in order to ensure implementation of the proposed projects. Thus, after the project completion, the coordinating agency could continue this negotiation process with the concerned agencies to secure budgets and human resources for timely planning and implementation of proposed projects, without counting on an assumption that they would be automatically assigned.

Handover ceremony of NIUPLAN
(Governor of Nairobi City County and Japanese Ambassador)

Governor of Nairobi City Council and school children in the exhibition of the city's visions

conducted by Uganda Office: December, 2018

Country Name	District and Urban Roads (DUR) Mapping and Roads Database Project
Republic of Uganda	

I. Project Outline

Background	Road network in Uganda consists of national roads, district roads, urban roads and community access roads. At the time of ex-ante evaluation (2011), the Ministry of Works and Transport (MoWT), an organization responsible for policy formation for road development, maintenance and planning, did not have district and urban roads (DUR) database which includes basic road information such as road name, class, distance, location, and condition of DUR (regarding national roads, Uganda National Roads Authority (UNRA) had developed the road database connected with geographical information system (GIS) database). This kind of situation brought difficulties for District Urban Councils (DUCs) to prepare an appropriate budget plan for road maintenance and secure necessary budget allocation from the Uganda Road Fund (URF) which was established by the Government of Uganda (GoU) in 2008 for road maintenance funding.
Objectives of the Project	Through developing the DUR database which includes geographical information and road inventory data nationwide and strengthening the capacities of MoWT and DUCs to maintain the database, the project aimed at improving their capacities to manage DUR assets, thereby strengthening their capacities to rehabilitate and maintain DUR in the whole country. 1. Overall Goal: MoWT's and DUCs' capacity for DUR rehabilitation and maintenance is strengthened in the whole country. 2. Project Purpose: MoWT's and DUCs' capacity for ensuring DUR assets is improved through the effective utilization of DUR database including GIS and road inventory data.
Activities of the Project	1. Project Site: the whole country 2. Main Activities: (1) Conduct site surveys, produce digital base map of DUR and conduct training on basic skills for GIS for MoWT; (2) Prepare formats and manuals for road inventory, conduct training on road inventory for MoWT and DUCs, conduct site surveys and prepare road inventory; and (3) Establish DUR database by integrating the road inventory data into digital base map, prepare a manual on maintenance of DUR database and conduct training on skills for updating and maintaining DUR database for MoWT and other road sector agencies etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 13 persons 2) Trainees Received: 10 persons 3) Equipment: handy global positioning system (GPS), visible and infrared mapping spectrometer (VIMS) system software, auto computer aided design (CAD) map and digital cameras etc. 4) Local operation cost: local employment, transport, training etc. Uganda Side 1. Staff Allocated: 19 persons 2. Local operation cost: project office, pilot project etc.
Project Period	March 2012 – March 2015 / Project Cost: (ex-ante) 290 million yen, (actual) 305 million yen
Implementing Agency	Ministry of Works and Transport (MoWT)
Cooperation Agency in Japan	Eight-Japan Engineering Consultants Inc.

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

・ In order for Overall Goal to be achieved, all DUR in Uganda needs to be covered in the DUR database. Thus, in this ex-post evaluation, it was checked whether all DUR in Uganda has been covered in the DUR database by the time of ex-post evaluation. (1) If the database has been updated by MoWT every year and the database covers 80%-100% of DUR in the country, continuation status of Indicator 1 of Project Purpose is to be evaluated "continued", (2) if the database has been updated by MoWT and the database covers 50%-79% of DUR in the country, continuation status of Indicator 1 is to be evaluated "partially continued", and (3) if the database has not been updated by MoWT or the database covers 49% or less DUR in the country, continuation status of Indicator 1 is to be evaluated "not continued".

1 Relevance

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

The project was consistent with Uganda's development policies such as "improvement and maintenance of rural road infrastructures" as set forth in "The National Development Plan (NDP) (2010/11-2014/15)", "The National Transport Master Plan (NTMP) (2008-2023)", "The Second 10 Year Road Sector Development Program (RSDP2) (2002-2012)" and "RSDP3 (2012-2022)" etc.

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

The project was consistent with Uganda's development needs for developing the DUR database to improve DUR maintenance and rehabilitation 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 one of the four priority areas of Japan's assistance for Uganda (confirmed in

the economic cooperation policy dialogue in October 2006) was basic economic infrastructure development focusing on roads[1].

<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 DUR database was updated daily, completed by January 2015 and approved by MoWT in February 2015 (Indicator 1). The road inventory survey data completed by DUCs (District Offices, Municipal Councils (MCs) and Town Councils (TCs)) was submitted to MoWT every year and the data submitted was input into the database by MoWT (Indicator 2). The DUR database completed in 2015 was ready to be utilized for preparing work plans (road maintenance plans), investment plans (budget plans) and annual report with the initiatives of DUCs (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. 100% of both district roads and urban roads have been covered in the DUR database, and the database has been partially updated by MoWT every year since project completion. Reasons for the database having been 'partially' updated are that while all DUCs conduct road inventory survey and submit the data to URF every year, the number of staff and capabilities of many DUCs are not sufficient to collect and submit sufficient data for MoWT to update the database[2], and that while MoWT collects necessary data by itself, funds for such survey has not been adequate (Indicator 1). Due to the same reason stated above, approximately 10% only of DUCs have submitted road inventory data to MoWT every year since project completion (Indicator 2). The DUR database has been utilized for preparing work plans (road maintenance plans) by DUCs and annual reports and road rehabilitation work plans by MoWT, however, it should be noted that these plans do not reflect the latest road information fully, as the database has not been fully updated every year (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. All DUCs have prepared and submitted road maintenance plans with updated data to URF every year, though these plans do not reflect the latest road information fully (Indicator 1). DUCs have submitted the list of roads which require rehabilitation to MoWT, and MoWT has prepared the rehabilitation plans and annual budget plans for DUR network[3], though these plans also do not reflect the latest road information fully due to the same reason above (Indicator 2). The amount of budget for DUR allocated by URF (for the purpose of road maintenance) has been almost the same since project completion. On the other hand, the amount of budget for DUR allocated by MoWT (for the purpose of road rehabilitation) has been increased by 96% from UGX 393 billion in FY 2010/11 to UGX 771 billion in FY 2017/18, in accordance with the intension of the Uganda government to prioritize road rehabilitation through its direct management (Indicator 3).

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

The paved road ratio including national roads, district roads and urban roads in Uganda was approximately 4% at the time of ex-ante evaluation, which has been improved to 20% of national roads and 11% of district and urban roads by the time of ex-post evaluation. While it is difficult to explain to what extent this project has contributed to this improvement, the actual road network which had been underestimated was revealed to a large extent by the project, and thus the project is considered to have contributed to the improvement to a certain extent.

<Evaluation Result>

While the Project Purpose and the Overall Goal have been achieved, the DUR database has been updated and utilized in more limited extent than intended during the project implementation (DUCs have not been able to submit necessary data required for updating the database, while MoWT cannot collect necessary data by itself due to lack of budget), and thus, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) MoWT's and DUCs' capacity for ensuring DUR assets is improved through the effective utilization of DUR database including GIS and road inventory data.	1. DUR database is updated by MoWT every year.	Status of the Achievement: achieved (mostly continued) (Project Completion) The DUR database was updated daily by MoWT and completed in 2015. (Ex-post Evaluation) The DUR database has been (partially) updated by MoWT every year.
	2. DUCs submit road inventory data to MoWT every year.	Status of the Achievement: achieved (not continued) (Project Completion) The road inventory survey data completed by DUCs was submitted to MoWT every year. (Ex-post Evaluation) Approximately 10% only of DUCs have submitted road inventory data to MoWT every year.
	3. DUR database is utilized for preparing work plan, investment plan, annual report, etc. by MoWT and DUCs.	Status of the Achievement: achieved (mostly continued) (Project Completion) The DUR database was ready to be utilized for preparing work plans, investment plans and annual report with the initiatives of DUCs. (Ex-post Evaluation) The DUR database has been utilized for preparing work plans, investment plans and annual report etc., however, these plans do not reflect the latest road information fully.

[1] Source: ODA Country Data Book (2011)

[2] All DUCs submit road inventory survey data to URF every year, because it is a prerequisite to obtain road maintenance funding from URF. However, DUCs cannot compile the GIS format required for updating the DUR database and thus they submit the simple format including road conditions and inventory data only to URF, which is insufficient for the purpose of updating the DUR database.

[3] There are two main types of road interventions. For road sections that are in fair to good conditions, the intervention required is road maintenance, and for road sections that are in poor to bad conditions, the intervention required is rehabilitation. URF provides DUCs with funds only for road maintenance and MoWT conducts rehabilitation works.

(Overall Goal) MoWT's and DUCs' capacity for DUR rehabilitation and maintenance is strengthened in the whole country.	1. All DUCs prepare timely road maintenance plans with updated data every year.	(Ex-post Evaluation) mostly achieved All DUCs prepare and submit road maintenance plans to URF every year, though these plans do not reflect the latest road information fully.
	2. MoWT prepares rehabilitation plan for DUR network with updated data every year.	(Ex-post Evaluation) mostly achieved MoWT has prepared the rehabilitation plans and annual budget plans for DUR network, though these plans do not reflect the latest road information fully.
	3. Allocation of the budgets for DUR by the government is increased.	(Ex-post Evaluation) achieved Allocation of the budgets for DUR rehabilitation has been increased by 96%, while allocation of the budgets for DUR maintenance has been almost the same.

Source: Project Completion Report, questionnaire survey and interview with Department of Roads and Administration, MoWT and district engineers of local governments

3 Efficiency

The project cost exceeded the plan, while the project period was within the plan (ratio against plan: 105%, 100%, respectively). The outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

"NTMP (2008-2023)" and "RSDP3 (2012-2022)" are still effective at the time of ex-post evaluation, and the needs for improving maintenance of DUR are also stated in "NDP II (2015/16-19/20)".

<Institutional Aspect>

A principal engineer, a senior engineer and three civil engineers are assigned in MoWT to be in charge of collecting, analyzing, processing and compiling road data, preparation of various reports and maintenance of the DUR database. According to MoWT, the number of staff is sufficient to fulfill these tasks. On the other hand, the number of staff in DUCs is generally insufficient and there is also a high rate of staff turnover (many staff have shifted to the private sector seeking higher income). The major problem caused by the insufficient number of staff is the inadequacy to collect sufficient and reliable data from the road inventory survey and the inability to make appropriate planning decision based on reliable information. In order to mitigate the problem, MoWT is attempting to intensify support for DUCs through capacity building.

<Technical Aspect>

Project counterparts (C/Ps) in MoWT still work in the organization, and five engineers stated above possess undergraduate and/or postgraduate degrees in relevant fields, have received GIS training and have sufficient work experience, and thus the skill level of these staff is sufficient to fulfill above mentioned tasks. On the other hand, according to DUCs, the skill level of staff is insufficient, particularly because there has been a high rate of staff turnover. Several trainings on road inventory and mapping surveys and GIS processing have been conducted for DUCs by MoWT (44 staff participated during 2014 to 2016 and 17 staff participated in 2018, while no training was conducted in 2017 due to lack of budget), however, many DUCs stated that there is a need for continuous training on a more regular basis to enrich capacity of newly employed staff in DUCs to sufficiently conduct the road inventory survey. Manuals prepared under the project and equipment procured under the project are still utilized at MoWT and DUCs.

<Financial Aspect>

MoWT does not have sufficient amount of budget[4] due to the shortfall in the overall government budget, and consequently it has not been able to fully update the DUR database every year, implement road rehabilitation plans promptly and conduct trainings for DUCs regularly. As for DUCs, DUCs are authorized to use a maximum of 4% only of the total road maintenance funds allocated from URF for administrative cost including the road inventory survey (the rest is to be used for actual road maintenance works), which is not sufficient to conduct the survey properly.

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved the Project Purpose, project effects have partially continued and the Overall Goal has been achieved: the DUR database had been established and utilized by project completion, it has been partially updated every year and road maintenance plans and rehabilitation plans have been prepared utilizing the database, though they have not reflected the latest road information fully since project completion. For the sustainability, some problems were found such as insufficient number of staff and technical skills in DUCs and lack of budget in MoWT and DUCs. As for 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

Recommendations for Implementing Agency:

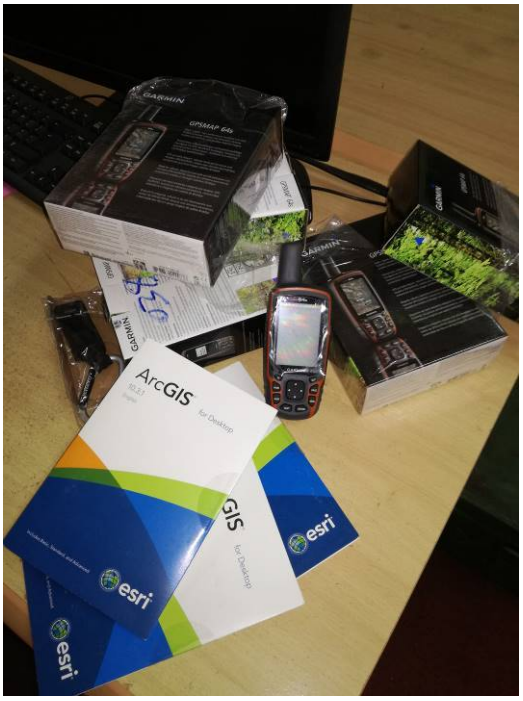
- As stated above, while staff in DUCs possess basic knowledge and skills, the staff turnover rate has been high and many skilled personnel have been lost to the private sector. DUCs stated needs for more regular trainings so as to build their internal capacity. Therefore, MoWT should conduct more comprehensive and periodical trainings for DUCs.
- As stated above, there is the shortfall in the overall government budget, and thus there should be prioritization and meaningful apportioning of financial resources within MoWT to facilitate properly managing and updating the DUR database.

Lessons Learned for JICA:

- As stated above, the staff turnover rate has been high in DUCs and the majority of staff who participated in this project among DUCs have left to the private sector. Thus, when formulating a project in future, changes of human resource allocation within implementing agencies should be carefully checked to ensure sustainability of project effects (it should be checked whether implementing agencies have sufficient human resources and whether they have means to attract sufficiently skilled staff in case of staff turnover).

[4] The financial data of MoWT was not available.

One of the district roads in Mukono district



Handy GPS procured under the project

Internal Ex-Post Evaluation for Development Planning Project

conducted by Mozambique Office: April, 2019

Country Name	**The Project for the Comprehensive Urban Transport Master Plan for the Greater Maputo**
Republic of Mozambique	

I. Project Outline

Background	Maputo City, the capital city of Mozambique, had a population of approximately 1.2 million (2009) and is the political and industrial center of the country. Also, it is the origin of the Maputo Corridor which is the busiest trunk road in the Southern African Development Community. In addition, residential and industrial development extended to neighboring cities including Matola, Boane and Marracuene and those areas created the Greater Maputo metropolitan area. As a result, vitalized mobility of passengers and goods brought about traffic congestions in routes between Matola and Maputo. In particular, the traffic flows on the National Road No.4 increased by three times for the last decade. Under those situations, the government of Mozambique requested the government of Japan a technical cooperation to formulate a comprehensive urban transport master plan for the Greater Maputo.		
Objectives of the Project	Through preparing a master plan for networks of public transport and roads, as well as traffic control in the Greater Maputo for 2035, conducting pre-feasibility study on priority project of Bus Rapid Transit (BRT), proposing recommendations on the bus system in the Greater Maputo and technical transfer of survey methodologies and master planning to the counterpart, the project aimed at implementation of the proposed master plan as a development plan for urban transport in the Greater Maputo and the priority project, thereby contributing to development of urban transport infrastructure in the Greater Maputo. 1. Expected Goals through the proposed plan[1]: The urban transport infrastructure is developed in the Greater Maputo. 2. Expected utilization of the proposed plan by the project: 1) The master plan prepared by the project is implemented as a development plan for urban transport in the Greater Maputo. 2) The priority project selected by the project is implemented.		
Activities of the Project	1. Project site: Greater Maputo covering Maputo City (except for Inhaca Island), Matola City, the southern area of Marracuene District, and the eastern area of Boane City, including Mozal and Boane 2. Main activities: 1) Information collection and situation analysis on urban transport in the Greater Maputo, 2) Demand forecast on urban transport in the Greater Maputo, 3) Master planning on urban transport in the Greater Maputo, 4) Preparation of improvement plans for road network, public transport and traffic control, management and safety, 5) Pre-Feasibility study on the priority project, and 6) capacity development plan to implement the proposed master plan and technical transfer, etc. 3. Inputs (to carry out above activities) Japanese Side 1) Mission members: 14 persons 2) Training in Japan: 14 persons 3) Equipment: Computers. Mozambique Side 1) Staff allocated: 19 persons 2) Land and facility: Office space with furniture 3) Equipment necessary for the study: Vehicles		
Project Period	January, 2012 to March, 2014	Project Cost	(ex-ante) 350 million yen, (actual) 313 million yen
Implementing Agency	Maputo City Council		
Cooperation Agency in Japan	PADECO Co., Ltd. Nippon Koei Co., Ltd.		

II. Result of the Evaluation

1 Relevance

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

The project was consistent with Mozambique's development policy of the "Absolute Poverty Reduction Strategy" (2004-2010), prioritizing improvement of urban transport in the Greater Maputo as an origin of the Maputo Corridor, and the "Poverty Reduction Strategy" (2011-2014), focusing on infrastructure development for better investment environment. The development priorities were confirmed at the time of ex-ante evaluation and at the time of project completion.

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

The project was consistent with the Mozambique's development needs to cope with increasing traffic flows and traffic congestions in the routes between Matola and Maputo in the Greater Maputo due to vitalized mobility of passengers and goods brought by expansion of residential and industrial areas. There was no change in the development needs from the time of ex-ante evaluation to the project completion.

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

The project was consistent with a Japan's ODA policy for Mozambique, prioritizing support for vitalization of regional economy, including development of corridors, of the three priority areas confirmed by the 6th policy dialogue between Mozambique and Japan in March of 2011[2].

<Evaluation Result>

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

[1] 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] Ministry of Foreign Affairs, "ODA Databook", 2011

2 Effectiveness/Impact

<Status of Achievement of the Objectives at the Time of Project Completion>

The study on the comprehensive urban development plan for the Greater Maputo was completed by the project as planned. The final report of the study was composed of the following three main components: i) The master plan including proposed projects and a list of the priority projects; ii) Pre-feasibility study on the Bus Rapid Transit (BRT) system proposed by the project; iii) Recommendation on the BRT system proposed by the project based on the results of the pre-feasibility study. Technical transfer of survey methodologies and master planning to the counterparts were partially delivered. While the training program was mostly implemented in Japan as planned except a training on the Traffic Management Software. Although the planned training in Brazil was not implemented, the technical visits in Brazil were conducted.

<Utilization Status of the Proposed Plan at the Time of Ex-post Evaluation>

The master plan proposed by the project have been partially utilized at the time of ex-post evaluation. After the project completion, the master plan became officially recognized as a development plan for urban transport in the Greater Maputo by the Ministry of Transport and Communications, and the establishment of the Greater Maputo Metropolitan Transport Agency (GMMTA) [3] has been promoted with coordination among relevant agencies. The master plan proposed by the project has been under implementation (Indicator 1-1). Despite of the budget shortage caused by the unsustainable public debt[4] and qualified/trained personnel for implementation, 28 projects in the sectors of urban public transportation, traffic management, including the 8 proposed projects, were implemented and completed during the period from 2013 to 2018. However, Implementation of the priority projects proposed by the project (Indicator 2-1) has not taking place yet due to the lack of budget to cover the high cost submitted by the contractor. In addition, it is also because the implementing agencies, such as Marracuene, Boane and Matola City Council were not aware of the master plan document. Implementation arrangements and organizational settings based on the recommendation by the project (Indicator 2-2) has not been started yet. Recommendations on improvement of the public bus service system have not be able to be implemented because the BRT project has not been implemented yet. However, the introduction of large-size buses and replacement of Chapas[5] have been already implemented. Also, through a partnership with the private sector, the METROBUS project was implemented in the Maputo/Matola corridor. Recommendation on the Photovoltaic Power System was partially implemented.

<Status of Achievement for Expected Goals through the Proposed Plan at the Time of Ex-post Evaluation>

The expected goal was partially achieved at the time of ex-post evaluation. As mentioned above, the 8 projects proposed in the master plan were implemented under the Director Plan of Mobility and Transports for the Metropolitan Area (Greater Maputo) for the period from 2013 to 2018 (Indicator 1). The traffic congestions in the area (Indicator 2) have been limitedly reduced because of the increase in the traffic volume and the limited capacity of public transportation yet.

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

No positive or negative impact was observed at the time of ex-post evaluation so far.

<Evaluation Result>

In light of the above, through the project, the final report was completed as planned and the plans, including that of the BRT system, have been partially utilized. Therefore, 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

Aim	Indicators	Results
(Utilization Status of the Proposed Plan) 1. The master plan prepared by the project is implemented as a development plan for urban transport in the Greater Maputo.	Indicator 1 The master plan prepared by the project as a development plan for urban transport sector in the Greater Maputo is implemented.	Status of achievement: Achieved (Ex-post Evaluation) The following projects were implemented and completed under the Director's Plan of Mobility and Transports for the Metropolitan Region based on the master plan. ● Public Transportation System: 6 projects ● Traffic Management: 1 project ● Road maintenance (including extension): 21 projects ● Traffic management and road maintenance ● Traffic management and road maintenance.
2. The priority project selected by the project is implemented.	Indicator 2-1. The prioritized project proposed by the project (BRT system) is implemented.	Status of achievement: Not achieved (Ex-post Evaluation) ● Only one high prioritized project for the BRT system proposed by the project has already been under preparation.
	Indicator 2-2. Implementation arrangements and organizational setting based on the recommendations by the project is developed.	Status of achievement: Partially achieved (Ex-post Evaluation) ● Recommendations on introduction of large-size buses and replacement of Chapas were implemented. ● Recommendations on operational and management system of the BRT system have not been implemented yet. ● Recommendation on the Photovoltaic Power System was partially implemented

[3] GMMTA is expected to be established as a public company for effective tendering, construction and operation of the proposed master plan, including the BRT system, which crosses several municipal boundaries.

[4] According to the IMF staff report issued in February 2018, the total public debt of the government of Mozambique is assessed to be on an unsustainable path.

[5] Chapas is the collective term used to describe one of public passenger transport services in the Greater Maputo provided by small private operators using 15-seat minibuses or medium-sized vehicles seating about 25.

(Expected Goals through the Proposed Plan) (Not considered for to be evaluation judgement) 1. The urban transport infrastructure is developed in the Greater Maputo.	1. The projects proposed by the project are implemented.	Status of achievement: Achieved (Ex-post Evaluation) The following have been implemented and completed for the period from 2013 to 2018. From 2013 up to this ex-post evaluation, the following priority projects were implemented: i) creation of the Metropolitan Transport Agency; ii) The BRT executive project was elaborated; (iii) transforming informal operators into cooperatives, by the corridor; iv) designed and implemented the project of renewal of the transport fleet for the public and private sector; v) the training of drivers and managers of cooperatives; vi) implemented the METROBUS (rail system) project on the Maputo/Matola line; vii) implemented traffic management projects with the introduction of Bus Lane; viii) initiated the pilot project of concession of route for the operators in the line Maputo Marracuene;
	2. The traffic congestions are mitigated in the Greater Maputo.	Status of achievement: Not achieved (Ex-post Evaluation) ● The traffic congestion in Greater Maputo suffered a slight reduction with the start-up of the METROBUS project and the increase in the fleet in the Metropolitan area.

(Source) Interviews with Maputo City Council

3 Efficiency

Although the outputs were produced as planned and the project cost was within the plan (ratio against the plan: 90%), the project period exceeded the plan (ratio against the plan: 110%). Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

On June 30, 2009, the Decree 4/96 approved the "National Transport Policy" and the "Strategy of the Integrated Transportation System" in order to promote implementation of the proposed master plan and the priority projects proposed by the project. However, the master plan and the priority projects proposed by the project have been endorsed by the national policy.

<Institutional Aspect>

It is expected that implementation of the proposed master plan and the priority projects can be somehow ensured by the institutional arrangement which has been still on going. GMMTA is going to take the responsibility for conducting the master plan and the priority projects proposed by the project for development of urban transport infrastructure in the Greater Maputo. As mentioned above, GMMTA was approved by the Ministry of Transport and Communications but have still been under creation. The Ministry of Transport and Communications is responsible for creation this organization to implement the proposed master plan and priority projects. Councils of Maputo City, Matola City, Boane City and Marracuene District take the responsibilities for carrying out the master plan and priority projects to develop urban transport infrastructure in their respective area.

For the implementation of the Master Plan, the government recently appointed the Board of Directors of GMTTA. It is a small structure still under construction. There is no staff deployed yet to provide support to the Agency and the approval of the staffing structure and governance structure is awaited for subsequent appointment of staff.

Since the traffic management software were not installed yet as expected, the monitoring and management of specific projects to improve traffic have been limited.

<Technical Aspect>

There is a still room for improvement of technical capacity to implement the master plan. GMMTA is expected to have staffs who have the sufficient knowledge and skills to implement the master plan and priority projects proposed by the project. Also, according to the above councils, all of technicians in the councils have the adequate knowledge and skills to develop urban transport infrastructure in their respective area because each council adequately provides training programs to their technicians through the projects including the Capacity Building of the Bus Sector, the Improvement of the Bus Sector, the Road Maintenance Capacity Strengthening Project and the Establishment of Greater Maputo Metropolitan Transport Agency. On the other hand, according to the technicians, they have still required any job trainings for successful performance of their tasks.

Since the planned training on the traffic management software has not been delivered, the capacity for monitoring and management of specific projects to improve traffic has not been improved.

<Financial Aspect>

The government of Mozambique allocated 12 million US dollars (USD) as a 15% co-participation in the financing agreement with the Brazilian Government for implementation of the proposed projects in the master plan. This value was used for the elaboration of the executive project and study of environmental impact of the project. Also, the government invested around 80 million dollars in the process of transforming the informal sector into a formal one with the acquisition of 300 new buses, which form delivered to 07 cooperatives in the Metropolitan Area of Maputo. The BRT project was not implemented due to the cut of funding for cooperation projects by the Brazilian Government with several countries in 2015. The project was revised for the implementation of a light BRT, costing approximately 50 million dollars.

<Evaluation Result>

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

5 Summary of the Evaluation

The master plan and pre-feasibility for the BRT project's priority project were prepared as planned, and some proposed projects and project recommendations were partially implemented. However, the most priority project of BRT has not been implemented yet though under preparation. In terms of sustainability, about 12 million dollars was allocated by the government of Mozambique to prepare the BRT executive project but the BRT project was scaled down due to the cut of funding. The organizational setting for implementation of

the master plan has been still ongoing and the technical capacity of GMMTA needs to be improved. 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:

(For Maputo and Matola City Councils)

- Maputo and Matola City Councils should identify alternative funding sources for implementation of the priority projects, including usage of Public Private Partnerships within the next 3 years.
- Since the Government of Brazil has suspended financing the BRT project though ODEBRECHT Company, Maputo City Council and Municipal Company of Public Transport（EMTPM） should seek alternative sources for funding the capacity building of the company in the areas of management, maintenance and planning of the transportation and BRT system for smooth implementation of the priority project proposed by the project, from 2019 to 2020.
- Co-participation of the National Administration of Roads (ANE) through the Road Fund should intervene in the improvement of the road network under ANE in Greater Maputo

Lessons Learned for JICA:

Taking into consideration the economic situation that the country is going through, it was not possible to implement some priority projects. However, in addition to the implemented traffic management activities, the government has allocated about 92 million dollars to ensure a decent transportation service for the population. It is noted that it is necessary to further deepen the work with the Municipalities, in order to take more ownership of the Master Plan. Consideration should be given to the possibility of translating the executive summary into Portuguese, in order to facilitate its use by technicians of all Metropolitan Area Municipalities, including transporters.

Internal Ex-Post Evaluation for Development Planning Project

conducted by Zimbabwe Office: December, 2018

Country Name	**Project for the Improvement of Water Supply, Sewage and Solid Waste Management in Chitungwiza**
Republic of Zimbabwe	

I. Project Outline

Background	Since Chitungwiza City in the Harare metropolitan area is located in upstream of Harare and neighboring basins, sanitation of the city considerably affects the neighboring areas. When the outbreak of cholera occurred in Zimbabwe in 2008, it was considered that Chitungwiza had been a source of infection. In fact, Chitungwiza faced the following problems on sanitation, such as limited safe water supply, deteriorating water quality caused by untreated waste water flows into rivers, and unmanaged open dumping of solid waste. Under those situations, improvement of sanitation of Chitungwiza was a critical issue not only for the city but also for the entire Harare metropolitan area.		
Objectives of the Project	Through compiling a report for a proposed master plan on water supply, sewage and waste management in Chitungwiza and preparing a feasibility study report on prioritized project for sanitation in the city, the project aimed at implementation of the proposed projects, thereby contributing to improvement of water supply, sewage and solid waste management in the city. 1. Expected Goals through the proposed plan[1]:Water supply, sewage and solid waste management is improved in Chitungwiza City 2. Expected utilization of the proposed plan by the project: The projects for water supply, sewage and solid waste management in Chitungwiza City, including the projects supported by other donors, are implemented based on the reports on the Master Plan and the Feasibility Studies prepared by the project.		
Activities of the Project	1. Project site: Chitungwiza City (Harare Province) 2. Main activities: 1) Collection of basic information on sanitation, 2) Preparation of master plans on water supply, sewage and solid waste management 3. Inputs (to carry out above activities) Japanese Side 1) Mission members: 7 persons 2) Training in Japan: 5 persons 3) Equipment: Hand pumps, water flow meter, etc Zimbabwean Side 1) Staff allocated: N.A. 2) Land and facility: Office space 3) Operation cost		
Project Period	March, 2012 to September, 2013	Project Cost	(ex-ante) 340 million yen (actual) 216 million yen
Implementing Agency	Chitungwiza Municipality		
Cooperation Agency in Japan	NJS Consultants Co., Ltd.		

II. Result of the Evaluation

1 Relevance

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

The project was consistent with Zimbabwe's development policy of the "State Reconstruction Programme" (2011-2015) prioritizing promotion of water supply and improvement of sanitation and "the National Solid Waste Management Strategy" (2010) to improve waste management at the time of ex-ante evaluation and the time of project completion.

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

The project was consistent with the Zimbabwe's development needs to improve sanitation in the Harare metropolitan area including Chitungwiza since sanitation had been deteriorating by limited safe water supply, unfunctional and malfunctional sewage treatment and untreated solid waste under the rapid population growth and economic development.

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

The project was consistent with a Japan's ODA policy for Zimbabwe supporting one of the four priority areas of environment protection including water at the time of ex-ante evaluation[2].

<*Appropriateness of Project Design/Approach*>

The approach of this project was appropriate to propose the master plan for water supply, sewage and solid waste management in order to meet the development needs in the target area of Chitungwiza City where the public services had been deteriorating as mentioned above. Although the scope of the project was changed to cancel feasibility studies on the proposed project in the master plan due to the serious fiscal difficulties of Chitungwiza City, it was a right decision considering financial capacity of Chitungwiza City for project implementation. On the other hand, the fiscal problem of the Chitungwiza City was not predictable at the stage of project formulation and preparation since the fiscal revenue of the national government largely increased by the commendable improvements in tax policy and administration after the fiscal revenue bottomed in 2008[3]

<*Evaluation Result*>

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

[1] 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] Ministry of Foreign Affairs, "ODA Databook 2011"

[3] International Monetary Fund, "IMF Country Report No. 11/135 Zimbabwe: 2011 Article IV Consultation", (2011)

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 project completion. As planned, the final report on master plans for water supply, sewage and solid waste management was completed. However, a report on feasibility studies on the proposed projects in the master plans was not prepared because no feasibility study was conducted by the project under the serious fiscal predicament of Chitungwiza City.

<Utilization Status of the Proposed Plan at the Time of Ex-post Evaluation>

The master plans prepared by the project have been partially utilized since there has been a difficult situation to implement projects in Chitungwiza City because of the serious fiscal constraints. Under such situation, the African Water Facility (AWF)[4] and ZimFund[5] have committed to projects for water supply. Chitungwiza City has a plan to build a Muda dam for own water supply with Chinese Assistance (60 million USD). The Urgent Water Supply and Sanitation Rehabilitation Project Phase I and Phase II funded by ZimFund improved water production through refurbishment of treatment plants[6]. For the rehabilitation of the water treatment plant, the municipal government of Chitungwiza adopted some recommendations such as revision of tariff proposed by the master plan prepared by the project.

<Status of Achievement for Expected Goals through the Proposed Plan at the Time of Ex-post Evaluation>

The expected goals were not achieved at the time of ex-post evaluation. For the water supply coverage, the ratio improved to 75.5% in 2017 from 31% in 2015 when the public utility services had not been functioning under the extraordinary hyperinflation and the fiscal predicament. It was because of more water supply from the Harare Water Department resulted from the negotiations with the Harare Water Department. For waste water treatment, the ratio has sustained for the last three years after the drop in 2015. The implementation of projects to upgrade sewer reticulation at Zengeza and Seke by Zimfund and Chitungiwza Municipality has been under preparation. For the solid waste collection, after the sharp drop in the ratio from 86.5% in 2014 to 58.75 % in 2015, it improved to 71.5% in 2016 and 2017. However, as mentioned above, any changes in the indicators for water supply, sewage treatment and solid waste management cannot attribute to the project because the proposed projects have not been implemented due to the serious fiscal constraints.

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

No positive or negative impact was confirmed at the time of project completion.

<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

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td>(Utilization Status of the Proposed Plan)
The projects for water supply, sewage and solid waste management in Chitungwiza City, including the projects supported by other donors, is implemented based on the reports on the Master Plan and the Feasibility Studies prepared by the project.</td><td>Commitments of donors' supports based on the Master Plans and the Feasibility Studies by the project
- The number of projects committed by donors
- The amounts committed by donors
(Proposed projects to be implemented by 2020)
- Water supply: 3 projects
- Sewage treatment: 1 project
- Solid waste management: 6 projects</td><td>Status of achievement: Partially achieved.
(Ex-post Evaluation)
• 3 projects have been committed by the donors of the African Water Facility and ZimFund.
• Approximately 7 million USD have been financed by the donors for the abovementioned 3 projects.</td></tr>
<tr><td>(Expected Goals through the Proposed Plan) (Not to be evaluation)Water supply, sewage and solid waste management is improved in Chitungwiza City.</td><td>1. Improvement of coverage of water supply system in Chitungwiza City
2. Improvement of sewage treatment ratio in Chitungwiza City
3. Improvement of solid waste collection rate in Chitungwiza City</td><td>Status of achievement: Not achieved.
(Ex-post Evaluation)
<table>
<tr><th></th><th>2014</th><th>2015</th><th>2016</th><th>2017</th></tr>
<tr><td>Water supply coverage ratio</td><td>99.3%</td><td>31%</td><td>47%</td><td>75.5%</td></tr>
<tr><td>Waste water treatment ratio</td><td>96.5%</td><td>69.47%</td><td>69.9%</td><td>69.6%</td></tr>
<tr><td>Solid waste collection ratio</td><td>86.5%</td><td>58.75%</td><td>71.5%</td><td>71.5%</td></tr>
</table></td></tr>
</table>

(Source) Information collected by the questionnaire surveys for Chitungwiza City

3 Efficiency

The project cost and project period were within the plan (ratio against the plan: 64%, 79%) but one of the outputs for preparing a report on feasibility studies on the proposed projects had been canceled and the dispatch of the Japanese experts had been reduced. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

In the "Zimbabwe National Water Policy "(2012), water is one of core issues for the country in order to promote agricultural and industrial development as well as urban and rural development. In addition, treated wastewater is considered as an important additional source of water in the strategy.

[4] AWF is a multilateral fund, which is funded by the African Ministers' Council on Water (AMCOW) and administered by the African Development Bank (AfDB), in order to provide grants and technical cooperation to catalyze development of the water sector in Africa.

[5] The Zimbabwe Multi-Donor Trust Fund contributed by seven donors of Australia, Denmark, Germany, Norway, Sweden, Switzerland and United Kingdom and managed by AfDB.

[6] Since Chitungwiza does not have own water treatment plant, it relies on Prince Edward Water Treatment Plant in Harare which was rehabilitated by the project funded by ZimFund.

<Institutional Aspect>

13 staff members of the municipal government of Chitungwiza who had trained by the project have been still working for the same positions. According to the interview with the municipal government of Chitungwiza, the organizational structure for implementing the proposed projects in the master plans prepared by the project is appropriated with the necessary staff required for project implementation. The Chitungwiza Municipality plans to recruit more staff once the BNR (biological nutrient removal) system for sewage treatment increases.

<Technical Aspect>

The technical skill of the Chitungwiza Municipality is sufficient level to implement of projects for the area of sewage treatment proposed in the Master Plan. The current staff properly manage several waste water treatment plants with the BNR system. For other areas of water supply and solid waste management, there is no information available.

