

Annex

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Annex 1-1: Progress Activities in the "Road Map"

Vol. 2	Component	Disaster Type												HFA	Status
		Flood	Landslide	Drought	Tsunami	Earthquake	Cyclones	Tornado/Strong Wind	Coastal Erosion	Lightning	Forest Fires	Epidemics	Others		
Policy, Institutional Mandates and Institutional Development															
P-01	Implementation of Provisions of DMO Act	x	x	x	x	x	x	x	x	x	x	x	x	1-(i)	A
P-02	Institutional Mandates Reviewed														A
P-02.1	For Provincial Councils & Local Government Agencies to Perform Disaster Related Activities	x	x	x	x	x	x	x	x	x	x	x	x	1-(i)	B
P-02.2	For Line Agencies to Perform Disaster Related Activities	x	x	x	x	x	x	x	x	x	x	x	x	1-(i)	B
P-03	Developing Institutional Mandates & Capacities	x	x	x	x	x	x	x	x	x	x	x	x	1-(ii)	B
P-04	Formulation of CBDRM Policy	x	x	x	x									1-(iii)	D
P-05	Enforcement of Policies	x	x	x	x									1-(i)	B
P-06	Establishment of the National Centre building	x	x	x	x									1-(ii)	A
P-07	Facilitating the Reconciliation Process												x		C
P-08	Good Governance and the Law-Making Process												x		C
P-09	Strengthening Human Rights: Constitutional Reform												x		N/A
P-10	Strengthening Human Rights: Making Laws More Effective												x		B
P-11	Strengthening Women's Rights												x		-
P-12	Voting Rights of Migrant Workers												x		N/A
P-13	Issues Pertaining to a Durable Peace in Sri Lanka												x		N/A
P-14	Encouraging Good Governance within the Ministry												x		C
Hazard, Vulnerability and Risk Assessment															
HVR-01	Landslide Hazard Zonation Mapping		x											2-(i)	B
HVR-02	Establishment of DRM Information System at DMC	x	x	x	x								x	3-(i)	C
HVR-03	Flood Risk Assessment	x												2-(i)	B
HVR-04	Coastal Vulnerability Assessment & Risk Analysis							x						2-(i)	A
HVR-05	Development of Drought-prone Area Maps of LGA			x										2-(i)	B
HVR-06	Dam Safety & Risk Assessment											x		2-(i)	C
HVR-07	Vulnerability & Risk Assessment for LGA	x	x	x	x							x		2-(i)	C
HVR-08	Vulnerability Atlas	x	x	x	x							x		2-(i)	B
HVR-09	Development of Wind Zoning & Storm Surge Maps							x						2-(i)	A
HVR-10	Seismic Zonation Maps					x								2-(i)	C
HVR-11	Integrated Epidemic Risk Assessment										x			2-(i)	D
HVR-12	Major Transportation Accidents											x		2-(i)	D
HVR-13	Major Industrial Accidents											x		2-(i)	B
HVR-14	Terrorism & Human-made Disasters											x		2-(i)	D
HVR-15	Reintegration of Ex-combatants												x	-	D
Tsunami and Multi-hazard Early Warning System															
E-01	Establishment of the National Early Warning Centre of Sri Lanka	x	x		x			x	x			x	x	2-(ii)	A
E-02	Improvement of Meteorological Observation and Prediction Capabilities	x	x	x				x	x				x	2-(iii)	B
E-03	Improvement of Hydrometric Network for Enhancing Flood Monitoring and Forecasting Capabilities	x												2-(iii)	B
E-04	Improvement of Landslide Prediction and Early Warning Capabilities			x										2-(ii)	B
E-05	Development of Long and Medium Term Drought Forecasting and Monitoring System for Agriculture and Associated Sectors				x									2-(iii)	D
E-06	Development of an Effective Cyclone Tracking, Storm Surge Warning System							x	x					2-(ii)	B
E-07	Development of a Unified Seismic Monitoring and Data					x								2-(iii)	A
E-08	Early Warning for Hazards Associated with Major Dams											x		2-(ii)	B
E-09	Development of Oceanographic Monitoring System									x				2-(iii)	D
E-10	Establishment of an EWS for Nuclear Accidents and Monitoring of Environmental Radiation											x		2-(ii)	D
E-11	Erecting Tsunami Warning Towers in Selected Coastal Areas				x									2-(ii)	A
Preparedness and Response Plans															
PR-01	Hazard Specific Response Plans														
PR-01.1	Cyclone and Tornado Response Plan							x	x					5	D
PR-01.2	Drought Response Plan				x									5	D
PR-01.3	Flood Response Plan	x												5	C
PR-01.4	Tsunami Response Plan				x									5	A
PR-01.5	Landslides Response Plan		x											5	B
PR-01.6	Lightning and Thunderstorms Response Plan									x				5	D
PR-02	National Rapid Response Team												x	5	A
PR-03	Emergency Operation Centres (EOCs)	x	x	x	x								x	5	A
PR-04	Hazard Specific Contingency Plans	x	x	x	x								x	5	D
PR-05	Emergency Service Networks (ESNs)	x	x	x	x								x	5	A
PR-06	Knowledge Management Systems	x	x	x	x								x	5	D
PR-07	Health Sector Preparedness and Response Mechanism	x	x	x	x								x	5	C
PR-08	Private Sector Preparedness for Disaster Response	x	x	x	x								x	5	C
PR-09	National Radiological and Nuclear Emergency Management Plan												x	5	C
PR-10	Capacity Building of Local Authorities for Emergency Response	x	x	x	x								x	5	C
PR-11	Provision of Facilities for Storage of Emergency Reserves and Resource Needs	x	x	x	x								x	5	C
PR-12	Construction of Multi-purpose Buildings for use as Tsunami Safe Shelters and Other Purposes along the Coastal Zone				x									5	C
PR-13	Improvement of Mortuaries in Government Hospitals												x	5	D
PR-14	Establishment of Nationwide Emergency Communication System				x								x	5	A
PR-15	Search and Rescue in Disasters by Sri Lanka Army	x	x		x	x	x	x	x				x	5	A
PR-16	Strengthening Responses to Oil Pollution, Flood Relief Operations and Enhancing SAR capabilities at	x											x	5	C
PR-17	Provision of Aircraft for Disaster Management Operations	x	x		x	x	x	x	x				x	5	B
Mitigation and Integration of Disaster Risk Reduction into Development Planning															
M-01	Mitigation and Stabilization of Slopes in High Risk Landslide and Rock Fall Sites		x											4-(i)	A
M-02	Flood Protection of Major Cities in Kalu Ganga Basin	x												4-(i)	A
M-03	Disaster Mitigation Action Plans	x	x	x	x	x	x	x	x	x	x	x	x	4-(iii)	0
M-04	Integrating DIA into All Development Plans														
M-04.1	Integration of Disaster Impact Assessment (DIA) in the Approval Process of Development Projects	x	x	x	x								x	4-(iii)	B
M-04.2	Structural Provisions for Mainstreaming DRM as a Component of Development	x	x	x	x								x	4-(iii)	B
M-05	National Land Use & Physical Planning Policy	x	x	x	x								x	4-(iii)	B
M-06	Coastal Zone Management														
M-06.1	Integration of Disaster Risk Considerations in Coastal Zone Management (CZM) policy									x				4-(iii)	A
M-06.2	Natural Barrier along the Coast									x				4-(iii)	A
M-07	Development Controls, Building Bye-laws												x	4-(iii)	B
M-08	Housing, Education, Tourism, Infrastructure Facilities														
M-08.1	Mitigation Measures in Housing Schemes, Industrial Estates, Tourist Hotels	x	x		x	x	x	x	x				x	4-(iii)	B
M-08.2	Reducing Disaster Risk Vulnerability of High Voltage Towers, Communication Towers	x	x		x	x	x	x	x				x	4-(iii)	B
M-08.3	Planning and Construction of Schools and Hospitals in Hazard Prone Areas to Higher Standards of Hazard Resilience	x	x		x	x	x	x	x				x	4-(iii)	B
M-08.4	Reducing Disaster Risk Vulnerability around Gas, Fuel and Chemical Storage Facilities												x	4-(iii)	B
M-08.5	Providing Safer Critical Infrastructure in Hazard Prone Areas	x	x		x	x	x	x	x				x	4-(iii)	B
M-09	Drought Mitigation in Selected Districts				x									4-(i)	B
M-10	Enhancing Dam Safety												x	4-(i)	B
M-11	Risk Transfer Mechanisms	x	x	x	x	x	x	x	x				x	4-(ii)	B