<Financial Aspect>

As mentioned above, the municipal government of Chitungwiza faced the fiscal problems reducing financial viability of the proposed projects during the implementation of this technical cooperation project. After the project completion, the fiscal predicament of the municipal government went further into more serious situation. After hyperinflation up to the time of ex-post evaluation, most public organization and private sectors could not purchase imported items quickly. Even Chitungwiza City tried to manage to purchase parts regarding with the plant from South Africa but the Reserve Bank of Zimbabwe (Central Bank of Zimbabwe) prioritizes transactions by categories going outside countries because of shortage of foreign currency reserves. For mitigating the fiscal problems, there have been discussions about introduction of public-private partnership (PPP) for operation of public utility facilities, such as water supply system and sewage treatment plants. However, prospects for the fiscal balance of the municipal government is still unclear.

<Evaluation Result>

In light of the above, serios problems have been observed in terms of the financial aspect of the implementing agencies. Therefore, the sustainability of the effectiveness through the project is low.

5 Summary of the Evaluation

The project partially achieved the objectives to prepare the report on the master plans for water supply, sewage and solid waste management with the proposed projects. As for sustainability, the fiscal predicament of the municipality government of Chitungwiza constrained the implementation of the proposed projects by the master plan and the future prospect of fiscal balance is still unclear. As for efficiency, the project period slightly exceeded the plan. Considering all of the above points, this project is evaluated to be low.

III. Recommendations & Lessons Learned

Lessons Learned for JICA:

- The financial capacity of the implementing agency is one of key issues to ensure effectiveness and sustainability of technical cooperation project supporting for formulation of master plans in infrastructure development. In many cases in developing countries, implementing agencies, in particular, local governments, face fiscal constraints on public utility services, including investment in facilities. Therefore, it is essential to consider viable funding sources, including other donors' funds, in master plans to be proposed by the technical cooperation project. In addition, although it is not easy to predict fiscal conditions of local government in long run, it is critical to carefully analyze fiscal conditions of implementing agency before starting the project as well as during the project implementation in order to come up with effective countermeasures against possible fiscal constraints in the master plans to be proposed.
- Most of local governments depend on their budget source allocated by central ministries and do not have own budget sources so much. This budget structure causes difficulties for the local governments to afford even minimum maintenance cost for public infrastructure. Development partners should consider affordability of maintenance cost for infrastructures, including facility and equipment, which are procured by the development partners, for long run. Therefore, at the planning stage for the technical cooperation project for master planning or during the implementation period, JICA needs to coordinate central ministries which have power and finance in order to involve in the process of master planning at local government level as responsible partners of local governments. In addition, at the implementation stage, it is preferable to discuss with stakeholders, including related ministries, development partners and the private sectors, about possible funding sources for implementation of the master plan to be proposed from aspects of short-term and the mid to long-term period.

Grid Chamber, Zengeza Sewage Treatment Plant

New Water Pipe at Chitungwiza

Internal Ex-Post Evaluation for Development Planning Project

conducted by Philippine Office: October, 2018

Country Name	Study on the Strategic Railways Networks for the Greater Capital Region
Republic of the Philippines	

I. Project Outline

Background	In Metro Manila and other areas in the Greater Capital Region (GCR)[1], the traffic conditions had been deteriorated due to the rapid urbanization with the rapid population growth. In addition to the growing transport demand in the region, alternative mass transportation system was required in order to cope with air pollution and greenhouse gas emission caused by the growing road transportation. In order to solve the serious traffic problems in the region, the Government of the Philippines planned to promote extension of the mass transportation system including the extension of LRT (Light Rail Transit) Line-1 to the south, LRT Line-2 to the east. In addition, it was necessary to develop a seamless transport network in the region, including construction of new high-speed railway connecting Clark International Airport (CIA) and National Capital Region (NCR), in order to mitigate the serious congestions of the road transportation within the GCR. Under those situation, the Government of the Philippines requested the Government of Japan a technical cooperation to conduct a study on improvement of the railway network in GCR and construction of new high-speed railway.		
Objectives of the Project	Through reviews of the existing studies on the extensions of LRT Line-1 and Line-2 and consideration of options for construction of new high-speed railway connecting Metro Manila and its surrounding areas (Region III and Region IV-A[2]), as well as conduct of pre-feasibility study on the planned construction, the project aimed at preparation of a strategic railway network development plan for GCR to connect CIA and NCR. 1. Expected Goals through the proposed plan[3]: The plan will be part of the development of seamless transportation networks in the Subic-Clark-Manila-Batangas growth corridor. 2. Expected utilization of the plan proposed by the project: The strategic railway network development plan is prepared that connecting CIA and NCR.		
Activities of the Project	1. Project site: Pampanga, Bulacan and Metro Manila 2. Main activities: 1) Reviewing the existing studies on extension of LRT Line-1, 2) Reviewing the existing studies on extension of LRT Line-2, 3) Considering appropriate technologies for the proposed transportation network, organizational setting for operation and maintenance of the system and tariff system, 4) Conducting project evaluation and environment impact assessment on the proposed project of Clark-Manila line, etc. 3. Inputs (to carry out above activities) Japanese Side 1) Mission members: 10 persons 2) Philippine Side 1) Staff allocated: 20 persons 2) Land and facility: Office space		
Project Period	February, 2012 to June, 2013	Project Cost	(ex-ante) 198 million yen, (actual) 259 million yen
Implementing Agency	Department of Transportation (DOTr), Bases Conversion and Development Authority (BCDA) (In July 2015, Department of Transportation and Communications was restructured to DOTr)		
Cooperation Agency in Japan	Oriental Consultants Co., Ltd., ALMEC Corporation, Katahira & Engineers International		

II. Result of the Evaluation

1 Relevance

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

The project was consistent with Philippine's development policy of and "the Philippine Development Plan (PDP) 2011-2016" promoting development of seamless transportation networks in Subic-Clark-Manila-Batangas growth corridor that is the distribution and growth corridor of the wider area of the Greater Capital Region and "the Executive Order No.64" (2011) clarifying the role of the Clark International Airport (CIA) and the Ninoy Aquino International Airport (NAIA). The development policies were confirmed at the time of ex-ante evaluation and at the time of project completion.

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

The project was consistent with the Philippine's development needs of establishment of alternative mass transportation networks with less greenhouse gas emissions against the deteriorating traffic conditions in NCR and GCR as well as resolution of bottlenecks of transportation in the route between NAIA and other areas in GCR, with heavy traffic congestion.

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

The project was consistent with "the Country Assistance Plan for the Philippines" (2008), a Japan's ODA policy for the Philippines, prioritizing "sustainable growth for creation of employment opportunities", including infrastructure development in the growth areas such

[1] Greater Capital Region (GCR): comprised of three regions namely NCR or Metro Manila, Region III, and Region IV-A

[2] The Region III covers Central Luzon and the Region VI-A covers CaLaBaRZon (Cavite, Laguna, Batangas, Rizal, and Quezon).

[3] 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).

as GCR, as one of three 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 study on Railway Strategy for Enhancement of Railway Network System in GCR was completed as planned. The final report of the study includes the following components as planned: i) Review of the Line-1 south extension plans and the extension to the north-east to connect with MRT Line-3 under planning stage, ii) Review of the Line-2 extension plans including the plan of extension to east for 4.2 km with two new stations at Emerald and to terminate in Masinag, iii) Preparation of options and pre-feasibility study on construction of high-speed railway connecting Clark and the Metro Manila Region.

Prior to the completion of the study, a Loan Agreement on the project, which is entitled "Capacity Enhancement of Mass Transit System in Metro Manila", was signed between JICA and the Government of the Philippines on March 27, 2013, for procurement of 120 Light Rail Vehicles (LRVs), rehabilitation of the existing Baclaran Depot, construction of a new satellite depot in Zapote for LRT Line-1 extension to south in Cavite, and procurement of electro-mechanical systems for LRT Line-2 extension to east in Masinag.

<Utilization Status of the Proposed Plan at the Time of Ex-post Evaluation>

To realize the development concept for the north-south economic growth corridor as described in the "Roadmap for Infrastructure Development for Metro Manila and Its Surrounding Areas (Region III and Region IV-A)" or Infrastructure Roadmap, the utilization of the strategic railway network plan prepared by the project is vital in order to alleviate the urban development issues in Metro Manila and to develop the neighboring provinces, hence, accommodate people and economic activities in Metro Manila. In line with this, the plans proposed by the project for enhancement of the railway network in the target areas have been utilized to develop the north-south backbone through the implementation of the proposed Airport Express Railway (AER). Currently, AER is officially known as the North 1 of the North-South Commuter Railway (Malolos-Tutuban) and has been approved by the National Economic Development Authority (NEDA) Board in February 2015. The North 2 for the route between Malolos and New Clark City (NCC), and Manila and Los Banos (South Commuter) was approved in June 2017.

The Capacity Enhancement of Mass Transit Systems in Metro Manila, extending LRT Line-1 to the south in Cavite, by 20.7 km. would add eight (8) stations to the existing 20 stations. Under the same project, LRT Line-2 was extended by 4.2 km towards east, adding two stations (Emerald and Masinag). The two extensions had become important parts of the railway network development plan envisioned in the Infrastructure Roadmap. The operations and maintenance of the entire LRT Line-1, including construction of an elevated structure or viaduct that will connect the existing line between Roosevelt and Baclaran towards Niyog in Bacoor Cavite had been awarded to a private entity, Light Rail Manila Corporation (LRMC), under a 32-year concessionaire agreement with the government of the Philippines in October 2014. The planned extension of LRT Line-1 to the northeast to connect with MRT Line-3, is also underway, as the ground breaking ceremony was held by the government of the Philippines in September 2017, to commence the construction of a common station and platform that will provide convenient transfer of passengers to and from LRT Line-1, MRT Line-3, and MRT Line-7.

<Status of Achievement for Expected Goals through the Proposed Plan at the Time of Ex-post Evaluation>

The Expected Goal cannot be verified as a whole at the time of ex-post evaluation since the timing for the verification of the indicator 2 for the modal shift was too early under the situation, given the uncompleted implementation of the priority projects proposed by this project, though the indicator 1 for the implementation of the priority projects has been already partially achieved. As for the implementation of the proposed project for construction of AER, the North 1 project had commenced in January 2018, and the construction works will start in late 2018, and is planned to be completed in 2022. The construction works for the North 2 project and South Commuter is projected to start in 2019. It is expected that the total daily passengers from Malolos and Tutuban, will be 370,000. While new routes for the North 2 projectand the PNR South Commuter Project, studied by the project are planned or ongoing for development of railway networks in the target regions. Since any of the projects have not been completed yet, the modal shift from road to railway was not verified at the time of ex-post evaluation.

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

There is no positive and negative other impact observed at the time of ex-post evaluation.

<Evaluation Result>

In light of the above, through the project, 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

Aim	Indicators	Results
(Utilization Status of the Proposed Plan) The strategic railway network development plan is prepared that will connect CIA and NCR.	1. To what extent the plans developed by the project has been implemented.	Status of achievement: Achieved (Ex-post Evaluation) - The North 1 project (Malolos-Tutuban) had commenced in January 2018, and the construction works will start in late 2018. - The detailed design for the North 2 project (Malolos-New Clark City), and the South Commuter (Manila-Los Banos) is now ongoing.
(Expected Goals through the Proposed Plan) (Not to be evaluated) The plan will be part of the development of seamless transportation networks in the Subic-Clark-Manila-Batangas growth corridor.	1. The proposed project to construct AER connecting CIA and Metro Manila Region has been under implementation.	Status of achievement: Partially achieved (Ex-post Evaluation) The proposed projects to construct AER connecting CIA and the Metro Manila Region (the North 1 project and the North 2 project) have been under preparation but constructions have not been implemented yet .
	2. The modal shift has been promoted.	Status of achievement: Not verified Implementation of the proposed railway network projects will promote modal shift from road to rail transportation within the growth corridor.

(Source) Questionnaire survey and interview with DOTr, NEDA and Office of the Undersecretary for Railways

3 Efficiency

Although the outputs were produced as planned and the project period was within the plan (ratio against the plan: 100%), the project cost exceeded the plan (ratio against the plan: 130%). Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

"The Philippine Development Plan (PDP)" (2017-2022) outlines the strategic framework for the transportation sector. Specifically, PDP encourages the shift from private to public transport, with emphasis on mass transport, by ensuring the accessibility, availability, affordability, adequacy, convenience and reliability of rail transport and bus rapid transport systems. Moreover, the Infrastructure Roadmap, supports the development of a north-south economic growth corridor to alleviate the urban development issues in Metro Manila and to develop the neighboring provinces to accommodate people and economic activities in Metro Manila. In order to realize this development concept, the Roadmap envisages the Clark-Manila Railway as a north-south backbone together with the North Luzon Expressway (NLEX).

<Institutional Aspect>

[DOTr]

DOTr has been in charge of implementing the NSCR project, developing and constructing infrastructure through Project Management Office (PMO), including management of contractors, and also procurement and selection of O&M contractors as well as supervising the provision of O&M services by the O&M contractors. Due to the current organizational development, 44 staffs are now deployed to DOTr, and the number of staff members may be sufficient to perform their current responsibilities. However, their qualifications or capacity may need to be strengthened. DOTr may further recruit additional personnel at the construction stage when the need arises.

[PNR]

PNR has taken responsibilities as co-implementer of the NSCR project to provide technical supports to PMO and regulate the railway operations of the NSCR. PNR has 5 staffs to complete their tasks, and the number was sufficient at the time of ex-post evaluation. However, similar to DOTr, PNR may increase the number of staffs to achieve sufficient number of needed manpower at the project implementation phase.

<Technical Aspect>

Personnel of DOTr and PNR are hands-on to the ongoing related projects. Hence, continuously acquiring technical expertise in the project implementation through training and technical advisory services which are also adequately provided by the Asian Development Bank.

As part of its initiatives, DOTr has started to develop its own manual on Right of Way Acquisition based on actual experiences to secure right of way for railway projects.

<Financial Aspect>

The estimated total cost for the NSCR project (both the North 1 project and the North 2 project) was 255 billion Philippine Peso (PHP). According to the official of DOTr interviewed by the ex-post evaluation team, DOTr has secured the necessary budget to implement the NSCR project. Moreover, the future budget for the NSCR project is expected to be secured as the current policies "the Ten-Point Socioeconomic Agenda" to be implemented within the administration of President Duterte, aims to ramp up investments on public infrastructure including railways and "the PDP 2017-2022" includes the required financial resources for the other components of the strategic railway network development plan in GCR. In addition, the fare system for the NSCR, which was proposed by the project, is also being considered, and the fare system is planned to be introduced in the following price setting: 30.00 PHP for Base Fare and 2.20 PHP per kilometer.

<Evaluation Result>

In light of the above, no major issue 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 railway network development plan proposed by the project, has been utilized through the development of Infrastructure Roadmap which serves as a railway network development plan. The AER project proposed by the project is now being implemented through the North-South Commuter Railway project, which will enhance the backbone of north-south corridor for Metro Manila. 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

Recommendations for Implementing Agency:

- For DOTr to ensure that O&M entity private or public shall be assigned or procured in advance prior to the start of revenue operations upon completion of the project.
- For DOTr to ensure that adequate number of personnel is put in place when project full implementation swings in late 2019.

Lessons Learned for JICA:

- Closer coordination between the JICA study team and counterparts, including DOTr, PMO, PNR as well as relevant local government units are essential for the smooth facilitation in conducting the studies and other related activities as well as elaboration of effective and feasible strategic plans. In terms of data collection, it is necessary for JICA study team to jointly work with PMO to ensure that accurate data are collected to minimize or eradicate gaps, for pre-feasibility study on the proposed project.
- On the other hand, since PNR is a key stakeholder in the railway sector, involvement of PNR in the study from the beginning is essential to make necessary coordination for the proposed project. The PNR Board Resolution No. 073-2014 stipulates the adoption of the concept of the North South Railway Project subject to the condition that Philippine National Railways be duly consulted during the project implementation. In addition, the coordination with the local government units by the JICA study team was good practice for public awareness raising among the local government units and the people inhabiting the planned routes.

Advanced Construction Mobilization Works (site clearing, grading of unleveled surfaces, demolition of obstructing structures) for North-South Commuter Railway (NSCR) Project (Malolos-Tutuban) on January 5, 2018.

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Tajikistan Office: January, 2019

Country Name	**Rural Development Project in Tajik-Afghan Border Area of Gorno-Badakhshan Autonomous Oblast** *Commonly known as" Cross-border Rural Development Project" (CBRD Project)
Republic of Tajikistan	

I. Project Outline

Background

Political and economic stability in Tajikistan was a pressing issue for the international community, given its geopolitical importance for peace and security in Central Asia and wider Eurasian continent. Tajikistan achieved strong growth and macroeconomic stabilization over the past years contributing to the decrease in national poverty rate from 81% in 1999 to 53.7% in 2007(1). However, the national demand for basic social services still remained high, especially in Gorno-Badakhshan Autonomous Oblast (GBAO) (2), where a poverty rate remained high. In order to tackle the poverty in the country, the realization of the activities directed on increasing of the incomes of the poor and infrastructure development and improving the access to basic social services was needed.

(1) Source: National Development Strategy (NDS2015)

(2) GBAO is the Autonomous Government in the area of Gorno-Badakhshan

Objectives of the Project

In five districts of GBAO, the project aims to improve the socio-economic services to the people by improving basic infrastructure, by enhancement of the capacity of local governance institutions to implement demand driven services and by strengthening of the collaboration between Tajik and Afghan governance institutions, thereby to improve the quality of life of the population in those areas.

1. Overall Goal: Improved quality of life of the population in the project target area as a result of improved infrastructure and socio-economic services.
2. Project Purpose: Improved service delivery to the population through sub-national good governance and improved Tajik-Afghan collaboration.

Activities of the Project

1. Project Site: 5 Districts of Darwaz, Vanj, Rushan, Shugnan and Ishkashim in GBAO.

Administrative Structure of target districts under GBAO						Total
District (ASUDVO) (1)	Darwaz	Vanj	Rushan	Shugnan	Ishkashim	5
Sub-district /Jamoat (SUDVO)(2)	4	6	7	7	7	31
Village Organizations (VOs)	58	71	56	71	74	326
Households	3,281	4,191	4,551	3,613	3,613	20,984
Population	23,600	30,400	25,300	38,000	28,400	145,700

Source: Final Evaluation Report 2015

(1) ASUDVO (Association of Social Unions for the Development of Villages Organization) is formed under each district in order to promote the collaboration between local administration and communities and to facilitate the local development in each district. ASUDVO is consisted of representatives of VOs and SUDVOs of each district.

(2) SUDVO (Social Unions for the Development of Villages Organization) is a consultation organization of VOs constructed under each Jamoat.

2. Main Activities:

(1) Improvement of basic infrastructure and an increase of livelihood opportunities (implementation of sub-projects), (2) Enhancement of the capacity of local governance institutions through setting ASUDVOs in order to effectively identify, plan and implement demand driven services, and (3) Strengthening of the collaboration between Tajik and Afghan governance institutions.

3. Inputs (to carry out above activities)

Japanese Side
1) Experts: 2 persons
2) Trainees received: 2 persons
3) Local expenses

Tajikistan Side
1) Staff allocated:4 persons (GBAO)
*In addition, there are Technical Working Group members in each of the five districts.
2) Facilities: Project Office
3) Local expenses

Project Period	February 2012 - February 2015	Project Cost	(ex-ante) 300 million yen, (actual) 324 million yen
Implementing Agency	The State Executive Body of Gorno-Badakhshan Autonomous Oblast（GBAO)		
Cooperation Agency in Japan	None		

II. Result of the Evaluation

<Constraints on Evaluation>

・Due to the lack of security at targeted area at the time of ex-post evaluation, there was a limitation of data collection and site observation.

<Special perspectives Considered in the Ex-Post Evaluation>

[Project implementation system]

・GBAO implemented the project through its strategic partner, Aga Khan Foundation Tajikistan (AKF-T)/ Mountain Societies Development Support Programme (MSDSP) of AKF-T. The Deputy Chairman of the State Executive Body of GBAO was responsible for overall steering of the Project and the regional manager of MSDSP was in charge of project management. AKF-T/MSDSP, the private institution, played a key role to implement the project as well as to sustain the project effects after the project completion.

[Evaluating Continuation Status of Effectiveness (Continuation status of achievement for Project Purpose)]

・Regarding Indicator 1 of Project Purpose, "% of population in the target area is aware of institutional arrangements for service delivery and governance (Target Value: 80%)", to verify its continuation status requires to review the continuation status of three Outputs, in order to ensure the causal relationship between Outputs and Project Purpose. Therefore, the status of achievement of selected Output Indicators at the time of ex-post evaluation was examined as Supplemental Information to confirm the operational status of the system established under this project.

[Evaluating Achievement Status of Overall Goal]

・As for the Indicator 1 "Improved quality of life of people residing in the project area (qualitative indicators)", the means of verification is defined as

"Quality of Life Assessment Study" by AKF-T. However, after the project completion, the study was not carried out. Therefore, the alternative indicators are presented as follows: "Biggest changes to the people's life and economy before and after the sub-projects", "Increase in agricultural production and income before and after the sub-projects". These indicators are to examine the qualitative and quantitative aspects of life of the people who have made a living in agriculture. As explained above, due to the security reasons, the collected data was mainly through questionnaire surveys and interviews with those of local governances and AKF-T/MSDSP who also provided their perceptions and observations on the people in the target area. Also, interviews with the residents from some of the targeted areas were conducted.

1 Relevance

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

At the time of ex-ante evaluation, this project was relevant to "the National Development Strategy (NDS2015)" which was the main strategy to develop the country under the market economy and "the Poverty Reduction Strategy (PRS2010-2012)" as its action plan, which stressed the need to establish the administration to respond to the market economy, to facilitate the investment and privatization and improvement of basic social services and human resources development. It also set up the priority on the regional cooperation with Afghanistan through public-private partnerships. Under the PRS2010-2012, it was stated that the four special economic zones would be established in regional cross-border area by 2012 to activate the national economy. At the time of project completion, NDS2015 was still effective.

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

This project was consistent with Tajikistan's development needs to improve infrastructure and socio-economic services as described in "Background" above. At the time of project completion, the demand for basic social services was also high in GBAO. Therefore, the needs to improve the socio-economic services developed by the project continued at the project completion.

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

At the time of ex-ante evaluation, the Japanese government set its policy of assistance for Tajikistan on the sustainable economic development which led to the market-oriented economic reform and poverty alleviation.[1] In practical term, it focused on the infrastructure development, the improvement of social securities and the promotion of regional collaboration with neighboring countries of Central Asia.

<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, through implementation of sub-projects, the enhancement of local government capacity and strengthening of collaboration with Afghan governance institutions, the project achieved its purpose of "Improved service delivery to the population through sub-national good governance and improved Tajik-Afghan collaboration". The findings from the interviews conducted during the completion inspection of the sub-projects suggested that the people in most of the target areas were aware of institutional arrangements for service delivery and governance (Indicator 1). They also indicated that most people appreciated local governance institutions positively (Indicator 2).

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

After the project completion, the project effects have continued. The questionnaire survey conducted during the ex-post evaluation study showed that the awareness levels of population on their institutional arrangements for service delivery and governance were high. This was also obvious from the continuation status of Outputs; all of the 44 sub-projects except one have been in operation and properly maintained after the project completion (Supplemental Information 1). Ninety one new projects were implemented after the project completion with the funds from external donors. ASUDVO was proven to be a useful mechanism as a liaison between the community and districts. However, it did not continue as it was and its function only remained in the MSDSP (Supplemental Information 2). This was due to that its responsibility was reduced with VOs being more empowered by law and the funds to support the mechanism from central and local government became unavailable. Various cross-border activities including meetings took place during and after the project completion (Supplemental Information 3). Those achievements made by the project have contributed to the high level of performance evaluation on local governance institutions by local community; all districts except Rushan rated the performance of their local governance institutions as high.

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

It is observe that the Overall Goal, "Improved quality of life of the population in the project target area as a result of improved infrastructure and socio-economic services" has been achieved. According to the questionnaires, across five districts, the qualitative aspect of people's life was evident from the biggest changes brought by the sub-projects for drinking water facility, health facility, bridge and road and irrigation system. It was judged that those facilities greatly contributed not only to providing the people with better quality of social services, such as in health care, drinking water but also to helping them to allocate more time for productive activities to earn income. The quantitative aspect of people's life was evident from the positive change in agricultural production and income. Agricultural production slightly increased from 2012 to 2017 for grains. The reduced access to quality seeds affected the production volume of potatoes decreased during the same period. As for the animal foods, the cultivated hectare for five districts combined increased by 10.2% during the same period. The agricultural income for GBAO as a whole increased by 46.4% from 2012 to 2017. However, considering that the figure includes two districts that were not targeted by the project, it is difficult to conclude that the agricultural income of five districts have also increased.

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

The study showed some ripple effects. The vertical institutional platform of village – sub-district/jamoat - district to bring local needs up to the district level, which was developed by the project, was replicated across all of GBAO. This platform structure has been carried on by MSDSP and the GBAO has admitted that having the platform contributes to the work efficiency for developing local development plans, noted by the interview at the time of ex-post evaluation. One example is the "Strengthening Civil Society Capacities for Greater Community Empowerment in Reducing Poverty (2014-2016)" funded by European Commission (EC). In this project, the MSDSP partnered with local government to develop or update 325 Village Development Plans (VDPs), 35 Jamoat Development Plans (JDPs), 7

[1] Source: ODA Data Book in 2011.

District Development Plans (DDPs), 1 Khorog Town Development Plan, and 1 GBAO oblast level Socio Economic Development Plan. Through this process, the priorities and plans of the VDPs were incorporated into the JDPs, which fed into the DDPs and Khorog Town Development Plan, all of which were taken into consideration during the development of GBAO Socio Economic Development Plan. Another ripple effect is for women in all districts who were actively participating in the sub-project from the beginning. With the effort by the project setting the meetings for women separately from men in the area where expressing the voice by women is not common, women could openly express their opinions. As a result, the need of women and children were properly captured, so that the sub-projects were tailored to their needs. With the drinking water facilities constructed under the sub-projects, they do not have to fetch water, so that they can allocate more time to generate income through knitting and needlework, etc.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td>(Project Purpose)
Improved service delivery to the population through sub-national good governance and improved Tajik-Afghan collaboration.</td><td>Indicator 1:
% of population in the target area is aware of institutional arrangements for service delivery and governance
(Target Value: 80%)</td><td><u>Status of the Achievement: Achieved (continued)</u>
(Project Completion)
・Interviews conducted during the completion inspection of sub-projects revealed that most people knew and could respond how they should consult with local governance institutions if issues of operation and maintenance or funding requirement arise. No negative comments were made on sub-projects. It was judged that the people in most of the targeted areas were aware of institutional arrangements for service delivery and governance. The increase of households' access to basic infrastructure seems to confirm their awareness level to some degree. In all 5 districts combined, the average accessibilities of household for all infrastructures except bridge reached to 100% by Feb. 2015.
(Ex-post Evaluation)
・With the bottom-up approach introduced by the project, local communities took initiatives by prioritizing the area to be improved, reached the consensus and carried out the sub-projects, thus continued to be aware of institutional arrangements of service delivery and governance.
・Continuation status of Outputs confirms the achievement of this indicator.
<table>
<tr><td>1</td><td>Progress of 44 sub-projects</td><td>All of sub-projects except one have been in operation and properly maintained since the end of the project. One sub-project, a bridge for vehicle crossing in Shugnan district, has not been in operation as it was destroyed due to the heavy mudslides and flood in 2015.</td></tr>
<tr><td>2</td><td>Development of new projects

Status of ASUDVO</td><td>With the enhancement of local government, ninety-one (91) projects have progressed after the project completion by obtaining the funds from external donors, such as Swiss Agency for Development and Cooperation (SDC), EC, but not using three Micro Lending Organizations (MLOs) of which originally envisaged, as these three merged into one and their profit was only enough for minor repair and purchasing some equipment, but not for the new project.
The position of ASUDVOs does not exist partly due to lack of funds to support the system, but its function has been maintained in the MSDSP.</td></tr>
<tr><td>3</td><td>Cross-border meetings/ activities</td><td>During the process of the implementation, several joint meetings among state structures, civil society and target group were organized. Various cross-border activities were conducted during and after the project, such as two irrigation systems in Darvaz district constructed in collaboration of Afghan villages, a canteen in the market constructed to meet with Afghan practices to separate women, etc.</td></tr>
</table></td></tr>
<tr><td></td><td>Indicator 2:
% of population rating the performance of local governance institutions as responsive and inclusive
(Target Value: 70%)</td><td><u>Status of the Achievement: Achieved (continued)</u>
(Project Completion)
・The completion inspection and the site visit by JICA expert revealed that most people in the target areas had communicated or collaborated with local governance institutions in planning, implementation and operation stages. District/Jamoat governments actively participated in problem solving and technical/financial support. Thus, it was assessed that most people appreciated local governance institutions positively.

(Ex-post Evaluation)
・Questionnaires on Performance evaluation of local governance institutions in sub-district level in terms of level of responsiveness /inclusiveness examined by district level local governance show that all districts except Rushan District rated the performance of local governance institutions as high (more than 80%). Rushan district answered it as medium (more than 50% and less than 80%)</td></tr>
</table>

(Overall Goal)
Improved quality of life of the population in the project target area as a result of improved infrastructure and socio-economic services.

Improved quality of life of people residing in the project area

1) Biggest changes to the people's life and economy before and after the sub-projects

(Ex-post Evaluation) Achieved

Three biggest changes* to the people's life before and after the sub-projects

	Sub-projects	Direct effects	Indirect Effects
1	Drinking water facility	Easy access to safe water	Save time to fetch waster, allocate more time for other work/study, Improve the sanitary condition, reduce infectious diseases
2	Health facility	Earlier access to health care	More opportunities to receive care, vaccination
3	Bridge and road	Convenience for distribution	Save time for distribution of goods, mobilization of labor

Three biggest changes* to the economy before and after the sub-projects

	Sub-projects	Direct effects	Indirect Effects
1	Health facility	Earlier access to health care	Prevent people from being seriously ill, securing the labor force
2	Drinking water facility	Easy access to safe water	Save time to fetch waster, allocate more time for productive work to earn money (household industry, such as knitting, etc.) Save money on gas fuel consumption
3	Irrigation facility	Increase of arable land	Produce more vegetables, agriproducts. Sell more agriproducts and get more income

Note: Each of five districts individually listed "three biggest changes" of their districts. Then, among those listed, the top three biggest changes that were common through all five districts were selected by the evaluator (Tajikistan Office).

2) Increase in agricultural production and income before and after the sub-projects

(Ex-post Evaluation) Partially Achieved

Agricultural production volume by products Unit: tons

Agriproducts	2012	2015	2017	% Change between 2012-2017
Potatoes	49,519	47,868	27,132*	△45.2.%
Grains (Wheat, Barley, Corn)	13,878	14,345	14,383	3.6%

Note: Production volume of potatoes decreased due to the reduced access to the quality seeds

Cultivated hectare of Animal Food Unit: hectare(ha)

Agriproducts (Animal Food)*	2012	2015	2017	% Change between 2012-2017
Alfalfa and grass	1,922	1,780	2,117	10.2%

Note: Production of animal food is measured by the cultivated hectare.

Agricultural income Currency Unit: in thousands Tajikistani Somoni (TJS)

Income	2012	2015	2017	% Change between 2012-2017
GBAO total*	443,936	598,021	649,865	46.4%

Note: GBAO total includes two districts that are not targeted by the project.

Source : Project Completion Report, Questionnaire survey and interviews with implementing agencies, AKF-T and local communities

3 Efficiency

While the project period was within the plan, the project cost exceeded the plan (ratio against plan: 100%, 108%). The Outputs of the Project Design Matrix were not changed. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The core country development plan, such as "National Development Strategy (2016-2030)" focuses on raising the level of life of local population, solving the social and economic problems and expanding the cross-border cooperation with Afghanistan and strengthening transportation and economic connectivity. In local levels, "District Development Plan (2016-2020)", "Jamoat Development Plan (2015-2020)" and "Village Development Plans (2016-2019)" state development priorities at respective levels.

<Institutional Aspect>

The organizational structure has been well established. At GBAO level, the structure formed by the project as Technical Verification Group (TVG) to supervise the operation of rural development, which consists of in-service heads of Depts., such as Education, Finance, Agriculture and Water and Melioration, and managers from AKF-T/MSDSP, such as Local Governance, Infrastructure and Cross Border Infrastructure, have been maintained and functioned well. At District level, the similar structure was formed by the project as Technical Working Group (TWG) to proceed the implementation and management of sub-projects, which consisted of in-service heads of Depts., managers from MSDSP and ASUDVO. The position of ASUDVO was not sustained, however, its function has been maintained in the MSDSP. At the sub-District level, the function of SUDVOs and VOs has been well maintained. It was confirmed by the Ex-Post Evaluation team, these structures involving all government departments and key community-based civil society organizations made it effective to jointly plan and implement rural development activities through experience gained from the project as well as other projects with the same approach. Currently, 43 staff assigned from MSDSP Regional Office in GBAO are working to support these structures. Out of those, with at least 7 district-level representatives, 13 technical staff based in MSDSP Regional Office are dispatched to districts when required and remaining are 23 administrative staff. It was confirmed by the study that the current number of MSDSP staff is sufficient to cope with

workload to manage active projects/grants. The relationship and collaboration among different levels, such as GBAO, District and Sub-District levels, have been effective through the bottom-up approach managed in collaboration with the Strategic Partner (AKF-T/MSDSP) who has fostered a committed relationship through a long-term collaboration.

<Technical Aspect>

It was identified by the Ex-Post Evaluation team that some of counterparts have been transferred to other position due to the promotion, etc., but they have not had any difficulties to operate sub-projects. According to the interviews with chairmen and deputy chairmen of five targeted districts, it is often the case that the person can continue working on the same issue at the position to be transferred. Trainings have continuously been provided by AKF-T/MSDSP in Jamoat and village levels. The number of trainings conducted since 2015 was more than 500 cases, which has contributed to maintaining the necessary technical levels.

<Financial Aspect>

The budget of GBAO allocated for rural development has been increasing since 2015.

Currency Unit: TJS

	2015	2016	2017	% Change between 2015-2017
GBAO Budget allocated for Rural Development	1,833,600	2,437,000	2,450,000	33.6%

Source: GBAO

Infrastructure facilities such as schools and hospitals are considered as the national property, and the budget from the national government is secured upon requests from District level. Besides, there is the mechanism to secure the budget for the facility maintenance from the people's contribution, such that the Parent Teacher Association, Water Users Association and the community people as individual have been contributing some money in order to maintain the facility built/rehabilitated through the sub-projects.

<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 improve social service delivery through sub-national good governance and better Tajik-Afghan collaboration." The effect of the project has continued after the project completion and the Overall Goal to improve quality of life of the population in the project target area with improved infrastructure and socio-economic services has been achieved. As for sustainability, no problems have been observed in terms of policy, 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 highly satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

To: The State Executive Body of GBAO

GBAO should recommend the national government (Ministry of Economic Development and Trade, Committee on Local Development) that it should financially support the bottom-up approach as one of effective methods to expand the rural development and replicate it to other part of the country.

The project has proved its effectiveness of the bottom-up approach in which the sub-projects have been well sustained after the project completion by the communities who have demonstrated the strong ownership. Furthermore, this approach was replicated by external donors' assistance as explained above. In order to further promote this approach to other part of the country, the national government should finance such projects by itself.

Lessons Learned for JICA:

1) JICA should make good use of the latent abilities of the communities and incorporate them into the project formulation. The approach of community mobilization and involvement can be applied to any other projects/sub-projects, and the key is to trust and involve the people from the very early stage and not to ignore their idea, but to assist them to formulate the project based on their own ideas and needs. In this respect, it is integral to involve the strategic partner, who has maintained a committed relationship with communities,

Through this ex-post evaluation study, it was identified that there have been untapped potentials of the communities. People in the community prioritized area to be improved and participated the decision making with local government. People have made contribution to take care of the facilities regardless of their severe financial situations. Also, they appreciated the benefits gained through sharing common resources with Afghan and through the promotion of cross-border communication. Those latent abilities of the communities could serve as valuable resources in the project formulation. The strategic partner, AKF-T/MSDSP, played a significant role to anticipate the needs of the community and to mobilize them to the right direction.

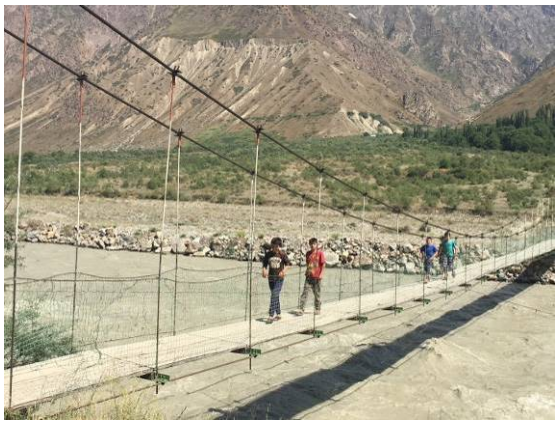
2) In order to encourage the participation by women, where the role of women is traditionally limited to the domestic one and expressing the voice by women is not common, it is important to directly capture and respond to their needs by creating the environment to make their voice heard.