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		Flood	Landslide	Drought	Tsunami	Earthquake	Cyclones	Tornado/Strong Wind	Coastal Erosion	Lightening	Forest Fires	Epidemics	Others			Unclassifiable
M-12	Research and Development in Disaster Risk Reduction	x	x	x	x	x	x	x	x	x	x	x	x	x	4-(ii)	B
M-13	Reducing Health Risk due to Polluted Groundwater													x	4-(i)	B
M-14	Construction of By-pass Road Down-stream of Kantale Dam													x	4-(i)	C
M-15	Drinking Water for Drought Affected Divisions of Hambantota and other Districts through Desalination													x	4-(i)	B
M-16	Provision of Incinerators as a Solution to Solid Waste Disposal													x	4-(i)	B
Community-based Disaster Risk Management																
CBDM-01	Promotion of CBDRM Volunteerism	x	x	x	x	x	x	x	x	x	x	x	x	x	1-(iii)	B
CBDM-02	Establishing CBDRM Resource Centres	x	x	x	x	x	x	x	x	x	x	x	x	x	3-(i)	D
CBDM-03	Preparedness and Mitigation through Small Grants Programmes	x	x	x	x	x	x	x	x	x	x	x	x	x	5	B
CBDM-04	Development and Implementation of Micro-Finance Schemes	x	x	x	x	x	x	x	x	x	x	x	x	x	5	D
CBDM-05	National CBDRM Programme	x	x	x	x	x	x	x	x	x	x	x	x	x	1-(iii)	A
CBDM-06	Applied Research Grant Scheme for CBDRM	x	x	x	x	x	x	x	x	x	x	x	x	x	3-(iii)	D
CBDM-07	Land mines and Unexploded Ordnances (UXO)													x	-	-
CBDM-08	Alternative and Informal Dispute Resolution Mechanisms and Improving Services from State Actors													x	-	B
CBDM-09	Facilitation of the creation of local citizens committees	x	x	x	x	x	x	x	x	x	x	x	x	x	1-(iii)	B
CBDM-10	Strengthening Participatory Democracy-local Government													x	-	B
CBDM-11	Creating a Special Disaster Response Ombudsmen	x	x	x	x	x	x	x	x	x	x	x	x	x	1-(i)	D
CBDM-12	Issues of Subsidiarity in Situations of Emergency													x	3-(iii)	B
CBDM-13	Strengthening Human Rights in Tsunami Recovery				x										4-(ii)	B
Public Awareness, Education and Training																
PA-01	Awareness through Disaster Safety Day	x	x	x	x	x	x	x	x	x	x	x	x	x	3-(iv)	A
PA-02	National Public Awareness Programme	x	x	x	x	x	x	x	x	x	x	x	x	x	3-(iv)	B
PA-03	Awareness through Schools and School Children															
PA-03.1	Integration of DRM into School Curriculum	x	x	x	x	x	x	x	x	x	x	x	x	x	3-(ii)	A
PA-03.2	School Children Awareness Programme	x	x	x	x	x	x	x	x	x	x	x	x	x	3-(ii)	B
PA-04	Awareness through University Curriculum and Continuing Education															
PA-04.1	Integration of DM in Graduate and Post-graduate Curriculum in University Education	x	x	x	x	x	x	x	x	x	x	x	x	x	3-(ii)	A
PA-04.2	Awareness by Integrating DM Training in Continuing Education	x	x	x	x	x	x	x	x	x	x	x	x	x	3-(ii)	D
PA-05	Training for Government Employees	x	x	x	x	x	x	x	x	x	x	x	x	x	3-(ii)	A
PA-06	Training for Emergency Preparedness and Response	x	x	x	x	x	x	x	x	x	x	x	x	x	3-(ii)	C
PA-07	Enhancing Training Capacities	x	x	x	x	x	x	x	x	x	x	x	x	x	3-(ii)	B
PA-08	Special Awareness Programmes	x	x	x	x	x	x	x	x	x	x	x	x	x	3-(ii)	C
PA-09	Nationwide Awareness Campaign on Public Safety	x	x	x	x	x	x	x	x	x	x	x	x	x	3-(iv)	B

A	completed
D	Not yet
B	To some extent completed
C	Ongoing
N/A	Not applicable anymore

Annex1-2: Road Map Matrix

Priority Actions	Key Activities	Flood	Landslide	Drought	Tsunami	Others
HFA-1	(i) National institutional and legislative frameworks	P-1, 2.1, 2.2, 5, 14 CBDM-11	P-1, 2.1, 2.2, 5, 14 CBDM-11	P-1, 2.1, 2.2, 5, 14 CBDM-11	P-1, 2.1, 2.2, 5, 14 CBDM-11	P-1, 2.1, 2.2, 5, 14 CBDM-11
	(ii) Resources	P-3, 6	P-3, 6	P-3, 6	P-3, 6	P-3, 6
	(iii) Community participation	P-4, CBDM-1, 5, 8, 9, 10	P-4, CBDM-1, 5, 8, 9, 10	P-4, CBDM-1, 5, 8, 9, 10	P-4, CBDM-1, 5, 8, 9, 10	P-4, CBDM-1, 5, 8, 9, 10
HFA-2	(i) National and local risk assessments	HVR-3, 7, 8	HVR-1, 7, 8	HVR-5, 7, 8	HVR-7, 8	HVR-4, 6, 7, 8, 9, 10 HVR-11, 12, 13, 14
	(ii) Early warning	E-1	E-1, 4		E-1, 11	E-1, 6, 8, E-10
	(iii) Capacity	E-2, 3	E-2	E-2, E-5		E-2, 7, E-9
	(iv) Regional and emerging risks					
HFA-3	(i) Information management and exchange	HVR-2 CBDM-2	HVR-2 CBDM-2	HVR-2 CBDM-2	HVR-2 CBDM-2	HVR-2 CBDM-2
	(ii) Education and training	PA-3.1, 3.2, 4.1, 4.2 PA-5, 6, 7, 8	PA-3.1, 3.2, 4.1, 4.2 PA-5, 6, 7, 8	PA-3.1, 3.2, 4.1, 4.2 PA-5, 6, 7, 8	PA-3.1, 3.2, 4.1, 4.2 PA-5, 6, 7, 8	PA-3.1, 3.2, 4.1, 4.2 PA-5, 6, 7, 8
	(iii) Research	CBDM-6	CBDM-6	CBDM-6	CBDM-6, 12	CBDM-6
	(iv) Public awareness	PA-1, 2, 9	PA-1, 2, 9	PA-1, 2, 9	PA-1, 2, 9	PA-1, 2, 9
HFA-4	(i) Environmental and natural resource management	M-2	M-1	M-9		M-10, 13, 14, 15, 16
	(ii) Social and economic development practices	M-11, 12	M-11, 12	M-11, 12	M-11, 12 CBDM-13	M-11, 12
	(iii) Land-use planning and other technical measures	M-3, 4.1, 4.2, 5, 8.5	M-3, 4.1, 4.2, 5, 8.5	M-3, 4.1, 4.2, 5	M-3, 4.1, 4.2, 5, 8.5	M-3, 4.1, 4.2, 5, 6.1, M-6.2, 7, 8.1, 8.2, M-8.3, 8.4, 8.5
HFA-5	Strengthen disaster preparedness for effective response at all levels	PR-1.3, 3, 4, 5, 6, 7, PR-8, 10, 11, 15, 16, PR-17 CBDM-3, CBDM-4	PR-1.5, 3, 4, 5, 6, 7, PR-8, 10, 11, 15, 17 CBDM-3, CBDM-4	PR-1.2, 3, 4, 5, 6, 7, PR-8, 10, 11 CBDM-3, CBDM-4	PR-1.4, 3, 4, 5, 6, 7, PR-8, 10, 11, 12, 14, PR-15, 17 CBDM-3, CBDM-4	PR-1.1, 1.6, 2, 3, 4, PR-5, 6, 7, 8, 9, 10, PR-11, 13, 14, 15, PR-16 17 CBDM-3, CBDM-4

Note: Unclassifiable P-7, 8, 9, 10, 11, 12, 13, 14, HVR-15, & CBDM-7
 Highlighted in blue indicates that an activity is not implemented.

Annex 2: List of Projects assisted by JICA and other Donors

Donor	No.	Project	Components	HFA	Target Areas
Japan	J-1	The Study on storm water drainage plan for the Colombo metropolitan region	<ul style="list-style-type: none"> - Master Plan of flood control for Colombo metropolitan region - F/S for prioritized project - Technical transfer 	2-iii 3-ii	
	J-2	Recovery, Rehabilitation and Development Project for Tsunami Affected Area of Northern and Eastern Region	<ul style="list-style-type: none"> - Rehabilitation, recovery and development plan for tsunami affected areas - Support and monitor grant aid projects of GoJ - Share disaster experiences in Japan through the project 	4-i	
	J-3	Recovery, Rehabilitation and Development Project for Tsunami Affected Area of Southern Region	<ul style="list-style-type: none"> - Rehabilitation, recovery and development plan for tsunami affected areas of southern region - Support and monitor grant aid projects of GoJ - Share disaster experiences in Japan through the project 	4-i	
	J-4	Recovery, Rehabilitation and Development Project for Tsunami Affected Trunk Roads on the East Coast	<ul style="list-style-type: none"> - B/D for 4 causeways destroyed by tsunami - F/S for trunk road on the east coast - B/D for new Kalladi bridge 	4-i	
	J-5	Comprehensive Study on Disaster Management	<ul style="list-style-type: none"> - comprehensive flood control plan for Kerani, Kal, Gin and Nilwara river - Early warning system and pilot projects - CBDRM - Strengthening of capacity of related organizations 	2-ii 1-iii 2-iii	
	J-6	Preparatory Study for Flood Risk Management and Climate Change Adaptation in South Western Sri Lanka	<ul style="list-style-type: none"> - F/S for structural measures and non-structural measures in Kal river basin in Gin and Nilwara River basin - Flood control facilities in Kerani river basin and rehabilitation plan for drainage systems - Strengthening capacity for flood control of related organizations 	2-iii	
	J-7	Data Collection Survey on Road Protection against Natural Disasters (Landslide-disaster)	<ul style="list-style-type: none"> - Assessment of landslide damages to road infrastructures - Identify issues for strengthening slope disaster management for national roads 	2-i	Uva Province, Central Province, Sabaragamuwa Province, Western Province
	J-8	Tsunami and Conflict Affected Communities Upliftment Project in the North East Region	<ul style="list-style-type: none"> - Obtain techniques for livelihood - Strengthen local community - Promote social inclusion of inhabitant - Improve capacity of administrative officers and NGOs for participatory development 	1-iii 2-iii 2-iii	
	J-9	Disaster Management Capacity Enhancement Project Adaptable to Climate Change	<ul style="list-style-type: none"> - Strengthen capacity for coordination of DMC - Improve capacity for monitoring, analysis and forecasting of DOM - Improve capacity for measures against landslides of NBRO - Adequate function for early warning system from DMC to pilot areas - Improve capacity for disaster management of all levels of provinces, districts and communities in pilot areas 	2-iii 2-iii 2-iii 2-ii 2-iii	
	J-10	Practical Community countermeasure for earthquake and tsunami disaster mitigation through PTA (Participatory Technology Assessment)	<ul style="list-style-type: none"> - Training in Japan - Workshop - Visit tsunami affected areas 	1-iii 3-ii	

Annex 2: List of Projects assisted by JICA and other Donors

Donor	No.	Project	Components	HFA	Target Areas
	J-11	Project on Promotion of Sustainable Disaster Mitigation Education and Trauma Counseling	- Education	3-ii	
	J-12	Sri Lanka Tsunami Affected Area Recovery and Takeoff (STAART) Project	- Recovery and rehabilitation and improvement of infrastructures affected by tsunami	4-i	
	J-13	Emergency Natural Disaster Rehabilitation Project	- Recovery , rehabilitation and improvement of national roads, provincial roads and irrigation facilities affected by torrential rain from December 2010 to February 2011	4-i	
	J-14	Greater Colombo Flood Control and Environmental Improvement Project	- Improvement of rivers in greater Colombo - Resettlement of shanty - Procurement of equipments for operation and maintenance - Consulting services	4-i 4-iii	
	J-15	The Project for Improvement of Meteorological and Disaster Information Network	- AWS System - VSAT system - Central Operation System	2-ii 2-iii 3-iii	
	J-16	Emergency Aid for Flood Disaster		4-i	
	J-17	Emergency Aid for the 2004 Indian Ocean earthquake and tsunami disaster		4-i	
	J-18	Non Project Type Grant Aid (the 2004 Indian Ocean earthquake and tsunami disaster)		4-i	
	J-19	Emergency Aid for Flood Disaster (through IFRC)		4-i	
	J-20	Emergency Aid for Flood Disaster (through UNICEF)		4-i	
	J-21	The Digital Topographic mapping Project for Reconstruction of Northern Region	- Aerial photography of the entire Northern Region of Sri Lanka. - Production of 1:10,000-scale topographic maps of Mannar and Jaffna Districts of Sri Lanka. - Technology transfers for production of digital topographic maps through implementation of items above.	2-i 2-i 2-iii	

Annex 2: List of Projects assisted by JICA and other Donors

Donor	No.	Project	Components	HFA	Target Areas
WB	WB-1	Metro Colombo Urban Development Project	Component 1: Flood and Drainage Management Component 2: Urban development, infrastructure rehabilitation and capacity building for Metro Colombo local authorities Component 3: Implementation Support	4-i 2-ii 4-iii	
	WB-2	Dam Safety and Water Resources Planning Project	Component 1. Dam Safety and Operational Efficiency Improvement (Project cost \$53.14 million, of which IDA Credit \$47.36million) Component 2. Hydro-meteorological Information System Improvement (Project cost \$8.48 million, of which IDA Credit \$8.48 million) Component 3. Multi-sectoral Water Resources Planning (project cost \$6.49 million, of which IDA Credit \$6.49 million) Component 4. Project Management, Monitoring and Evaluation (Project cost \$3.05 million, of which IDA Credit 3.00 million)	4-i 2-ii 4-i	
	WB-3	ARF Training on Developing a Common Framework for PDNA, Recovery and Reconstruction in Asia (Bangkok)	The ARF Training on Developing a Common Framework for Post-Disaster Needs Assessment, Recovery and Reconstruction will be organized by the European Union and Thailand in close cooperation with the World Bank and the United Nations Development Programme in the framework of the EC-UN-WB Joint Declaration on Post-crisis Assessments and Recovery Planning. The training will focus on introducing main principles to undertake government-led Post-Disaster Needs Assessment (PDNAs) to assess the socio-economic impacts and identify the needs for recovery and reconstruction in the aftermath of a disaster. It will illustrate how to assess human/social needs using the UN Human Recovery Needs Assessment methodology (HRNA) and the impact and recovery/reconstruction needs using the methodology for damage and loss assessments (DaLA). Practical case studies will be presented, based on past PDNAs undertaken by the EC, WB/GFDRR (Global facility for Disaster Reduction and Recovery) and UN/UNDP-BCPR in the framework of the cooperation on PDNA and recovery planning to support disaster-stricken countries both in Asia and in other regions of the world.	3-ii 5	
	WB-4	DRR technical assistance to priority countries in South Asia	Technical assistance for the preparation and implementation of DRR activities in focus countries identified and prioritized in the approved Country Plans. Country specific TORs have been prepared.	3-ii	

Annex 2: List of Projects assisted by JICA and other Donors

Donor	No.	Project	Components	HFA	Target Areas
	WB-5	Improving Sri Lanka's response and recovery in the aftermath of natural disaster	<p>The objective of the proposed activity is to improve the capacity of the country's disaster management system to improve the response and recovery activities in the aftermath of disasters. This would contribute to an improved response to the social protection and livelihoods needs of poor people affected by natural disasters.</p> <p>The proposed activity will seek to achieve these objectives by (i) assessing the institutional capacity and the needs of those affected; and (ii) providing training and capacity building of the safety net programs of the Ministry of Resettlement and Disaster Management, Ministry of Disaster Management and Human Rights and other relevant ministries designated by the GoSL to offer disaster relief and recovery services.</p>	5 3-ii 2-iii	
	WB-6	Mainstreaming Disaster Risk Management in Sri Lanka	<p>The primary objective of the proposed activity is to build the technical capacity of the Sri Lankan government to assess and quantify particular flood risk, and to formulate appropriate policy and operational responses to this risk.</p> <p>Given the urgency for the completion of Component One - Preparatory studies for Metro Colombo Urban Development Project (MC request from the DMC to organize a PDNA training during the last week of July 2011</p>	2-iii 4-iii	
	WB-7	Emergency Northern Recovery Project	<p>The Project Development Objective (PDO) is to support Government of Sri Lanka's efforts to rapidly resettle the IDPs in the Northern Province by creating an enabling environment#. It will be achieved through: (A) Emergency Assistance to IDPs; (B) a Work-fare Program; (C) Rehabilitation and Reconstruction of Essential Public and Economic Infrastructure; and (D) Project Management Support.</p>	4-i	
UNDP					
	UNDP-1	2003-2008: Transitional Recovery Support to Flood Disaster in Southwest Sri Lanka (TRSFDF)	<ul style="list-style-type: none"> - To provide assistance to reconstruct the damaged infrastructure facilities in affected areas. - To develop the capacity of National Disaster Management Centre (NDMC) - To provide opportunities for establishing and strengthening DM coordination mechanisms at national and district level to respond to emergencies. - To provide the assistance to rebuild life lines of the social fabric on priority basis who are worst affected due to flood. 	4-i 2-iii 5 4-i	flood and landslide prone areas of Kalutara, Galle, Matara and Hambantota districts
	UNDP-2	2006-2008 Capacity Building in Disaster Risk Management (CBDRM)	<ul style="list-style-type: none"> - Institutional strengthening - To implement DRM Framework/Roadmap developed by DMC for "safer Sri Lanka". - Provisions of Physical (Hardware and software) and human resource to establish National Emergency Operation Room at DMC and provincial EOC. - To develop disaster preparedness and response plans for National Ministries, Departments and authorities. - To develop Multi Hazards Community contingency Plans at Villages/GN levels - To Carryout and develop Capacity Building of DM teams at various levels. - To integrate hazard mapping into development process at the local levels. - Training and awareness creations – To promote partnership with academic and Research institutions and private sector for engaging in DRM. (R & D) - To carryout awareness campaign on Disaster Mitigation and preparedness for all stakeholders, professional institutions, school and community. 	1-i 1-i 5 5 2-iii 2-i 3-i 3-ii 3-iv	