The project set the meetings for women separately from men in the area where it is not common for women to express their own opinions due to religious and customary practices. By this way, the needs of women and children were openly expressed and the sub-projects in those areas were tailored to their needs.

3) Creating a new coordination body, namely ASUDVO in case of the project, was instrumental in binding the community and district together into generating the meaningful outcome.

The mechanism of ASUDVOs to serve as liaison between the community and districts was effective to connect the various stakeholders in different levels together for collective actions. Though the ASUDVO as the organization body was not sustained after the project completion, the knowledge and experiences learned by the members remained in the local body and MSDSP.

Pictures



The foot bridge constructed through the project made the walking distance for schoolchildren drastically shorter. As a result, they gained more time for other activities.

The provision of drinking water supply freed women and children from fetching water at the river. The clean water also bettered sanitary situation and reduced incidence of infectious diseases.

Internal Ex-Post Evaluation for Technical Assistance under Finance and Investment Account

conducted by Brazil Office: February 2019

Country Name	**Project for Capacity Development of Post-harvest and Marketing Practices in Jaiba Region**
Brazil	

I. Project Outline

Background	The Jaíba region, which is located in the northern part of Minas Gerais State across Cerrado, has a warm climate throughout a year. The region had drawn attention with high potential of agricultural production because of year around cultivation and harvest by using irrigation systems to be less affected by changes of rainfalls by season, such as rainy season and dry season. The Jaíba Irrigation Project (I-IV) (planned irrigation area of approximately 230,000 ha) was planned and promoted by collaboration between the Federal Government of Brazil and the State Government of Minas Gerais. With supports from development partners, including JICA, around 19,000 ha became irrigated area in the 2000s. Also, the quality of fruits as main agricultural products in the region acquired good reputation. However, the proportion of irrigated areas against the irrigable areas was limited to 31% (2,493 ha against 8,043 ha) in the District C2, for the project sites of the Jaíba Irrigation Project (I) area and 60% (9,846 ha against 16,276 ha) in the project site of the Jaíba Irrigation Project (II). That was attributed to the factors of: i) comparatively high distribution and transportation cost of agricultural products because the Jaíba region was far from domestic markets and export bases in Brazil, and 2) limited incentives for many small and medium scale producers due to low profitability caused by sales of their products to middlemen at low price without market information. Under those situations, the government of Brazil requested the government of Japan a technical cooperation project aiming at institutionalizing small and medium scale famers in the Jaíba region, increasing added values of agricultural products and reducing distribution and sales costs.		
Objectives of the Project	Through delivery of trainings on information collection and analysis about markets and agricultural products, preparation of mid and long term marketing plans, preparation of the operation manuals on post-harvest process and delivery of trainings, as well as construction and operation of the Public Packing House[1], the project aimed at strengthening competitiveness of small and medium scale farmers (less than 1,000 ha) in the Jaíba region, thereby contributing to further development of irrigation agriculture in the region. 1. Overall Goal: Irrigation agriculture is further developed in the Jaíba region. 2. Project Purpose: Competitiveness of small and medium scale farmers in the Jaíba region is strengthened.		
Activities of the Project	1. Project Site: The Jaiba region, Minas Gerais State 2. Main Activities: (1) Delivery of trainings on information collection and analysis about markets and agricultural products, (2) Preparation of mid- and long-term marketing plans, (3) Preparation of the operation manuals on post-harvest process, (4) Delivery of trainings on post-harvest process, (5) Construction and operation of Public Packing House 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 9 persons 2) Trainees Received: 10 persons 3) Equipment: Sorting and packing equipment, cold chamber, PCs and software for data management Brazilian Side 1. Staff Allocated: 12 persons 2. Land and facilities: project office, space for installation of the equipment provided by JICA 3. Local expenses: Travel expenses		
Project Period	January, 2012 – December, 2014	Project Cost	(ex-ante) 250 million yen, (actual) 290 million yen
Implementing Agency	Minas Gerais State Export Support Agency (Exportaminas)		
Cooperation Agency in Japan	Nippon Koei LAC, INC.		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

[Target of verifiable indicator for the Overall Goal]

- The verifiable indicator for the Overall Goal of "further development of irrigation agriculture in the Jaíba region" is "increases in irrigated areas and production in the Jaíba region". On the other hand, the target group of the project was only small and medium scale farmers. Therefore, this ex-post evaluation confirmed data on small and medium scale producers in addition to data on the region, and the achievement level of the Overall Goal was verified and judged by both data in order to clarify contribution of the project to it.

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 Multiple-year Plan" (2008-2011), a national development plan, and "The National Irrigation Policy" (2013) aiming at restarting agricultural production in 50,000 ha out of the idled plots in the existing public irrigation areas as one of development goals.

<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 to improve an issue of limited proportion of irrigated areas in the irrigable areas due to: i) relatively expensive transport and distribution cost for agricultural products in the Jaíba region which is far from the major domestic markets and export bases, and ii) limited incentives of small and medium scale farmers by low profitability with sales of agricultural products to middlemen at low price without market information.

[1] Public Packing House is a public facility for sorting and packing of agricultural products.

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

This project was consisted with Japan's ODA Policy for Brazil[2] prioritizing 5 areas, including "agriculture", under the top-level agreement on the priorities areas for assistance, when the President Lula visited Japan in May, 2005.

<Appropriateness of Project Design/Approach>

The project approach to increase competitiveness of small and medium scale producers in the Jaiba region for further development of irrigation agriculture was appropriate. On the other hand, the Directorate of Agriculture of the Minas Gerais State or the Minas Gerais State Company for Technical Assistance and Rural Extension (Empresa de Assistência Técnica e Extensão Rural do Estado de Minas Gerais : Emater) should have been more adequate as an implementing agency in addition to Exportaminas in order to increase competitiveness of small and medium producers. However, for the implementing arrangement of the project, the Joint Coordination Committee, the decision making mechanism of the project, was chaired by the Minas Gerais state government and the project was implemented with involvement of the Bureau of Agriculture and Emater under coordination by the state government. Therefore, there was no negative impact on the project implementation practically..

<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 major wholesale markets in Brazil, while the proportion of the number of target agricultural products with more than 80% of the target value in the growth rate of sales volume in the year of project completion (2014) compared to the ones in the 1st year of the project was 4 out of 5 in São Paulo, 2 out of 5 in Belo Horizonte, only 1 out of 5 in Rio de Janeiro, and the number of the target product with more than 50% of the target value was only 1 out of 5 in Belo Horizonte (Indicator 1). Among the target agricultural products, lime and mango started to be exported. The growth rates of the number of small and medium scale farmers entering export of lime and mango exceeded the target value (30%), respectively (Indicator 2). The fluctuations of sales volumes of the target agricultural products in each target area may have been attributed to impacts of external factors, such as market behaviors and climates. However, those external factors affecting the sales volumes were not analyzed in detail by the terminal evaluation of the project.

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

The project effects have been partially continued since the project completion. Precise data at the major markets, such as São Paulo, Belo Horizonte and Rio de Janeiro, on sales volumes of the target agricultural products produced by the small and medium scale farmers in the target areas were not available since those data were not disclosed. In terms of banana production, according to Emater, the sales volumes by the target regions at the São Paulo market increased since the production volume in São Paulo State decreased in 2016 because of damages by frost. While the sales volume after the project completion exceeded the ones during the project at the São Paulo market, the figures were far below the ones during the project in other two markets. Also, the number of small and medium scale farmers participating in exporting limes increased 11 in 2015 to 25 in 2017, and the same level sustained in 2018. The data was only available for limes among the target agricultural products.

The project attempted to expand sales volumes of the target agricultural products through enhancement of marketing capacities of Producer Associations (PA) instead of using the channels of middlemen. The system introduced by the project has sustained or expanded for only bananas and limes. For lime, the number of farmers selling directly at the market without middlemen dramatically increased from 6 in 2012 to 40 in 2018. In addition, new PA consisting of 25 farmers was established. Since the project delivered trainings to make farmers deeper understanding on importance of post-harvest and quality control, the farmers have taken more interests in certification systems and some of them have received a certification of fair trade market and shipped their agricultural products to the markets. For banana as well, the number of farmers selling their products without middlemen increased from 9 in 2012 to 32 in 2018, and 20 farmers started to process establishment of a new PA because they had deepened their recognition of benefits of collective sales through PA without middlemen, such as expansion of sales and reduction of transportation cost, by the trainings and other activities conducted by the project. As mentioned above, the expansion of sales volume of banana produced in the Jaíba region and the increasing sales price were attributed to poor harvest in São Paulo state in 2016. On the other hand, the number of farmers producing atemoya and mango just slightly increased from 2 to 8 and from 2 to 5, respectively. Papaya cultivation was demolished in the target area because of disease damage.

Also, it was confirmed by the filed survey of this ex-post evaluation that sorting and packing of agricultural products based on the selection criteria introduced by the project have been undertaken under responsibilities of each PA for each agricultural product. Through the project implementation, the small and medium scale farmers have recognized importance of product sorting. Furthermore, the farmers received certifications of GLOBAL G.A.P[3] (certification for agricultural products) and of the fair trade market in order to ensure competitiveness in the domestic market and the export market. As a result, the proportion of non-standard agricultural products among the target products in the target areas has been decreasing. For banana, the proportion of non-standard products was 100% in 2012 but improved to 21% at the time of project completion (2014), and has sustained at the same level since then. On the other hand, although the proportion of non-standard mango improved from 100% in 2012 to 61% at the time of project completion, the same level has continued without further improvement. For lime, while the number of lime farmers sorting has significantly increased from 6 in 2012 to 112 in 2018, the proportion of non-standard lime is 90% even in 2018. The Public Packing House constructed by the project has been utilized by each PA.

SMIM installed in Emater by the project has not been in use. Since Emater is an institution aiming at extension of agricultural technologies for small scale farmers, no budget for operation and maintenance of information system has been secured.

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

The Overall Goal has been partially achieved. According to the Jaiba Irrigation District (Distrito de Irrigação de Jaíba:DIJ), the

[2] Ministry of Foreign Affaires "Japan's ODA Data by Country" (2012)

[3] A certification system defining quality standard of agricultural products and hygiene standards of each workplace for each process from harvesting to shipping, including harvesting, sorting, and packing. The system covered not only quality standards to check damages on products but also hygiene standards for each of workplace such as farm, sorting house, and packing house.

irrigated cultivation area and the total agricultural production in the entire Jaiba region have increased every year. Although it is not possible to compare the baseline data for the entire region in 2011 and the data for small and medium scale farmers in 2017 collected at the time of ex-post evaluation, the irrigated cultivation area of the small and medium scale farmers in the irrigated cultivation area of small and medium scale farmers in the target region has been increasing year by year since 2015 and increased by 21% in 2017 from 2015 (Indicator 1). Regarding the agricultural production, the data in 2017 was available but no comparable data was available since the baseline data in 2011 was only for the entire region (Indicator 2). However, it can be reasonably assumed that the agricultural production of small and medium scale farmers might have been in a upward trend because the agricultural production in the entire region doubled from 211 and 2017 and the irrigated cultivation area of the small and medium farmers has increased. On the other hand, the contribution of the project to the increase in the agricultural production of the small and medium farmers can be limited because reduction of planting space and introduction of new varieties may have positively affected the agricultural production.

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

Some positive impacts have been observed at the time of ex-post evaluation. The number of farmers selling their products at a fair-trade market has been increasing. As the project contributed to awareness raising among the farmers on the necessity of thorough post-harvest management and sorting, and to the expansion of sales of agricultural products at more value-added markets. In addition, according to DIJ, as a result of encouraging women to participate in the trainings implemented by the project, female executives have been active in management of DIJ. Also, in PAs for agricultural product, such as the Association of Producers' Union of Jaíba and the Region (Associação União dos Fruticultores do Jaíba e Região: AFRUTJA) and the Association of Lemon Producers (Associação de Produtores de Limão ASLIM) (PA for lemon), women have been active as an executive manager. In particular, 60% of employees of ASLIM is female.

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td>(Project Purpose)
Competitiveness of small and medium scale farmers in the Jaiba region is strengthened.</td><td>(Indicator 1)
Sales volumes (weight-base) of the target products in the major market increase by 40% in Sao Paulo and Belo Horizonte, and 25% in Rio de Janeiro.</td><td>Status of the Achievement: Partially achieved (Not continued)
(Project Completion)
[Sales volumes (weight-base :t) of the target products at the major market]
<table>
<tr><th>Major Market</th><th>Target Products</th><th>Year of Baseline (2012)</th><th>2013</th><th>Year of project completion (2014)</th><th>Growth rate (%)</th></tr>
<tr><td rowspan="5">Belo Horizonte</td><td>Atemoya</td><td>4</td><td>15</td><td>62</td><td>1,450</td></tr>
<tr><td>Banana</td><td>30,208</td><td>40,735</td><td>34,782</td><td>15</td></tr>
<tr><td>Lime</td><td>5,091</td><td>4,589</td><td>4,488</td><td>-12</td></tr>
<tr><td>Mango</td><td>1,766</td><td>3,917</td><td>4,062</td><td>30</td></tr>
<tr><td>Papaya</td><td>5,020</td><td>6,613</td><td>11,398</td><td>127</td></tr>
<tr><td rowspan="5">San Paulo</td><td>Atemoya</td><td>501</td><td>670</td><td>666</td><td>33</td></tr>
<tr><td>Banana</td><td>3,544</td><td>4,492</td><td>6,836</td><td>93</td></tr>
<tr><td>Lime</td><td>44</td><td>0</td><td>290</td><td>560</td></tr>
<tr><td>Mango</td><td>887</td><td>595</td><td>522</td><td>-41</td></tr>
<tr><td>Papaya</td><td>7,752</td><td>9,884</td><td>12,485</td><td>61</td></tr>
<tr><td rowspan="5">Rio de Janeiro</td><td>Atemoya</td><td>N.A.</td><td>1</td><td>0</td><td>N.A.</td></tr>
<tr><td>Banana</td><td>17,256</td><td>13,197</td><td>11,732</td><td>-32</td></tr>
<tr><td>Lime</td><td>242</td><td>1</td><td>149</td><td>-38</td></tr>
<tr><td>Mango</td><td>493</td><td>229</td><td>332</td><td>-33</td></tr>
<tr><td>Papaya</td><td>118</td><td>384</td><td>378</td><td>220</td></tr>
</table>
(Ex-post Evaluation)
[Sales volumes (weight-base: t) of the target product (Banana) in the major market]
<table>
<tr><th>Major Market</th><th>2015</th><th>2016</th><th>2017</th><th>2018 (as of May)</th></tr>
<tr><td>Belo Horizonte</td><td>6,285</td><td>5,893</td><td>6,715</td><td>3,709</td></tr>
<tr><td>Sao Paulo</td><td>8,504</td><td>9,780</td><td>10,237</td><td>4,390</td></tr>
<tr><td>Rio de Janeiro</td><td>9,276</td><td>8,949</td><td>10,294</td><td>4,914</td></tr>
</table></td></tr>
<tr><td></td><td>(Indicator 2)
Increase in participation of farmers in exports by 30% (compared to the number of farmers involved in the Project)</td><td>Status of the Achievement: Achieved (Partially continued)
(Project Completion)
• Growth rate of the number of farmers participating in exports
➢ Lime: 78%
➢ Mango: 32%
(Ex-post Evaluation)
• Among the target products, only Lime has been exported.
• The number of farmers exporting limes increased to 25 at the time of ex-post evaluation from 6 at the beginning of the project.</td></tr>
<tr><td>(Overall Goal)
Irrigation agriculture is</td><td>(Indicator 1)
Total area cultivated with irrigation as well</td><td>(Ex-post Evaluation) partially achieved
[Irrigated cultivation area in the Jaíba region (Unit: ha)]</td></tr>
</table>

further developed in the Jaiba region.	as the total agricultural production in the region increase by 18% in comparison with those at beginning of the Project.	

	2011 (Baseline)	2015	2016	2017	2018 (Estimated)	Growth Rate (%)
small and middle scale farmers	-	11,182	12,225	13,603	13,603	21%*
large scale producers	-	-	15,800	15,218	15,218	-
Total	19,590**	-	28,025	28,822	28,822	47%

Note: *The growth rate for small and medium scale farmers is the ratio of the irrigated cultivation area from 2015 to 2018.
**The baseline data for 2011 was collected by the survey conducted by the expert team.

[Agricultural production in the Jaiba region (Unit: tons/year)]

	2011 (baseline)	2017	Increase Rate (%)
small and middle scale producers	-	108,916	-
large scale producers	-	285,481	-
Total	196,403	394,397	101%

Note: *The baseline data for 2011 was collected by the survey conducted by the expert team.

Source : Terminal Evaluation Report (EN), Questionnaire and Interview with Emater, Jaiba Irrigaion District, Agricultural Cooperatives, PA, small and middle scale producers

3 Efficiency

The project cost and period exceeded the plan (against the plan: 116% and 102%, respectively). The output was produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

Policies and laws to strengthen the competitiveness of small and medium scale farmers in the Jaiba region were “Food Acquisition Program” (2003) that is a program to purchase agricultural products as food from small scale producers, “the National Program for Strengthening Family Agriculture” (1996) that is a loan program for small scale farmers, and “the National School Feeding Program” (1997) that is a program to purchase agricultural products as food from small scale producers for school lunch. Moreover, “the National Irrigation Policy” (2013) aims at resuming of agricultural production in fallow lands among the existing public irrigation areas. The related activities to the project have been endorsed by those policies and laws.

<Institutional Aspect>

[Marketing for agricultural products and Post-harvest quality control]

Pas and agricultural cooperatives for each agricultural product have practiced marketing and post-harvest quality control for their target product. Emater has been operating the Public Packing House constructed by the project, and has been sorting and shipping mangos under the agreement with a cooperatives for mango (COOPAIJA). On the other hand, SMIM introduced by the project has not been utilized at time of ex-post evaluation. This is because Emater is an organization in charge of extension of agricultural technologies for small scale farmers and has not secured any budget for operation and maintenance of such information system.

<Technical Aspect>

[Marketing for agricultural products]

PAs, agricultural cooperatives, and small and medium scale farmers have comprehended the importance of marketing for agricultural products (including market information collection and analysis) and sustained their knowledge and skills. However, as mentioned above, as Emater aims at extension of agricultural technologies, they have not had any specific budget for marketing and not actively utilized the manuals prepared by the project.

[Post-harvest quality control]

PAs and agricultural cooperatives have continuously utilized the operation manuals on post-harvest process prepared by the project. Part of trainings implemented through the project have been sustained by the National Service for Rural Apprenticeship (Serviço Nacional de Aprendizagem Rural: SENAR). Among the PAs and the agricultural cooperatives, some have acquired GLOBAL G.A.P. certification and been required to fully comply with the post-harvest process management.

<Financial Aspect>

[Marketing for agricultural products]

PAs and agricultural cooperatives have managed to raise their funds by collecting membership fees from each member to necessary costs and have covered the costs for the necessary activities, such as development of a tool for market information sharing. In terms of a budget for the operation and maintenance of SMIM, as mentioned above, since Emater is an institution for extension of agricultural technologies and does not undertake any marketing activities, they have not secured budget for marketing activities.

[Post-harvest quality control]

The the operation and maintenance cost of the Public Packing House has been secured by COOPAIJA through collecting membership fees from its members but no budget plan has been prepared and the necessary costs have been covered when needed. The trainings on the post-harvest quality control have been delivered by SENAR, and the training costs have been borne by PAs and agricultural cooperatives.

<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 its effects have partially continued through the strengthening of marketing

capacities and improvement of post-harvest quality control by PAs for each agricultural product associated with small and medium scale farmers in the Jaíba region. For the Overall Goal of further development of irrigation agriculture in the Jaíba region, although expansion of irrigated cultivation areas of small and medium scale farmers was confirmed, the contribution of the projects to that impact was not clarified. As for the sustainability, supports to small and medium scale farmers have been endorsed by the national policies, and the activities connected to the marketing and the post-harvest quality control of agricultural products have been sustained by PAs with participation of small and medium scale farmers in the Jaíba region. On the other hand, SMIM introduced by the project has not been utilized at the time of ex-post evaluation. As for the efficiency, the 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 Implementing Agency:

- In order to ensure sustainability of the project effects, the results of the project need to be incorporated in administrative instruction of Minas Gerais State for the national policy of Brazil such as the National Irrigation Policy (issued in January 2013).

Lessons Learned for JICA:

- Although the Minas Gerais State Export Support Agency was set as a main implementation agency of this project at the beginning of the project, its main responsibilities are procedures related to exports and public relations. On the other hand, technical transfer to local farmerss is conducted by the Bureau of Agriculture and the associated institution of Emater. Therefore, it is necessary to assess responsibilities of each relevant institution in detail and consider appropriate implementing agencies at the stage of project formulation.

Small scale farmers with improvement of sales (Mango)

Public Packing House for sorting and packing of agricultural products by criteria introduced by the project (Lime)

Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Philippines Office: January, 2019

Country Name	National Industry Cluster Capacity Enhancement Project (NICCEP)
Republic of the Philippines	

I. Project Outline

Background	The Department of Trade and Industry (DTI) of the Government of the Philippines (GOP) had been taking a proactive role in adopting the industry cluster approach as a means to support the development of micro, small and medium enterprises (MSME). Based on the request of GOP, JICA provided technical assistance in the implementation of the Davao Industry Cluster Capacity Enhancement Project (DICCEP) from 2007 to 2010 with DTI as the lead agency in cooperation with local government units (LGUs), other national agencies, academe and industry associations. DICCEP was evaluated highly as one of the best practices of industry cluster enhancement activities in the Philippines, winning a Good Practice Award from the National Economic and Development Authority (NEDA) in 2010. The award was based on the criteria that include the achievement of results, innovativeness, reliability, sustainability and social acceptability. Encouraged by this experience, DTI decided to replicate the industry cluster approach developed in DICCEP to the rest of the country and requested JICA for technical assistance.		
Objectives of the Project	Through designing and practicing practical and sustainable operational workflows in DTI that promote or mainstream the industry cluster approach, establishing pilot models of industry cluster approach in Luzon, Visayas and Mindanao Regions (except for Davao) and establishing models of the upgraded industry cluster approach in Davao Region to provide lessons and best practices for other regions, the project aimed at developing a national capacity of DTI to intensify and extend the industry cluster approach, thereby replicating the approach nation-wide as a tool of industry development. 1. Overall Goal: Industry cluster approach is replicated nation-wide as a tool of industry development. 2. Project Purpose: To develop a national capacity of DTI to intensify and extend the industry cluster approach that is sustainable and replicable for the purpose of industry development		
Activities of the Project	1. Project Site: the whole country 2. Main Activities: (1) Design and practice DTI's operational workflows for promoting the industry cluster approach; (2) Conduct trainings/workshops to enable core members of industry clusters from private sector, public sector and academes in Luzon, Visayas and Mindanao Regions (except for Davao) to plan and implement activities to strengthen industry clusters; and (3) Conduct periodical workshops to assist planning for upgraded activities to further strengthen industry clusters in Davao Region and assist establishment of necessary organizations required for implementation of above activities etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 4 persons 2) Trainees Received: 65 persons 3) Local operation cost: cluster activities, trainings and travel expenses etc. Philippine Side 1. Staff Allocated: 49 persons 2. Project office 3. Local operation cost: cluster activities, trainings/workshops and travel expenses etc.		
Project Period	February 2012 – March 2015	Project Cost	(ex-ante) 199 million yen, (actual) 248 million yen
Implementing Agency	Department of Trade and Industry (DTI)		
Cooperation Agency in Japan	UNICO International Corporation		

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

・ Continuation status of project effects (Indicators 1 (Number of regions where the Regional Development Council (RDC) or Economic Development Committee (EDC) of RDC recognizes industry cluster approach as an useful tool for industry development.) and 2 (Number of industry cluster organizations representing the industry clusters under NICCEP which commit themselves to continue cluster approach for their development.) of Project Purpose) can be checked and consolidated by the achievement level of Indicator 2 of Overall Goal (Activities are sustained and intensified in the NICCEP assisted industry clusters.). Thus, in the ex-post evaluation, continuation status of project effects (Indicators 1 and 2 of Project Purpose) was not confirmed separately but consolidated with Indicator 2 of Overall Goal.

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 policies such as "the expansion of the industry cluster development" as set forth in "the Philippine Development Plan (PDP) (2011-2016)", "the Micro, Small and Medium Enterprise Development Plan for 2011-2016" and "the Philippine Export Development Plan (PEDP) for 2014-2016".

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

The project was consistent with the Philippines' development needs for the promotion of the industry cluster approach 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 the Philippines (2008) (which included "aid to help promote foreign direct investment" and "aid in the "software" areas such as improving management and maintenance capacity").

<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. Among 24 target clusters[1], the RDC in 22 clusters (except for tourism cluster in Region IV-B and health and wellness cluster in the National Capital Region (NCR)) approved the industry cluster approach as an useful tool for industry development (Indicator 1). The above 22 clusters determined to continue cluster approach (Indicator 2). Inter-cluster collaboration was observed between tourism and coconut clusters, between tourism and mining clusters and between mango and durian clusters in Davao, and between coconut cluster in Davao and the gifts, decors, and housewares (GDH) cluster in Visayas. Moreover, information exchange and coordination for common issues were observed between wearables and homestyles (W&H) cluster in Bicol and GDH cluster in Visayas (Indicator 3). The Mid-term National Cluster Activity Plan (2015-2016) was prepared by DTI and "Cluster Management and Operations Manual: Experiences, Lessons and Good Practices" was under preparation (Indicator 4).

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

Project effects have partially continued to the time of ex-post evaluation. DTI has consolidated similar clusters in several regions into eight national priority clusters (coffee, cacao, processed fruits and nuts (PFN), W&H, bamboo, rubber, palm oil and coco coir). While cluster-specific meetings, conferences, training seminars, trade fairs and product promotion have been conducted, inter-cluster interaction and collaboration among the above eight national priority clusters have generally not been conducted. However, there are two exceptional cases. One case is the formation of the Bahandi Producers Association in Eastern Visayas (BPAEV) (in Region VII) wherein products included in their trade fairs are from different clusters such as GDH, processed foods, PFN and W&H among others, thereby creating an opportunity for different clusters to interact whenever they conduct various activities such as trade fairs and product promotion. Another case is that the Visayas ICT Cluster (VICTOR) has assisted other clusters through IT-enabled marketing strategies (Indicator 3). Implementation of the above Mid-term National Cluster Activity Plan (2015-2016) has been completed, and DTI initiated the Industry Cluster Enhancement (ICE) Program in 2017 which adopted the NICCEP activities and implemented it in eight national priority clusters. In addition, the above "Cluster Management and Operations Manual: Experiences, Lessons and Good Practices" has been finalized, distributed and utilized among DTI Regional and Provincial Offices and other government agencies (Indicator 4).

<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. Two clusters (milkfish cluster and abaca cluster in Region VIII) have been established after project completion and activities for industry cluster development such as planning workshops, trainings and seminars on product development and marketing, trade fairs and product promotion have been conducted (Indicator 1). Among eight national priority clusters, five clusters (coffee, W&H, bamboo, rubber and palm oil) were assisted by NICCEP. DTI has continued industry development activities in these eight clusters such as cluster meetings, trainings and seminars, planning workshops, trade fairs and product exhibitions under the ICE Program, and particularly, trade fairs and product exhibitions have been conducted more regularly than during project implementation both domestically and abroad (Indicator 2). As a result of experimental studies with a local university, Pampanga Furniture Industry Foundation (PFIF) in Region III has shifted its design and production of bamboo products from engineered bamboo to pole bamboo, and PFIF has promoted furniture from Pampanga through the publication of brochure called "One Pampanga". In Region VIII, DTI has strengthened BPAEV to bring together MSMEs in different clusters including processed foods, PFN and W&H, thus involving a wide range of stakeholders in different layers of value chain (Indicator 3).

<Evaluation Result>

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

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) To develop a national capacity of DTI to intensify and extend the industry cluster approach that is sustainable and replicable for the purpose of industry development	1. A number of regions where the RDC or EDC of the RDC recognizes industry cluster approach as an useful tool for industry development	Status of the Achievement: achieved (Project Completion) 22 clusters out of 24 clusters in total recognized industry cluster approach as an useful tool for industry development.
	2. A number of industry cluster organizations representing the industry clusters under NICCEP which commit themselves to continue cluster approach for their development	Status of the Achievement: achieved (Project Completion) 22 clusters out of 24 clusters in total determined to continue cluster approach.
	3. Development of communications among different industry clusters and relevant participants	Status of the Achievement: mostly achieved (partially continued) (Project Completion) Inter-cluster collaboration, information exchange and coordination for common issues were observed among different clusters. (Ex-post Evaluation) Cluster-specific meetings, conferences, training seminars, trade fairs and product promotion have been conducted among eight national priority clusters. In addition, BPAEV has been formed, creating an opportunity for different clusters to interact whenever they conduct various activities, and VICTOR has assisted other clusters through IT-enabled marketing strategies.
	4. Existence of the efficient workflows for promoting/mainstreaming the industry cluster approach	Status of the Achievement: mostly achieved (continued) (Project Completion) The Mid-term National Cluster Activity Plan (2015-2016) was prepared and "Cluster Management and Operations

[1] 24 clusters include 16 clusters that received support starting from NICCEP and 8 clusters in Davao that received support starting from the DICCEP period.

		Manual: Experiences, Lessons and Good Practices" was under preparation. (Ex-post Evaluation) Implementation of the above Mid-term National Cluster Activity Plan (2015-2016) has been completed, and "Cluster Management and Operations Manual: Experiences, Lessons and Good Practices" has been finalized and utilized among DTI and other government agencies.
(Overall Goal) Industry cluster approach is replicated nation-wide as a tool of industry development.	1. Organizations are established and activities for industry development are initiated beyond NICCEP assisted industry clusters.	(Ex-post Evaluation) achieved Two clusters have been established after project completion and activities for industry cluster development have been conducted.
	2. Activities are sustained and intensified in the NICCEP assisted industry clusters.	(Ex-post Evaluation) achieved DTI has continued industry development activities in eight national priority clusters under the ICE Program as well as in different regional priority clusters, and trade fairs and product exhibitions have been conducted more regularly than during project implementation both domestically and abroad.
	3. Upgraded activities (*) to strengthen industry clusters in Davao are replicated in other clusters.	(Ex-post Evaluation) achieved Upgraded activities have been observed in Region III and VIII.

* Upgraded activities mean any activity corresponding to at least one of the following factors:
1) Involve wider range of stakeholders in the different layers of value chain for collaborative activities targeting industry cluster development themes from a broader network; 2) Implement new study/research to develop the micro enterprise, strengthen competitiveness and realize innovation; 3) Aim for creation of regional brand; and 4) Dissemination of the result of the pilot/demo project and ensure achievement of the result
Source: Project Completion Report, questionnaire surveys and interviews to DTI-Bureau of Small and Medium Enterprise Development (BSMED), DTI-Regional Offices and industry clusters

3 Efficiency

The project cost exceeded the plan, while the project period was within the plan (ratio against plan: 125%, 100%, respectively) due to additional budget allocation required for four clusters that were badly affected by super-typhoon Haiyan in 2013. The outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The needs for industry cluster development are stated in "PDP (2017-2022)" and "the DTI's Strategic Directions of MSME Development Plan for 2017-2022".

<Institutional Aspect>

After project completion, functions of the National Project Management Office (NPMO) have been taken over by the Regional Operations Group (ROG) of the DTI Central Office, which is responsible for developing and monitoring of eight national priority clusters, while those of the Satellite Project Management Office (SPMO) have been taken over by the Business Development Division in the Regional Offices and the Industry Development Unit in the Provincial Offices. According to DTI, the number of staff from central to local levels in DTI is sufficient to promote and mainstream the industry cluster approach nationwide[2]. In addition, 44 cluster advisors and 76 cluster coordinators (19 at the regional level and 57 at the provincial level) were trained under the project[3], and 37 cluster advisors and 18 cluster coordinators at the regional level were confirmed to be still working[4]. According to DTI, the number of cluster advisors and cluster coordinators is also sufficient to promote and mainstream the industry cluster approach nationwide.

<Technical Aspect>

The majority of project counterparts (C/Ps) still work in DTI. The skill level of staff from central to local levels in DTI is judged sufficient to promote and mainstream the industry cluster approach as evidenced by continued trainings and seminars on product development and marketing, trade fairs and product promotion etc. in various cities. The skill level of cluster advisors and cluster coordinators are also generally sufficient to promote and mainstream the industry cluster approach, however, results of interviews in the regions revealed that more advanced trainings are needed by cluster coordinators to respond to technical and managerial requirements of more advanced clusters. However, a training mechanism including structured on-the-job-training (OJT) to disseminate and improve knowledge and skills of DTI staff on industry cluster management has not been established in DTI, and results of interviews could not ascertain its definitive reasons.

<Financial Aspect>

For national priority clusters, PhP 19 million was allocated in 2015/2016 and PhP 41 million was allocated in 2017. In addition, budget has been allocated for other clusters not included in the national priority from the regular SME program (the budget amount differs in each region). According to DTI, it has sufficient amount of budget to continuously promote the industry cluster approach except for budget for trainings for DTI staff, since a training mechanism has not been established yet.

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved the Project Purpose and the Overall Goal: inter-cluster collaboration was developed and most clusters determined to continue the industry cluster approach, and activities for industry development have been initiated beyond NICCEP assisted clusters as

[2] The number of staff in DTI was not available, however, according to DTI, at least one coordinator is assigned for each industry cluster from central to local levels within DTI.

[3] Cluster advisors are DTI officers who took the cluster advisor training. To be advisors of DTI, one has to have participated in the planning stage and the implementation stage of cluster activities as a cluster coordinator, and completed the cluster coordinator training program. Cluster coordinators are core players of clusters who have taken the cluster coordinator training and have had participated in the planning stage of cluster activities. Cluster coordinators can be from DTI, other government agencies, the academe and/or the private sector.

[4] The number of cluster coordinators at the provincial level was not available.

well as having been sustained and intensified in the NICCEP assisted clusters. For sustainability, some problems were found such as the lack of a training mechanism in DTI, while no particular problem was observed in terms of the policy and institutional 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 stated above, a training mechanism has not been established in DTI. DTI should (1) review existing training programs in DTI, (2) make a request to those in charge of training programs to include modules for OJT on industry cluster operations and management including monitoring of impacts on industry clustering, and (3) revise/upgrade the manual produced by NICCEP based on experiences of training implementation.
- As stated above, inter-cluster interaction and collaboration among different industry clusters have not been observed than expected. Thus, DTI should (1) re-evaluate needs for collaboration/communication among different clusters (ICT cluster might have greater potential for inter-cluster collaboration activities to help out other clusters), (2) identify possible areas for collaboration among different clusters, and (3) initiate activities such as business matching, forums and national/regional trade fairs.

Lessons Learned for JICA:

- As stated above, a training mechanism including structured OJT to disseminate and improve knowledge and skills of DTI staff on industry cluster management has not been established in DTI. Continuous capacity building of DTI staff is very important for sustainability of project effects, and thus involvement of the DTI training division (Philippine Trade Training Center) should have been considered under the project. When implementing similar projects in future, trainings/OJT programs should be institutionalized through a human resource division or a training division of an implementing agency.

Bamboo Cluster - Various furniture made from bamboo displayed at the DTI Regional III Office in Pampanga

Cacao Cluster - Cacao nursery at Cacao Academy, a learning site owned and managed by an officer of the Cacao Industry Development Association in Mindanao (CIDAMI)

Internal Ex-Post Evaluation for Development Planning Project

conducted by Ethiopia Office: April, 2018

Country Name	Jarar valley and Shebele Sub-basin Water Supply Development Plan, and Emergency Water Supply
Federal Republic of Ethiopia	

I. Project Outline

Background	In the Horn of Africa which includes the eastern part of Ethiopia, most of the areas are arid and semi-arid areas with little rainfall and vulnerability as they are easily affected by drought and food crisis. Somali Region is most affected by droughts in Ethiopia. The water supply rate of Somali Region was 59.7% in 2011, which was lower than the national average of 68.5%. There were constant needs for stable water supply even when there was no drought. However, these needs were not met by Somali Region Water Resources Development Bureau (SRWDB) because of the lack of data/information on water resources development and its insufficient techniques.		
Objectives of the Project	By evaluating the utilization potential of the water resources, developing the water supply plan, conducting emergency water supply operations and training the related personnel, the project aimed at implementing water supply projects in the target area, thereby contributing to improvement of water supply.		
	1. Expected Goals through the proposed plan[1]: Water supply is improved in the target area. 2. Expected utilization of the proposed plan: Water supply projects are implemented based on the developed water supply plan in the target area.		
Activities of the Project	1. Project site: Jarar valley and Shebele Sub-basin (water supply development plan) and Somali (emergency water supply) 2. Main activities: Evaluation of potential water resources for use, development of the water supply plan, conduct of the emergency water supply operations, technical training for the related personnel, etc. 3. Inputs (to carry out above activities) Japanese Side 1) Mission members: 15 persons 2) Equipment: vehicles and equipment for emergency water supply, etc. Ethiopian Side 1) Staff allocated: 16 persons 2) Land and facility: Office space 3) Equipment: Desktop PC, Lap-top computer, Printer, etc. 4) Local operation cost		
Project Period	March 2012 to August 2013	Project Cost	(ex-ante) 580 million yen, (actual) 580 million yen
Implementing Agency	Ministry of Water and Energy (MoWE)		
Cooperation Agency in Japan	Kokusai Kogyo Co., Ltd.		