Annex 2: List of Projects assisted by JICA and other Donors

Donor	No.	Project	Components	HFA	Target Areas
	UNDP-3	2005-2008: Preparatory assistance for Establishing Disaster Management Framework and Disaster Management Centre in Sri Lanka (PAEDF)	<ul style="list-style-type: none"> - Technical support (Consultancy) for the establishment and functioning of the DMC. - Support to DMC to develop a DRM Road Map. - Training and Capacity building for staff of the Disaster management Centre - Support for development of 'initial' communication material for DMC. - Assistance with initial stake holder's workshops, consultation meetings and coordination of donor and international agencies. - Training/capacity building of intermediate level staff and volunteers. - Provide technical assistance in the preparation of Disaster preparedness and response plan at intermediate and GN levels - Provide physical and technical assistance in establishing operation centers and websites at intermediate level. - Technical assistance on appropriate disaster resistant construction technologies form mason and engineers.D36 	<ul style="list-style-type: none"> 2-iii 1-i 2-iii 1-I 1-ii 3-i 2-iii 5 2-iii 4-iii 	
	UNDP-4	Jan 2009 – April 2009 Disaster Risk Management through partnerships (DRM-P) in Sri Lanka(DRMP) Budget =US\$ 699035	<ul style="list-style-type: none"> - Key stake holders to participate at national and provincial risk reduction forums - Support most vulnerable community centres, Health centres and Schools in Uva and eastern provinces to draft infrastructure development plans with disaster risk reduction main streamed. - Provide materials to DMC for community level training and advocacy activities. 	<ul style="list-style-type: none"> 3-i 4-iii 1-iii 3-ii 	
	UNDP-5	2005-2007 Strengthening Early warning system in Sri Lanka (EWSS)	<ul style="list-style-type: none"> - Establishment of community based flood level monitoring network along vulnerable river basins - Establishment of a pilot, integrated model for real-time land slide monitoring based on real-time precipitation measurements. - Strengthening of capacity of institutions involved in early warning systems to improve amongst others forecast for multi hazards and ensure appropriate actions to avoid their adverse impact. - Strengthening dissemination mechanism of early warning to communities. - Development guideline s for evacuation. - Establishment of local warning systems such as sirens and loudspeakers. - Mock drills 	<ul style="list-style-type: none"> 1-iii 2-ii 2-ii 2-ii 1-iii 5 2-ii 2-iii 	implemented primarily in the landslide prone areas of Ratnapura district
	UNDP-6	2006-2008: Sustainable Recovery of Natural Resources of Tsunami Affected Coastal Areas of Sri Lanka with People's Participation (SRNRTA)	<ul style="list-style-type: none"> - Development of environment plans and implemented with the participation of the community - Ecosystems are managed by people affected by the tsunami whose livelihoods depend on the sustainability of ecosystem. - Raised awareness amongst selected communities and the district committee on the linkages between environment and disaster risk reduction 	<ul style="list-style-type: none"> 1-iii 4-i 3-iv 	implemented in Hambantota, Matara, Ampara, Baticaloa, Trincomalee districts
	UNDP-7	2008-2012 Strategic Support to "Operationalize the Road Map Towards Safer Sri Lanka" (SSORM) Budget \$ 2,100,000	<ul style="list-style-type: none"> - Development of Hazard, Vulnerability and Risk Report for Sri Lanka. - Establishment of tsunami and multi-hazard warning systems at district level. - Sustainable Disaster Risk reduction approaches mainstreamed into Development Planning. - Promotion of climate risk management at the community level. - Promotion of DRR as a subject of study in research institutions and schools. - Support Ministry of Disaster Management in project implementation and management 	<ul style="list-style-type: none"> 1-i 2-ii 4-iii 1-iii 4-i 3-ii 2-iii 	
Korea	K-1	COMS Project	<ul style="list-style-type: none"> - System for receiving images from Korean weather satellite 	<ul style="list-style-type: none"> 2-ii 3-iii 	

Annex 2: List of Projects assisted by JICA and other Donors

Donor	No.	Project	Components	HFA	Target Areas
China	C-1	CMAcast Project	- System for receiving images from Chinese weather satellite	2-ii 3-iii	
USA	USA-1	GTS Project	- System for transmission and reception to world climate information system	2-ii 3-iii	
Italia	Ita-1	Hyper DEM Project	- LIDAR survey along the coast with 2km width	2-i	
GIZ	GIZ-1	Education for Social Cohesion	- Curriculum and teacher's manual development on disaster risk management - In-service training for teachers at 17 teacher colleges and 92 local centers at province level - National standards for school safety have been drawn up and are being implemented in schools through the country. (school disaster safety activity at selected 200 pilot schools by 2012) (Phase 2 starts from 2013, targeting all primary/junior secondary schools in the country)	2-ii	Countrywide

Annex 3: Matrix of Projects assisted by JICA and other Donors corresponding to HFA

Priority Area	Key Activities	Flood	Landslide	Drought	Tsunami	Others(including Meteorology)
HFA-1	(i) National institutional and legislative frameworks	UNDP-2, 3, 7	UNDP-2, 3, 7	UNDP-2, 3, 7	UNDP-2, 3, 7	UNDP-2, 3, 7
	(ii) Resources	UNDP-3	UNDP-3	UNDP-3	UNDP-3	UNDP-3
	(iii) Community participation	J-5 UNDP-4,5,7	UNDP-4, 5, 7	UNDP-4, 5, 7	J-8, 10 UNDP-6	UNDP-4, 5, 7
HFA-2	(i) National and local risk assessments	UNDP-2	J-7 UNDP-2	UNDP-2	UNDP-2	J-21 UNDP-2 Ita-1
	(ii) Early warning	J-5, 2 <i>WB-2</i> UNDP-5, 7 K-1 C-1 USA-1	J-2 UNDP-5, 7 K-1 C-1 USA-1	UNDP-5, 7 K-1 C-1 USA-1	UNDP-7	J-15 <i>WB-2</i> UNDP-5,7 K-1 C-1 USA-1
	(iii) Capacity	J-1, 5, 6, 9 <i>WB-1, 5, 6</i> UNDP-1, 2, 3, 5, 7	J-5, 2 WB-5, 6 UNDP-1, 2, 3, 5, 7	J-5, 9 WB-5, 6 UNDP-1, 2, 3, 5, 7	J-5, 8, 9 WB-5, 6 UNDP-1, 2, 3, 5, 7	J-5, 2, J-15 WB-5, 6 UNDP-1, 2, 3, 5, 7
	(iv) Regional and emerging risks					
HFA-3	(i) Information management and exchange	UNDP-2, 3, 4	UNDP-2, 3, 4	UNDP-2, 3, 4	UNDP-2, 3, 4	UNDP-2, 3, 4
	(ii) Education and training	J-1 WB-3, 4, 5 UNDP-2, 4, 7 GIZ-1	WB-3, 4, 5 UNDP-2, 4, 7 GIZ-1	WB-3, 4, 5 UNDP-2, 4, 7 GIZ-1	J-10, 11 UNDP-2, 4, 7 GIZ-1	WB-3, 4, 5 UNDP-2, 4, 7 GIZ-1
	(iii) Research	J-15 K-1 C-1 USA-1	J-15 K-1 C-1 USA-1	J-15 K-1 C-1 USA-1		J-15 K-1 C-1 USA-1
	(iv) Public awareness	UNDP-2	UNDP-2	UNDP-2	UNDP-2, 6	UNDP-2
HFA-4	(i) Environmental and natural resource management	UNDP-7	UNDP-7	UNDP-1,7	UNDP-1, 6, 7	UNDP-1, 7
	(ii) Social and economic development practices					
	(iii) Land-use planning and other technical measures	J-14 <i>WB-1, 6</i> UNDP-3, 4, 7	WB-6 UNDP-3, 4, 7	WB-6 UNDP-3, 4, 7	WB-6 UNDP-3, 4, 7	WB-6 UNDP-3, 4, 7
HFA-5	Strengthen disaster preparedness for effective response at all levels	WB-3, 5 UNDP-1, 2, 3, 5	WB-3, 5 UNDP-1, 2, 3, 5	WB-3, 5 UNDP-1, 2, 3, 5	WB-3, 5 UNDP-1, 2, 3, 5	WB-3, 5 UNDP-1, 2, 3, 5
Structural Measures		J-14 <i>WB-1, 2</i> <i>C-2</i>		<i>WB-2</i>		
Emergency Measures		J-13, 16, 19, 20 <i>WB-8</i> UNDP-1	UNDP-1		J-2, 3, 4, 12, 17, 18	WB-7

*J-1, etc.: Project Number shown in Annex 1

Italic with underline: on-going or proposed projects.

No bold type: Not specific projects for specific type of disasters, Overall projects such as disaster management, meteorological management

*Highlighted in yellow indicates great discrepancy, and light yellow indicates small discrepancy.