II. Result of the Evaluation

<Special perspectives considered at the ex-post evaluation>

- Besides the master plan for water supply in 2 towns and 16 woredas (districts) in Somali Region was developed, equipment including water tank trucks, water supply trucks and mobile workshop were procured for the purpose of emergency water supply in Somali Region. Although at the ex-ante evaluation, indicators were set only for verification of the former purpose, at the ex-post evaluation, supplementary information was collected and analyzed for verification of the project effects made through the latter efforts.

1 Relevance

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

The project was consistent with Ethiopian development policies, as improvement of water supply was targeted in the "Universal Development Program 2" (2011-2015) which was formulated under the "Water Sector Development Program" (2002-2016). Thus, the project was consistent at time of both the ex-ante evaluation and project completion.

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

Somali Region is severely affected by drought, where the water supply rate was 59.7% in 2011 lower than the national average of 68.5%. However, SRWDB was not equipped with sufficient techniques and data/information on water resources development. There were constant needs for water supply even when there was no drought, and therefore the project was consistent with these needs at the time of both the ex-ante evaluation and project completion.

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

In the "Country Assistance Program for Ethiopia" (2008), one of the priority areas is "water." Related to this, it is described that two different approaches would be taken for the purpose of securing drinking water for rural villages: development of facilities for water-supply whose maintenance is easy and building of people's capacity to maintain water-supplying facilities. Thus, the project was consistent with Japan's ODA policy at the time of the 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 Project Completion>

Based on the evaluation of potential water resources for use in Jarar valley and Shebele Sub-basin, the water supply plan in Jarar valley and Shebele Sub-basin was developed, which includes 53 water supply projects for 2 towns and 16 woredas. The water supply

[1] The level of achievement of the 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).

plan has not officially been approved by SRWDB because the plan covers the limited number of woredas. However, the water plan which also includes water resource potential maps has been utilized by SRWDB, as it has developed the annual plan which contains some of the water supply projects proposed by the project. The project aimed at emergency water supply, too. The pilot project was implemented in Kabribeyah town and the feasibility study (F/S) was conducted in Godey town as planned, through utilization of the procured vehicles and other equipment.

During the project period, technical trainings were delivered to a total of 30 personnel of SRWDB and Water Supply Utility Offices of Godey and Kabribeyah Town and trainers of WASH[2] Communities (WASHCO) on mapping technology, geophysical survey, remote sensing, and so on.

<Utilization Status of the Proposed Plan at the Time of Ex-post Evaluation>

53 projects for 2 towns (Kabribeyah and Godey) and 16 woredas were proposed by the project, such as development of water supply facilities taking water from boreholes, haffir (rain water harvesting) dams, birkas (ponds), and so on. Among these projects, 16 projects have been implemented in 2 towns and 12 woredas as of September 2017. No project has been implemented in 4 woredas, because all the water sources were dried up in these areas due to the severe droughts from 2014 to 2016. Among the 53 proposed projects, 37 projects have not been included in the annual plan of SRWDB, because the budgets and necessary equipment were allocated to areas with more needs than the target woredas. SRWDB had an intention to cover almost all the region from 2014 to 2016. Besides the projects proposed by the project, SRWDB has implemented water supply projects in the target woredas, such as constructing reservoirs, pipelines, and so on.

With regard to the emergency water supply, SRWDB has been providing emergency water supply operations with the equipment procured by the project, especially during the drought season when Somali Region suffers from El Niño-induced drought. For example, it has conducted emergency water supply with the procured water trucks in Dollo Zone and maintenance work intensively in Zones of Dollo, Jarar and Korahai with the mobile workshop vehicles. Through these efforts, the ratio of non-functional water supply facilities in Somali Region decreased from 24% (2011) to 19% (2015). However, these operations of emergency water supply are limited, as two of the five water trucks and two of the three mobile workshop vehicles are out of function and have not been used since 2016. Needs for these machineries are recognized by SRWDB and it has a repair plan, but the budget has not been allocated.

<Status of Achievement for Expected Goals through the Proposed Plan at the Time of Ex-post Evaluation>

No data on the number of the beneficiaries of water supply in the target towns and woredas are available from SRWDB due to its insufficient capacity on documentation and record. Mixed implementation of the regular and humanitarian projects for the last three years has made the documentation difficult. However, SRWDB considers that the beneficiaries have increased in all of the target towns and woredas because of the improved water supply services, except four woredas where no project has been implemented. The improved water supply system in Kabribeya Town benefited a total of 16,697 refugees (2016) in the three refugee camps. On the other hand, the project contribution may have been partial in Kabribeya Camp, because both of the two boreholes drilled by the project have stopped their service since 2015[3] due to the pump problem and high cost of fuel.

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

Regarding other impacts in the social and natural environment aspects, SRWDB has not prepared monitoring documents, but they have not received any complaints from the residents or related organizations in the target sites till the time of the ex-post evaluation. Therefore, it can be said that no negative impact has been caused.

<Evaluation Result>

In light of the above, the water supply plan in Jarar valley and Shebele Sub-basin was developed. Though less than half of the proposed projects have been implemented, also water supply projects which were not proposed by the project implemented in the target woredas. Regarding the emergency water supply, SRWDB has conducted the services, though they are limited. It is presumed that the beneficiaries of the water supply have increased in all of the target sites where the proposed projects have been implemented, though the exact data were not available. Therefore, the effectiveness/impact of the project is fair.

Utilization of the Proposed Plan and Achievement of Expected Goals through the Proposed Plan

Aim	Indicators	Results
(Achievement status of the Objectives) 1. Utilization potential of the water resources in Jarar valley and Shebele Sub-basin is evaluated.		Status of achievement: Achieved. (Project Completion) - Utilization potential of the water resources in Jarar Valley and Shebele Sub-basin was evaluated.
2. The water supply plan in Jarar Valley and Shebele Sub-basin is developed.		Status of achievement: Achieved. (Project Completion) - The master plan for water supply in Jarar valley and Shebele Sub-basin was developed, which included 53 water supply projects for 2 towns (Kabribeya and Godey) and 16 woredas.
3. Capacity of the counterpart personnel for developing the water supply plan is improved.		Status of achievement: Achieved. (Project Completion) - Technical trainings were delivered to 30 personnel of SRWDB and Water Supply Utility Offices of Godey and Kabribeyah Town and WASHCO trainers on mapping technology, geophysical survey, remote sensing, and so on.
4. Water supply is improved in Kabribeyah.		Status of achievement: Achieved. (Project Completion) - In the pilot project in Kabribeyah and Jarar Valley, 2 water facilities with deep wells

[2] WASH stands for "Water, Sanitation and Hygiene." WASH Program has been implemented nationwide with support of UNICEF for improving sanitation and hygiene.

[3] In Kabribeya camp, UNHCR has provided water services for the refugees from the two boreholes connected to the national grid.

		were constructed, water conduits were introduced, water pumps were equipped, and 5 public water faucets were constructed.
5. F/S is implemented in Godey.		Status of achievement: Achieved. (Project Completion) - F/S was implemented in Godey.
6. The system of emergency water supply is developed in the whole Somali by procuring the equipment for emergency water supply.		Status of achievement: Achieved. (Project Completion) - Vehicles and equipment for emergency water supply were procured to widen the scope of work of SRWDB.
(Utilization Status of the Proposed Plan) Water supply is improved in the target area.	Number of the projects included in the water supply plan and the progress of the projects.	Status of achievement: Not achieved. (Ex-post Evaluation) - Among the 53 proposed projects in the water supply plan developed by the project, 16 are being implemented in 2 towns and 12 woredas as of September 2017.
	(Supplementary information) SRWDB provides emergency water supply when needed.	Status of achievement: Achieved. (Ex-post Evaluation) - SRWDB has been providing emergency water supply during the drought season with the equipment procured by the project. It also utilizes the procured equipment for emergency mobile maintenance services.
(Expected Goals through the Proposed Plan) Water supply is improved in the target area.	Number of the beneficiaries of water supply through the projects proposed in the water supply plan	Status of achievement: Mostly achieved. (Ex-post Evaluation) - No data were available on the number of the beneficiaries. - SRWDB presumes that the number of the beneficiaries has increased due to the improved water supply services in the 2 target towns and 12 woredas out of the target 16 woredas. <Supplementary information> - The improved water supply system in Kabribeya Town benefited a total of 16,697 refugees in 2016.

(Source) SRWDB.

3 Efficiency

Both of the project cost and period were as planned (ratios against the plan: 100% and 100%, respectively). Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

Both the regional and federal government has given keen consideration to water resource development, highly prioritizing the increase the water supply coverage to 83% by 2020 as depicted in the "Growth and Transformation Plan II" (2015/16-2019/20).

<Institutional Aspect>

SRWDB undertakes water supply and water resource management. Each woredas is expected to have the Woreda Water Desk (WWD) which is responsible for the study, design, construction, operation and maintenance of the small-scale rural water supply facilities such as hand pumps and small traditional dams, and it also supports WASHCOs which supposedly handle daily management of each community's water supply facility. Urban water supply facilities are managed by the Town Water Utility Offices. Thus, the organizational structure itself for implementing projects proposed is clearly defined, but the number of the assigned personnel of SRWDB is not sufficient for managing projects of the annual plan and emergency water supply operations, due to the high staff turnover. And, only 7 of the 16 target woredas have WWD and there are no WASHCO in most of the target woredas, because of the limited management and coordination of SRWDB. Geographically difficult access to some woredas is another reason. With regard to emergency water supply, SRWDB leads operations in coordination with the Emergency Task Force which consists of the Disaster Prevention and Preparedness Bureau of Somali Region and NGOs. SRWDB is responsible for dispatch of the maintenance team, distribution of chlorine agents, drilling wells, and so on.

<Technical Aspect>

According to SRWDB, though SRWDB personnel gained knowledge and skills from the technical trainings of the project, due to the high staff turnover, there are few personnel who have sufficient knowledge for planning and implementing water supply projects. In order to solve this issue, SRWDB has undertaken efforts to improve its support for WWDs by deploying more than 315 water related technicians to be assigned at 67 woredas and 4 town councils. In addition, 254 technicians from the regional, town and woredas levels have been given opportunities to take the degree program at Jigjiga University or diploma program at Jigjiga Technical and Vocational College with financial support. For operation and maintenance of the procured mobile workshops, mechanical and electro-mechanical engineers of SRWDB have faced difficulties in maintenance works of on-spot generator, pumps, pipe lines, and so on.

<Financial Aspect>

The budget of SRWDB has been increasing as shown in the table, but it could not be confirmed at the ex-post evaluation how much have been secured for planning and implementing the projects proposed in the water supply plan of the project or SRWDB's annual plan. The budget for operation and maintenance of the procured equipment has not been sufficient, as some procured equipment including two mobile workshop vehicles and two water trucks have remained unrepaired after the breakup.

Table: Budget of SRWDB (thousand ETB)

	2013	2014	2015	2016
Recurrent	8,400	8,577	11,263	16,435
Capital	264,657	490,904	545,369	814,210
Aid/loan	43,632	4,640	4,320	3,814
Total	316,690	504,121	560,953	834,459

Source: SRWDB.

<Evaluation Result>

In light of the above, 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

In the project, the water supply plan in Jarar valley and Shebele Sub-basin was developed, and some of the proposed projects have been implemented. Regarding the emergency water supply, since some facilities and equipment have been out of function, SRWDB has conducted the services in a limited way. Although the statistics were not available, the beneficiary population has increased in the target towns and woredas where water supply operations including emergency water supply were conducted. As for the sustainability, issues related the high staff turnover at SRWDB were pointed out, which have caused the personnel insufficiency for managing projects of the annual plan and emergency water supply operations, though the organizational structure itself has remained appropriate since the project completion.

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 SRWDB and respective organizations to build a coordination system for rehabilitation of (i) broken boreholes drilled by the project in Kabribeya Camp and (ii) non-functional water trucks and mobile workshop vehicles in order to increase the capacity of emergency water supply in Somali Region.
- It is recommended to SRWDB to set opportunities in which its personnel trained by the project would transfer their knowledge and skills on repair of the procured equipment to the new personnel. It is also recommended to provide refresher trainings for the personnel in service on development of the water supply plan and operation and maintenance of the procured equipment.

Lessons Learned for JICA:

- Less than half of the water supply projects proposed by the project have been implemented, as not all of the proposed projects have not been included in SRWDB's regional annual plan. However, this does not necessarily mean that SRWDB's water supply services have not been limited, but actually, SRWDB has conducted its services in other areas than the project target sites in the region and also emergency water supply operations upon necessity. And, refugee camps are located in some target sites where the boundary is not clear, and as water supply for them was included in the project, as a matter of course. For formulation of the master plan in regions which have possibilities of severe natural disasters or refugees' influx in a large area, it is necessary to consider the plan which includes both regular projects and emergency or humanitarian projects in a wider area than expected. It is also important to make the plan flexible in terms of the implementation timing and contents, so that resources would be allocated to projects upon necessity.

Procured equipment (Water truck which needs repair)

Procured equipment (Mobile workshop vehicle)

Internal Ex-Post Evaluation for Development Planning Project

conducted by Thailand Office: February, 2019

Country Name Kingdom of Thailand	**Project for flood countermeasures for Thailand agricultural sector**

I. Project Outline

Background	From the end of July 2011 and into 2012, Thailand experienced a massive flood in the Chao Phraya River basin. Although the Government of Thailand established two committees to deal with long-term measures, the Government had provided limited measures for the benefit of the agricultural sector. After the discussion between the needs assessment survey team dispatched by Japan and the Government of Thailand, recovery of damaged pasture for livestock sector, rehabilitation of irrigation facilities and mitigation planning which involves community peoples were identified as areas for Japan's support. As to the livestock sector, it was found that many small-scale farmers were not able to secure the feeding stuff after the flood, and therefore the sustainable system for supplying feeding stuff was needed. Regarding the irrigation facilities, although the Royal Irrigation Department (RID) grasped the degree of damages, the root causes and countermeasures accordingly were not identified. As for the mitigation planning, designing mitigation plan at community level was needed. Under these circumstances, based on the request of the Government of Thailand, JICA decided to conduct this project titled "Flood Countermeasures for Thailand Agricultural Sector."
Objectives of the Project	1. Expected Goals through the proposed plan[1]: (1) Based on the recommendations by the project, policy and implementation preparation for the support for prompt recovery of damaged pasture is progressed by the Government of Thailand; (2) Based on the recommendations by the project, The Government of Thailand implements rehabilitation and reinforcement of irrigation facilities, and establishes system for rehabilitation/reinforcement in response to flood; and (3) Based on the guidelines developed by the project, local governments other than the project area implement mitigation plans for flood damage. Expected utilization of the proposed plan by the project: 2. Expected utilization of the proposed plan: (1) Department of Livestock Development (DLD) prioritizes the policy/programs for support for recovery of damaged pasture and prepares budgets; (2) Royal Irrigation Department (RID) acknowledges the mid-term and long-term direction of rehabilitation and reinforcement of irrigation facilities; and (3) The guidelines on disaster-resilient agriculture and agricultural community is acknowledged as the direction of local governments, and plans in accordance with the guidelines are drawn up in local governments other than the project area.
Activities of the Project	1. Project Site: Flood damaged area in upper stream of Chao Phraya River and the Chao Phraya Delta in central region: (1) Component 1: 49 provinces, (2) Component 2: Whole area as described above, (3) Component 3: Model area: Eight Tambons[2] from Phitsanulok (Chum Saeng Songkhram, Nakhon Pa Mak), Chainat (Wang Man, Khao Kaeo), Pra Nakhon Si Ayutthaya (Gop Chao, Singhanat), Pathum Thani (Kholong Ha) and Nkhon Pathom (Naraphirom) provinces 2. Main activities: (1) Component 1: Submitting direction of support for recovery of damaged pasture (2) Component 2: Making proposal for direction of rehabilitation and reinforcement of irrigation facilities (3) Component 3: Drawing up the guidelines on disaster-resilient agriculture and agricultural community 3. Inputs (to carry out above activities)

[1] 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] Local government units in Thailand

	Japanese Side 1) Mission members: 23 persons 2) Equipment: Equipment necessary for carrying out the study 3) Local cost: Expenses for implementation of model projects		Thai Side 1. Staff allocated: unknown 2. Land and facilities: Office space
Project Period	March 2012 to July 2013 (The kick-off meeting was organized on March 28, 2012.There was a letter saying that the project implemented completely on July 2013)	Project Cost	(ex-ante) 480 million yen (actual) 471 million yen
Implementing Agency	Overall coordination: Ministry of Agriculture and Cooperatives (MOAC) Component 1: Department of Livestock Development (DLD) Component 2: Royal Irrigation Department (RID) Component 3: Office of Agricultural Economics (OAE)		
Cooperation Agency in Japan	SANYU CONSULTANTS INC., NIPPON KOEI CO., LTD.		

II. Result of the Evaluation

<Constraints on Evaluation>

- The information collected for ex-post evaluation was very much limited because personnel reshuffle and resigning

1 Relevance

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

The project was consistent with the development policy of Thailand both at the time of ex-ante evaluation and project completion. At the time of ex-ante evaluation, the Strategic Committee for Water Resource Management (SCWRM) headed by deputy prime minister/finance minister was discussing the mid-term to long-term water resource management among the measures for flood damages. Master plan for water resource management announced by SCWRM on January 2012 aimed at developing infrastructure for water resource management including flood control basin, and therefore the project was consistent with the master plan. At project completion, as to the Component 1, one of the three important issues raised in the government policy on the livestock sector for 2011-2012 was "to maintain animal feed stocks and to establish a system to supply feed in times of natural disasters". With respect to Component 2: RID annually formulated the Medium-Term Expenditure Framework (MTEF) plan as a 6-year expenditure proposal for all RID projects/works for the operation, maintenance and improvement of irrigation systems and integrated water resources management. MTEF included water hazard prevention and mitigation through dam improvement, monkey cheeks[3] and drainage system. With respect to Component 3: Thai Government set up the action plan of integrated and sustainable flood mitigation in Chao Phraya River basin for preparedness of the transportation during flood and formulation of plan for assistance and recovery of flood victims both during and after flood situation in Master plan on water resources management in January 2012.

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

The project was consistent with the development needs of Thailand for recovery measures from the flood both at the time of ex-ante evaluation and project completion. The project was implemented as Thailand experienced a massive flood in the Chao Phraya River basin and needs for recovery of damaged pasture for livestock sector, rehabilitation of irrigation facilities and mitigation planning were identified. At project completion, RID and relevant governments are considering implementing projects for countermeasure against flood disaster as social needs for flood countermeasure are still high. As to Component 1 and Component 2, measures were being taken including recovery measures and prevention work to assist people affected from flood damage, compensation, and setting up of a committee for assistance and infrastructure rehabilitation to increase the average of farmer's income.

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

The project was also consistent with Japan's ODA Policy. The environmental management and water disasters are listed as the areas for cooperation under Japan's Economic Cooperation Program for the Kingdom of Thailand (May

[3] The purpose of monkey cheek is both flood control and water utilization. Monkey cheek can be lowlands, flood-prone areas, tributaries, swamps, or ponds that are inundated every year. Flood water is stored in the wet seasons and is released for irrigation from the beginning of the dry seasons.

2006).

<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>

During the project period, direction of support for recovery of damaged pasture was submitted (Component 1), direction of rehabilitation and reinforcement of irrigation facilities was proposed (Component 2), and guidelines on disaster-resilient agriculture and agricultural community planning were drawn up (Component 3) under the final report of the project.

No record was confirmed on whether JICA officially sent the final report to MOAC and MOAC accepted it. However, according to reply from DLD and OAE, they had accepted the final report from JICA. Besides, because MOAC had uploaded the report in Thai language version on their website, it is supposed that the final report had been sent to all counterparts at the completion of this project, although the record to have been sent has not been reserved. Therefore, the status of achievement for the objective at the time of project completion has to be interpreted as partially achieved.

< Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

The recommendations made for Component 1 during the project were as follows. (1) Strengthening forage production and storing, and reviewing/establishing the feed supply system for emergency situation so that flooded areas are supported by supplies of stored feed from non-flooded areas. (2) Identification of flooding and non-flooding areas based on a simulation study, and estimation of the number of livestock. (3) Estimation and construction of hay storage. (4) Hay storage monitoring by DLD headquarters (monitoring of the status of feed stored in 29 Animal Nutrition Research and Development Center (ANRDCs). (5) Further capacity building of livestock farmers. (6) Replacement of agricultural machinery at ANRDCs. After the project completion, to improve and standardize roughage and forage crop production as the Good Agricultural Practices (GAP) for commercialize and value added of the products, recently, MOAC established the GAP for Pangola Grass[4] in order to obtain quality Pangola Grass, suitable for animal feed. At the time of ex-post evaluation, Bureau of Animal Nutrition Development of DLD has tried to promote and propagate the GAP for Pangola Grass to farmers. GAP Pangola Grass was being promoted and propagated just in some area as a pilot project. GAP of other grass and further implementation need more plan and both of financial and technical support.

With respect to Component 2, according to interview with RID, Thai Government has constructed and repaired the ponds and canals in Bangban, Pakhai and Ayudhaya to decrease velocity of run-off to river as more effective way instead of the way of recommendation by the project on flood countermeasure by use of irrigation canals as flood waterway

Regarding Component 3, OAE Zone 2 (Phitsanulok province) and OAE Zone 7 (Chainat province) have acknowledged the guideline as the direction of local governance. According to OAE, OAE distributed the guidelines to other 12 provinces (32 Tambons) and several Provincail Agricultural and Cooperative Offices. And the plan in accordance with the guideline has been made in Phitsanulok province and Chainat province.

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

As to Component 1, DLD has implemented the measures to improve the capacity of productivity and reserve in line with the recommendations in the projects by annual budget, although all six recommendations have to be incorporated into policies/programs. Budget is on yearly requested base. With respect to Component 2, RID has implemented almost all of recovery projects, so average of farmer's income has increased in 2013-2016. Furthermore, RID considers to carrying out the project of countermeasure against flood disaster under the Master plan which was formulated based on the recommendation of this project by another JICA's cooperation. With respect to Component 3, at the time of ex-post evaluation, no plan was formulated in other provinces. OAE has to continue to follow up the progress toward formulation of the plan in the other provinces, in cooperation with Provincial Agriculture and Cooperatives Offices, which are core regional administration in area level to work together with Special Project and Planning Bureau of MOAC which has a role to implement and coordinate with internal and external related agencies

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

No land acquisition and resettlement occurred under this project, and no negative impact on natural environment was observed. The information on the status of RID related impacts was not obtained.

<Evaluation Result>

In light of the above, through the project, the objectives were partially achieved at the time of project completion. Component 1 has been somewhat progressed in terms of utilization of the plan and attainment of expected goals through the utilization of the project. Component 2 has been almost achieved and, RID considers implementing the projects for countermeasure against flood disaster. Component 3 has to follow up progress in other provinces

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

3 Efficiency

[4] The Pangla Grass was distributed by the project during the project period and proposed for cultivation.

Both project cost and project period were within the plan (ration against the plan: 98%, 100%). Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

RID's Strategies 2012-2017 mentions that water hazards prevention and mitigation is a significant strategy and RID allocates a lot of budget to carry out this task. Moreover, under the strategies, the Government of Thailand considers implementing the projects while putting high priority in the countermeasure against flood disaster. DLD has to formulate the policy for reserve of forage against flood disaster in collaboration with Component 3, even if DLD has some policy about improvement of productivity. Regarding Component 3, OAE and other agencies relevant to disaster prevention have to collaborate with together and manage to be promoted formulation of the plans in other provinces.

<Institutional Aspect>

Under DLD, Bureau of Animal Nutrition Development is responsible for (1) Research & Development of Animal Nutrition and Forage Crop, (2) Improvement and Extension of Animal Nutrition and Forage Crop Technology, (3) Production of animal fodder for supportive farmer during disaster. In DLD's recognition, although DLD has 216 staff members and the number is stable, the personnel is insufficient considering the current increasing trend of workload.

Regarding the operation of water management, under RID, the Smart Water Operation Center (SWOC), the relevant institution to sustain the project effects, is responsible for monitoring and collecting weather data, water situation, water storage in main dams. 15 staff members are allocated, but the number is not sufficient. However, the Government of Thailand puts high priority in the countermeasure against water flood management, so it is expected that institution against flood disaster will be strengthened in RID and other relevant agencies.

In order to extend the guideline, OAE transfer assignment to Provincial Agriculture and Cooperatives Offices which are core regional administration in area level to work in cooperation with Special Project and Planning Bureau of MOAC which has a role to implement and coordinate with internal and external related agencies

<Technical Aspect>

No information was obtained on the technical level of the organizations of DLD, RID and OAE. and therefor, the sustainability in terms of technical aspect is not able to be verified.

<Financial Aspect>

Expenditure on items for water hazards prevention and mitigation of DLD and RID are as follows. The budget is sufficient as RID are able to complete all activities as reported in the final report. No information is obtained on the sufficiency of budget of DLD. Therefore, the sustainability in terms of financial aspect is not able to be verified.

Revenue and expenses of water hazards prevention and mitigation of DLD and RID

(Unit: million Bhat)

	2012	2013	2014	2015	2016	2017
1. Organization Name: Bureau of Animal Nutrition Development, DLD						
Revenue	-	-	-	-	-	-
Expenditure	113	125	120	143	159	
2. Organization Name: Royal Irrigation Department						
Revenue	-	-	-	-	-	-
Expenditure	5,803	3,497	4,645	6,682	9,210	

<Evaluation Result>

In light of the above, there is partly a little unclear information on the sustainability of the project effects in terms of the policy, institutional, technical, and financial aspects. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

During the project period, direction of support for recovery of damaged pasture was submitted (Component 1), direction of rehabilitation and reinforcement of irrigation facilities was proposed (Component 2), and guidelines on disaster-resilient agriculture and agricultural community planning were drawn up (Component 3) under the final report of the project. However, whether or not the final report was officially accepted by MOAC was not clear. The recommendations on Component 1 has somewhat progressed. Regarding Component 2, the Government of Thailand has implemented almost all of recovery project and considers carrying out further countermeasure against flood disaster. With respect to the recommendation on Component 3, OAE has to continue to follow up of formulation of the plan in other provinces even if the plans were set up in Phitsanulok province and Chainat province.

As to the Sustainability, there is partly a little unclear information on the sustainability of the project effects in terms of the policy, institutional, technical, and financial aspects.

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

III. Recommendations & Lessons Learned

Recommendations to Implementing Agencies

As a general remark, at the time of ex-post evaluation, we partly got a little limited information. Therefore, the final report of the project needs to continue to be handed over staff members in the implementation agencies to obtain sustainability. Recommendation for each component are following below.

Component 1: The implementing agency continues their activities, but the budget is on requested yearly base. Therefore, these activities have to be implemented with incorporating into policies/programs about six recommendations of the project.

Component 2: RID has already implemented almost all of rehabilitation of irrigation facilities, and RID has set up SWOC to operate water resources, but staff is limited under RID's recognition. Thai Government puts high priority in water resources management, so it is desirable that water resources management will efficiently be carried out in the RID and relevant agencies.

Component 3: OAE has to continue to follow up the progress of formulation of the plan in other provinces in collaboration with relevant agencies, even if the plans were set up in Phitsanulok province and Chainat province.

Internal Ex-Post Evaluation for Grant Aid Project

conducted by Laos Office: May 2018

Country Name	**The Project for Supporting Unexploded Ordnance Clearance in Surrounding Areas of Main Roads**
Lao People's Democratic Republic	

I. Project Outline

Background	While the Lao National Unexploded Ordnance Programme ("UXO Lao") had cleared UXO in approximately 3,000 ha of land each year, the number of cleared UXO accounted for only 0.6% of the total at the end of 2010. The additional funds, personnel, equipment, and other resources was essential in view of the fact that the UXO sector, if left with its current overall clearance capacity, would not be able to achieve the target figures described in the national programme for the UXO sector, the "National Strategic Plan for the UXO Sector in the Lao People's Democratic Republic 2010-2020." Furthermore, UXO Lao had been forced to detect and remove UXO quickly and smoothly to ensure the security of flood-stricken areas in various situations. This required UXO Lao to preferentially clear land on which they were forced to relocate their public facilities.			
Objectives of the Project	To improve the safety and efficiency of the UXO clearance activities by UXO Lao in areas including flood-stricken areas by procuring the UXO clearance equipment and thereby contributing to socio economic development and improvement in safety of residents/companies			
Contents of the Project	1. Project Site: UXO Lao national office, training center, provincial offices in nine provinces. 2. Japanese side: Procurement of (1) equipment necessary for UXO detection and clearance (UXO Detectors, communication devices, GPS, vehicles, PC for data management) and (2) equipment necessary for capacity building and information management (PC, projectors) and others. 3. Lao side: (1) inland transportation from the training center to the project sites, (2) operation and maintenance of the equipment procured under the project, and others.			
Project Period	E/N Date	May 23, 2012	Completion Date	September 27, 2013 (Handover of equipment)
	G/A Date	June 5, 2012 (Amended on October 3, 2012)		
Project Cost	E/N Grant Limit / G/A Grant Limit: : 900 million yen			Actual Grant Amount: 830 million yen :
Executing Agency	Lao National Unexploded Ordnance Programme (UXO Lao)			
Contracted Agencies	Main Contractor(s): Mitsubishi Corporation, Sirius Corporation Main Consultant(s): ORIENTAL CONSULTANTS Co.,Ltd. LANDTEC JAPAN, INC.			

II. Result of the Evaluation

1 Relevance

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

The project has been consistent with Laos's development policy. At the time of ex-ante evaluation, "the National Strategic Plan for the UXO Sector in the Lao People's Democratic Republic 2011-2020" intended to reduce the number of UXO casualties from 300 to less than 75 per year by 2020. At the time of ex-post evaluation, "National Strategic Plan for the UXO Sector in the Lao PDR from 2011-2020, The Safe Path Forward II" set the priority on the UXO clearance in target 47 poorest districts.

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

The project has been consistent with development needs of Laos for UXO clearance. At the time of ex-ante evaluation, cumulative cleared area by UXO Lao until 2011 was 23,442ha, which accounts for only 0.27% of the UXO contaminated area of 8,700,000ha (estimate). Approximately 80 million UXO remained in Laos, and only 480,297 UXO (0.6%) were cleared by 2009. At the time of ex-post evaluation, although UXO have been cleared steady every year, still many UXO remain.

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

The project was consistent with Japan's ODA policy. "Country Assistance Policy for Lao PDR (April 2012)" referred to the necessity to pay attention to UXO as follows: "UXO which is still all over the country impedes the expansion of farm lands and infrastructure lands, thereby presenting a barrier in the way for socioeconomic development. Hence, bear in mind the necessity of UXO clearance as a cross-sectoral issue."

<Evaluation Result>

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

2 Effectiveness/Impact

<Effectiveness>

The project has partially achieved its objectives to improve the safety and efficiency of the UXO clearance activities by UXO Lao in areas including flood-stricken areas as per 4 indicators: 1) the total clearance area per year; 2) the number of beneficiaries by clearance operations; 3) the number of persons covered by community awareness activities and 4) the maintenance cost of all equipment.

However the indicators except indicator 4 have not attained the target, due to the change of UXO Lao's strategy. In 2014, a new Concept of Operations was developed for UXO Lao which incorporates an evidence-based survey methodology into the prioritization of clearance activities. The development of the new survey methodology that provides a stronger evidence-based system for survey, which prioritizes the identification of Confirmed Hazardous Areas (CHA) and very quickly led to an increase in the number of UXO cleared per hectare. This means that CHA is now the focus of clearance activities. Before that,It was detected an UXO without prioritize of select location. Therefore, it was inefficient work. such as sometimes they can not detect any. Owing to the preliminary survey make their performance better so that they can conduct operation certainly in suitable place where are buried UXO and increased the number of dispose of

UXO.That is why efficiency of the their performance of dispose is significantly improved. As a result, a much larger number of UXOs can be found and destroyed per ha cleared though total clearance area per year is decreasing. It can be proved that the efficiency of clearance activity has dramatically improved. According to National Programme Director, the evidence-based survey has been carried out smoothly in 2017 as well. Year by year, the number of UXO found and cleared is increasing and it shows that the new strategy is working effectively. Also, based on CHA data, UXO Lao can now approach to the poorest districts where the accessibility is limited and conduct awareness activities for residents there."The maintenance cost of all equipment" (indicator 4) has been reduced as a result of introduction of the new equipment under the project. In general, conditions of the equipment procured under the project is good and the equipment continues to operate properly. Some detectors (less than 10% of the total) are under repair. The equipment was given an individual identification number so that it is possible to know in what office the number of equipment was placed, however, it is difficult to grasp the situation of individual equipment at the headquarters (HQ) on time. It was expected that the safety of clearance operators improved through replacement of worn-out equipment with the new equipment. According to the questionnaires survey with UXO Lao at the 9 provinces, by replacing the equipment, the operators realized that they were able to work safer and more efficiently than before the project.

<Impact>

Socio-economic development has been facilitated by the UXO clearance activities. Interviews with 9 provincial offices of UXO Lao revealed that local facilities such as health center, school, gravity-feed water systems and other community facilities have been developed after the UXO clearance. The numbers of UXO victims are on a downward trend as a result of promotion of removal work and educational activities. From an average of 100 UXO causalities annually as recently as 2011, the number has dropped to less than 50 in 2016. This is due, in part to ongoing Risk Education in contaminated provinces and also to clearance of more UXOs by a growing number of operators.

In addition, the unexploded shell removal work of the area where many Japanese companies have invested has been completed and therefore, the safety of their operation has been improved as the project envisaged at the time of ex-ante evaluation.

Negative impact on the natural environment by this project has not been observed and land acquisition has not occurred either.

<Evaluation Result>

In light of the above, a certain effect of the project has been observed, as UXO clearance has progressed, and some socio-economic development after clearance has been partially observed. Therefore, the effectiveness/impact of the project is fair.

Quantitative Effects

	Baseline 2011 Baseline Year	Target 2017	Actual 2013 Completion Year	Actual 2014 1 Year after Completion	Actual 2015 2 Years after Completion	Actual 2016 3 Years after Completion	Actual 2017 4 Years after Completion*1
Indicator 1: Total clearance area per year (ha)	2,938	3,783	2,845.46	3,090.23	1,973.32	2,593.17	1,825.60
Supplemental indicator 1a: Number of cluster munitions (UXO) found and cleared	-	-	35,113	31,658	51,165	67,166	41,940
Supplemental indicator 1b: Number of UXO found and cleared per hector	-	-	12	10	26	26	23
Indicator 2: The number of beneficiaries by clearance operations	466,337	510,486	219,032	235,687	98,872	95,416	30,146
Supplemental indicator 2a: Planned number of beneficiaries by clearance operations set by UXO Lao*2	-	-	214,737	259,256	96,706	104,958	n.a.
Supplemental indicator 2b: Progress of the planned number of beneficiaries (%)	-	-	102	90	102	97	n.a.
Indicator 3: The number of persons covered by community awareness activities	143,447	150,619	173,529	196,420	183,155	93,428	85,712
Indicator 4: The maintenance cost of all equipment (USD)*3	69,769	54,262 (2016)	65,816	42,699	32,487	30,120	28,057

Source：JICA documents, questionnaire and interview with UXO Lao

*1 Up to June, 2017

*2 UXO Lao set the target when they draw up an annual operation plan (December or January every year)

*3 Maintenance cost which consists of maintenance of clearing equipment and office equipment dramatically decreased in 2015 because UXO Lao replaced most of the office equipment and therefore, the maintenance cost for office equipment dropped.

3 Efficiency

Both project cost and project period were within the plan (the ratio against the plan: 92%, 67%). Therefore, the efficiency of the project

is high.

4 Sustainability

<Institutional Aspect>

Operation and Maintenance (O&M) of the equipment procured under the project is carried out by UXO Lao. UXO Lao belongs to the Ministry of Labor and Social Welfare. In addition to HQ in Vientiane Capital, there are 9 provincial offices and one training center. Although the number of personnel has increased compared to before, it is not sufficient for carrying out clearance operation all over the country. On the other hand, UXO Lao is trying to strengthen capacity and a framework in terms of "human resource management" and "procurement and logistics" for proper activities as far as they can. JICA has been implementing Technical Cooperation Project, "The project for Strengthening management capacity of UXO Lao" since 2015 for enhancing asset and human resource management to make maximum use of equipment.

<Technical Aspect>

UXO Lao is striving to improve the technical skills of the staff through six training programs. However, at this moment, the staff is not satisfied with their skills especially on UXO equipment maintenance and considers that they need more training.