ANNEX 4: Impacts of Disasters

Damage and Impacts of Natural Hazards

No.	1	2	3	4	5	6	7	8	9	10	11
Natural Disaster	Landslide	Flood	Drought	Earthquake	Tsunami	Cyclones	Tornado/ Strong Wind	Coastal erosion	Lightning	Forest fires	Epidemics
No. of records	2,483	9,080	1,997	82	89	192	3,864	78	446	149	88,833
No. of deaths	896	519	2	0	30,959	855	88	0	374	1	368
No. of injured	302	322	0	0	19,611	600	416	1	389	0	0
No. of missing	39	19	1	0	1,908	21	15	0	3	0	0
No. of houses destroyed	2,239	49,176	10	1	57,085	31,324	3,834	135	21	16	0
No of houses damaged	10,152	157,435	78	103	48,208	148,408	36,728	386	183	17	0
No. of peoples affected	120,384	13,900,794	12,922,514	70	1,076,240	1,690,930	278,469	3,223	1,629	187	588,797
No. of peoples relocated	348	33	0	0	0	0	16	0	0	0	0
No. of peoples evacuated	2,798	74,093	600	0	0	3,941	1,375	646	3	10	0
No. of lost cattle	0	0	0	0	0	0	0	0	0	0	4,149,120

Note, Data from DesInventar Sri Lanka, Recording Period from Jan/1974 to Sep/2012

Disaster Impact Score based on Damage and Impacts of Natural Hazards

No.	1	2	3	4	5	6	7	8	9	10	11
Natural Disaster	Landslide	Flood	Drought	Earthquake	Tsunami	Cyclones	Tornado/ Strong Wind	Coastal erosion	Lightning	Forest fires	Epidemics
No. of records	8	10	7	2	3	5	9	1	6	4	11
No. of deaths	10	7	4	1	11	9	5	1	6	3	8
No. of injured	6	7	1	1	11	10	9	5	8	1	1
No. of missing	10	8	5	1	11	9	7	1	6	1	1
No. of houses destroyed	7	10	3	2	11	9	8	6	5	4	1
No of houses damaged	7	11	3	4	9	10	8	6	5	2	1
No. of peoples affected	5	11	10	1	8	9	6	4	3	2	7
No. of peoples relocated	11	10	1	1	1	1	9	1	1	1	1
No. of peoples evacuated	9	11	6	1	1	10	8	7	4	5	1
No. of lost cattle	1	1	1	1	1	1	1	1	1	1	11
Total Score	74	86	41	15	67	73	70	33	45	24	43

* Score given based on the order of each item above; No.1 of the item can be given 11 points. If data is 0, score is 1 point.

: Top 3 types of natural hazards in each item.

No.	1
Kind of Natural Disaster	Landslide
1. Damages in historical record *1	
No. of records	2,483
No. of deaths	896
No. of injured	302
No. of missing	39
No. of houses destroyed	2,239
No of houses damaged	10,152
No. of peoples affected	120,384
No. of peoples relocated	348
No. of peoples evacuated	2,798
No. of lost cattle	0
2. Degree of impact to country	
Frequency of occurrence	Very high
Area spread	High
Loss and damages	High
Impact on population	High
3. Present efforts of DM	
Management framework	- NBRO is recognized as the leading agency in the technical aspect. - NBRO is preparing the draft act related to the landslide.
Risk assessment	- 1:50,000 scale hazard map have been developed in the hillside landslide prone areas. - 1:10,000 scale hazard maps is being prepared.
Early warning	- NBRO is conducting the early warning for the landslide prone districts based on the rainfall data from DOM. - 36 AWS (DOM) and the pilot early warning system in Galaboda and Mahawewa installed by DiMCEP.
Response	- National and district level DMCCs have been established. - District level disaster management and response plans were prepared or are being revised. - District level search and rescue teams were established.
Mitigation works	- Small scale emergency works have been implemented by DMC and the district secretariats. - 4 mitigation works are being conducted by NBRO. - New regulation concerning the land suitability certificate or recommendation by NBRO has been issued for the new development/construction activities in the hillside landslide prone areas. - The school disaster safety plan are being prepared. - Land use plan in the central fragile areas are being prepared by the NPPD in association with NBRO.
Awareness/education	- The pilot projects of school education and CBDRM are being implemented. - Material for awareness were prepared.
4. Future prospect of DM	
Management frame work	- The landslide act shall be ratified.
Risk assessment	- Revised landslide zoning maps shall be prepared in order to clarify the potential areas of the sediment related disasters based on the new base maps in cooperation with Survey Department.
Early warning	- The early warning system for the districts shall be improved by NBRO in corporation with DOM. - The early warning at the respective landslide sites shall be installed.
Response	- Present system shall be maintained and improved through the continuous training.
Mitigation works	- Capacity to mitigate the sediment related disasters shall be enhanced in NBRO and the implementing agencies. - Appropriate countermeasures of the landslide sites shall be conducted, considering the national physical plan.
Awareness/education	- Present activities shall be systemized and continued, considering the national physical plan.
5. Discrepancy between the present condition and the future prospect	
Management frame work	Great
Risk assessment	Great
Early warning	Great
Response	Small (training)
Mitigation works	Great
Awareness/education	Great

No.	2
Kind of Natural Disaster	Flood
1. Damages in historical record *1	
No. of records	9,080
No. of deaths	519
No. of injured	322
No. of missing	19
No. of houses destroyed	49,176
No of houses damaged	157,435
No. of peoples affected	13,900,794
No. of peoples relocated	33
No. of peoples evacuated	74,093
No. of lost cattle	0
2. Degree of impact to country	
Frequency of occurrence	Extremely high
Area spread	Very high
Loss and damages	Very high
Impact on population	Very high
3. Present efforts of DM	
Management framework	- There are many responsible agencies for the flood: ID, MASL, CEB, NWS&DB, the district secretariats, municipal councils/local authorities, SLLRDC, Agrarian Services Department and CC&CRMD in their jurisdictional areas. - ID has the flood protection ordinance of the rivers, but the responsibility is limited.
Risk assessment	The event base flood hazard maps for 4 river basins has been prepared.
Early warning	- Two (2) early warning systems in place (Kelani, Kalu) - 36 AWS in operation (DOM) - Hydro-meteorological data collection network and information system are being updated (DSWRPP)
Response	- National and district level DMCC were established. - National and District level disaster management and response plans were prepared or are being revised. - District level search and rescue teams were established.
Mitigation works	- Aging and critical infrastructure facilities are being rehabilitated /improved (DMC, District Secretariats). - Large dams are being rehabilitated (DSWRPP). - Desilting works of the tanks are being done (ID, MASL) - Urban flood measures are being studied and implemented: Metro Colombo (SLLR&DC-WB), Batticaloa (ID) - Integrated flood management master plans in the south western Sri Lanka were prepared. However, the master plans are not authorized by the residents in the basins.
Awareness/education	- The pilot projects of school education and CBDRM are being implemented. - Material for awareness were prepared.
4. Future prospect of DM	
Management frame work	- The basin-wide coordination framework shall be made, based on the existing water management coordination framework.
Risk assessment	- The flood hazard maps for the respective river basins shall be prepared by the ID in cooperation with Survey Department.
Early warning	- The early warning systems for respective flood prone areas shall be installed.
Response	- Present system shall be maintained and improved through the continuous training.
Mitigation works	- The flood management policies and master plans of respective basins shall be prepared under the condition of public participation. - Appropriate flood mitigation works shall be conducted in accordance with the master plan.
Awareness/education	- Present activities shall be systemized and continued.
5. Discrepancy between the present condition and the future prospect	
Management frame work	Great
Risk assessment	Great
Early warning	Great
Response	Small (training)
Mitigation works	Great
Awareness/education	Great

No.	3
Kind of Natural Disaster	Drought
1. Damages in historical record *1	
No. of records	1,997
No. of deaths	2
No. of injured	0
No. of missing	1
No. of houses destroyed	10
No of houses damaged	78
No. of peoples affected	12,922,514
No. of peoples relocated	0
No. of peoples evacuated	600
No. of lost cattle	0
2. Degree of impact to country	
Frequency of occurrence	Very high
Area spread	Very high
Loss and damages	High
Impact on population	Very high
3. Present efforts of DM	
Management framework	-There are many responsible agencies related to the water and agriculture, such as WRB, DOM, ID, MASL, DOA, Agrarian Services Department, HART, FOs, etc.
Risk assessment	- The hazard map of the country has been developed based on the weather records, under coordination by DMC and UNDP.
Early warning	- DOM issues the season weather forecast.
Response	- National and district level DMCC were established. - National and District level disaster management and response plans were prepared or are being revised.
Mitigation works	- Rehabilitation of capacities of the existing storage facilities is being done by ID and MASL under MI&WRM. - Ground water development are being done by WRB. - DOA is studying the countermeasures against drought, such as the crop changeover, etc. - National plan for drought mitigation was prepared. - Small scale emergency works have been implemented by DMC and the district secretariats.
Awareness/education	- Awareness is implemented through FOs.
4. Future prospect of DM	
Management frame work	- DMC shall be lead coordination agency of the drought.
Risk assessment	- Risk assessment under the condition of climate change shall be under taken.
Early warning	- DOM shall enhance the forecast accuracy.
Response	- Present system shall be maintained and improved through the continuous training.
Mitigation works	- Present activities should be continued.
Awareness/education	- Present activities should be continued and accelerated.
5. Discrepancy between the present condition and the future prospect	
Management frame work	Small
Risk assessment	No
Early warning	Great (meteorology)
Response	Small (training)
Mitigation works	No
Awareness/education	Small

No.	4
Kind of Natural Disaster	Earthquake
1. Damages in historical record *1	
No. of records	82
No. of deaths	0
No. of injured	0
No. of missing	0
No. of houses destroyed	1
No of houses damaged	103
No. of peoples affected	70
No. of peoples relocated	0
No. of peoples evacuated	0
No. of lost cattle	0
2. Degree of impact to country	
Frequency of occurrence	Rare
Area spread	Significant
Loss and damages	Significant
Impact on population	Significant
3. Present efforts of DM	
Management framework	- GSMB is recognized as the lead agency of earth quake. - There is no significant earth quake in Sri Lanka, except small tremors in the eastern part.
Risk assessment	- No risk assessment is done.
Early warning	- Global seismic activities including the observation in Sri Lanka are monitored by GSMB through GSN, and the warning is issued,
Response	- National and district level DMCC were established. - National and District level disaster management and response plans were prepared or are being revised. - District level search and rescue teams were established.
Mitigation works	- The Construction Guideline Committee of the National DM Advisory Committee has issued a Construction guideline. - The school disaster safety plan are being prepared.
Awareness/education	- Awareness activities of the construction guideline are being done.
4. Future prospect of DM	
Management frame work	- Present framework shall be maintained.
Risk assessment	- Observation and research of the tremor/earthquake shall be continued.
Early warning	- Present activities shall be maintained.
Response	- Present system shall be maintained and improved through the continuous training.
Mitigation works	- Enforcement of the construction guideline shall be done not only for the earthquake but also for the other disasters.
Awareness/education	- Awareness activities for the construction guidelines shall be strengthened.
5. Discrepancy between the present condition and the future prospect	
Management frame work	No
Risk assessment	No
Early warning	No
Response	Small (training)
Mitigation works	No
Awareness/education	Small

No.	5
Kind of Natural Disaster	Tsunami
1. Damages in historical record *1	
No. of records	89
No. of deaths	30,959
No. of injured	19,611
No. of missing	1,908
No. of houses destroyed	57,085
No of houses damaged	48,208
No. of peoples affected	1,076,240
No. of peoples relocated	0
No. of peoples evacuated	0
No. of lost cattle	0
2. Degree of impact to country	
Frequency of occurrence	Rare
Area spread	High
Loss and damages	Very high
Impact on population	Extremely High
3. Present efforts of DM	
Management framework	- CC&CRMD is in charge of the coast area conservation except the national park areas. - Tsunami Early Warning Committee consisting of secretary of MDM, heads of NARA, DMC, DOM and CC&CRMD was established.
Risk assessment	- Tsunami hazard maps along the coastline of the country have been prepared by CC&CRMD, EDC of University of Paradeniya, DMC and UNDP.
Early warning	- Based on the GSN information, the Tsunami Early Warning Committee will issue the warning. - Dissemination system of the warning, including warning towers, were established by DMC through the various measures.
Response	- National and district level DMCC were established. - National and District level disaster management and response plans were prepared or are being revised. - District level search and rescue teams were established.
Mitigation works	- New coastal zone management plan are being developed by CC&CRMD, based on the National Physical Plan and the Urban Development Plan. - Coastal area construction permit and land use regulation, such as setback, buffer zone, etc., are being implemented by CC&CRMD. - Planting for the shelter belt along the coastal line is being implemented. - The school disaster safety plan are being prepared.
Awareness/education	- Awareness activities of the communities are being implemented.
4. Future prospect of DM	
Management frame work	- Present framework shall be maintained.
Risk assessment	- Research activities for Tsunami shall be continued.
Early warning	- Present system shall be maintained and improved.
Response	- Present system shall be maintained and improved through the continuous training.
Mitigation works	- Present system shall be maintained and improved.
Awareness/education	- Present system shall be maintained and improved in order to make a culture against Tsunami.
5. Discrepancy between the present condition and the future prospect	
Management frame work	No
Risk assessment	No
Early warning	No
Response	Small (training)
Mitigation works	No
Awareness/education	Small

No.	6
Kind of Natural Disaster	Cyclones
1. Damages in historical record *1	
No. of records	192
No. of deaths	855
No. of injured	600
No. of missing	21
No. of houses destroyed	31,324
No of houses damaged	148,408
No. of peoples affected	1,690,930
No. of peoples relocated	0
No. of peoples evacuated	3,941
No. of lost cattle	0
2. Degree of impact to country	
Frequency of occurrence	Rare
Area spread	High
Loss and damages	Very high
Impact on population	Very high
3. Present efforts of DM	
Management framework	- DOM is in charge of observation of the cyclone/ storm. - DMC is in charge of coordination of the disaster response.
Risk assessment	- Based on the observed data from 1958 to 2009, track of the storms and cyclones, average and maximum wind speed distributions in the country were developed, under coordination by DMC and UNDP.
Early warning	- DOM issues the warning and DMC disseminates the warning to the public.
Response	- National and district level DMCC were established. - National and District level disaster management and response plans were prepared or are being revised. - District level search and rescue teams were established.
Mitigation works	- The Construction Guideline Committee of the National DM Advisory Committee has issued a Construction guideline. - The school disaster safety plan are being prepared.
Awareness/education	- Awareness activities of the construction guideline are being done.
4. Future prospect of DM	
Management frame work	- Present framework shall be maintained.
Risk assessment	- Research activities for the cyclones/storms shall be continued.
Early warning	- Present system shall be maintained and improved.
Response	- Present system shall be maintained and improved through the continuous training.
Mitigation works	- Enforcement of the construction guideline shall be done. - Public facilities, such as the government offices, schools, hospitals, etc., shall be strengthened in accordance with the construction guideline.
Awareness/education	- Awareness activities for the construction guidelines shall be strengthened.
5. Discrepancy between the present condition and the future prospect	
Management frame work	No
Risk assessment	No
Early warning	Great (Meteorology)
Response	Small (training)
Mitigation works	No
Awareness/education	Small

No.	7
Kind of Natural Disaster	Tornado/ Strong Wind
1. Damages in historical record *1	
No. of records	3,864
No. of deaths	88
No. of injured	416
No. of missing	15
No. of houses destroyed	3,834
No of houses damaged	36,728
No. of peoples affected	278,469
No. of peoples relocated	16
No. of peoples evacuated	1,375
No. of lost cattle	0
2. Degree of impact to country	
Frequency of occurrence	Very high
Area spread	High
Loss and damages	High
Impact on population	High
3. Present efforts of DM	
Management framework	- DOM is in charge of observation of the cyclone/ storm. - DMC is in charge of coordination of the disaster response.
Risk assessment	- Based on the observed data from 1958 to 2009, track of the storms and cyclones, average and maximum wind speed distributions in the country were developed, under coordination by DMC and UNDP.
Early warning	- DOM issues the warning and DMC disseminates the warning to the public.
Response	- National and district level DMCC were established. - National and District level disaster management and response plans were prepared or are being revised. - District level search and rescue teams were established.
Mitigation works	- The Construction Guideline Committee of The National DM Advisory Committee has been issued a Construction guideline. - The school disaster safety plan are being prepared.
Awareness/education	- Awareness activities of the construction guideline are being done.
4. Future prospect of DM	
Management frame work	- Present framework shall be maintained.
Risk assessment	- Research activities for the cyclones/storms shall be continued.
Early warning	- Present system shall be maintained and improved.
Response	- Present system shall be maintained and improved through the continuous training.
Mitigation works	- Enforcement of the construction guideline shall be done. - Public facilities, such as the government offices, schools, hospitals, etc., shall be strengthened in accordance with the construction guideline.
Awareness/education	- Awareness activities for the construction guidelines shall be strengthened.
5. Discrepancy between the present condition and the future prospect	
Management frame work	No
Risk assessment	No
Early warning	Great (meteorology)
Response	Small (training)
Mitigation works	No
Awareness/education	Small

No.	8
Kind of Natural Disaster	Coastal erosion
1. Damages in historical record *1	
No. of records	78
No. of deaths	0
No. of injured	1
No. of missing	0
No. of houses destroyed	135
No of houses damaged	386
No. of peoples affected	3,223
No. of peoples relocated	0
No. of peoples evacuated	646
No. of lost cattle	0
2. Degree of impact to country	
Frequency of occurrence	Rare
Area spread	Significant
Loss and damages	Significant
Impact on population	Significant
3. Present efforts of DM	
Management framework	- CC&CRMD is in charge of the coast area conservation except the national park areas.
Risk assessment	- Tendency maps of erosion along the coast line of the country was prepared by CC&CRMD, EDC of University of Paradeniya, DMC and UNDP.
Early warning	- No early warning is done.
Response	- National and district level DMCC were established. - National and District level disaster management and response plans were prepared or are being revised. - District level search and rescue teams were established.
Mitigation works	- New coastal zone management plan are being developed by CC&CRMD, based on the National Physical Plan and the Urban Development Plan. - Countermeasures of the coastal erosion are implemented by CC&CRMD.
Awareness/education	- No awareness activity is done.
4. Future prospect of DM	
Management frame work	- Present framework shall be maintained.
Risk assessment	- Research activities for the coast erosion shall be continued.
Early warning	- Warning method shall be established based on the research results.
Response	- Present system shall be maintained and improved through the continuous training.
Mitigation works	- Present system shall be maintained and improved.
Awareness/education	- Awareness for conservation of the coast line shall be strengthened.
5. Discrepancy between the present condition and the future prospect	
Management frame work	No
Risk assessment	No
Early warning	No
Response	Small (training)
Mitigation works	No
Awareness/education	Small