<Financial Aspect>

UXO Lao alone does not have sufficient budget to carry out O&M of the equipment. However, UXO Lao is sufficiently financed by development partners. It also has a great impact to UXO Lao that USA confirmed that they fund US$90 million over for the next three years (from 2017-2019).

Budget of UXO Lao

(Unit: USD)

	2014	2015	2016
Revenue	8,057,028.80	10,097,511.53	10,131,142.47
Expenditure	6,543,859.72	7,775,734.15	8,562,751.89

<Current Status of Operation and Maintenance>

The most of equipment items procured under the project are in good condition. UXO Lao regularly carries out maintenance of the equipment, however, they were not able to receive sufficient after-sales service for some of the equipment procured outside of Laos.

<Evaluation Result>

In light of the above, some issues have been observed in terms of institutional, technical and financial aspects, as the number of staff is not sufficient, more training is needed and UXO Laos is financially dependent on donors as same as other organizations in this field. However, it could be confirmed that the equipment is handled by the HQs and provincial offices properly. Therefore, the sustainability of the project effect is fair.

5 Summary of the Evaluation

The project has partially achieved its objectives, "to improve the safety and efficiency of the UXO clearance activities in areas including flood-stricken areas by UXO Lao" as the indicators set to measures the effectiveness, such as "total clearance area per year", "the number of beneficiaries by clearance operations", "the number of persons covered by community awareness activities", and "the maintenance cost of all equipment" partially achieved the targets. Positive impacts have been observed in terms of socio-economic development after UXO clearance. As for the sustainability, though slight problems have been observed in terms of the institutional, technical and the financial aspect, it can be said that the organizational structure and management system are appropriate in general.

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

III. Recommendations & Lessons Learned

Recommendations to Implementing Agency:

- The equipment was given an individual identification number so that it was possible to know in what office the number of equipment was placed, but it is difficult to grasp the situation of individual equipment at HQ. For proper management of equipment, it is necessary to share correct data of situation of equipment between HQ and provincial offices.

Lessons Learned for JICA:

- UXO Lao is short of data of impact for socio economic development after clearance activities. It is important to observe the socio-economic development of clearance site to evaluate the activity of clearance. In order to do that, it is necessary to cooperate with international organizations, other donors or NGOs who can monitor effective utilization of post clearance sites.

Motorbikes in Training Center

Generator in Savanakhet Office


Detectors and Radios in Champasak office

Internal Ex-Post Evaluation for Development Planning Project

conducted by Bangladesh Office May 2018

Country Name	The Project for Developing Inclusive City Governance for City Corporation
People's Republic of Bangladesh	

I. Project Outline

Background	In Bangladesh, the rapid urbanization was progressing and at the year of 2006, 24.6% (34.6 million) of the total population lived in the urban area. Due to the lack of institutional capacity of local government and their financial resources, the urban planning was not well exercised. As a result, many cities in Bangladesh were burdened with insufficient infrastructure, immature institutional system and poverty of citizens, etc. Furthermore, the country confronted with other issues such as non-availability of proper urban planning, functional overlap among the central government, local government and related institutions and a lack of strategic leadership. The Government of Bangladesh (GOB) pledged to promote the decentralization in the Fifth Five-Year Plan (1997-2002) but failed to fulfill it. In the Sixth Five-Year Plan (2011-2015), GOB supported the decentralization as well as the needs for planned urbanization and public services. However, it was required to have the better mechanism and to make much effort in order to materialize the pledge.		
Objectives of the Project	By creating Infrastructure Development Plan for City Corporation (IDPCC), Inclusive City Government Improvement Action Program (ICGIAP) and Administrative Reform Plan (ARP) to targeted City Corporations (CCs), this project aimed to establish a framework for the improvement of Urban Governance and Infrastructure Development, thereby enhancing economic growth potential and improving the Quality of Life (QoL). 1. Expected Goals through the proposed plan[1]: To enhance economic growth potential and improve quality of life in the targeted cities 2. Expected utilization of the proposed plan: Framework for the improvement of urban governance and infrastructure development in order to achieve the concept of Inclusive City Government established by the project has been utilized.		
Activities of the Project	1. Project Site: Narayanganj City Corporation (NCC), Comilla City Corporation (CoCC), Rangpur City Corporation (RCC), Gazipur City Corporation (GCC) and Chittagong City Corporation (ChCC)* Note: ChCC was officially added by the decision made at the 2nd Project Steering Committee Meeting held in April 2013 as it was considered as one of the most important CCs in the country in terms of trade. And ChCC's economic relation and opportunity with foreign investors were significant. 2. Main Activities: 1) To make IDPCC of the targeted CCs, 2) To make ARP of the targeted CCs., 3) To develop ICGIAP, 4) To compile the practical experiences on development planning for CCs 3. Inputs (to carry out above activities) Japanese Side 1) Mission members: 16 persons (65.16MM for Japanese experts, 23.46MM for local consultant) 2) Trainees Received: 18 persons 3) Equipment: needed to conduct research Bangladesh Side 1) Staff Allocated: 2 persons 2) Land and facilities: Office space		
Project Period	November 2012 to February 2014	Project Cost	(ex-ante) 250 million yen, (actual) 279 million yen
Implementing Agency	Responsible supervisory agency: Local Government Department (LGD), Ministry of Local Government, Rural Development and Cooperatives Implementing agency: Local Government Engineering Department (LGED), Ministry of Local government, Rural Development and Cooperatives		
Cooperation Agency in Japan	PADECO Co., Ltd.,		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

・[Issues to be clarified for Effectiveness/Impact]:

・ In the first indicator, "the infrastructure projects have been implemented based on IDPCC." of "Utilization Status of the proposed plan after project completion", followings describe the progress expected by 2017 in each batch of sub-projects respectively.

・Among the proposed 72 sub-projects, those whose estimated costs are relatively small are to be implemented as Batch 1 of JICA's yen loan project, "Inclusive City Governance Project (2014-2020)" (ICGP), while relatively large scale of sub-projects which are also one of the components of ICGP are to be implemented as Batch 2.

・Batch 2 sub-projects are to be implemented only after the 1st performance review of ICGIAP in June 2016, where 13 trigger activities, out of total 42 activities, are required to be fulfilled as the condition to proceed with Batch 2 implementation.

・All five City Corporations have been qualified to proceed with Batch 2 sub-project implementation after the 1st performance review of ICGIP in June, 2016, and most of the Batch 2 sub-projects are in progress at the time of ex-post evaluation. Thus, not only Batch 1, but also most of Batch 2 sub-projects are subject to the ex-post evaluation.

・There is no reference of ChCC made in the indicator 2 and 3 of "Utilization Status of the proposed plan after project completion", due to its later inclusion to the project as of June, 2013. However, this ex-post evaluation examines the performance of ChCC for those indicators as well as it is

[1] 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 there has been certain period of time for ChCC to generate the outcome.

・[Issue to be clarified for Efficiency]: ChCC was included as one of the target CCs seven months later than other CCs. Such delay could affect the efficiency of the project, thus the judgment of efficiency is to be made considering effects caused by the delayed inclusion of ChCC.

1 Relevance

<Consistency with the Development Policy of Bangladesh 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 such as "The Sixth Five Year Plan"（2011-2015）which focused on job creation, promotion of industry, enhancement of governance, extension of social services provision under the objective of "Accelerating Growth and Reducing Poverty" to realize the society to enjoy lives at the level of middle-income country by 2021. This development plan was still effective as a key policy in the country's economic development at the time of project completion.

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

This project was consistent with Bangladesh's development needs for urban development at the time of ex-ante evaluation as described in "Background" above. The development of urban infrastructure has not kept pace with rapid population growth in urban areas, causing an acute shortage of infrastructure and services, such as piped water, sewerage, drainage, roads and bridges. With a huge number of institutions involved in the city management, there has been the gross overlapping of functions, lack of coordination among institutions, which often lead to the plurality in the planning, implementation and development approaches. It has become necessary for GOB to establish the Inclusive City Government with a view to meeting the future demand and efficient management of urban development. No information or report have been made that indicates the change of Bangladesh's development needs for urban development since the time of ex-ante evaluation.

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

The project was relevant at the time of ex-ante evaluation with the priority areas of the Country Assistance Program for Bangladesh (2012) in which the focuses were on the acceleration of economic development for all in order to reach out the level of middle-income-country, in particular on the development of transportation and traffic infrastructure which contributes to efficiently mobilizing people and commodities and to the resolution of regional gap.

<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 framework for the improvement of urban governance and infrastructure development to achieve the concept of Inclusive City Government was established by the project completion since the three plans, namely, IDPCC, ARP, and ICGIAP were all produced by the project completion. Through on the job trainings, those officers and staff in charge of the Project accumulated the knowledges and practices in the field of 1) Development of inclusive planning, 2) environmental burden consideration, 3) consensus building through stakeholder meetings and 4) implementation of subprojects.

< Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

The framework has been partially utilized by the time of ex-post evaluation as one out of four indicators has been achieved and three indicators have been partially achieved.

Out of the total number of proposed 72 sub-projects, 40 subprojects (56%) have been undertaken and 32 subprojects (44%) were not partly due to the changes of plan after the project completion as well as shortage of funds. (Indicator 1). In terms of the Administrative Reform Program, according to the 1st ICGIAP Implementation Performance Assessment Report (June 2016), as for 13 trigger activities that are mandatory to start Batch 2, 74% of them has been executed in fully satisfactory level. While for 29 non-trigger activities that are not mandatory, only 49% of them have been executed in fully satisfactory level. It should be also noted that institutional changes, such as administrative and tax reforms, are required to fully implement ICGIAP. However, amendments and/or formation of related rules and regulations are not under the jurisdiction of LGED, but LGD (supervisory authority of LGED). For example, to increase holding tax revenue, interval of tax assessment needs to be changed from every 5 year, current practice stipulated by "The City Corporation (Taxation) Rules, 1986)" to every 3 years. However, authority to amend this rules is exclusively given to LGD, which has made the process taken much time. As for the staff allocation, more than 80% of proposed staff in total has been allocated by the time of ex-post evaluation. Staff allocation level is high for NCC, GCC and ChCC showing the status as more than 90%. It was found that proposed staff will be fully allocated only after the proposed organogram, which were submitted by each CC to LGD, obtain official endorsement by LGD and other authorities (e.g. Ministry of Public Administration and Ministry of Finance) with subsequent budget allocation (Indicator 2). In terms of the institutional improvement based on the institutional structure reform program, all CCs have implemented both measures of e-governance activities and mass communication cells. However, due to manpower and budget constraints, only half of CCs have implemented the measures of City Information Service Center and Meeting with Mass Public (Indicator 3). Coordination meetings with Civil Society Coordination Committee (CSCC) were carried out 4 times and those with Ward Level Coordination Committee (WLCC) twice as planned for all CCs (Indicator 4).

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

Through the proposed plan, the Expected Goals, "To enhance economic growth potential and improve quality of life in the targeted cities" at the time of ex-post evaluation have shown some progresses in terms of the economic growth potential. Investment toward ChCC up to the time of ex-post evaluation has been steadily increased year by year. According to the interview with those ICGIAP informants, the reason of increased investments for ChCC is because it is economically important industrial hub of the country with dynamic leadership and absorption capacity. For other CCs, investments have been fluctuating during the same period. (Indicator 1).

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

It was identified through comments of LGED that although ICGP is a gender-neutral project, certain governance arrangements have shown actions to cope with gender bias, e.g. formation of CSCC, developing gender action plan by the CCs, standing committees for divorce mitigation. The Bangladeshi cities are facing numerous negative impacts from climate change. The drainage facilities and water supply system improvement is couple of such initiatives that have reduced the urban risks posed by the climate change.

<Evaluation Result>

In light of the above, through the project, the framework for the improvement of urban governance and infrastructure development to achieve the concept of Inclusive City Government was established by the project completion, and it has been partially utilized, by the time

of ex-post evaluation. Furthermore, the expected goals, "To enhance economic growth potential and improve quality of life in the targeted cities" at the time of Ex-post Evaluation have shown some progresses in terms of the economic growth potential.

Therefore, 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

Aim	Indicators	Results
(Utilization Status of the Proposed Plan) Framework for the improvement of urban governance and infrastructure development in order to achieve the concept of Inclusive City Government established by the project have been utilized.	1. The infrastructure projects have been implemented based on IDPCC.	Status of the Achievement: partially achieved (Ex-post Evaluation) Out of total number of 72 subprojects, 40 subprojects (56%) have been undertaken. Of those undertaken, 11 subprojects (28%) were already completed by the time of ex-post evaluation, 20 subproject (50%) have been in progress and 9 subprojects (22%) have been approved to be undertaken, but not yet started.
	2. The Administrative and financial reform has been carried out based on fiscal and administrative reform program (ARP) of 5CCs*. *(Note): In the original document, it was stated as 4 CCs because of delayed inclusion of ChCC.*	Status of the Achievement: partially achieved (Ex-post Evaluation)

Implementation status of sub-projects across CCs

CCs	# of sub-project	80% and more (Achieved)	50% - 79% (Partially Achieved	Less than 50% (Not achieved)	0% (not undertaken)
NCC	8	2	1	2	3
CoCC	14	8	1	0	5
RCC	24	0	9	3	12
GCC	15	0	6	3	6
ChCC	11	1	3	1	6
Total	72	11	20	9	32
Ratio of subprojects in different progress made		*28%*	*50%*	*22%*	*na*
Ratio of number of subprojects undertaken		***55.6%***			***44.4%***

Performance results of 13 Trigger activities as of June 2016

CC	Number of trigger activities with full satisfactory level of performance	%	Number of trigger activities with minimum satisfactory level of performance	%
NCC	12	92%	1	8%
CoCC	7	54%	6	46%
RCC	10	77%	3	23%
GCC	9	69%	4	31%
ChCC	10	77%	3	23%
average	9.6	74%	3.4	26%

Performance results of 29 Non-Trigger activities as of June 2016

CC	Number of non-trigger activities with full satisfactory level of performance	*%*	Number of non-trigger activities with partial satisfactory level of performance	*%*	Number of non-trigger activities not done	*%*
NCC	24	*83%*	4	*13%*	1	*3%*
CoCC	6	*20%*	8	*27%*	15	*52%*
RCC	15	*52%*	9	*31%*	5	*17%*
GCC	14	*48%*	8	*27%*	7	*24%*
ChCC	12	*41%*	8	*27%*	9	*31%*
average	14.2	*49%*	7.4	*25.5%*	7.4	***25.5%***

Staff allocation for each CC at the ex-ate and ex-post evaluation

Timing		NCC	CoCC	RCC	GCC	ChCC	Total
Ex-ante evaluation	Proposed*	683	1,274	941	1,722	3,180	7,800
	Actual	168	127	223	350	3,175	4,043
	Achieved	*24.6%*	*10.0%*	*23.7%*	*20.3%*	*99.8%*	*51.8%*
Ex-post evaluation	Proposed**	660	1,321	941	1,237	3,180	7,339
	Actual	822	758	547	1,132	2,935	6,194
	Achieved	*124.5%*	*57.3%*	*58.1%*	*91.5%*	*92.30%*	*84.4%*

Note: The proposed staff number was changed between the time of ex-ante evaluation and ex-post evaluation due to that some of the administrative and financial reform activities have required institutional changes.

	3. The institutional improvement has been carried out in the targeted 5CCs* based on the institutional structure reform program (ICGIAP). *(Note): In the original document, it was stated as 4 CCs because of delayed inclusion of ChCC.*	Status of the Achievement: partially achieved (Ex-post Evaluation) According to the 1st ICGIAP Implementation Performance Assessment Report (English), June 2016, following measures have been implemented to CCs. Progress of ICGIAP

CCs	E-governance activities	Mass Communication Cell	City Information Service Center	Meeting with Mass Public
NCC	○	○	○	○
CoCC	○	○	○	
RCC	○	○		
GCC	○	○		
ChCC	○	○	○	○

	4. Coordination meetings on the participatory urban development have been carried out.	Status of the Achievement: achieved (Ex-post Evaluation) In all of CCs, Coordination meetings with Civil Society Coordination Committee (CSCC) were carried out 4 times and with Ward Level Coordination Committee (WLCC) twice as planned.
(Expected Goals through the proposed plan) To enhance economic growth potential and improve quality of life in the targeted cities	1. The increase of investment toward CCs	(Ex-post Evaluation) Investment toward ChCC has been steadily increased year by year up to the time of ex-post evaluation. According to the interview with those ICGIAP informants, the reasons of increased investment for ChCC are because it has served as economically important industrial hub of the country with dynamic leadership and with its high level of absorption capacities. For other CCs, investments have been fluctuating partly due to the fluctuation of government allocation and tendency to invest more funds in early years for infrastructure development cost. Investment toward each CCs Unit of CCY (in thousand Taka)

City Corps.	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19 (forecast)	FY 2019-20 (forecast)
NCC	600,000	524,100	560,000	616,000	677,600
CoCC	10,000	400,000	170,000	187,000	205,700
RCC	200,000	300,000	28,500	31,350	34,485
GCC	na	94,700	11,400	12,540	13,794
ChCC	962,100	1,561,000	2,780,000	3,058,000	3,363,800
Total	na	2,879,800	3,549,900	3,904,890	4,295,379
Rate of increase compared to the previous year		*na*	*23.3%*	*10%*	*10%*

Source : Project completion report, 1st Batch of ICGIAP Implementation Performance Assessment Report, June 2016, Quarterly Progress Report of the Inclusive City Governance Project (July -September, 2017), questionnaire and interview with those concerned.

3 Efficiency

Both of the project period and the project cost slightly exceeded the plan (ratio against plan: 106%, 112%), due to the political unrest during the first half of 2015, which delayed the deployment of project consultants and staff of Project Implementation Unit, and the later inclusion of ChCC. Therefore, efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The Seventh Five-year Plan (2016-2020) has given a priority to the urban infrastructure development and strengthening of the capacity of the local government. Furthermore, the National Housing Policy approved in July 2016 and Urban and Regional Planning Act approved in 2017 have supported the project in the policy aspect.

<Institutional Aspect>

The Local Government Division (LGD) under the Ministry of Local Government, Rural Development and Cooperatives, has a dedicated wing dealing with the urban local government named Urban Development Wing with a function of monitoring of activities of CCs and municipalities. But they still do not have sufficient manpower to implement its function. The staff allocation percentage has achieved more than 90% of what was proposed for three CCs (NCC, GCC, ChCC) and more than 55% for two CCs (CoCC, RCC). However, due to lack of coordination between some CCs and national agencies, some ineffective service delivery cases have been observed. For example, even though the building permission is given by the CC and Capital Development Authority (known us RAJUK) the CCs are not informed of building constructions undertaken within their jurisdictions. Roads renovated by the CC have been re-excavated by other agencies for some other purpose. In order to cope with these uncoordinated process, the City Development Coordination Committee (CDCC) has been formed aiming to facilitate the coordination between CCs and national agencies through quarterly meetings at which their plans of activities should be shared and issues related to public services should be discussed among them. A Municipal Association of Bangladesh (MAB) was also formed to work with Local Government & International Organization to deliver the very best services. They have not been adequately functional yet to exploit synergies and collaborative advantages among the city local governments.

<Technical Aspect>

Almost all the CCs relevant to ICGP are lacking planning and implementation capacity for large projects. The ARP has not been yet fully in place due to delayed administrative reforms as described above. In order to cope with insufficient capacity of planning and implementation for large projects, along with the existing CCs' human capacity, the project recruited a number of staffs for each CC in a position of Senior and Junior Field Engineer, Facilitator for IT, Governance, Finance and Community and Urban Planning as well. Moreover, a Senior Slum Development Officer and a Socio-economist are also recruited by the CCs as government contribution. The project for Capacity Development of City Corporations (2016-2021) is now being implemented by Local Government Division and JICA, part of which activities address to accelerate the process of LGD-led administrative reforms. The project is now in its 3rd year of implementation.

<Financial Aspect>

More than 50% of the priority projects are either completed or being implemented using JICA loan (ICGP) and Government funds. The original IDPCC has been updated under ICGP and the funding priorities have changed. Many of the projects were re-casted and changed their names. There are some new projects included during revision process and approved by the ICGP's steering committee. Relocation of all those projects by name and category in the original plan may be done by the ICGP. With surplus budget of ICGP, approximately 2 billion yen, the rest of the priority projects are expected to be implemented in due course, however, it is uncertain whether the LGED and each CC have secured the sufficient budgets for the maintenance costs for the infrastructures developed by 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

Through the project, the framework for the improvement of urban governance and infrastructure development was established by the project completion, and it has been partially utilized by the time of ex-post evaluation. Through the proposed plan, the Expected Goals, "To enhance economic growth potential and improve quality of life in the targeted cities" at the time of ex-post evaluation have shown some progress. As for sustainability, slight problems have been observed in terms of institutional, technical and financial aspects such as lack of coordination between CCs and related agencies partly due to slow implementation of administrative reform process proposed by the project. As for efficiency, both project cost and 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: LGED in terms of ICGP

The ex-post evaluation has revealed that the limited progress has been made for 29 non-trigger activities except NCC.

Although achieving the non-trigger activities are not binding to access the Batch-2 fund, it is equally important for all CCs to achieve non-trigger activities for the capacity development purpose. Therefore, before the 2nd Batch Performance Assessment in 2018, it is recommended that all non-trigger activities should be carefully examined by;

1. Closely following up and monitoring the progress of ARP(organogram) approval especially for GCC, CoCC, RCC
2. Developing manuals and organizing regular trainings on financial management and resource mobilization
3. Organizing peer-groups between well performing CCs(e.g. NCC) and CCs which are lagging behind (e.g. CoCC)

To: Each CC

The ex-post evaluation has revealed that lack of coordination between CCs and related agencies has posed the concerns in city governance. Due to lack of coordination between CCs and these national agencies, ineffective service delivery has been observed as explained in the institutional aspect of sustainability above. In order to cope with this, the committees to facilitate the coordination between CCs and national agencies such as CDCC to exploit synergies and collaborative advantages among the city local governments, such as MAB should be effectively utilized among CCs.

Lessons Learned for JICA:

1) Careful considerations should be given to the methodology and measurement of criteria as the condition to determine further infrastructure implementation.

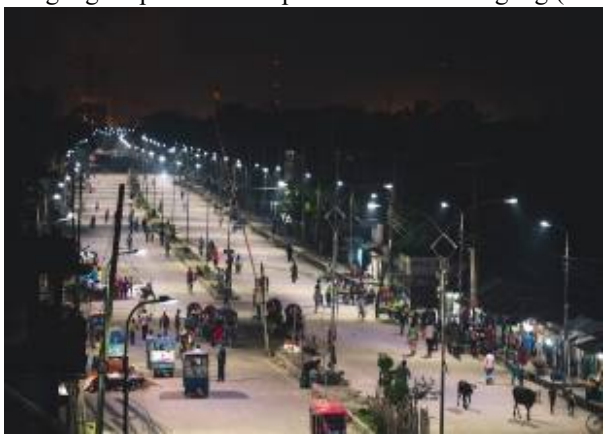
   The ex-post evaluation has revealed that the approach of combining governance and infrastructure component by setting criteria of trigger activities as the condition to proceed with Batch 2 sub-project implementation provides strong incentives for the target CCs to implement governance improvement (ICGIAP) activities. However, it was also observed that some CCs have tended to concentrate on achieving trigger activities which serve as the condition to proceed with Batch 2 sub-project implementation and pay less attention to non-trigger activities. Thus, methodology of setting criteria as the condition to determine further implementation and how to measure its achievement should be more carefully considered.

2) Proper consultation and coordination among stakeholders depending on their TOR are needed when institutional/legal changes are expected.

   As described in "2. Effectiveness and Impact", some of administrative and financial reforms of CCs require institutional changes, which are not under the jurisdiction of LGED, the implementing agency of the project, but LGD, the supervisory authority of LGED. Therefore, proper consultation and coordination among concerned organizations, depending on their TOR, should be more considered, particularly when institutional/legal changes are expected.

Chittagong Airport Road Improvement in Chittagong (ChCC)

Road Improvement in Comilla (CoCC)



Lighting Subproject in Narayanganj (NCC)

Drainage improvement in Rangpur (RCC)

Road infrastructure Subproject in Gazipur (GCC)

Internal Ex-Post Evaluation for Grant Aid Project

conducted by Nepal Office: December. 2018

Country Name	The Project for Countermeasure Construction for the Landslides on Sindhuli Road Section II
Federal Democratic Republic of Nepal	

I. Project Outline

Background	Since roads in Nepal were situated in adverse topographical and geological conditions where sediment-related disasters occurred frequently, the distribution network in the country was weak. Securing stable and reliable routes in the country as well as provision of minimum road access in rural areas was urgently required. Sindhuli Road had been constructed through Grant Aid from the Government of Japan since 1996, and, with full opening[1], it was expected to be an important alternative highway connecting the capital city of Kathmandu with Bardibas in the Eastern Terai Plain, which would contribute to establishment of safe distribution network and development of the eastern region. However, some of the sections along the road were also situated on adverse topographic geological conditions. It was necessary to implement permanent countermeasures in landslide-prone areas to sustain traffic operation after full opening of the road.			
Objectives of the Project	To sustain smooth and safe traffic operation on Sindhuli Road connecting Kathmandu and the Eastern Terai Plain in Nepal, by implementing countermeasure construction works at priority landslide-prone areas in Section II of the road, thereby contributing to development of the eastern region.			
Contents of the Project	1. Project site: Section II of Sindhuli Road (Sindhuli Bazar -Khurkot) in Sindhuli, Nepal 2. Japanese side: provision of grant necessary for landslide measures (ground anchors, crib works F500, crib works F300, shotcrete, and embankment) for Sta.17+600 and road realignment (170m) for Sta.18+200. 3. Nepal side: compensation of using private lands, relocation of water supply facilities, landslides monitoring, environmental monitoring including initial environmental examination, etc.			
Project Period	E/N Date	July 10, 2012	Completion Date	January 9, 2015
	G/A Date	July 10, 2012		
Project Cost	E/N Grant Limit / G/A Grant Limit: 901 million yen, Actual Grant Amount: 898 million yen			
Executing Agency	Department of Roads (DOR), Ministry of Physical Infrastructure and Transport (MOPIT) (Ministry of Physical Planning, Works and Transport Management at the time of ex-ante evaluation)			
Contracted Agencies	Main Contractor: Hazama Ando Corporation (former Hazama Corporation) Main Consultant: Nippon Koei Co., Ltd.			

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

- Observed status of achievement of quantitative and qualitative effects, impacts, and institutional, technical and financial aspects of sustainability include both outcomes/impacts of this project and the grant aid ("The Project for Construction of Sindhuli Road" (Section I, II, III, IV) (1995-2015) (GA-PCSR) and the technical cooperation project ("The Project for the Operation and Maintenance of Sindhuli Road" (2011-2016) (TC-POMSR)) of JICA. It is difficult to separate outcomes/impacts of this project from the above said grant aid and technical cooperation.

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 development policy of Nepal to prioritize sustainable and safe road network, including Sindhuli Road, set in policy document such as provisional Three-year Plan of Nepal (2010/11 to 2012/13), Master Plan for Strategic Road Network (2005) and Sector Wide Road Program and the Priority Investment Plan (2007), Three-year Plan of Nepal (2016/17 to-2018/19) and 5 years Strategic Plan of MOPIT (2016-2021).

<Consistency with the Development Needs of Nepal at the Time of Ex-Ante and Ex-Post Evaluation >

This project has been consistent with Nepal's development needs for safe and smooth traffic of Sindhuli Road and development of the eastern region as described in "Background" above and as planned in the above-mentioned development plans and strategies. The needs were also confirmed by DOR at the times of ex-post evaluation.

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

One of the priority areas of Country Assistance Policy for Nepal (April 2012) was "Social and economic infrastructure and mechanism development which directly lead to economic growth and the national livelihoods improvement", including "Building of social infrastructure and mechanisms related to transportation".

<Evaluation Result>

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

2 Effectiveness/Impact

<Effectiveness>

The project objective of sustaining smooth and safe traffic operation on Sindhuli Road in Nepal has been achieved. As for quantitative effects, running distance of traffic from Kathmandu to Bardibas has been reduced to 189Km as planned (Indicator1). Also, travel time from Kathmandu to Bardibas has been reduced to 5 hours as planned (Indicator 2). Regarding qualitative effects, safe traffic operation of Section II of Sindhuli Road has been secured because there has been no closure due to natural disaster on the road along the facilities constructed under the project and only partial closure for one day (for heavy vehicles) was observed in other locations during the earthquake in April 2015.

[1] Sindhuli Road was fully open in March 2015.

<Impact>

According to DOR, safe distribution network in the eastern region has been established though the project. With full opening, Sindhuli Road is serving as an important alternative highway connecting Kathmandu with Bardibas in the Eastern Terai Plain, especially for light vehicles[2], and the project has smoothened the travel of people and the transport of goods along Sindhuli Road by avoiding possible landslides. For example, even after the earthquake in April 2015 and flooding in August 2017 in the Terai Plain, almost all relief materials were transported to the eastern region through Sindhuli Road. The project has also promoted cultivation of cash crops and has contributed to revitalization of regional economy of rural areas of Sindhuli. Although up-to-date data is not available, the share of agriculture in household income in the rural areas of Sindhuli increased from 26.9% in 2012 to 39.9% in 2015 and the average annual income from Nepal Rupees (NRs.) 119,815 in 2012 to NRs. 244,308 in 2015 according to the survey conducted by TC-POMSR. Gradual increases in the flow of people and goods, and the setup of new shops and, houses are observed and felt by DOR officials who have been regularly passing by Sindhuli Road. In fact, traffic volume increased from 2,754 vehicles per day in2012 to 4,551 vehicles per day in 2017 at Sindhuli madi according to the survey conducted by Japanese experts engaged in this project. Another example is that, near a facility constructed under the project in Dhungrebas, the number of tea shops has increased from 2 to 6 because of the increased number of travelers and safety[3]. Local people (a man and a woman) interviewed by the ex-post evaluator also confirmed that construction of Sindhuli Road had increased economic activities by providing local farmers with opportunities for diversifying cash crops due to better market accessibility, improving accessibility to services, and providing more business opportunities, etc. Similarly, the smooth flow of goods and services along Sindhuli Road is assumed to have promoted the revitalization of the regional development and revitalization of regional economy, especially in the mountain areas where development lagged behind due to civil war, which are linked with Sindhuli Road. However, this could not be verified concretely due to lack of reliable information.

Regarding other positive impacts, the local people stated that the project had contributed to creating employment for some women at the newly opened tea shops in Dhungrebas. They also mentioned that the local men employed by the project could enhance their construction skills and could obtain construction jobs in other areas of Nepal and in other countries (mostly in Arab countries and Southeast Asia like Malaysia).

No negative impacts of the project on natural and social aspects have been observed. It is noted that total of 7,128 m^2 of land was acquired from 22 people through the project. Most of the acquired land was steep, and there were no houses and structures. According to DOR, no disturbances associated with the land acquisition were observed because the affected people were properly compensated, and they were glad to receive compensation for the land vulnerable to landslide. An affected landowner interviewed by the ex-post evaluators confirmed this and even commented that he was happy as the project had a positive impact for protection of his remaining land. He was also constructing a house near the countermeasure facility because it is safer.

<Evaluation Result>

In light of the above, the project objective was achieved, and positive impacts were observed. Therefore, the effectiveness/impact of the project is high.

Quantitative Effects

	Baseline (2011) Baseline Year	Target (2018) 3 Years after Completion	Actual (2016) 1 Year after Completion	Actual (2017) 2 Years after Completion	Actual (2018) At the time of ex-post evaluation
Indicator 1: Running distance of traffic from Kathmandu to Bardibas (Km)	333	189	189	189	189
Indicator 2: Travel time from Kathmandu to Bardibas (hours)	8	5	5	5	5

Source: Ex-ante Evaluation Sheet, DOR.

3 Efficiency

Both the project cost and period were within the plan (ratio against plan: 100%, 97%). The outputs of the project were produced as planned.

Therefore, the efficiency of the project is high.

4 Sustainability

<Institutional Aspect>

DOR is in charge of maintenance of road in Nepal. During the project implementation, the Project Office (PO) of GA-PCSR, established under Foreign Cooperation Branch of DOR, was responsible for maintenance of Sindhuli Road. After completion of GA-PCSR in 2015, it has been transformed to the PO of the Nepalese project, "Suryabinayak-Dhulikhel, Dhulikhel Sindhuli Bardibas Project (SDDSBP)[4]", which is continuously responsible for maintenance of Sindhuli Road constructed under GA-PCSR (i.e. the road between Dhulikhel Sindhuli Bardibas). For maintenance of Sindhuli Road, DOR allocates 25 officers at central level, including one sub-engineer dedicated to Section II, and 60 staff members (i.e. 9 supervisors and 51 length workers) at field level. DOR considers the number of staff is appropriate because the maintenance work has been implemented smoothly. In addition, according to DOR, maintenance works can be outsourced if

[2] Heavy vehicles were prohibited to use this road until August 2018.

[3] According to DOR, the countermeasure construction work is first of its kind in Nepal so that people would take a break for photo taking and enjoying the scene, which has also contributed to the increment of visitors to the tea shops. The place is famous for taking selfie and is known as "selfie danda (selfie hill)".

[4] There is no definite timeline for the duration of SDDBSP. According to DOR, SDDBSP will be continued as long as there is cooperation of JICA, expected to start in Japanese Fiscal Year 2018 (i.e. a technical cooperation "Project for Operation and Maintenance of Sindhuli Road (Phase 2)" and a grant aid "Sindhuli Road Earthquake rehabilitation").

necessary. Major changes in the organizational structure for the maintenance is not planned at the time of ex-post evaluation.

<Technical Aspect>

Regarding Sindhuli Road in general, the staff of DOR has acquired basic skills and knowledge to plan and implement maintenance works based on various experience and achievement through the past cooperation of JICA such as GA-PCSR and TC-POMSR. Further, Road Sector Skill Development Unit under DOR provides staff training including maintenance of road. According to DOR, it can also outsource the maintenance if necessary. As for the facilities constructed under the project, they do not require maintenance activities other than cleaning of road and drainage as well as landslide monitoring (i.e. measurement using load meter of anchor, and visual inspection of crib works, anchor works and rock bolt works). DOR has necessary capacity to conduct these activities in general. However, DOR does not have adequate knowledge of how to repair a malfunctioned load meter procured in Japan because it is not stated in the maintenance manual prepared by the experts. Technical instruction on recalibration of the load meter was not given to DOR, either. DOR also commented that, since the technologies applied to the facilities are complex, it would need support from international experts if major maintenance should be required due to unexpected reasons.

<Financial Aspect>

Budget for maintenance of Sindhuli Road is prepared based on the maintenance plan and provided by Roads Board Nepal (RBN). Annual budget increased from about NRs. 68 million in Nepal Fiscal Year (NFY) 2015/2016 to about NRs. 136 million in 2016/17, and annual expenditure was within the budget in 2015/16 and 2016/17. It is noted the annual expenditure in 2016/17 was only one-third of the budget. In addition, although the total budget in 2016/17 increased more than two-fold compared to the previous year, the expenditure decreased by more than 20% due to sharp drop of the expenditure for periodic maintenance (from NRs. 30.8 million to NRs. 8.4 million). According to DOR, a big chunk of the budget was allocated only later on and not in the beginning of NFY 2016/17. Therefore, the procurement of the contractors for periodic maintenance was delayed. This led to the lower level of expenditure.

Budget and expenditure of DOR for maintenance of Sindhuli Road (Unit: NRs. 1,000)

NFY (Mid July-Mid July)	2015/16	2016/17	2017/18
(1) Total budget approved/allocated	**67,993**	**141,800**	**135,572**
(2) Total expenditures	**59,611**	**46,924**	**(Ongoing)**
-Routine maintenance	9,990	13,101	
-Recurrent maintenance (annual repair)	10,874	14,108	
- Specific maintenance (preventive works)	7.912	11,306	
-Periodic maintenance (once in five years)	30,835	8,400	

Source: Red Book 2015/2016, 2016/2017, and 2017/2018DOR

Overall, necessary budget is considered to have been secured because smooth and safe traffic operation has been sustained as shown in "Effectiveness/Impact". According to DOR, the budget for routine, recurrent, and specific maintenance of Sindhuli Road is sufficient; however, delay of budget allocation stated above has resulted in postponement of some of the scheduled periodic maintenance, which may affect smooth and safe traffic operation of Sindhuli Road in the long term. Meanwhile, budget for maintenance of the facilities constructed under this project has been secured since cleaning of road and drainage is conducted as part of routine maintenance. Specific budget for landslide monitoring is not required because it is implemented by the regular staff of the PO, who does not need to be paid extra.