No.	9
Kind of Natural Disaster	Lightning
1. Damages in historical record *1	
No. of records	446
No. of deaths	374
No. of injured	389
No. of missing	3
No. of houses destroyed	21
No of houses damaged	183
No. of peoples affected	1,629
No. of peoples relocated	0
No. of peoples evacuated	3
No. of lost cattle	0
2. Degree of impact to country	
Frequency of occurrence	High
Area spread	High
Loss and damages	Significant
Impact on population	Significant
3. Present efforts of DM	
Management framework	- DOM is in charge of the forecasting and warning.
Risk assessment	- Based on the data for 1961 to 1990 at the 20 meteorological stations, distribution Maps of the average thunder days in months and in a year was prepared.
Early warning	- No warning is done.
Response	- National and district level DMCC were established. - National and District level disaster management and response plans were prepared or are being revised. - District level search and rescue teams were established.
Mitigation works	- there is no mitigation work done.
Awareness/education	- Awareness creation has been implemented by use of the prepared material.
4. Future prospect of DM	
Management frame work	- Present framework shall be maintained.
Risk assessment	- Research activities for the thunder and weather shall be continued.
Early warning	- Based on the research activities, the warning method for lightening shall be established. - The warning of the lightening shall be done.
Response	- Present system shall be maintained and improved through the continuous training.
Mitigation works	- The lightning conductor shall be widely used.
Awareness/education	- Awareness creation shall be continued.
5. Discrepancy between the present condition and the future prospect	
Management frame work	No
Risk assessment	No
Early warning	Small (meteorology)
Response	Small (training)
Mitigation works	No
Awareness/education	Small

No.	10
Kind of Natural Disaster	Forest fires
1. Damages in historical record *1	
No. of records	149
No. of deaths	1
No. of injured	0
No. of missing	0
No. of houses destroyed	16
No of houses damaged	17
No. of peoples affected	187
No. of peoples relocated	0
No. of peoples evacuated	10
No. of lost cattle	0
2. Degree of impact to country	
Frequency of occurrence	Rare
Area spread	Significant
Loss and damages	Significant
Impact on population	Significant
3. Present efforts of DM	
Management framework	- Department of Forest and Department of Wildlife conservation are in charge of the warning in corporation with DOM.
Risk assessment	- No risk assessment is done.
Early warning	- No early warning issued.
Response	- National and district level DMCC were established. - National and District level disaster management and response plans were prepared or are being revised. - District level search and rescue teams were established.
Mitigation works	- No mitigation work done.
Awareness/education	- Awareness of manmade fire has been implemented.
4. Future prospect of DM	
Management frame work	- Present framework shall be maintained.
Risk assessment	- Research activities for the forest fire and weather shall be continued.
Early warning	- Warning method shall be developed.
Response	- Present system shall be maintained and improved through the continuous training.
Mitigation works	No work proposed.
Awareness/education	- Awareness of manmade fire shall be continued.
5. Discrepancy between the present condition and the future prospect	
Management frame work	No
Risk assessment	No
Early warning	Small (meteorology)
Response	Small (training)
Mitigation works	No
Awareness/education	Small

No.	11
Kind of Natural Disaster	Epidemics
1. Damages in historical record *1	
No. of records	88,833
No. of deaths	368
No. of injured	0
No. of missing	0
No. of houses destroyed	0
No of houses damaged	0
No. of peoples affected	588,797
No. of peoples relocated	0
No. of peoples evacuated	0
No. of lost cattle	4,149,120
2. Degree of impact to country	
Frequency of occurrence	Extremely high
Area spread	Very high
Loss and damages	High
Impact on population	High
3. Present efforts of DM	
Management framework	- Ministry of Health and Department of Health Services are in charge of management.
Risk assessment	- No risk assessment in public.
Early warning	- Warning by Ministry of Health and dissemination by DMC.
Response	- National and district level DMCC were established. - National and District level disaster management and response plans were prepared or are being revised. - District level search and rescue teams were established.
Mitigation works	- No mitigation work done
Awareness/education	- Awareness of health has been implemented.
4. Future prospect of DM	
Management frame work	- Present framework shall be maintained.
Risk assessment	- Research activities shall be continued.
Early warning	- Present system shall be maintained and improved.
Response	- Present system shall be maintained and improved through the continuous training.
Mitigation works	- No work proposed.
Awareness/education	- Awareness of health shall be strengthened.
5. Discrepancy between the present condition and the future prospect	
Management frame work	No
Risk assessment	No
Early warning	No
Response	Small (training)
Mitigation works	No
Awareness/education	Small

Spatial distribution of Flood Damage

Data Source:

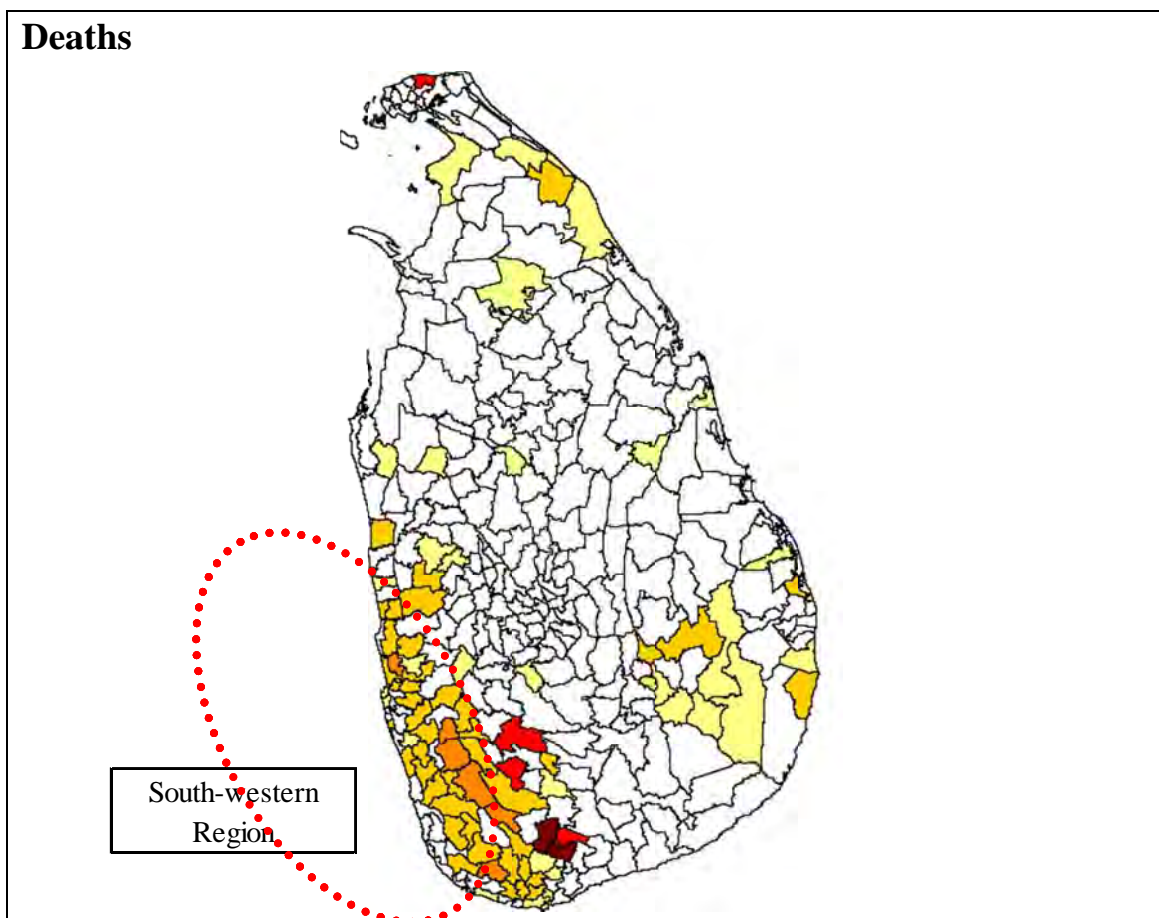
Disaster Information Management System in Sri Lanka (www.desinventar.lk/)

Disaster Type: Flood

Period: 2000/01/01~2011/12/31

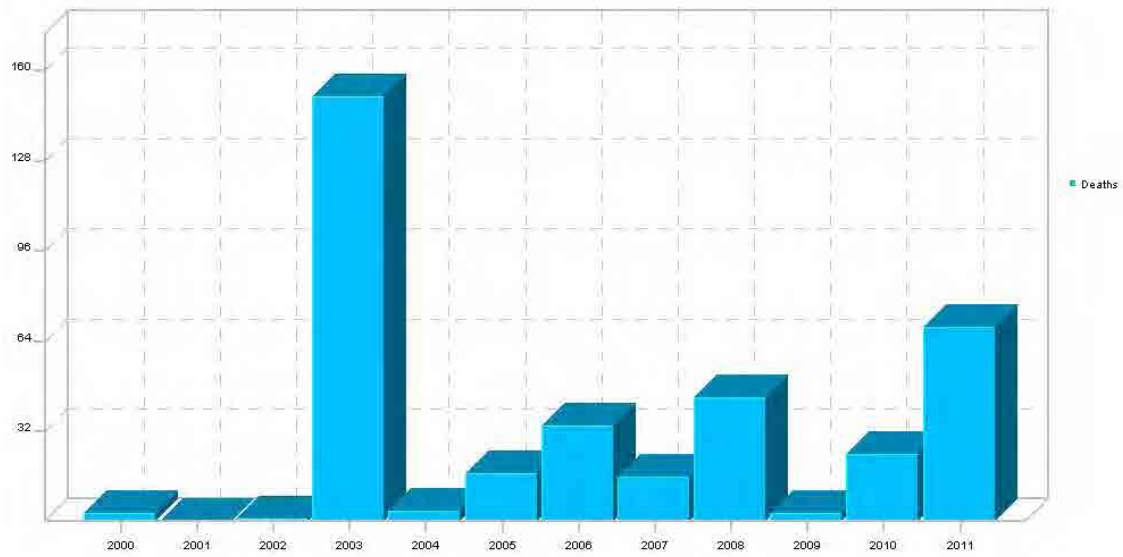
Record size: 5,175 (5,095 with division information)