<Current Status of Operation and Maintenance of the Constructed Facilities>

Maintenance plan of Sindhuli Road has been developed, which also covers the facilities constructed under the project. Cleaning as well as landslide monitoring by visual inspection has been conducted based on the plan. However, landslide monitoring by load meter has not been implemented by DOR for more than 2 years because calibration of the load meter procured under the project in Japan has been disturbed since its battery was changed in around 6 to 7 months after the project completion. DOR has sought general advice from Japanese experts involved in the project, who were in the country on other assignment, because troubleshooting method for this problem was not stated in the maintenance manual. The advice has been carried out, but the disturbance has not been fixed. In the meantime, the Japanese experts have informally supported DOR in monitoring with their own load meter on an occasional basis and have confirmed that land mass movement is not observed[5]. It is not clear if DOR plans to outsource recalibration or to purchase a new one. According to DOR, the load meter is not available in the local market. The constructed facilities were observed to be in good condition. However, drainage was not as clean as road and some dirt was observed. According to a DOR engineer accompanying the ex-post evaluator, instruction to the length workers in charge of cleaning may not have been clear enough so that they do not clean the drainage as often as the road, and he mentioned that he would see to it. A small void was also observed in the area leading to the drainage just under a constructed facility for Sta. 17+600. Based on a general observation by the DOR engineer, it seems to be a local void which would not cause a big problem but needs investigation just in case.

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved its objective of sustaining smooth and safe traffic operation on Sindhuli Road in Nepal and the expected impact of developing the eastern region has been observed to some extent. Regarding the sustainability, slight problems have been observed in terms of technical aspect (i.e. lack of adequate knowledge of DOR to recalibrate and repair the load meter used for landslide monitoring) and financial aspect (i.e. delay of allocation of budget for periodic maintenance of Sindhuli Road, which may affect smooth and safe traffic operation in the long term) but there is no major problem in institutional aspect.

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

[5] According to DOR, last measurement was conducted in December 2017.

III. Recommendations & Lessons Learned

Recommendations to Implementing Agency:

- It is recommended that DOR recalibrate the load meter by outsourcing or purchase a new one as soon as possible so that landslide monitoring using the load meter can be resumed.
- It is recommended that DOR continue to lobby to RBN to allocate the adequate budget for periodic maintenance of Sindhuli Road in time to ensure smooth and safe traffic operation in the long term.
- It is recommended that DOR instruct the length workers to clean the drainage more frequently, especially before and during the rainy season and have its experts investigate a void area observed just below the constructed facility for 17+600, where the collection of water leading to the drain is situated, as soon as possible.

Lessons Learned for JICA:

- JICA should ensure that experts give adequate technical instruction on maintenance and repair of the equipment procured in the projects, especially in the case of the equipment from overseas, to implementation agencies during implementation of the projects.

STA 18+200
(Retaining wall crib work, rock bolt and pavement all are intact)

Dhungrebas (new houses and shops are growing day by day)

Internal Ex-Post Evaluation for Grant Aid Project

conducted by Pakistan Office: February 2019

Country Name	The Project for Upgrading of Mechanical System for Sewerage and Drainage Service in Faisalabad
Islamic Republic of Pakistan	

I. Project Outline

Background	Faisalabad City was the third urban center of Pakistan and, due to rapid population inflow, strengthening of its socioeconomic infrastructure was indispensable. Although construction and replacement of water supply facilities were conducted in the past, improvement of mechanical system for sewerage and drainage services was relatively delayed. As a result of aged deterioration of cleaning equipment for sewers and pump facilities, flood damage caused by overflowing sewage became chronic in the city center, which adversely affected sanitary environment and local socio- economic activities. (Figures at the time of ex-ante evaluation)			
Objectives of the Project	The project aims to upgrade mechanical system for sewerage and drainage service in Faisalabad City in Province of Punjab by procuring cleaning equipment for sewers and channels and pumps for disposal stations and implementing technical assistance to prepare a cleaning work plan and cleaning equipment management plan as well as an inspection manual, thereby contributing to reduction of damages from chronic flooding.			
Contents of the Project	1. Project Site: Faisalabad City, Province of Punjab 2. Japanese side: (1) Provision of grant necessary for procurement of cleaning equipment (8 jet machines, 2 suction machines, 2 wheel backhoes, 2 mini-backhoes, 7 dump trucks, 2 crane cargo trucks, 17 dewatering sets) and disposal station equipment (9 pumps and 4 generators); (2) Technical assistance (soft component of Grant Aid) to Water and Sanitation Agency (WASA) Faisalabad 3. Pakistani side: Demolition/Removal of Existing Disposal Station Facilities, etc.			
Project Period	E/N Date	August 13, 2012	Completion Date	February 8, 2015 (completion of soft-component activities)
	G/A Date	August13, 2012		
Project Cost	E/N Grant Limit / G/A Grant Limit: 683 million yen, Actual Grant Amount: 453 million yen			
Executing Agency	Water and Sanitation Agency (WASA) Faisalabad			
Contracted Agencies	Main Consultant: Japan Techno Co., Ltd. Main Contractors: Future Bud International Co., Ltd. (for cleaning equipment); Torishima Pump Mfg. Co., Ltd (for disposal station equipment)			

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

- In the Ex-ante Evaluation Sheet, the target year for Indicators of Quantitative effects is set to be 2015 that is one year after project completion (the project was planned to be completed in August 2014). Although the project was completed in February 2015, handing over of the equipment procured under the project was completed in July 2014 and activities of the soft component other than school awareness were completed by October 2014. Accordingly, the target year is not changed in this ex-post evaluation.
- As to quantitative effects, utilization level of the procured equipment is examined in addition to 5 Indicators set at the time of ex-ante evaluation. Regarding qualitative effects, the following supplementary information is used to verify the effects of the soft component of the project: preparation of a cleaning work plan; preparation of a management plan of the cleaning equipment procured under the project; inspection of the procured equipment according to the inspection manual developed through the project; continuation of public awareness activities introduced by the project.

1 Relevance

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

The project has been consistent with development policy of Pakistan to prioritize safe water supply and improvement of sanitation, as set forth in Poverty Reduction Strategy Paper II (2007), National Sanitation Policy (2006), and National Water Policy (2018).

<Consistency with the Development Needs of Pakistan at the Time of Ex-Ante and Ex-Post Evaluation >

This project has been consistent with development needs of Pakistan for upgrading of mechanical system for sewerage and drainage service in Faisalabad City as described in “Background”. The needs were also confirmed by the Implementing Agency 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 Country Assistance Policy for Islamic Republic of Pakistan (April 2012), which includes assistance to “contribute to improving the poor conditions of water and sanitation especially in the urban areas” under one of the three Priority Areas, “Ensuring human security and improvement of social infrastructure”.

<Evaluation Result>

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

2 Effectiveness/Impact

<Effectiveness>

The project achieved its objective of upgrading mechanical system for sewerage and drainage service in Faisalabad City. As for quantitative effects, all the equipment procured under the project has been utilized as originally intended, and all of the 8 items under 5 Indicators have achieved at least 80% of the respective targets since the target year (i.e. 2015). With respect to qualitative effects, effects of soft-component of the project have been produced and continued. WASA Faisalabad (WASA-F) has been preparing a cleaning working plan and a management plan of the cleaning equipment procured under the project, utilizing the skills and knowledge acquired through the soft-component. Inspection of the procured equipment has been conducted based on the inspection manual and other concerned monitoring and tracking plans developed through the soft component. In addition, some of the public awareness activities introduced by the soft-component have been implemented, including a school campaign in 2016.According to WASA-F, it has a plan to organize more public awareness activities in the future.

<Impact>

According to WASA-F, damages from chronic flooding in Faisalabad City have been reduced through the project because time required for rectification of public complaints has been reduced from 6 to 2 hours and major inundations have not occurred since the project completion. In addition, the project has contributed to improvement of sanitary environment in Faisalabad City because conditions of uncollected wastes and chronic flooding have been improved. The project is assumed to have promoted revitalization of socio-economic activities impeded by the chronic flooding; however, related information was not available. As for impacts on gender, according to WASA-F, key persons in the service area (both men and women) actively participated in public awareness activities on proper use of service of WASA-F. No negative impacts have been observed.

<Evaluation Result>

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

Quantitative Effects

	Baseline (2011)	Target (2015) 1 year after project completion	Actual Result			
			2015 1 year after project completion	2016 2years after project completion	2017 3 years after project completion	2018 (as of August 2018)
Indicator 1: Possible number of emergency dispatches (times/day)						
(a) Jet Machine (Average Dispatch Request:40.3/day)	18.9	40.5	42.0**	44.0**	43.5**	55**
(b) Suction Machine (Average Dispatch Request:10.1/day))	6.0	12.0	14**	11**	12**	22**
(c) Dewatering Pump Set (Average Dispatch Request: 69.9/day)	53	70 or more	62**	58**	61**	72**
Indicator 2: Minimum time required to reach site (minutes) (Dewatering Pump Set and Transport Vehicles)	25-60	20 or less	22 or less	18 or less	17 or less	10
Indicator 3: Emergency drainage capacity (Dewatering Pump Set) (cfs)	26.5	43.5	45.9	46.8	48	52
Indicator 4: Amount of sludge and waste removal (m3/day)						
(a) Desludging capacity (Excavator)	570	936	936	936	936	936
(b)Transport capacity (Dump Truck)[1]	9.1	63.7	54.6	54.6	54.6	54.6
Indicator 5: Capacity of 4 target disposal stations* which discharge into final drains (cfs)	246	376	437	437	437	437

* PS-3 Chokera, PS-31 Station Road, PS-36 Ahmed Nagar, PS-30 Bawa Cha

** Data for Indicator 1 is the maximum number of emergency dispatches (times/day) in the year

Source: Ex-ante Evaluation Sheet; WASA-F

3 Efficiency

While the project cost was within the plan, the project period exceeded the plan (ratio against plan: 66% and 123% respectively). Although major component of the project was completed within the planned period, the project period was extended because implementation of school awareness activities under the soft component, was delayed due to the schedule conflict of WASA-F and an incident of school attacks by extremists occurred in Pakistan. The outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Institutional Aspect>

WASA-F is responsible for sewerage and drainage service in Faisalabad City. Under its O&M Directorate, Deputy Director (O&M) East, Deputy Director (O&M) West, and Deputy Director (Drainage), supervised by Deputy Managing Director (Service), are in charge of cleaning of sewers and channels and O&M of 4 target disposal stations, including O&M of the equipment procured under the project. Under the Deputy Directors, total of 878 staff members are allocated, including 836 for cleaning of swearers and channels, and 42 for O&M of 4 target disposal stations. WASA-F considers that allocated number of staff members is sufficient because the activities in the service area have been implemented without a serious problem and the procured equipment is in good condition.

<Technical Aspect>

WASA-F has necessary technical capacity to sustain the effects of the project. Staff members trained by the soft-component of the project still work for WASA-F and prepare clearing working plans and equipment management plans, utilizing the acquired skills and knowledge. Cleaning of sewers and drainage and O&M of the procured equipment are conducted according to the Standard Operational Procedures (SOPs) prepared through the soft-component of the project without a serious problem. In addition, training on O&M is available at Punjab WATSAN (Water and Sanitation) Academy[2], established under a technical cooperation project of JICA "Project for Improving the Capacity of WASAs in Punjab Province" (2015-2018). So far, 32 staff members of WASA-F, including Deputy Directors, participated in various training courses, including O&M, at the Academy through the JICA project. The technical level of WASA-F is expected to be maintained through training of O&M staff at the Academy.

[1] The actual result has been lower than the target because the existing vehicles at the time of ex-ante evaluation have not been utilized.

[2] It is known as Al-Jazari Academy.

<Financial Aspect>

Budget for O&M of the procured equipment is prepared based on the equipment management plan developed by the soft-component of the project and provided by Punjab Government. Annual budget was about 147 million rupees (Rs) in Pakistan Fiscal year (PFY)[3] 2015/16, 83 million Rs, in PFY 2016/17 and 182 million Rs. in PFY 2017/18, and annual expenditure was within the budget in the said period. WASA-F considers that sufficient budget has been secured because the budget estimate has been made based on the above-mentioned equipment management plan and all of the procured equipment has been in good condition. From the past record, the budget necessary for O&M of the procured equipment is likely to be secured from the government fund in the future. It is noted that WASA-F is examining introduction of Public Private Partnership to encourage private investment in water and sanitation sector in order to enhance its financial capacity and reduce its dependency on the government fund.

<Budget and expenditure of WASA-F for O&M of the procured equipment at WASA> (Unit: million Rs.)

	2015/16	2016/17	2017/18
(1) Total budget for O&M of the procured equipment	146.949	83.294	182.279
(2) Total expenditures for O&M of the procured equipment	102.007	63.642	146.147

Source: WASA-F

<Current Status of Operation and Maintenance of the Procured Equipment>

From interview to WASA-F and field observation, it was confirmed that all of the equipment procured under this project is in good condition and necessary spare parts and consumables are properly managed at the time of the ex-post evaluation.

<Evaluation Result>

Therefore, the sustainability of the project effect is high.

5 Summary of the Evaluation

The project achieved its objective of upgrading mechanical system for sewerage and drainage service in Faisalabad City and the expected impact of reduction of damages from chronic flooding has been observed. Regarding the sustainability, no particular problems have been observed in terms of institutional, technical, and financial aspects of the executing agency. As for efficiency, the project period exceeded the plan. Considering all of the above points, this project is evaluated to be highly satisfactory.

III. Recommendations & Lessons Learned

Recommendations to Executing Agency:

(1) The procured equipment should be continuously operated and maintained according to the SOPs so that life period of the equipment can be achieved.
(2) Trainings of O&M staff should be continuously arranged at Punjab WATSAN Academy.
(3) WASA-F should replicate the impacts of this project to the entire sewerage and drainages managed by Deputy Director (Drainage) by upgrading the existing equipment-so that the sewerage/drainage problems of entire city can be solved to facilitate benefit of the public.
(4) Close collaboration between WASA-F and communities in the service area should be promoted by implementing more public awareness activities.
(5) WASA-F should involve women in public awareness activities in the future as in the soft-component of this project.
(6) Through the project, WASA-F improved the mechanical system for sewerage and drainage services in its service area i.e. city center. As the next step, it should expand the service area and enhance its capacity to tackle sewerage issues of outskirt areas.

Lessons Learned for JICA:

The executing agency (WASA-F) had very competitive management and trained and professional staff enough for the implementation of this project with in its given timeframe and budget lines. The WASA concerned staffs regularly prepares cleaning plans to clean the sewer lines twice a year along with routine rectification of complaints. Due to improvements in conditions of uncollected waste and chronic inundations, the sanitary environment in the city is improved. The SOPs have been prepared & implemented accordingly by the trained staff. Vehicles tracking system is in place. In order to produce similar good results in a future project, it is desirable to start implementing measures to cleaning the sewers and channels and pumps for disposal stations and implementing technical assistance to prepare a cleaning work plan and cleaning equipment management plan as well as an inspection manual, thereby contributing to reduction of damages from chronic flooding and to ensuring their sustained effectiveness in the longer-term. In planning an assistance project including the provision of equipment, if certain post-completion supporting activities from the executing agency are expected to greatly influence the sustainability of the equipment's effective operation. JICA should encourage the executing agency in advance to actively implement the relevant measures. As an example, it may be desirable to first check whether the beneficiary country or the executing agency's medium-term activity plans include such necessary measures.

[3] PFY is from June to July.

（WASA-Project Machinery and Vehicle on Work）

（Project Machinery and Vehicles Parked in WASA Parking Yard）

Internal Ex-Post Evaluation for Grant Aid Project

conducted by Cameroon Office: December 2018

Country Name	The Project for Rural Water Supply (Phase V)
Republic of Cameroon	

I. Project Outline

Background	The safe water access rate of Cameroon as a whole was 74% in 2008, which exceeded the average of Sub-Saharan Africa. On the other hand, with regard to rural water supply, the access rate remained at 51% in average and particularly the access rate was low at 20% plus in Northern Region and Far North Region. That was due to failure of pumps and drying up of wells because many of the wells were old or were not maintained well. Therefore, the people in those regions depended on contaminated surface water from rivers and ponds and waterborne diseases such as diarrhea were widely spread.			
Objectives of the Project	To secure safe and stable water supply by constructing water supply facilities in North Region and Far North Region, and thereby contributing to improvement in hygiene.			
Contents of the Project	1. Project Site: 57 localities in 6 communes in Benoue Department, North Region *Originally, 132 localities in Far North Region were also included in the scope, they were cancelled due to the security situation. 2. Japanese side (1) Construction of foot-operated pump wells (2) Technical assistance (soft-component) for the operation and maintenance of the facilities, establishment of water user committees 3. Cameroon side: Improvement of access roads, if necessary.			
Project Period	E/N Date	September 7, 2012	Completion Date	Middle of May, 2015 (Completion of the soft-component) (No record for the exact date)
	G/A Date	September 7, 2012		
Project Cost	E/N Grant Limit / G/A Grant Limit: : 768 million yen			Actual Grant Amount: 392 million yen
Executing Agency	MINISTERE DE L' EAU ET DE L' ENERGIE (MINEE, Ministry of Water Resources and Energy)			
Contracted Agencies	Main Contractor(s): TONE ENGINEERING CORPORATION Main Consultant(s): Eight-Japan Engineering Consultants Inc.			

II. Result of the Evaluation

<Constraints on Evaluation>

- Due to security concern in the Northern Region, the field survey was not conducted. Instead, information was collected from 38 sites through questionnaires collected by DREE (Regional Delegation of Energy and Water Resources) and DD (Departmental Delegation) (Out of 57 sites, 38 responded to the questionnaires)

1 Relevance

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

The project has been consistent with the development policy of Cameroon. The "Growth and Employment Strategy Paper" (2010-2020) aims at achieving 75% of rural water supply rate in 2020. In addition, at the time of ex-post evaluation, "National Policy of Water in Rural Areas" (2010-2020) require various actors to participate in the objective that assure the sustainable access of drinking water and adequate sanitation. The components of the project contribute to the policy objective.

<Consistency with the Development Needs of Cameroon at the Time of Ex-Ante and Ex-Post Evaluation >

The project has also been consistent with the development of policy of Cameroon for rural water supply. At the time of ex-ante evaluation, the access rates for rural water supply remained at 51% due to failure of pumps and drying up of wells because many of the wells were old or were not maintained well. Especially in the access rate was low in Northern Region and the Far North Region. At the time of ex-post evaluation, while the national average access water rate was 60%, the rate in the rural area was 54.2% (2016). Compared to the national coverage, the rate was still low in rural area, though the gap has been reduced.

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

The project was also consistent with Japan's ODA policy to Cameroon. Improvement of basic living conditions in the rural area and poverty reduction at community level through supplying safe water was one of the priority areas for assistance[1].

<Evaluation Result>

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

2 Effectiveness/Impact

<Effectiveness>

The project achieved its objective, "to secure safe and stable water supply by constructing water supply facilities", as the targets of indicators set at the time of ex-ante evaluation were achieved. Although the recent population census was not available, the project was deemed achieved the target of "the population who has access to safe and stable water" and "water supply rate" as the water supply facilities were constructed at 57 water points as planned. The target of an indicator "the number of water users committees (WUCs) which are functioning" was also achieved as all water users committee, which was formed under the soft-component of the project have been functioning, according to the response from the sampled sites as well as information from MINEE. As a result of the soft-component, WUCs have held regular meetings, though, frequency of the meeting has varied from once a week to once a month. There have been a sensitization campaigns on the use of water facilities and the importance of the water facilities maintenance. Therefore, the target population has been well

[1] Ministry of Foreign Affairs, "ODA Country Databook 2010"

engaged and they understand the importance of the safe and stable drinking water. They have their willingness to sustain the facilities.

According to the questionnaire survey with the sites and interviews with person in charge of MINEE, most of the facilities (55/57) have been properly utilized while the rest of the facilities did not operate and need some small repair. A follow-up of the situation for the repair was undergoing at the time of ex-post evaluation.

People are satisfied with the quality and quantity of water, and the quality of water satisfies the WHO standards, according to the officials of MINEE. People have changed their behavior on using safe drinking water and the hygiene status has been improved, according to the questionnaire survey and interviews with MINEE.

<Impact>

According to the questionnaire survey with the sites and interviews with MINEE, incidents of water borne diseases have decreased thanks to the water supply facilities constructed by the project. There are fewer cases of diarrhea and amebic dysentery. Also, decreases in burden of fetching water of women and children have been observed in 33 sites out of 38 sites which responded to the questionnaires. Before the project, it took 3 to 11 hours for women and children to fetch water, however, after the project, the time for fetching water reduced to 30 minutes to 1 hour at a maximum. Women and children have been able to spend time for other activities such as retail business for women and school for children.

No negative impact on the natural environment by this project has been observed and land acquisition and resettlement have not occurred either.

<Evaluation Result>

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

Quantitative Effects

	Baseline (2012-Estimated) Baseline Year	Target (2017) 3 Years after Completion	Actual (2015) Year of Completion	Actual (2018) 3 Years after Completion
Indicator 1-1The population who has access to safe and stable water	-	Increase by 17,100*	17,100	17,100
Indicator 1-2 Water supply rate	-	14.3%*	14.3%	14.3%
Indicator 2: The number of water users committees which are functioning	0	57	57	57

Source：JICA documents, questionnaires and interviews with MINEE

*The population of "17,100" at 57 water points at the time of ex-ante evaluation was set as the target, and the design criteria did not include the population increasing ratio. Unfortunately, we could not have actual proper censes data in the target quarters/villages of Benoue at the time of ex-post evaluation, so we indicate the number at the time of the project completion.

3 Efficiency

Although the project cost was within the plan (ratio against the plan: 51%), the decrease in the project cost did not match the decrease in the the actual output (the ratio against the plan: 30%) despite of excluding the increase in the project cost due to the security reason. Although there was no exact date for the completion of the project (Soft-component was completed May 2015), the actual period deemed exceeded the plan after excluding the delay by the security reason (estimated ratio against the plan: 124%).

Therefore, the efficiency of the project is fair.

4 Sustainability

<Institutional Aspect>

WUCs have been mainly responsible for Operation and Maintenance (O&M) of the facilities constructed under the project while coordinating with communes and pump menders (one pump mender at each commune). Main tasks of WUCs have been cleaning and water tariff collection, while pump menders have been carrying out maintenance works, and communes have been monitoring the O&M practices. Among 38 WUCs surveyed under the ex-post evaluation, 36 WUCs[2] have committee members as planned, including President, Secretary, and Treasurer. Although it was expected that all WUCs hire pump operators, 28 WUCs have had pump operators. All WUCs have held regular meetings: 27 have held regular meetings every week or two weeks, while 8 WUCs have held meetings every month. All WUCs have collected contributions[3] from the users instead of water tariff. Monitoring activities at some communes have been somewhat limited due to the lack of budget.

<Technical Aspect>

WUC has necessary skills for operation of the committee activities. Every household in WUCs have been required to make contribution to WUCs (900-1,500 XAF per year), and this money has served to acquire repair equipment and to pay transport cost for the pump menders. WUCs have sensitized the water users on the operation and importance of the pumps every month. As to the skills of communes and pump operators, each commune has had sufficient skills to supervise WUCs and pump menders at each commune have acquired and maintained technics to repair the pump. The commune has trained reparatory in each quarter/village and they have assisted WUCs to maintain water facilities whenever there has been a need. At the time of ex-post evaluation, MINEE did not have a policy/plan to keep the system functioning in case of serious damages of the water facilities.

<Financial Aspect>

No information has been obtained on the financial situation of WUCs and communes. According to MINEE, almost none of commune has sufficient budget in order to get down to the community (at the water point) WUC And WUC has not have sufficient budget, WUC has been collecting contribution from each household annually, which can be used for required O&M at minimum level, though it is not sufficient. Information on the amount of water tariff/distribution and the collection rate was not obtained.

[2] Among 38 respondents, two respondents did not answer questions on the organizational structure. However, according to MINEE, they were also functional.

[3] Members do not pay water tariff for use of a certain quantity water, instead, they contribute the amount that depends on each household's willingness and availability on annual basis.

<Current Status of Operation and Maintenance>

The pump operators if hired (28 WUCs) have properly maintained the facilities. Most of the facilities have been cleaned on a regular basis. In 29 sites (out of 38 surveyed), communes regularly monitor the facilities, while communes do not regularly monitor the facilities in seven sites because of lack of funds (No answer from 2 sites).

<Evaluation Result>

Therefore, the sustainability of the project effect is fair.

5 Summary of the Evaluation

The project achieved its objective, "to secure safe and stable water supply by constructing water supply facilities", as the targets of indicators set at the time of ex-ante evaluation such as "the population who has access to safe and stable water", "water supply rate" as well as "the number of water user committees which are functioning" were achieved. Positive impacts such as the decrease in the incidents of waterborne diseases and the decrease in the burden of fetching water have been observed. As to the sustainability, problems have been observed in the institutional, technical and financial aspects, though no problem has been observed in policy aspect. As to efficiency, both of the project cost and project period are deemed to slightly exceed 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 necessary to reinforce the follow-up of water facilities and improve the communication between Communes and the Ministry of Water Resources and Energy. Communes are recommended to formulate and implement a periodic (annual, monthly) financial plan for the regular operation and maintenance of water facilities.

Fetching water from water supply system (1)

Fetching water from water supply system (2)

Internal Ex-Post Evaluation for Grant Aid Project

conducted by Papua New Guinea Office: December 2018

Country Name	**Project for Improvement of Road Maintenance Equipment**
Independent State of Papua New Guinea	

I. Project Outline

Background	Road network in Papua New Guinea (total length: 19,800 km as of 2012) was not sufficiently developed with many unopened blocks, disjunct trunk roads, and few bypass and alternative routes. Therefore, when heavy rains in rainy season caused landslides or slope failures, roads were closed, people and goods in the areas had no means to transport, and the local economies and the people's life had been seriously affected. The pavement ratio of roads in the country was low. About 74% of the national roads (total length: 8,700 km as of 2012) maintained by the Department of Works (DOW) were unpaved gravel roads which required periodical maintenance such as unevenness correction and refilling of gravels. However, proper maintenance and prompt restoration after disasters were poorly conducted because of the insufficient and aged construction equipment owned by the Plant and Transport Division (PTD) who was responsible for the maintenance and management of road maintenance equipment.			
Objectives of the Project	To conduct proper maintenance of roads and restoration of roads after disasters by four Provincial Offices of DOW by procuring equipment for grading and restoration works of roads, thereby contributing to ensuring stable transportation and traffic routes in the target areas.			
Contents of the Project	1. Project Site: Western Highlands Province, Morobe Province, East Sepik Province and West New Britain Province 2. Japanese side: provision of grant necessary for procurement of equipment for road grading and restoration (bulldozers, excavators, motor graders, wheel loaders, vibration rollers, water tankers, dump trucks, mobile workshops, and spare parts) 3. Papua New Guinean side: logistical arrangements and clearances			
Project Period	E/N Date	February 20, 2013	Completion Date	April 1, 2014 (installation completion date of procured equipment)
	G/A Date	February 20, 2013		
Project Cost	E/N Grant Limit / G/A Grant Limit: 864 million yen, Actual Grant Amount: 765 million yen			
Executing Agency	Department of Works (DOW)			
Contracted Agencies	Main Contractor: ITOCHU Corporation Main Consultant: INGEROSEC Corporation Agent: INGEROSEC Corporation			

II. Result of the Evaluation

1 Relevance

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

The project was consistent with the Papua New Guinea's Medium Term Development Plan (MTDP) (2011-2015) at the time of ex-ante evaluation, which aimed at realizing easy accesses for local people to social services. It was also consistent with the MTDP 2 (2016-2017) at the time of ex-post evaluation, which aimed at improving transportation system that allows efficient movements of goods from the points of production to the points of consumption and easy access to social services such as education and health. MTDP 3 (2018-2022), which is in drafting process as of August 2018, is supposed to focus on 'maintenance first' for transportation facilities.

<Consistency with the Development Needs of Papua New Guinea at the Time of Ex-Ante and Ex-Post Evaluation>

The project was consistent with the needs of Papua New Guinea. DOW was in the position to directly perform maintenance and restoration of national roads, but the equipment owned by PTD for maintenance of gravel roads (grading work) and restoration of roads after a disaster (restoration work) was insufficient and aged. Therefore, DOW was forced to outsource the works to private contractors at the time of ex-ante evaluation. The needs for road maintenance were further increasing along with the extension of roads 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 Japan's ODA policy for Papua New Guinea at the time of ex-ante evaluation. In the "Japan's ODA Policy for Papua New Guinea" (August 2012), strengthening of the foundation of economic growth focusing on transport and energy/electricity infrastructure by developing and maintaining roads, bridges, sea/air ports was raised as one of the three 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 objectives by employing maintenance equipment procured by the project for grading and restoration works of roads in four target provinces effectively and efficiently. As for grading works, operation hours of equipment and the total work lengths in a month in 2017 exceeded the targets set at the time of ex-ante evaluation (Table 1). As for restoration works, according to the answers to the questionnaires to the Provincial Offices and interviews with the Provincial Work Managers and the Civil Engineers, the equipment was highly effectively mobilized for restoration works. For instance, it was so when flash floods and landslides took place in February 2015 in West New Britain Province and in October 2016 in Morobe Province, and at the time of Mt. Kadovar eruption in East Sepik Province in January 2018. According to the Provincial Plant Manager and the Maintenance Supervisor in Western Highlands Province, a restoration work that used to take a week (40 to 80 hours) before the project could be completed within 3 days (24 hours) after the project.

<Impact>

Although no quantitative data is available, it is a collective opinion of managers in the Provincial Offices that the transportation of goods and access for people to public services has been highly improved by providing smooth surface of roads, shortening traveling time and increasing the traffic volume with less frequency of road closures. Before the project, due to insufficient and aging equipment owned by PTD, significant amount of grading works used to be outsourced to private sectors. However, according to the First Assistant Secretary of DOW, after the project, since most of the works were directly done by the Provincial Offices with new equipment procured by the project, about 70% of the outsourcing cost was reduced.

Table 1. Performance of equipment for grading works in 2017

	Baseline (2012)	Target (2017)	Province			
			Western Highlands	Morobe	East Sepik	West New Britain
Operation hours of equipment (hours/month)	0	84	192*	110*	220*	160*
Total work lengths (km/month)	0.8	8.0	21.6**	21.3**	8.8**	9.0**

Source: Provincial Offices of DOW

*: operation hours = (operation hours/day) x (operation days/month)
e.g. 8 hours/day x 24 days/month = 192 hours

**: work lengths = (work lengths/day) x (operation days/month)
e.g. 0.9 km/day x 24 days/month = 21.6 km

The procured equipment is also being used for new construction works which used to be outsourced. The missing link construction work in the West New Britain Province, which significantly benefits rural population, has been implemented by DOW in its own capacity. Besides, the Provincial Offices earn revenue by leasing the equipment to private sectors and provincial and district administrations, and the income is deposited into the DOW's trust account[1] which is for covering operation and maintenance of equipment of PTD. For instance, the East Sepik Provincial Office has earned the revenue about 3 million Kina in a year (Table 2). No resettlement and land acquisition, and no other negative impact by project has been observed.

Table 2. Revenue from leasing equipment in East Sepik Province

Year	2014	2015	2016	2017
Revenue from leasing equipment (million Kina)	3.3	3.2	2.8	1.7

Source: Provincial Office of East Sepik

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is high.

3 Efficiency

Outputs were produced as planned. Both of the project cost and period were within the plan (ratio against the plan: 89% and 100%, respectively). Therefore, efficiency of the project is high.

4 Sustainability

<Institutional Aspect>

There was no significant change neither in organizational structures nor in responsibilities and mandates of the Provincial Offices, PTD and DOW from the time of ex-ante evaluation of the project. The number of staff members engaged in road grading and restoration in the Provincial Offices changed or slightly increased (Table 3), and it is sufficient according to the interviews with managers of the Provincial Offices. In Provinces of East Sepik and West New Britain, the number of mechanics which used to be sufficient for a small number of equipment before the project became inadequate for the equipment increased after the project. The official request for additional mechanics was submitted to DOW by the East Sepik Provincial Office in 2017 but it has not been realized yet. There is no prospect of changing the institutional structures of Provincial Offices, PTD and DOW in near future.

Table 3. Number of staffs engaged in road grading & restoration

Province	Year	2014	2015	2016	2017
Western Highlands	Total	26	26	26	26
	Mechanics	12	12	12	13
Morobe	Total	36*	27	27	27
	Mechanics	-	-	-	-
East Sepik	Total	18	18	19	21
	Mechanics	2	2	2	2
West New Britain	Total	-	-	30	30
	Mechanics	5	5	5	5

Source: Provincial Offices

* This included the number of vocational trainees on 6-month training program.

<Technical Aspect>

The technical level of the staff engaged in road grading and restoration is sufficiently high since the equipment procured by the project was the selection of conventional and familiar ones that had been used for long time for their works. The technical level of staff in the four Provincial Offices has been further improved through the on-the-job and off-the-job training provided by the technical cooperation project the "Project for Capacity Development on Road Maintenance" (2013-2017) assisted by JICA. Besides, DOW provided technical training programs in 2017 with its own funds on line drain construction, culvert installation, gravelling, and patrol grading inviting approximately 100 participants in total from all the Provincial Offices.

Table 4. Annual Budget of Provincial Offices

Unit: thousand Kina

Province	2014	2015	2016	2017
Western Highlands	377	1,034	715	422
Morobe	585	548	909	1,732
East Sepik	3,028	3,336	2,486	1,049
West New Britain	528	743	783	251

Source: DOW

<Financial Aspect>

It is hard to find the financial trends and foresee the financial sustainability of Provincial Offices with the limited data

[1] Trust accounts are held by public agencies across the country and were initially established to hold counterpart funding between the government and donor agencies, but their roles have varied over the years. In the case of the trust account for maintenance equipment of DOW, the rental fee of equipment is the primary source of revenue, and it is the source of funds to cover the expenses for maintenance, repair and replacement of equipment.

available (Table 4). According to the First Assistant Secretary of DOW who is responsible for the allocation of budget for Provincial Offices, the budget for grading and restoration works of roads including O&M of equipment will be secured in the future. The fund for road maintenance of the country is fully controlled by the headquarters of DOW leaving limited control by Provincial Offices. Therefore, it takes time for Provincial Offices to mobilize budget and it has caused the delay of procurement of consumables and spare parts.

<Current Status of Operation and Maintenance>

Sufficient and adequate manuals for road maintenance and O&M of equipment including O&M schedule were provided by the project and the technical cooperation project mentioned above. O&M of equipment has been conducted by the Provincial Offices mostly in accordance with the manuals and schedule, and the conditions of equipment were confirmed by the field survey to be well maintained meeting the relevant standards. The delay of procurement of consumables and spare parts stated above occasionally causes the delay of O&M.

<Evaluation Result>

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

5 Summary of the Evaluation

The project has achieved its objectives by enhancing the capacity of the four Provincial Offices of DOW to maintain and restore national gravel roads through the procurement of road maintenance equipment. Utilizing the equipment procured, the road conditions have been improved ensuring stable transportation of goods and people. As for sustainability, the number of technical staffs has been in short in some provinces, and the budget mobilization mechanism limits quick actions for road maintenance in provinces. Technical level of staff of the Provincial Offices for road maintenance including O&M of equipment was improved and has been sustained through the project and the technical cooperation project assisted by JICA. Considering all of the above points, this project is evaluated to be highly satisfactory.

III. Recommendations & Lessons Learned

Recommendations to Executing Agency:

- It is recommended for DOW to allow the Provincial Offices to control some parts of the budget for O&M of road maintenance equipment in order to promote prompt actions for appropriate grading and restoration works of roads at site.
- For realizing the recommendation above, it is recommended for DOW and the Provincial Offices to improve the capacity of data management including actual operation hours of equipment, staff allocation in offices, revenue and expenditure, and others.

Lessons Learned for JICA:

- Because conventional and familiar equipment for the counterpart was selected for the project, the soft-component to train the staff for new unfamiliar machines was unnecessary in this project, and technical sustainability has been secured at high level. Equipment procured by a grant aid project is suggested to be conventional and familiar ones for the counterpart as much as possible so that the efficiency and sustainability of the project can be ensured.
- Adding to the selection of equipment, collaboration with the technical cooperation project assisted by JICA has significantly contributed to the improvement of technical capacity of the counterparts resulting high technical sustainability of the project. In case of a grant aid project, in order to make the equipment procured fully functional and sustainable, specific collaboration with any technical cooperation project(s) is recommended.

Fig 1: Disaster restoration work in Southern Highlands Province using equipment lent by Western Highlands Provincial Works

Fig 2: Road grading and maintenance work in Western Highlands Province using the procured equipment

Internal Ex-Post Evaluation for Grant Aid Project

conducted by JICA Cambodia Office: September 2018

Country Name	The Project for Improvement of Facility and Laboratory Equipment in the Institute of Technology of Cambodia
Kingdom of Cambodia	

I. Project Outline

Background	Cambodia aimed to ensure the economic growth sustainably by diversifying industries, in particular, enlarging manufacturing industry. However, the skill level of graduates from higher educational institutes in Cambodia for practical work was insufficient in that only few graduates had studied engineering majors, and in that those in major of engineering had often lacked the laboratory experiments. Under these circumstances, the Cambodian government had been stressing to develop human resources in engineering, mathematics and science fields as one of the key concepts in the educational sector development plan, namely "Educational Strategic Plan (2009-2013)" and established a policy of strengthening the development of human resources with skill and technique in order to satisfy labor market needs. One of the only two public institutes of higher education for engineering in Cambodia was the Institute of Technology of Cambodia (ITC). Due to that experimental equipment was quite old and insufficient which made it difficult for ITC to hold enough experimental classes to meet the needs of subjects in each department, it had little choice but to provide the conventional style of classes in which students carried out desk work. Thus ITC couldn't provide enough graduates (human resource) to the industries which need human resource with the practical skill.			
Objectives of the Project	To enhance the educational and research development capacity by construction of facilities and procurement of experimental equipment targeting ITC, thereby contributing to development of human resources (Engineers) with practical skills for industrial fields			
Contents of the Project	1. Project Site: Institute of Technology of Cambodia, Phnom Penh City 2. Japanese side: Provision of grant necessary for the following items: (a) Construction of a laboratory building (Some specifications were changed) (b) Procurement of experimental equipment for seven departments of ITC (Some items were cancelled or additionally procured, and specification of some item was changed) 3. Cambodia side: Extension of electric cable to connect distribution panel, extension of water supply pipe with bulb, extension of sewage water pipe and installation of communication network			
Project Period	E/N Date	March 21, 2013	Completion Date	June 20, 2015 (Handover of the equipment)
	G/A Date	March 28, 2013		
Project Cost	E/N Grant Limit / G/A Grant Limit：596 million yen, Actual Grant Amount: 594 million yen			
Executing Agency	Institute of Technology of Cambodia (ITC)			
Contracted Agencies	Main Contractor: Konoike Construction Co. Ltd., Ogawa Seiki Co., Ltd., Mitsubishi Corporation, Nishizawa Limited. Main Consultant(s): Joint venture: Intem Consulting Inc., Matsuda Consulting International Co. Ltd.			

II. Result of the Evaluation

<Constraints on Evaluation>

・It should be noted that during and after the project period, ITC constructed some laboratories by their own funds and it received some experimental equipment from other sources than the project. Therefore, the quantitative and qualitative effects and impacts of the Project include the effect by those outputs.

< Special Perspectives Considered in the Ex-Post Evaluation >

[Indicators and supplemental information for Effectiveness]

・As for Quantitative Effects, two indicators specified in the ex-ante evaluation summary sheets such as "The number of laboratories for 7 departments targeted by the Project (unit: laboratory)" and "The number of subjects utilizing experimental equipment in classes for 7 departments targeted by the Project (unit: subject)" are used to judge the effectiveness. In addition to these two indicators, in order to examine the utilization level of the outputs by the project, "the number of students registered to the subjects utilizing experimental equipment in class for 7 departments (unit: student) (Supplemental Information 1)" and "the current utilization level of laboratories constructed (Supplemental Information 2)" and "the current utilization level of equipment provided by the project (Supplemental Information 3)" are used.

・As for Qualitative Effects, three kinds of effects are specified in the ex-ante evaluation summary sheets. They are "(1) Educational environment with necessary experimental equipment for practical training as the top Engineering Institute in Cambodia has improved", "(2) By using experimental equipment for practical training for education and research, human resources (engineers) with practical skills will be increased*" and "(3) To benefit the demand for human resources in the industrial area of Cambodia, including Japanese companies expanding into the country". Among those, (2) and (3) are considered as impacts.

Note: As for (2), attempts were made to obtain more specific data to identify the number of ITC graduates employed in the field of manufacturing and construction industries and those entered into the further studies in the subject fields, but the data was not available.

1 Relevance

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

At the time of ex-ante evaluation, this project was consistent with development plans such as "The Education Strategic Plan (2009-2013)", which mentions the needs to improve facilities for basic learning activities relating to the human resource development of the science and mathematics field. At the time of ex-post evaluation, the subsequent policy, "The Education Strategic Plan (2014-2018)" emphasizes in its Higher Education sub-sector program about the improvement of teaching and learning program by introducing creative pedagogy through research and modernization of learning materials and environment such as classrooms, laboratories and libraries.

<Consistency with the Development Needs of Cambodia at the Time of Ex-Ante and Ex-Post Evaluation >

This project was consistent with Cambodia's development needs of higher education at the time of ex-ante evaluation as described in "Background" above. At the time of ex-post evaluation, there are still continuing needs for producing engineers with practical skills for the

development of industrial sector. In this respect, ITC has played a crucial role to support the government to realize the vision of "Industrial Development Policy (2015-2025)" which aims to increase Gross Domestic Products' share of industrial sector. Therefore, laboratories constructed and equipment procured by the project have been highly needed for ITC educational development as well as the development of industrial sector.

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

One of the Pillars of Priorities stated in the "Country Assistance Policy for Cambodia, April 2012" is "Strengthening of the basis for economic activities". One of those activities includes "Strengthening of Private Sector", in which Japan supports for the human resources development for the industrial sector with special focus on the human resources in the technical fields (e.g., engineers and technicians) and middle-level management who are required in the expanding manufacturing industries.

<Evaluation Result>

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

2 Effectiveness/Impact

<Effectiveness>

The project objective of enhancement of the educational and research development capacity by construction of facilities and procurement of experimental equipment targeting ITC has been achieved.

For quantitative effects, the number of laboratories targeted by the project for seven departments increased to 44 which has mostly achieved the target of 45 (Indicator 1). It was identified by the study that ITC constructed 21 laboratories by their own funds in order to meet the demands. As a result, there are 65 laboratories available for seven departments at present. The number of subjects utilizing experimental equipment in class for seven departments increased to 178, achieving the target of 176 (Indicator 2). It was also found by the study that the approximately 30 % of experimental equipment (in pricewise) are those provided by other projects, such as the Cultural Grant Assistance for "The Project for the Improvement of Educational Equipment of the Department of Geo-Resources and Geotechnical Engineering of the Institute of Technology of Cambodia" and Technical Cooperation for "The Project for Educational Capacity Development of the Institute of Technology of Cambodia. Therefore, the increase of subjects utilizing equipment is attributable to the combined effects of the project and other projects. In terms of utilization of the laboratories and equipment, the number of students registered to the subjects utilizing experimental equipment in class for all seven departments has increased from 1,985 in 2012 to 4,065 in 2017, and to 4,735 in 2018. This implies that more and more students are utilizing experimental equipment (Supplemental Information 1). Furthermore, it was confirmed by the study that the laboratories constructed and equipment provided by the project are used accordingly as planned (Supplemental information 2 and 3).

As for qualitative effects, according to the questionnaire survey and interview with teachers and students of ITC, the new lab building equipped with modern equipment has enabled a deepening understanding of students on the contents of subjects through experiments under practical settings. For example, as for the Modeling subject at Electrical and Energy Engineering Department, students have chances for the first time to do experiment on their own design on Modelling, which is fundamental element for robot development.

<Impact>

According to the survey conducted by ITC, the absolute number of ITC graduates from the engineering or technicians courses has drastically increased. The number of ITC graduates who got employed increased from 304 in 2012 (before project) to 444 in 2015 (after project completion) and further increased to 596 in 2017. Those ITC graduates who continued further studies increased from 87 in 2012 to 108 in 2015 and further increased to 173 in 2017. This suggests that the project has contributed to produce human resources with practical skills by using experimental equipment for practical training and it is likely to benefit the demand for human resources in the industrial area of Cambodia. According to the questionnaire survey and interviews, ITC has continuously received the request from companies that they should increase the number of graduates to meet the demand of job market. In order to cope with such market demands, ITC established an Office of University-Industry Linkage and Cooperation in 2016 for the well cooperation with private sector. No negative impacts by the project were found.

<Evaluation Result>

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

Quantitative Effects

Indicators	Baseline 2012 Baseline year	Target 2017 5 years after completion	Actual 2017 5 years after completion	Actual 2018 6 years after completion
Indicator 1: (1) The number of laboratories for seven departments	37	45	65 (44)	65 (44)
Indicator 2: (2) The number of subjects utilizing experimental equipment in class for 7 departments	129	176	178	178

Sources: Preparatory Survey Report , Questionnaire and interviews with Implementing Agency

Note: (1) The number in parenthesis excludes 21 laboratories constructed by the ITC's own funds.

Note: (2) It is considered that the combined effects of equipment provided by both of the project and other projects are reflected on these figures.

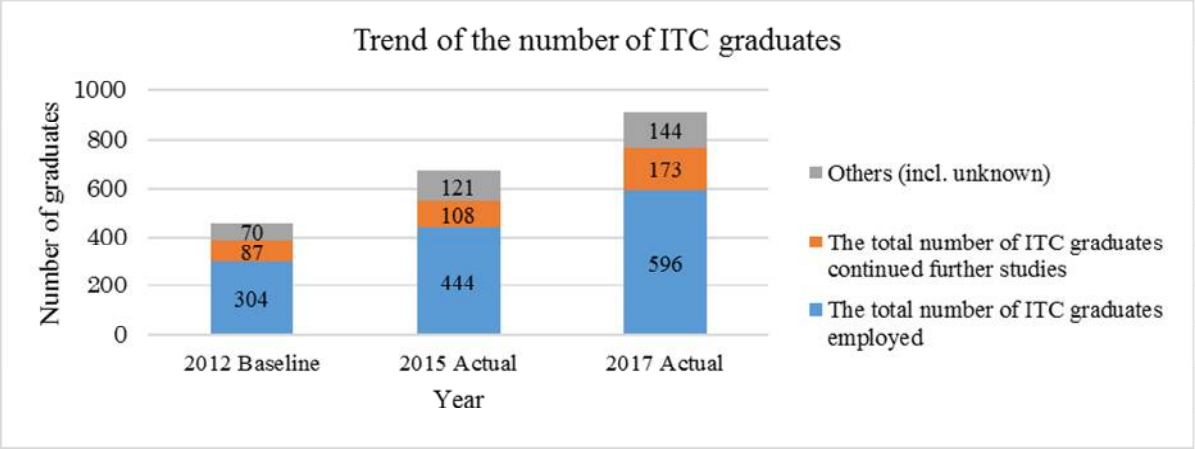
Supplemental Information 1: Number of students registered to the subjects utilizing experimental equipment in class for seven departments

Department Name	Baseline 2012 Baseline year	Actual(3) 2017 5 years after completion	Actual(4) 2018 6 years after completion
Electrical and Energy Engineering	409	900	909
Industrial and Mechanical Engineering	319	815	819

Food Technology and Chemical Engineering	279	650	679
Civil Engineering	448	420	948
Information and Communication on Engineering	164	350	364
Geo-Resources and Geotechnical Engineering	120	250	270
Rural Engineering	246	680	746
Total	1,985	4,065	4,735
% increase against baseline	*na*	*205%*	*239%*

Sources: Preparatory Survey Report, Questionnaire and interviews with Implementing Agency
Note: As for (3) and (4), it is considered that the combined effects of equipment provided by both of the project and other projects are reflected on these figures.

Expected Impacts



Source: Ex-ante Evaluation Sheet, Questionnaire, interviews with Deputy Director

3 Efficiency

While the project cost was within the plan, the project period exceeded the plan (ratio against plan: 100%, 133%). Having been affected by the big fluctuation of foreign exchange rates between the time of the Outline Design and that of the Detailed Design, it was necessary to reduce the number of items of equipment provision and those for facility renovations in order to execute the project within the scope of planned cost. Additional tender procedures were followed based on the re-designed plan. The residual funds after several tender procedures were used to obtain some items of equipment and renovation once deleted from the original plan. As a result, the outputs were produced, but not as planned. Therefore, efficiency of the project is fair.

4 Sustainability

<Institutional Aspect>

The Higher Education Department of Ministry of Education, Youth and Sport (MoEYS) assumes the overall responsibility of the higher education sector and is responsible for large scale construction and provision of equipment and also for supervising higher education institutions to carry out the operation and maintenance (O&M). Each higher education institution is independently responsible for course programing, curriculum development, collection of tuition and cost control, thus actual operation and maintenance of buildings constructed and equipment provided by the project are carried out by ITC. There are two-levels of O&M supervision system in ITC. Under level 1, daily base maintenance is carried out by the Maintenance Office of Lab Equipment at each department in which there are two or three technicians and one engineer assigned. Under level 2, being responsible for all equipment, building, water electricity and IT services, the Technical Service Office handles critical and serious problems. It is identified by the study that ITC has recruited one engineer for each lab and three staff for Maintenance Office of Laboratory Equipment. In total, there are ten more staff for O&M now compared with what was before the project and it is considered as sufficient to sustain the effect by the project.

<Technical Aspect>

Technical skill of teachers and technicians is sufficient to sustain O&M of laboratory constructed and equipment procured by the project because they received proper training from suppliers before handing over the equipment. In addition, JICA technical cooperation project, “Project for Educational Capacity Development of Institute of Technology of Cambodia (2011-2015)” has contributed to the improvement of technical capacity of technicians and teachers in three departments, such as Electrical and Energy Engineering, Industrial and Mechanical Engineering and Geo-Resources and Geotechnical Engineering that were also supported by the project. In order to further improve their technical skills, ITC also has a system to send technicians to abroad for technical training. Some technicians have been trained under such program and are expected to work as trainers for the lab staff. Furthermore, lab manuals have been developed and used properly under the supervision of teachers.

<Financial Aspect>

The financial condition as shown below explains that ITC has sufficient budget secured for sustaining the effect achieved by the project. The total revenue from tuition fee has been increasing. ITC also receives funding from MoEYS and the assistance from other countries such as France and Belgium.

Currency Unit in USD

Revenue items	Baseline 2012-13	2015-16	2016-17	Ex-post evaluation 2017-18
ITC tuition	1,060,000	1,502,990	1,662,000	1,769,800
Subsidy from MoEYS	218,555	883,941	539,018	608,200
Assistance from other external donors	461,106	287,874	250,583	308,397

	Total	1,739,661	2,674,805	2,451,601	2,686,397
	% increase against baseline	*na*	*154%*	*141%*	*154%*
Cost items		Baseline 2012-13	2015-16	2016-17	Ex-post Evaluation 2017-18
Payroll Total		1,043,111	1,645,051	1,326,690	1,380,000
Development Cost (non-recurring)	Facility, equipment	90,539	80,245	156,170	155,500
	Others	37,929	55,248	56,469	72,200
	Total	1,171,579	1,780,544	1,539,329	1,607,700
Operating expenses	Repair/maintenance	170,247	338,817	373,140	150,900
	(% increase against baseline)	*na*	*228%*	*219%*	*89%**
	utilities	161,055	179,101	189,096	235,000
	Others	161,055	179,101	189,096	235,000
	Total	368,062	645,627	687,805	519,500
	Grand total	1,539,641	2,426,171	2,227,134	2,127,200
	% increase against baseline	*na*	*158%*	*145%*	*138%*

Source: Questionnaire survey with Implementing Agency
Note: In 2015-16 and 2016-17, ITC had a big investment projects on construction of new building and other development activities such as concrete pavement, road pavement in the campus. Therefore, the overall budget for maintenance in 2017-18 was decreased after completion of those projects.

<Current Status of Operation and Maintenance>
All of equipment provided by the project are currently in operation. Consumables for laboratory are managed properly by Technical Service Office. Some spare parts for replacement or for repair are available locally or should be imported from other countries.
<Evaluation Result>
Therefore, the sustainability of the project effect is high.

5 Summary of the Evaluation

The project has achieved its objectives, "to enhance the educational and research development capacity by construction of facilities and procurement of experimental equipment targeting ITC" as it was observed that the number of laboratories for seven departments increased mostly achieving the target. With the combined effects of experimental equipment provided by other projects, the number of subjects utilizing experimental equipment in class for seven departments increased as planned. Furthermore, the number of students registered to the subjects utilizing experimental equipment in class has more than doubled. Positive impacts were observed in which the number of ITC graduates employed as well as those entered into the further studies has been increasing.

As for sustainability, there is no problem in institutional, technical and financial aspects. Regarding efficiency, project period exceeded the plan. Considering all of the above points, this project is evaluated to be highly satisfactory.

An exterior view of Lab Building

Lab of Electrical & Energy Engineering

Internal Ex-Post Evaluation for Grant Aid Project

conducted by Sri Lanka Office: August 2018

Country Name	The Project for Construction of a Dredger
Democratic Socialist Republic of Sri Lanka	

I. Project Outline

Background	In Sri Lanka, 18 fishery harbors were in operation and two more harbors were to be added shortly at the time of ex-ante evaluation (2012). Since almost all fishery harbors in Sri Lanka were located in such places as either directly faced to the outer ocean or in lagoons, under monsoon climate, severe siltation had occurred (the annual sedimentation was estimated as about 173,000m^3), which made the water depth of navigation channels and harbor basins shallow and disturbed the safety navigation of fishing boats. Ceylon Fishery Harbours Cooperation (CFHC) had undertaken to dredge the sedimentation with four dredgers including one grab hopper dredger which was supplied in 1989 as Japan's Grant Aid and three cutter suction dredgers with the annual total dredging capability of about 95,000m^3, which was insufficient by about 78,000m^3 against the sedimentation mentioned above. Moreover, the grab hopper dredger above was so old that repair and maintenance works had been increasing year by year.			
Objectives of the Project	To enable dredging appropriate amount of silt and prevent accidents due to the sedimentation in fishery harbors in Sri Lanka by constructing a self-propelled grab hopper dredger, thereby contributing to the promotion of productivity and profitability of fishery activities in the country.			
Contents of the Project	1. Project Site: 21 fishery harbors in Sri Lanka[1] 2. Japanese side: Provision of grant necessary for construction of a self-propelled grab hopper dredger 3. Sri Lankan side: Obtaining the provisional nationality certificate and necessary documents for the transportation of the new dredger from Japan to Sri Lanka, performing the custom clearance, tax and port charges exemption and registration of the new dredger, providing appropriate berthing/ mooring space for the new dredger, and carrying out the domestic transportation of the new dredger from the hand over point to the designated birthing / mooring area, etc.			
Project Period	E/N Date	March 18, 2013	Completion Date	October 22, 2014 (Completion of handing over of the dredger in Sri Lanka)
	G/A Date	March 18, 2013		
Project Cost	E/N Grant Limit / G/A Grant Limit: 988 million yen, Actual Grant Amount: 802 million yen			
Executing Agency	Ceylon Fishery Harbours Cooperation (CFHC) under the Ministry of Fisheries & Aquatic Resources Development and Rural Economic Affairs (MOFARDARE)			
Contracted Agencies	Main Contractor: KEGOYA DOCK co., Ltd. Main Consultant: Shipbuilding Research Center of Japan			

II. Result of the Evaluation

<Constraints on Evaluation>

- While Indicator 2 is stated as "(prevention of) annual number of accidents due to the sedimentation in the fishery harbors area" in the ex-ante evaluation sheet and the preparatory survey report, it was found out that the baseline figure stated in the table for the indicator was actually "annual number of accidents of fishing boats" (not limited to accidents due to the sedimentation, nor in the fishery harbors area). Thus, in the ex-post evaluation, Indicator 2 was revised as "annual number of accidents of fishing boats". Then, as the original Indicator 2 cannot be verified quantitatively, "whether the number of accidents caused due to the sedimentation in fishery harbor areas has decreased after the project completion" was checked qualitatively.

<Special Perspectives Considered in the Ex-Post Evaluation>

- [Indicator 1-2 for Evaluating Quantitative Effects] While Indicator 1 is stated as "(increasing) annual maintenance dredging volume conducted by dredgers owned by CFHC" in the ex-ante evaluation sheet, this includes dredging volume conducted by dredgers other than the one constructed under the project. Thus, in order to clarify the contribution of this project to achievement of the indicator, Indicator 1-2 ("of which, annual maintenance dredging volume conducted by the dredger constructed under the project") is added.
- [Supplemental Information for Evaluating Impact] Indicators for evaluating impact of this project (contributing to the promotion of productivity and profitability of fishery activities in the country) are not stated in the ex-ante evaluation sheet. Thus, "the volume of fish catches" is used as supplemental information to assess impact of the project.
- [Target Year for Evaluation] In the ex-ante evaluation sheet, it is stated that the target year for evaluation is 2018, which is three years after project completion (The project was planned to be completed in January 2015). However, this project was completed in October 2014 and three years after project completion is October 2017. Thus, in the ex-post evaluation, the target year was changed to 2017.

1 Relevance

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

The project has been consistent with Sri Lanka's development policies such as "maintenance of fishery harbors" as set forth in "Mahinda Chintana (2007-2016)" (Vision of New Sri Lanka), "Ten Years Development Policy Framework of the Fisheries and Aquatic Resources Sector (2007-2016)" and "the draft National Fisheries and Aquaculture Policy (2017)" (to be approved by the parliament).

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

The project has been consistent with Sri Lanka's development needs for appropriate maintenance dredging in fishery harbors through construction of a new dredger at the times of both ex-ante and ex-post evaluations.

<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 for Sri Lanka (2012) (which included

[1] The maintenance dredging sites of the dredger to be constructed under the project were planned to be 20 fishery harbors in total, while actual maintenance dredging sites of the dredger constructed under the project at the time of ex-post evaluation are 21 fishery harbors in total.

assistance for fishing areas such as coastal areas).
<Evaluation Result>
In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Effectiveness>

The project has partially achieved its objectives. CFHC owns five dredgers in total including the one constructed under the project (called "Sayuru") at the time of ex-post evaluation[2]. Two out of these five dredgers are very old and require repair works frequently, and frequent unavailability of these two dredgers and bad weather and sea conditions resulted in the targeted annual dredging volume having not been achieved (Indicator 1-1). As for Sayuru, it has not been fully utilized and the targeted annual dredging volume was not achieved in 2015 and 2017 while it was achieved in 2016, as bad weather and sea conditions negatively affected its operation in these years (Indicator 1-2). On the other hand, actual number of accidents per fishing boat has been much fewer than the target (Indicator 2). According to the Department of Fisheries and Aquatic Resources in the Ministry of Fisheries & Aquatic Resources Development and Rural Economic Affairs (MOFARDARE), accidents due to sedimentation in fisheries harbors have rarely been observed and reported during the past few years, though reasons for the decrease of accidents are unclear. Nonetheless, the fact that CFHC has continuously made efforts to remove sedimentation utilizing dredgers, excavators and other machineries is considered to have contributed to the decrease to a certain extent.

<Impact>

Regarding the volume of fish catches in the originally targeted 20 fishery harbors, it has increased by approximately ten percent against the baseline since project completion. While it is difficult to explain the causal relationship of the increase and the project, as there are many factors that affect fish productivity such as weather, sea waves, number of fishermen, number of fishing boats in operation and the volume of siltation, according to CFHC and MOFARDARE, safety and mobility of fishing boats have been ensured since project completion owing to Sayuru, particularly under the situation that two out of five dredgers are frequently unavailable. Therefore, the project is considered to have contributed to the increased fish productivity at least to some extent.

Regarding other impact, no negative impact on natural environment has been observed and no land acquisition and resettlement has been occurred under the project.

<Evaluation Result>

As the effect of the project has been observed partially as planned, the effectiveness/impact of the project is fair.

Quantitative Effects

Indicators	Baseline 2011	Target 2017 3 Years after Completion	Actual 2015 1 Year after Completion	Actual 2016 2 Years after Completion	Actual 2017 3 Years after Completion
Indicator 1-1: Annual maintenance dredging volume conducted by dredgers owned by CFHC in all fishery harbors under administration of CFHC (m^3/year) (21 harbors in total)	88,500	173,000	102,130 (59%)	138,030 (80%)	77,370 (45%)
Indicator 1-2: Of which, annual maintenance dredging volume conducted by the dredger constructed under the project (m^3/year)	-	78,000	26,150 (34%)	91,180 (117%)	22,650 (29%)
Indicator 2: Annual number of accidents per fishing boat	0.03	Not over 0.03	0.003	0.018	0.0018
(For reference) Annual number of accidents of fishing boats	144	-	16	96	10
(For reference) The number of registered fishing boats	4,280	-	5,059	5,282	5,502

Note: Percentages in brackets show achievement rates against targets.
Source: Ex-Ante Evaluation Sheet, Preparatory Survey Report, Questionnaire survey to Statistics Unit and Department of Fisheries and Aquatic Resources, MOFARDARE

Expected Impact

[Volume of fish catches in the originally targeted 20 fishery harbors]

	Baseline 2011	Actual result 2015	Actual result 2016	Actual result 2017
Volume of fish catches (ton)	338,900	380,370 (12%)	381,520 (13%)	366,285 (8%)

Note: Percentages in brackets show increase rates against the baseline.
Source: Preparatory Survey Report, Fisheries Statistics 2016, Questionnaire survey to Statistics Unit, MOFARDARE

3 Efficiency

The outputs of the project were produced mostly as planned[3]. Both the project cost and the project period were within the plan (ratio against plan: 81%, 91%, respectively). Therefore, the efficiency of the project is high.

[2] CFHC owned a grab hopper dredger and three cutter suction dredgers before project implementation, and a grab hopper dredger was added under the project.

[3] Registration of Sayuru has not been undertaken, because CFHC must obtain full insurance in order to register the dredger, however, the captain of Sayuru does not have a license required by insurance companies (all the CFHC captains have only the basic license), and there is no institution in Sri Lanka which can issue such license. The license must be obtained from recognized institutions in developed countries such as Japan and the United Kingdom, however, the cost is beyond CFHC's budget. Nonetheless, this has not affected its operation within the Sri Lankan coastal belt.

4 Sustainability

<Institutional Aspect>

The operation and maintenance (O&M) of Sayuru are undertaken in the engineering service division of CFHC. The daily O&M is carried out by the crews of Sayuru, and the number of the crews is 18 including the captain, a marine engineer, a chief officer, seamen, workers, welders, divers and cook. In addition, an experienced consultant/advisor is hired by CFHC to support the engineering service division and crew members of all five dredgers on inspection and repair works. According to CFHC, these numbers of staff/crews are sufficient to properly conduct O&M.

<Technical Aspect>

18 crews mentioned above were recruited following CFHC policies and procedures to ensure necessary experience and educational background of the crews, and four pre-existing engineers from the engineering service division closely work with them for inspection and repair works. According to CFHC, the skill level of staff/crews is sufficient to properly conduct O&M, as they have been able to smoothly operate and quickly repair Sayuru when needed. Currently, knowledge and skills development of staff is conducted informally in the form of on-the-job-training (OJT) at workplaces. CFHC recognizes that a formal training system should be established within their organization, and is currently preparing to establish one for their staff to learn about the latest O&M and repair techniques to meet the future demands and enable full skills transfer to younger staff.

<Financial Aspect>

Approximately 20 million LKR has been spent annually as O&M cost of Sayuru, including fuel, cable compound, lubricants, wages and salaries, and victuals etc. CFHC has three major income sources, which are annual budget allocation from MOFARDARE (approximately 435 to 470 million LKR annually), income from harbor operations (approximately 370 to 450 million LKR annually) and other income sources (approximately 85 to 110 million LKR annually), and CFHC's income has been in increasing trend recently. According to the finance division of CFHC, it has sufficient budget to cover O&M cost of equipment and machineries in CFHC including Sayuru, and in case CFHC needs more funds for major repairs, it submits a request of necessary budget allocation to MOFARDARE (, which has been approved by MOFARDARE in the past years).

<Current Status of Operation and Maintenance>

Routine maintenance of Sayuru is conducted by the engineering service division every six months, in addition to daily maintenance conducted by the crews. CFHC plans to dry dock Sayuru for periodical inspection every three years. O&M activities are conducted as planned, which was confirmed in the maintenance record of Sayuru. It was also observed during the field visit that Sayuru was kept clean and well organized, and all the equipment and machinery in Sayuru are working and maintained well.

<Evaluation Result>

Therefore, the sustainability of the project effect is high.

5 Summary of the Evaluation

The project partially achieved its objective of enabling dredging of appropriate amount of silt and preventing accidents due to the sedimentation in fishery harbors, as Sayuru has not been fully utilized and the targeted annual dredging volume was not achieved in 2015 and 2017 due to bad weather and sea conditions, however, the number of accidents per fishing boat has been much fewer than the target. The expected impact of contributing to the promotion of productivity and profitability of fishery activities has been observed, as the volume of fish catches in the originally targeted 20 fishery harbors has increased by approximately ten percent against the baseline after project completion, while there are many factors that affect fish productivity other than siltation. Sustainability of the project effect, and relevance and efficiency of the project are high.

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

III. Recommendations & Lessons Learned

Recommendations to Executing Agency:

- As stated above, CFHC does not have a formal training system. The human resource department together with the engineering service division within CFHC should analyze the needs for job trainings and/or separate training programs on O&M and repair works and establish a formal training system to develop staff capacities.

Lessons Learned for JICA:

- As stated above, two out of five dredgers owned by CFHC are very old and require repair works frequently, which has prevented CFHC from dredging necessary amount of silt. While Sayuru has not been fully utilized due to bad weather and sea conditions, during the short period of the high season (off-monsoon with low precipitation and wind), CFHC must mobilize all their dredgers to maximize the dredging amount for the year. Overall dredgers' performance could have been better if all the dredgers were fully functioning during the high season. Thus, when planning a similar project in future, future changes such as deterioration of existing dredgers should also be carefully analysed.

Sand collection basin of Sayuru under maintenance

Dredger view from the left side

Internal Ex-Post Evaluation for Grant Aid Project

conducted by Honduras Office: August 2018

Country Name	**Project for Restoration of the Democracia Bridge**
Republic of Honduras	

I. Project Outline

Background	Honduras is a country which severely suffers from hurricanes and also not frequent but large-scale earthquakes. After being hit by the Hurricane Mitch in 1998, the new Democracia Bridge (also called locally La Amistad Bridge) was constructed parallel to the Old Democracia Bridge by the Project for Construction of Ilama and Democracia Bridges (2000-2003). In 2009 the new Democracia Bridge was damaged by a large earthquake. The survey conducted by JICA in 2010 detected that the earthquake-proof equipment was damaged and confirmed the necessity for rehabilitation/reinforcement and prevention of damage extension for large-scale earthquakes in the future.			
Objectives of the Project	To develop the disaster-resilient social and economic infrastructure, by rehabilitating the Democracia Bridge on the important route of load transport which was damaged by the earthquake, thereby contributing to smooth international and domestic logistics.			
Contents of the Project	1. Project Site: Municipalities of El Progreso and San Manuel of Yoro Department 2. Japanese side: Rehabilitation and strengthening of the bridge piers and abutment change of expansion joints, rehabilitation of the access of road, etc. 3. Honduran Side: Removal of obstacles, ground leveling, provision of landfills for solid waste and gravel, relocation of light poles and electrical cables, etc.			
Project Period	E/N Date	October 23, 2013	Completion Date	February 26, 2015
	G/A Date	October 23, 2013		
Project Cost	E/N Grant Limit: 561 million yen		Actual Grant Amount: 559 million yen	
Executing Agency	Secretary of Infrastructure and Public Services (INSEP) (Restructured from the Secretary of Public Works, Transport and Housing in 2014)			
Contracted Agencies	Main Contractors: Hazama Ando Corporation Main Consultant: Central Consultant Inc.			

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

- At the ex-ante evaluation, the project objective was set as disaster-resilient social and economic infrastructure. It was verified with one of the qualitative effects, avoidance/mitigation of traffic shut-off caused by damages from earthquakes. The indicator for the expected quantitative effect (increase in the traffic velocity) was used for verification of smooth logistics.
- At the ex-ante evaluation, the other expected qualitative effect was set as "activation of the local economy in the area nearby the bridge." However, this is an indirect impact to be expected after realization of smooth traffic and logistics. Therefore, at the ex-post evaluation, it was verified as an impact.

1 Relevance

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

The project was consistent with Honduras' development policies on energy/transport and disaster prevention/preparedness as set forth in the "National Strategies for Climate Changes" as a sector plan of the "National Plan 2010-2022" and the "Development Plan 2014-2018."

<Consistency with the Development Needs of Honduras at the Time of Ex-Ante and Ex-Post Evaluation >

The new Democracia Bridge was damaged by the large earthquake in 2009. The bridge is located at an important logistics point, on the route from the northern coastal region to Port Cortes, the most important port in the country and also to Tegucigalpa, the capital city. Therefore, the project was consistent with Honduras' needs for transport and logistics via the new Democracia Bridge at the times of both the ex-ante and ex-post evaluation.

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

The project which aimed at rehabilitating a disaster-resilient bridge was consistent with Japan's ODA policy for Honduras as agreed in the "Country Assistance Policy for Honduras" (2012) (which included regional development and disaster prevention and mitigation).

<Evaluation Result>

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

2 Effectiveness/Impact

<Effectiveness>

The project objective was achieved, as the disaster-resilient social and economic infrastructure was developed by rehabilitating the 2009 earthquake-damaged new Democracia Bridge which is located on an important route of road transport. The velocity for transit during off-peak hours increased to 60-65km/h in 2018, which is more than the target value of 60km/h but has not caused any safety problem[1]. Once the parallel bridge (old Democracia Bridge) is re-built, further improved vehicle flow will be expected, according to INSEP.

As qualitative effects, transport and logistics have not been shut off since the new Democracia Bridge was rehabilitated. An earthquake of M4.3 occurred in the northern region of Honduras in February 2018, but there was no damage to the Bridge or traffic shut-off. Cables for collapse prevention (Prestressed Concrete[2] (PC) Cables) were used for the bridge construction for the first time in the country.

<Impact>

[1] The Transit Law in Honduras sets no specific speed limit and it is determined by local authorities for some roads. At the ex-post evaluation, it could not be confirmed if any speed limit has been set for the Democracia Bridge, but according to the Municipality of El Progresso, it has not caused any safety problem.

[2] Prestressed concrete is a form of concrete used which is "pre-stressed" by being placed under compression. It is resistant to tensile forces compared to reinforced concrete.

According to the mayor of El Progreso and the President of the local Chamber of Commerce, smoother logistics via the new Democracia Bridge by increased transit velocity has contributed to activation of the local economy since it is located at a crucial point of export for agricultural products. No negative impact including that from the environmental and social aspects has been reported until the time of the ex-post evaluation.

<Evaluation Result>

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

Quantitative Effects_

Indicator	Baseline 2012	Target 2018 3 year after completion	Actual 2015 Completion year	Actual 2016 1 year after completion	Actual 2017 2 year after completion	Actual 2018 3 year after completion
Increase of velocity for transit during off-peak hours (km/h)	20	60	n.a.	n.a.	n.a.	60-65

Source: Direct measurement at the ex-post evaluation survey (measurement from the end of the bridge to the other end and vice versa at 8:00, 11:00, 13:00 and 15:00 in two days).

3 Efficiency

Both the project period and cost were within the plan (ratio against the plan: 71% and 100%, respectively). During the project period, an alternative bridge-like structure was installed for smooth traffic and construction works. Therefore, the efficiency of the project is high.

4 Sustainability

<Institutional Aspect>

INSEP is the entity in charge of what concerns with formulation, coordination, execution and evaluation of policies related with the national road system including bridges. In this Secretary, a coordinating Engineer and three bridge-specialist Engineers are assigned to the General Administration for National Roads. The number of staff is sufficient for supervising all related work. Maintenance of the bridge is responsibility of the Strategic Investment of Honduras[3] (INVESTH) which is executed by a concession contract. There is one coordinating engineer and a bridge-specialist engineer assigned as supervising staff, which make sure maintenance is performed according to the concession contract. The municipality of El Progreso also takes part in the bridge monitoring and minor repairing as needed. Maintenance works have been outsourced to a private company under the concession contract for the last four years.

<Technical Aspect>

The private company in charge of maintenance works at the new Democracia Bridge has sufficient skills, according to the engineer of INVESTH as stipulated in the concession contract. Also, INVESTH has sufficient skills for supervision of rehabilitation works, as it has experiences in managing large projects.

<Financial Aspect>

The budget assigned to maintenance works along the 122Km of the roads specified in the concession contract including the new Democracia Bridge amounts to $600,000 per month as confirmed by INVESTH. Since some repair expenses are borne also by the Municipality of El Progreso, the budget is sufficient for maintenance.

<Current Status of Operation and Maintenance>

All parts of the new Democracia Bridge are in a good condition except a small damage in the plastic insulation around the PC cable and seven potholes in the pavement. These do not compromise the bridge functionality. The potholes are already in the repair plan. For bridge maintenance, the in-charge company conducts a) removal of sediment of the bridge and side ditch and b) weeding in the road shoulder and slope twice per year, c) repaint in the marking of the traffic safety once per year, d) repair of cracks and potholes on the bridge surface and access road every five years, and e) repair of guardrails when necessary. Maintenance works are reported by the Concessioner to INVESTH on a monthly basis. INVESTH plans replacement of the pavement and exchange of the expansion joint after 20 and 40 years, respectively. All repair materials can be acquired locally or imported without difficulty, though it takes time to import materials.

<Evaluation Result>

Therefore, the sustainability of the project effect is high.

5 Summary of the Evaluation

The project objectives have been achieved; the new Democracia Bridge has enabled smooth transport and logistics after being rehabilitated from damages caused by a big earthquake in 2009. Regarding sustainability, while INSEP is responsible of policies related to the national road system including bridges, maintenance is supervised by INVESTH and executed by a concessioner. INVESTH has sufficient skilled staff and budget allocation for supervision, and the new Democracia Bridge has been maintained in a good condition in accordance with the concession contract.

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

III. Recommendations & Lessons Learned

Recommendations to Implementing Agency:

- The system with PC cables was applied for construction of the new Democracia Bridge for the first time in the country, and after rehabilitation there has been no damage and traffic shut-off due to natural events including the earthquake in the northern region in 2018. It is recommended for INSEP to use this system for future similar bridge construction.

Lessons Learned for JICA:

- The project was completed earlier than planned. While the project was being executed, an alternative bridge-like structure was installed on the sides of the bridge as part of the project, like other similar projects, which served as a temporary traffic pass way. This structure avoided traffic to be halted completely and enabled smooth construction works. In bridge construction projects, it is effective to have this kind of system in order to not only complete the project in time but also ensure local traffic and logistics flow during the project period. In order to

[3] INVESTH is a unit which manages national development projects and programs, attached to the Secretary of General Coordination of the Government.

prove effectiveness of such a system, it would be suggested to assess and show how much traffic and logistics are sustained during the construction work compared to before the project.

Commercial traffic going through the bridge

Led lamps above and river flow below the bridge

Internal Ex-Post Evaluation for Grant Aid Project

conducted by JICA Myanmar Office: March 2019

Country Name	The Project for Provision of Road Construction and Maintenance Equipment in Kayin State
Republic of the Union of Myanmar	

I. Project Outline

Background	In Kayin State of Myanmar, there were a series of armed struggles by ethnic armed groups against the government forces until both sides reached a ceasefire agreement in January 2012. Therefore, the long years of conflict impeded development. Repatriation and resettlement of refugees and internally displaced people were the most pressing issues that faced Kayin State at that time. Under such circumstances, roads were vital to enabling access to various infrastructure for repatriation and resettlement but were not in good condition. While the construction and maintenance of trunk roads (approximately 53,000 km at the time of ex-ante evaluation) was basically conducted as a directly managed activity by Public Works (PW) of the Ministry of Construction (MOC), the poor state of equipment meant that it could not conduct efficient road construction and maintenance.			
Objectives of the Project	To promote the construction and maintenance of major roads in Kayin State of Myanmar by procuring road construction and maintenance equipment and providing related technical assistance, thereby contributing to the mitigation of poverty in provincial outlying areas.			
Contents of the Project	1. Project Site: Yangon City, Yangon Region and Kayin State 2. Japanese side: (1) Provision of grant necessary for procurement of road construction equipment (1 set of earthwork equipment, 1 set of surface treatment equipment, 1 set of craning equipment, 1 set of vehicles for inspection and maintenance), and spare parts for the equipment (2) Technical assistance (soft component of Grant Aid) to utilize the performance of the Project equipment in executing road construction and maintenance works, and place the Project equipment under efficient operation and maintenance together with existing equipment and spare parts. 3. Myanmar side: Road and bridge construction of the project site, storage area for construction and maintenance equipment, etc.			
Project Period	E/N Date	March 22, 2013	Completion Date	December 26, 2014 (completion of soft component activities)
	G/A Date	March 22, 2013		
Project Cost	E/N Grant Limit / G/A Grant Limit：759 million yen, Actual Grant Amount: 558 million yen			
Executing Agency	Public Works (PW), Ministry of Construction Since the organizational reform of MOC on April 2015, the Department of Public Works was replaced by Department of Highways (DOH).			
Contracted Agencies	Main Consultant: Yachiyo Engineering Co., Ltd. Main Contractors: Sumitomo Corporation, Mitsubishi Corporation, Toyota Tsusho			

II. Result of the Evaluation

< Constraints on Evaluation >

・Due to the lack of security of targeted area at the time of ex-post evaluation, no site observation was carried out and the data was collected mainly through questionnaire survey and interviews with those concerned.

< Special Perspectives Considered in the Ex-Post Evaluation >

[Use of supplementary information]

・In addition to the three indicators set at ex-ante evaluation, this evaluation uses “Actual status of construction and improvement of road in comparison of the initial plan” and “Capacity of participants of soft component (indicators specified in soft component)” as Supplementary information 1 and 2. In evaluation judgment, less weights are given to the supplementary information than the original three indicators.

1 Relevance

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

At the time of ex-ante evaluation, this project was consistent with development policy of Myanmar, such as “The 30-year Road Development Plan for 2001 to 2030” in which the Government of Myanmar prioritizes the development of road construction. At the time of ex-post evaluation, the current national and regional development policies, such as “2016-2030 Master Plan” based on “National Transport Master Plan, 2014” formulated by the Ministry of Transport and Communications, with assistance from JICA, prioritizes the improvement of road construction under the administration of both union government and local government.

<Consistency with the Development Needs of Myanmar at the Time of Ex-Ante and Ex-Post Evaluation >

This project was consistent with Myanmar’s development needs of road construction at the time of ex-ante evaluation as described in “Background” above. At the time of ex-post evaluation, there are still continuing needs for equipment for road construction and maintenance not only for target roads but also for other roads in Kayin State. Some of those provided equipment, vehicles are also being used for emergency disaster responses such as providing foods, moving and relocating disaster affected people at the currently flooded areas in Kayin State.

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

The Japanese government set its policy of assistant on the better living of people including ethnic minorities and the poor as well as the assistance on the infrastructure development.[1]

<Evaluation Result>

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

2 Effectiveness/Impact

<Effectiveness>

The project objective of promoting the construction and maintenance of major roads in Kayin State by procuring road construction and maintenance equipment and providing related technical assistance was achieved.

For quantitative effects, the average travelling speed on the target roads at the target year (2017) achieved the 60 km per hour as planned and the road condition has been well maintained (Indicator 1). DOH completed the rehabilitation work for 101.77 km out of the planned total length of road improvement of 146 km, achieving the target of 100 km at the target year (Indicator 2). Construction of remaining part for 44.23 km (approximately 30% of what was planned) has been suspended nearby Phapun area due to security reasons. The maximum weight of vehicle on bridges achieved the target of 60 ton (Indicator 3). It was also confirmed by the study that many of the equipment procured under the project have been utilized to make regular and occasional maintenance and repair of the completed roads as well as for other road rehabilitation projects in Kayin State. The equipment provided is in good condition and is properly stored in the compound of Road Construction Special Unit 22.

As for qualitative effects, the operation of the equipment and stock condition of spare parts are controlled by the database management system for equipment ledger implemented as soft component. The system is well constructed to readily store the various data, such as the initialized state of each equipment, its record of daily operation and maintenance, and inventory of spare parts, etc. Furthermore, the system is accessible by the ordinary computer. The soft copies of Monthly Database Reports which include Maintenance and Operation Record and Parts Inventory Control are prepared by mechanical staff of Kayin State and are sent via email to Mechanical Equipment Company (South), Yangon. If the Assistant Director of Mechanical Equipment Company (South), Yangon Office detects the abnormal condition, he instructs to the mechanical staff for necessary action. Taking full advantages of those accumulated data such as daily operation and maintenance, the system can automatically pick up the timing of maintenance and let it display on the computer screen. This is how the mechanical staff can timely identify when to carry out the maintenance and when to procure the spare parts, etc.

Therefore, the mechanical staffs of Yangon and Kayin State have been able to grasp the operation conditions of equipment and promptly respond to equipment failures, if any. Under this database management system for equipment ledger described above, the management capability of employees of DOH, Kayin State has improved to take care not only of the project equipment but also of other departmental equipment. Learned from this experience, DOH Mechanical Section has decided to officially introduce the file maker database management system for equipment ledger which converts the paper-based database system to the computer-based one to ensure more efficient, convenient and faster control of equipment.

<Impact>

In terms of benefit to the people living along the target roads (which includes towns of Phapun and Kamamaung), the project contributed to advancing of the mobility of local population. The population along the target road areas increased by about 12.3% from 50,635 (2014-2015) to 56,846 (at the time of ex-post evaluation in 2018). During the same period, 6 schools and 8 units of health service centers and one hospital have been newly established. Furthermore, two passenger express bus lines have newly been implemented and the number of small buses has increased. The local people from Waboetaw and Kamamaung area more frequently go to Thaton in Mon State for buying and selling goods. Those improved passenger bus lines have resulted in the emergence of several small businesses such as small restaurants, and home-based shops on the road side, giving income generation opportunities especially for the households, including women and children, living on the road side villages and communities.

<Evaluation Result>

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

Quantitative Effects

Indicators	Baseline 2012 Baseline year	Target 2017 3 Years after Completion	Actual 2015 1 Year after Completion	Actual 2016 2 Years after Completion	Actual 2017 3 Years after Completion	Actual 2018 4 Years after Completion
Indicator 1: Average travelling speed on the target road Unit: km/h	20	Approx.60	40	60	60	60
Indicator 2: Total length of road improvement on the target road Unit: km	0	Approx.100	31.5	71.53	101.77	101.77
Indicator 3: Maximum weight of vehicle on bridges Unit: ton	5	60	60	60	60	60

Source: Preparatory Survey Report, Questionnaire survey and interviews with Mechanical Section of DOH (Kayin State)

3 Efficiency

While the project cost was within the plan, the project period exceeded the plan (ratio against plan: 74%, 122%). This is due to that the Grant Agreement (G/A) was signed three months prior, though the actual implementation was conducted according to the original plan. The outputs were produced as planned.

Therefore, efficiency of the project is fair.

[1] Source: ODA Databook in 2013

4 Sustainability

<Institutional Aspect>

The Mechanical Section based in Nay Pyi Taw under the DOH of MOC has an overall responsibility for operation and maintenance (O&M) of equipment procured under the project. One Superintending Engineer assigned to Yangon City is in charge of southern part of Myanmar, including Kayin State. He supervises the Mechanical Equipment Compound which is in charge of maintenance of equipment and appropriate stores of expandable parts, the Base Workshop and the Mechanical Training Centre for the development of human resources for construction. The routine maintenance is carried out by the DOH of Kayin State Office, which periodically reports the maintenance status to the Mechanical Equipment Compound. The number of staffs of Mechanical Section, the Mechanical Equipment Compound and the Base Workshop combined decreased by 32% from 1,203 at the time of ex-ante evaluation to 816 at the time of ex-post evaluation. However, the DOH can properly manage O&M of current equipment, since the number of equipment was reduced by 36% for the same period due to past their estimated service life. Furthermore, in case that the DOH needs the operators and drivers in ground, it can appoint additional staffs by local government budget. The staff number of DOH of Kayin State Office has slightly increased from 35 to 36 for the same period.

As for the construction and maintenance of roads and bridges, the Road Construction Special Unit No.22 and Phapun District under the DOH and the Bridge Construction Special Unit No. 14 under the Department of Bridges (DOB) are responsible. It was confirmed by the study that the staff numbers of those organizations combined have decreased from 232 to 92 which have been sufficient to carry out the construction and maintenance of roads and bridges partly due to that the DOH has been outsourcing several projects. This means that it is not required for DOH to keep plenty of equipment under their compound.

<Technical Aspect>

It was confirmed by the study that the majority of staffs of Mechanical Section, Mechanical Equipment Compound and Base Workshop have sufficient knowledge and skills for O&M of equipment. Operators in DOH of Kayin State Office had attended initial training for the latest equipment after hand-over. In Mechanical Equipment Compound of Yangon and DOH of Kayin State, operational status of equipment as well as the inventory of spare parts is well managed under the database management system for equipment ledger. It was also confirmed by the study that staffs of the DOH and the DOB have sufficient knowledge and skills to carry out the necessary activities. Four training courses on the Basic Training of Database System were conducted in DOH attended by the total of 124 participants, such as mechanical staff officers and junior engineers, which contributed to the internal transfer of the O&M related techniques. Manuals and inventory books for spare parts have been shared during training courses as well as to the field engineers.

<Financial Aspect>

The budget fluctuation is partly due to the fact that budget allocation depends on the priority issues for MOC in each year. Under such circumstances, however, it was confirmed through the study that the sufficient budget will be secured for proper O&M of equipment as the DOH and DOB have attached the high importance to the project .

(Currency Unit: Million Kyats)

Items	2015	2016	2017
(1) Total Budget of DOH (Highways)	2,833.25	3,114.59	644.01
(2) Total Budget of DOB (Bridge)	3,654.44	2,185.85	1,946.60
(O&M Budget for the procured equipment for DOH and DOB combined)	20.82	33.14	136.83
(Percentage of O&M budget against total budgets of DOH and DOB combined)	*0.3%*	*0.6%*	*5.3%*

Source: DOH and DOB

<Current Status of Operation and Maintenance>

The maintenance of procured equipment has been conducted properly on the equipment compound of Road Construction Special Unit No.22, near Thanlwin River. If some equipment failure is detected on the job sites, the mechanic group is sent by mobile workshop vehicle for urgent repairs. The necessary spare parts and consumables are procured and managed appropriately.

<Evaluation Result>

Therefore, the sustainability of the project effect is high.

5 Summary of the Evaluation

The project achieved its objectives, “to promote the construction and maintenance of major roads in Kayin State of Myanmar by procuring road construction and maintenance equipment and providing related technical assistance” as it was observed that the average travelling speed, the length of road improvement on target roads and the maximum weight of vehicle on bridges achieved the targets respectively. The rehabilitation work needs to be continued for some remaining parts that has been suspended due to security reasons, however, the project contributed to the improvement of O&M of the equipment and inventory of spare parts through the development of the database management system for equipment ledger. Positive impacts were also observed in which the educational and health service facilities were newly established and the number of passenger express bus lines were increased, which advanced the mobility of local population. As for sustainability, there is no problem in institutional, technical and financial aspects. Regarding efficiency, project period 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 project introduced the database management system for equipment ledger as a soft component assistance which have made it possible for DoH to manage the operation and maintenance of the provided equipment more efficiently.

Compared with the previous paper-based system, this system is well constructed to readily store the variety of data, such as the initialized state of each equipment, the record of daily operation and maintenance, and inventory of spare parts, etc. Furthermore, the system is accessible by the ordinary computer. The system indeed is easier to handle and thus, it can save much time.

By taking full advantages of consecutively accumulated data, the system can automatically pick up the timing for the equipment maintenance and let it display on the computer screen. This is how the mechanical staff can identify the appropriate time of equipment

maintenance as well as the procurement of spare parts, etc. Furthermore, many staff can manage the system once they are given the training. DOH has decided to introduce this system to other DOH Offices for equipment operation and maintenance.

Internal Ex-Post Evaluation for Grant Aid Project

conducted by Georgia Office: January, 2019

Country Name	**The Project for Improvement of Equipment for Amelioration and Irrigation (Phase 2)**
Republic of Azerbaijan	

I. Project Outline

Background	In the southern area of Azerbaijan, annual precipitation is as scarce as 100 to 500mm. In 40% of the farming land, the salinity of ground water was higher than 3mg/L, and the ground water level was high. For agricultural production, irrigation and drainage to the lower ground water level of farming land were essential. Under these circumstances, based on the request for Grant Aid by the Government of Azerbaijan in 1999, the Government of Japan implemented "The Project on Strengthening Equipment Supply in Melioration and Irrigation (2004-2005)" (Phase 1) in 2004 for the five southeastern districts (Sabirabad, Saatly, Salyan, Nefchala, and Shirvan) and provided excavators for dredging canals, as well as equipment and tools necessary for their maintenance. The ex-post evaluation in 2009 confirmed the high effectiveness of Phase 1. However, there remained many areas, except the five southeastern districts, which were in need of improved irrigation and drainage systems and were suffering from equipment shortages. (Figures at the time of ex-ante evaluation.)			
Objectives of the Project	To improve dredging capacity of irrigation and drainage canals by procuring equipment necessary for operation and maintenance of irrigation/drainage canals in four project districts in Azerbaijan, thereby contributing to the improvement of irrigation water supply as well as control and mitigation of salinization in the project sites.			
Contents of the Project	1. Project Site: Four target districts (Aghjabadi, Imishli, Beylagan, Fuzuli) and Shirvan district as the location of Shirvan mechanical repair factory in southern Azerbaijan 2. Japanese side: Provision of grant necessary for the procurement of equipment for operation and maintenance of irrigation and drainage system (30 excavators, 4 bulldozers, 1 tractor head with trailer, 1 mobile workshop van, 1 refueling truck, 1 set of workshop equipment, and spare parts for the equipment) 3. Azerbaijan side: Operation of irrigation/drainage canal dredging and allocation of sufficient budget and personnel required for the operation, use and maintenance of procured equipment, renovation of existing workshop, etc.			
Project Period	E/N Date	April 17, 2013	Completion Date	August 18, 2014 (Equipment handover)
	G/A Date	April 17, 2013		
Project Cost	E/N Grant Limit / G/A Grant Limit: 777 million yen, Actual Grant Amount: 723 million yen			
Executing Agency	Azerbaijan Amelioration and Water Farm Open Joint Stock Company (AWF)			
Contracted Agencies	Main Contractor(s): ITOCHU Corporation Main Consultant(s): Katahira & Engineers International			

II. Result of the Evaluation

1 Relevance

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

At the time of ex-ante evaluation, a land amelioration (mainly improvement of drainage) and agricultural water supply program for 2007-2015 was formulated under the 2006 Presidential Decree and was to be implemented by the AWF. At the time of ex-post evaluation, improvement of water supply and amelioration of land are still prioritized in such sources as "Strategic Road Map for production and processing of agricultural products in Azerbaijan" approved with Presidential Decree No. 1138 of the Republic of Azerbaijan dated December 6, 2016.

<Consistency with the Development Needs of Azerbaijan at the Time of Ex-Ante and Ex-Post Evaluation >

At the time of ex-ante evaluation, the needs for irrigation and drainage was high as mentioned in "Background" above. At the time of ex-post evaluation, through the site survey and interviews with AWF and the beneficiaries, it was confirmed that there were continuing needs in order to dredge canals and improve the agricultural production. Otherwise, water loss and salinization would be caused, which would affect the agricultural production and regional economy.

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

The basic policy of Japan's assistance for Azerbaijan in Japanese Fiscal Year 2012 was to support the Azerbaijani government's efforts to diversify its economy and promote agriculture, tourism as well as infrastructure development for sustainable economic development and reducing disparities.[1]

<Evaluation Result>

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

2 Effectiveness/Impact

[1] Ministry of Foreign Affairs, Japan's ODA Data by Country2013.

<Effectiveness>

The project has achieved its objective of improving dredging capacity of irrigation and drainage canals in the target project sites. Through the site survey, it was confirmed that all the equipment procured under the project was continuously utilized actively and properly as originally planned. Based on the data provided by AWF and the result of site survey, it is clear that dredging capacity of irrigation/ drainage has improved and the excavating volume (Indicator 1) and the equipment sufficiency ratio (Indicator 2) have achieved the target. It was also confirmed through the site survey that the dredging work was actively done in each targeted region and that the frequency of dredging work was aligned with based on the Government's annual budget plan.

<Impact>

The data provided by AWF clearly shows the stable productivity of major crops and improvement of soil through prevention of salinization (i.e., lower level of salinization compared to before the project). Moreover, based on the site survey, it is clear that the farmers are very much satisfied with the result of the project because of soil conditions' improvement and increase of productivity. For example, some regional offices of AWF received the appreciation letters from the farmers.

No negative impacts were observed. Through the interview with regional AWF in Fuzuli district, the following positive impacts were confirmed. Due to the warfare with a neighboring country, Fuzuli district received many internally displaced persons. However, before the project, there was not enough soil with good quality to work as farmers, and thus these internally displaced persons left Fuzuli district for big cities like Baku. However, after the project, more precisely, after the soil condition got improved, many people came back to Fuzuli district and started working as farmers, and the number of population of the district has been increasing. This is a significant positive impact for the district.

<Evaluation Result>

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

Quantitative Effects

Indicators	Baseline 2011 Baseline Year	Target 2017 3 Years after Completion	Actual 2015 1 Year after Completion	Actual 2016 2 Years after Completion	Actual 2017 3 Years after Completion (Target Year)
Indicator 1: Excavating volume by excavators in possession (m^3/year)	3,240,000	5,640,000	5,437,300	6,546,377	6,495,068
Indicator 2: Equipment sufficiency ratio (%) (ratio of excavation capacity of the excavators in possession to the annual sedimentation volume)	34	58	56	68	67

Source: AWF

Productivity of major crops (average in the target districts) (Unit: centner/ha)

	2013	2014	2015	2016	2017
Wheat	31.9	32.4	36.1	34.9	36.5
Barley	26.9	27.1	28.0	28.3	28.6
Vegetables	129.2	129.7	133.4	133.6	148.3

Source: AWF

Note: These statistics were collected to verify "improvement of agricultural productivity by stable water supply" that was originally indicated as a qualitative indicator in the ex-ante evaluation sheet.

Agricultural land area by level of soil salinization (total sum in the target districts) (Unit: ha and %)

Year	No salinization	Low	Medium	High	Severe	Total
2013	114,766 (63%)	25,685 (14%)	21,329 (12%)	13,605 (7%)	7,264 (4%)	182,649 (100%)
2017	145,238 (78%)	30,075 (16%)	7,351 (4%)	3,010 (2%)	1,015 (1%)	186,689 (100%)

Source: AWF

Note: These statistics were collected to verify "conservation of fortified soil by prevention of salinization" that was originally indicated as a qualitative indicator in the ex-ante evaluation sheet.

3 Efficiency

Both the project cost and the project period were within the plan (ratio against the plan: 93% and 94%, respectively). The outputs of the project were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability

<Institutional Aspect>

AWF, a governmental organization equivalent to ministry and the executing agency of this project, is responsible for operation and maintenance (O&M) of this project. The mechanical department of each regional office of AWF is in charge of both O&M of the equipment and dredging of irrigation/drainage canals. In case when serious repair is required and the regional office cannot handle it, the regional office sends the equipment to Shirvan mechanical repair factory, which repairs all the equipment owned by AWF. Based on the review of the organizational structure and the site survey with interviews, it is clear that the targeted regional offices have an appropriate organizational structure with a sufficient number of staff for both O&M and dredging of irrigation/drainage canals. This is clear from the fact that the planned targets have been achieved as well.

Number of staff in charge of O&M of the equipment and dredging of irrigation/drainage canals

Shirvan mechanical repair factory	Imishli regional office	Beylagan regional office	Aghjabadi regional office	Fuzuli regional office

- Mechanical repair factory: 9	- Bahram-tapa construction office: 16 - Irrigation office: 20 - Central Mugan Drainage office: 22	- Irrigation office: 17 - Drainage office: 13	- Irrigation office: 19 - Drainage office: 22	- Mil-Mugan construction office: 15 - Irrigation office: 9

Source: AWF

<Technical Aspect>

As mentioned elsewhere, all the procured equipment is in good condition and has been actively utilized. It was also confirmed that almost all the operators and mechanical engineers who participated in the training provided by the supplier (contractor) at Shirvan mechanical repair factory during the project are still working with the same position. Furthermore, when necessary, training has been done by those who participated in the training in Shirvan as well. Thus, it is possible to remark that AWF has enough capacity.

<Financial Aspect>

Based on the data provided by AWF and site survey, it was confirmed that the necessary budget is calculated in advance and sufficient budget is allocated for proper O&M. The costs for fuel and lubricants for the procured equipment, maintenance and service costs, salaries of the operators are also fully covered by the budget. Although the total income of AWF is in a decreasing trend, it is still much higher than the budget before project implementation,[2] when the preparatory survey team for this project concluded that the estimated O&M cost for the equipment to be procured could be funded from the budget with no problem. Therefore, it is possible to remark that AWF has and will have a sound financial situation to conduct appropriate O&M for the procured equipment.

Budget of AWF (unit: thousand AZN)

Description	2015	2016	2017	2018 (May)
Total income	314,185	288,861	237,330	92,316
Allocated from Government budget	310,951	285,461	233,830	88,816
Other incomes	3,234	3,400	3,500	3,500
Total costs	314,185	288,861	237,330	92,316
Remuneration	56,400	60,423	63,021	22,434
Procurement of goods (works and services) (maintenance, repair etc.)	66,960	60,806	35,397	20,353
Transportation expenses	8,870	7,981	7,900	3,154
Utilities and communication costs	75,088	75,059	108,751	35,694
Capital repairs	68,939	63,730	7,000	3,925
Purchase of main supplies	31,791	15,000	10,000	4,460
Others	6,137	5,862	5,261	2,296

Source: AWF

<Current Status of Operation and Maintenance>

Through the site survey, it was confirmed that all the procured equipment is in good condition. Regarding the spare parts, each regional office annually announces tenders to procure necessary spare parts and signs the agreement with private companies. In case of shortage of spare parts, these private companies are supposed to procure necessary spare parts, and this system is functioning.

<Evaluation Result>

Therefore, the sustainability of the project effect is high.

5 Summary of the Evaluation

The project has achieved its objective of improving dredging capacity of irrigation and drainage canals in target project sites by proper use of the procured equipment such as excavators, which contributed to stable agricultural productivity and mitigation of salinization. All of the aspects of the sustainability (i.e., institutional, technical, and financial), as well as the status of O&M, are good. Considering all of the above points, this project is evaluated to be highly satisfactory.

III. Recommendations & Lessons Learned

Lessons Learned for JICA:

- The biggest factor of successful implementation of the Project is very high capacity of AWF headquarters office and the regional offices in operation and maintenance of procured equipment. And also, the headquarters office of AWF has been managing the regional offices very carefully and systematically, which also contributed to the successful implementation. Therefore, it is very important for JICA to confirm the implementing agency's sufficient capacity in O&M through analyzing financial situation as well as organizational structure. And also, examining the targeted organization's performance in similar projects, if any, implemented by JICA and/or other development partners could be also helpful to clarify the capacity. If there will be a project with AWF in the future, the project will be certainly successful.

[2] For example, 217 thousand AZN in 2010 and 219 thousand AZN in 2011 (source: Preparatory Survey Report).

Working excavator with staff of AWF regional office and farmers (Aghjabadi)


Renovated workshop and equipment for major repair
(Shirvan mechanical repair factory)

Internal Ex-Post Evaluation for Development Planning Project

conducted by Kenya Office: February, 2019

Country Name	**Project on Master Plan for Development of Dongo Kundu, Mombasa Special Economic Zone**
Republic of Kenya	

I. Project Outline

Background	Mombasa is the second largest city in Kenya having Mombasa Port which is the largest trade port in East African region, and a logistics hub for landlocked economies of Kenya, Uganda, Rwanda and other countries linked by Northern Corridor. In 2008, the Government of Kenya prepared a national development policy of the "Kenya Vision 2030" and declared to lift the country to be a middle-income country by 2030 by keeping 10% of annual economic growth. The economic plan of the Vison 2030 designated the highly prioritized twenty Flagship Projects including projects for establishing three Special Economic Zones (SEZs) in Mombasa, Kisumu, and Lamu. Land development, infrastructure development, and attraction of industries were expected to be realized by establishing these SEZs. In order to accelerate materialization of the Vision 2030, it was urgently required to establish a viable Master Plan for the development of the Mombasa SEZ.		
Objectives of the Project	Through compiling a master plan for the development of Dongo Kundu, Mombasa SEZ, the project aimed at implementation of the prioritized actions of the development projects, thereby contributing to the entry of companies in to the Mombasa SEZ. 1. Expected goals through the proposed plan[1]: Companies enter into the Mombasa SEZ. 2. Expected utilization of the proposed plan: The Master Plan will be approved by the Government of Kenya and prioritized actions will be implemented.		
Activities of the Project	1. Project site: Mombasa SEZ 2. Main activities: (1) development of the visions and concepts of the Mombasa SEZ, (2) identification of the target industries and functions of the Mombasa SEZ, (3) formulation of the plans for infrastructure development of the Mombasa SEZ, (4) decision of the operation and management of the Mombasa SEZ. 3. Inputs (to carry out above activities) Japanese Side (1) Mission members: 17 persons (2) Trainees received: 8 persons Kenyan Side (1) Staff allocated: SEZ Delivery Unit (2) Land and facilities: Japanese experts' office, wireless internet		
Project Period	January 2014 – September 2015 (Extension: April 2015 – September 2015)	Project Cost	(ex-ante) 350 million yen, (actual) 409 million yen
Implementing Agency	Ministry of Industry, Trade & Cooperatives (MOITC) (former Ministry of Industrialization and Enterprise Development (MOIED))		
Cooperation Agency in Japan	Nippon Koei Co., Ltd., KRI International Corporation, Tamano Consultants Co., Ltd.		

II. Result of the Evaluation

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 policies of Kenya planned for materializing the Vision 2030. At the time of ex-ante evaluation, the SEZ Policy and the SEZ Bill for legitimization and acceleration of the establishment of SEZs including the Mombasa SEZ have been prepared for getting the approval of related authorities. At the time of project completion, the SEZ Policy was awaiting the approval from the East African Community Council while the SEZ Bill was under consideration by the National Parliament for possible enactment.

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

The project was consistent with the development needs of Kenya at the time of ex-ante evaluation and project completion. For Dongo Kundu area, the site of the project, the Kenya Port Authority who owned the area formulated an industrial development plan in 1989 for integrating the Mombasa Port and a free trade zone. In order to start practical activities for establishing the Mombasa SEZ based on the Vision 2030, the updated industrial development plan was highly required.

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

The project was consistent with the Japan's ODA policy for Kenya at the time of ex-ante evaluation. One of the priority areas designated by the "Country Assistance Policy for the Republic of Kenya" (April 2012) was the economic infrastructure development. The program of "Wide-area Infrastructure Improvement" placed under this priority area aimed at development of the international corridor, smoothing of customs clearance, and development of special economic zones for vitalizing the trading of Kenya and east African countries.

<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. In the Master Plan prepared by the project, the concepts and visions of the Mombasa SEZ was formulated (Output 1); the target industries and functions of the Mombasa SEZ were identified

[1] 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).

(Output 2); infrastructure development plans for the Mombasa SEZ were formulated (Output 3); and organizational structures for operation and management of the Mombasa SEZ were decided (Output 4).

<Utilization Status of the Proposed Plan at the time of Ex-post Evaluation>

Although the Mombasa SEZ is not opened yet at the time of ex-post evaluation, preparations for projectization and policy and institutional setup based on the proposed plans have been progressing with the assistance mainly of Japan. The Master Plan formulated by the project was approved by MOITC in July 2015. After that, the agreement on the joint-development of the Mombasa SEZ by Kenya and Japan was made in the summit meeting held in August 2016. Based on this agreement, at the time of ex-post evaluation, the feasibility study on basic infrastructures (port and harbor, access road, power supply, etc.) in the SEZ is ongoing by the "Design Mission for Mombasa Special Economic Zone Development Project" (2016-2019 planned) assisted by JICA. Dispatch of a JICA expert (an advisor for facilitating the Mombasa SEZ development) to MOITC from 2019 is also planned. The comprehensive endeavors aiming at an early establishment of the Mombasa SEZ are progressing also in collaboration with the International Finance Corporation (IFC) which is supporting the development of legal systems relating to SEZs in Kenya. The preparations for almost all plans proposed in the Mater Plan, thus, have been commenced at the time of ex-post evaluation.

<Status of Achievement for Expected Goals through the Proposed Plan at the time of Ex-post Evaluation>

At the time of ex-post evaluation, as stated above, various approaches for projectization have been progressing based on the Mater Plan under the top-level agreement of the governments of Japan and Kenya. However, the expected goals set by the proposed plans have not been achieved because the Mombasa SEZ is not established yet. The degree of achievement of the expected goals is not to be evaluated as noted at the footnote on the previous page.

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

Since construction works have not started yet in the SEZ, no resettlement and land acquisition, and no other negative impact have been caused by the project at the time of ex-post evaluation. The Strategic Environmental Assessment (SEA) for the master plan was undertaken in line with the legal requirements of Kenya. The specific procedures were guided by the National Guidelines for SEA (2012) and the Environmental Management and Coordination Act (1999), as well as the JICA Guidelines for Environmental and Social Considerations 2010.

<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

Aim	Indicators	Results
Utilization Status of the Proposed Plan	The Master Plan will be approved by the Government of Kenya	(Ex-post Evaluation) Achieved The Master Plan compiled by the project was approved by MOITC in July 2015.
	The number of plans and priority issues proposed by the Master Plan implemented.	(Ex-post Evaluation) Partially achieved Aiming at the establishment of the Mombasa SEZ, the top-level agreement between the Japanese and Kenyan governments has been made based on the plans proposed by the Mater Plan. While the number of plans and issues implemented cannot be specified, for an early opening of the SEZ, the comprehensive endeavors are progressing assisted by JICA including the feasibility study ongoing, and dispatch of a Japanese expert planned.
Expected Goals through the Proposed Plan	The number of companies operating in the Mombasa SEZ	(Ex-post Evaluation) Not achieved No company has started its operation in the Mombasa SEZ because the Mombasa SEZ has not been opened yet.

Source: MOITC

3 Efficiency

Both of the project cost and period exceeded the plan (ratio against the plan: 117% and 140%, respectively) due to the prolonged demand forecast survey. The outputs were produced as planned. Therefore, efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The SEZ Bill was approved by the National Parliament of Kenya and enacted as the SEZ Act, No.16 of 2015. The SEZ Policy, which was awaiting the approval from the East African Community Council at the time of project completion, is still under the partner states' consultation process at the time of ex-post evaluation.

<Institutional Aspect>

While the project (master plan formulation) was implemented with MOITC as the Kenyan side counterpart, the feasibility study ongoing for the projectizations is conducted with the Ministry of Transport and Infrastructure (MOTI) in charge of port & harbor and road constructions, the Ministry of Energy and Petroleum (MOEP) in charge of power supply infrastructure constructions, and MOITC in charge of policy and institutional preparations. Agencies under MOTI and MOEP in charge of project implementations (Kenya Port Authority, Kenya National Highway Authority, Kenya Electricity Transmission Co. Ltd.) have experiences of implementation of Japanese ODA loan projects. From their performance of loan projects implementations in the past, no concern can be found in their institutional sustainability.

As of institutional setup for establishing the SEZ, the SEZ Authority was established under MOITC in 2017 following the enactment of the SEZ Act, No.16 of 2015. However, at the time of ex-post evaluation, the number of staffs of the Authority is four under the acting Chief Executive Officer (CEO) who has the post in MOITC.

<Technical Aspect>

Technical skills and knowledge on marketing, financing, and accounting of the supporting staffs of the SEZ Authority is not necessarily sufficient for implementation of the projects proposed by the Mater Plan and management of the Mombasa SEZ. In order to cope with this situation, IFC is implementing a technical cooperation for policy and institutional system improvement for the SEZ, and JICA plans to send a Japanese expert from 2019. Cooperation activities for improving technical capacities of MOITC and the SEZ Authority are, thus, progressing. Regarding MOTI and MOEP and the agencies under the Ministries have experiences of implementation of Japanese ODA loan projects, and no concern can be found in their technical capabilities.

<Financial Aspect>

According to the interview with the MOITC officer in charge at the time of ex-post evaluation, the budget planned for the SEZ Authority for the fiscal year 2018/19 is 9 million Kenya shilling (KSH) which is not sufficient for operationalizing the SEZ Authority. Therefore, the SEZ Authority requested the National Treasury for the additional financing under the supplementary budget.

Regarding the agencies under MOTI and MOEP, the budget has been allocated to them to implement several projects in Kenya including big-scale Japanese ODA loan projects. Besides, they have properly managed the finance of construction and operation of the loan projects, and no concern can be found in their financial resources and management capabilities.

<Evaluation Result>

In light of the above, slight problems have been observed in terms of the policy, institutional 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 submitting the Master Plan. The Master Plan was approved by MOITC. Preparation works for establishing the Mombasa SEZ are progressing based on the top-level agreement between the Governments of Japan and Kenya. The Master Plan is contributing to the formulation of the common perceptions of the projects' direction. As for sustainability, while further coordination is required to improve the policy and institutional setup and to improve the capacity including financial aspect of the SEZ Authority as a managing agency, sustainability of executing agencies in charge of project implementation is high. 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:

- It is recommended for MOITC to make an active coordination among related organizations to firmly realize the policy and institutional preparations for the SEZ with the assistance of IFC and JICA. The coordination is also required for accelerating the approval process of the SEZ Policy by the East African Community Council.
- It is also recommended for MOITC to work on the National Treasury and the Staff Indent to allocate proper budget and staffs for the SEZ Authority.

Lessons Learned for JICA:

- Preparation works for establishing the Mombasa SEZ are steadily progressing under the top-level agreement between the Governments of Japan and Kenya based on the proposals made by the Mater Plan. This situation has become possible because the Master Plan was formulated in consistency with the Kenyan government's highly prioritized issues. In addition, in parallel with the Master Plan, the port and harbor development master plan was in the process of formulation in Mombasa area; and the Master Plan incorporated the contents of the port and harbor development master plan. This was also made the Master Plan realistic and feasible. In this way, in case of a large-scale area development project, because a wide variety of plans and projects are related, a master plan must be formulated in line with them through the comprehensive study on the contents, progress, and prospects of progress of those plans and projects.
- In case of a large-scale area development project such as the Mombasa SEZ, it is not realistic to expect a single ministry or implementing agency to assume major roles in all plans and projects. Therefore, the coordination among related authorities is indispensable. In order to smoothly transfer plans to executions, it is recommended for JICA to get involve the related authorities from the initial stage of a master plan development and keep their commitment during the implementation of the project.