Deaths

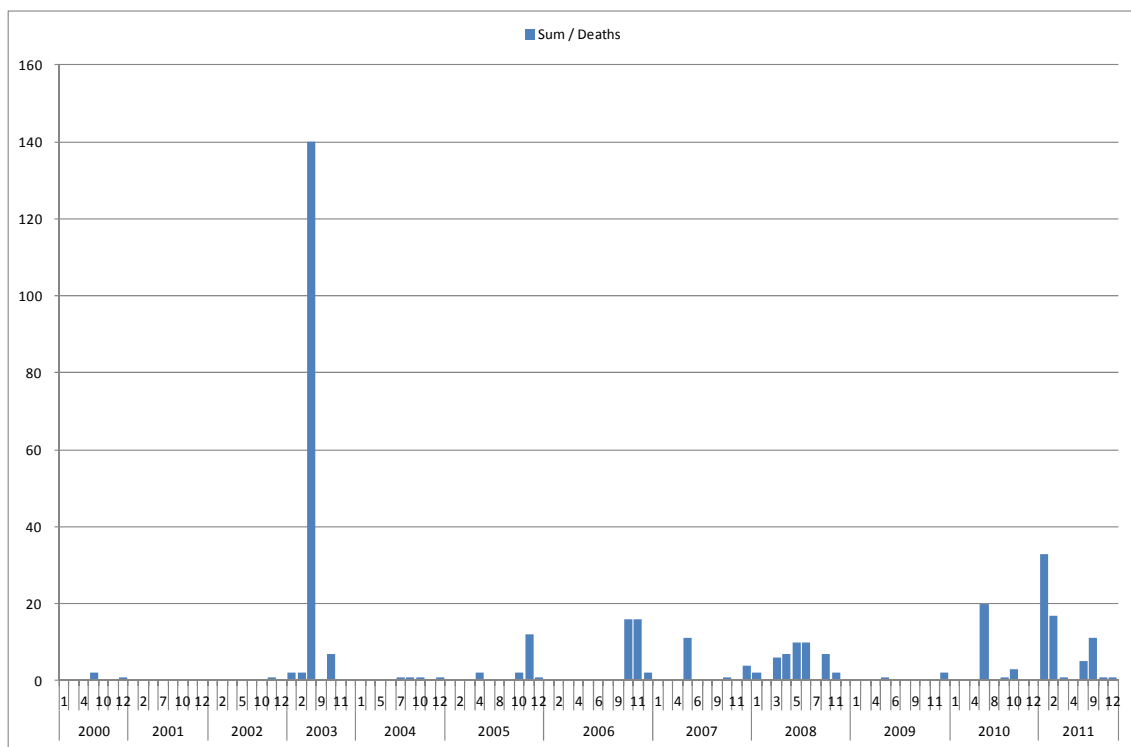


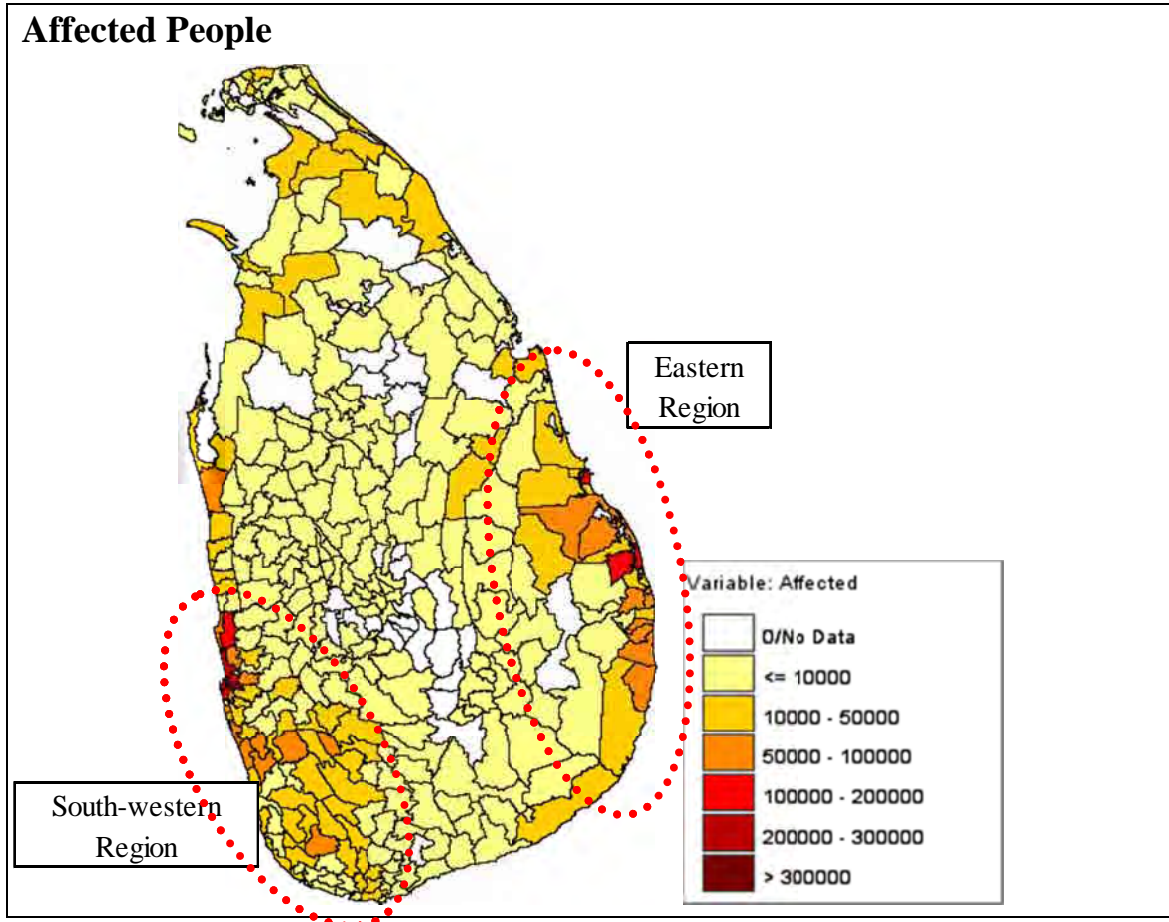
Annex 6-1: Spatial Distribution of Flood Damage

Deaths



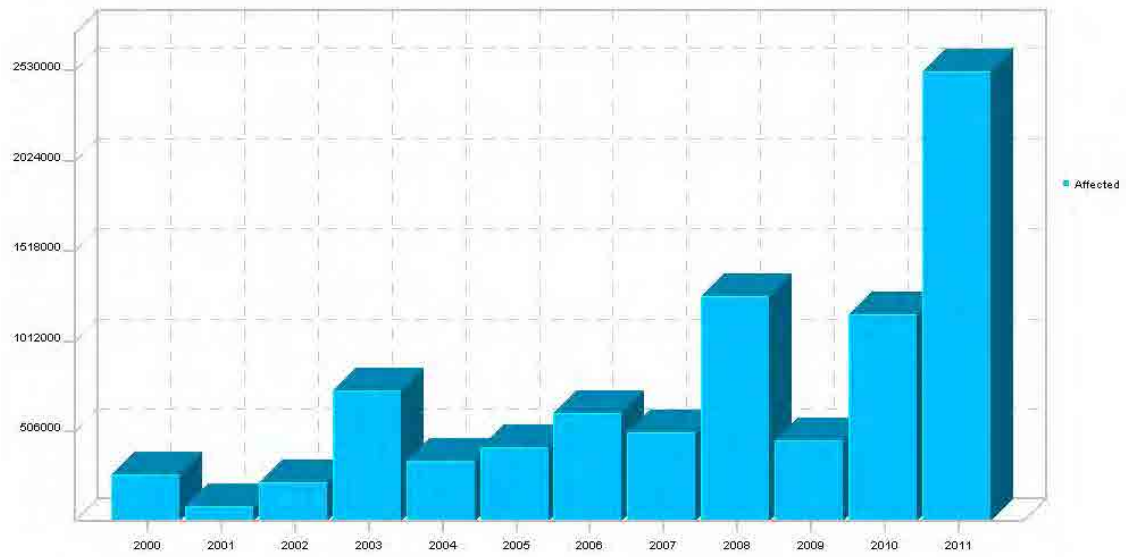
Deaths



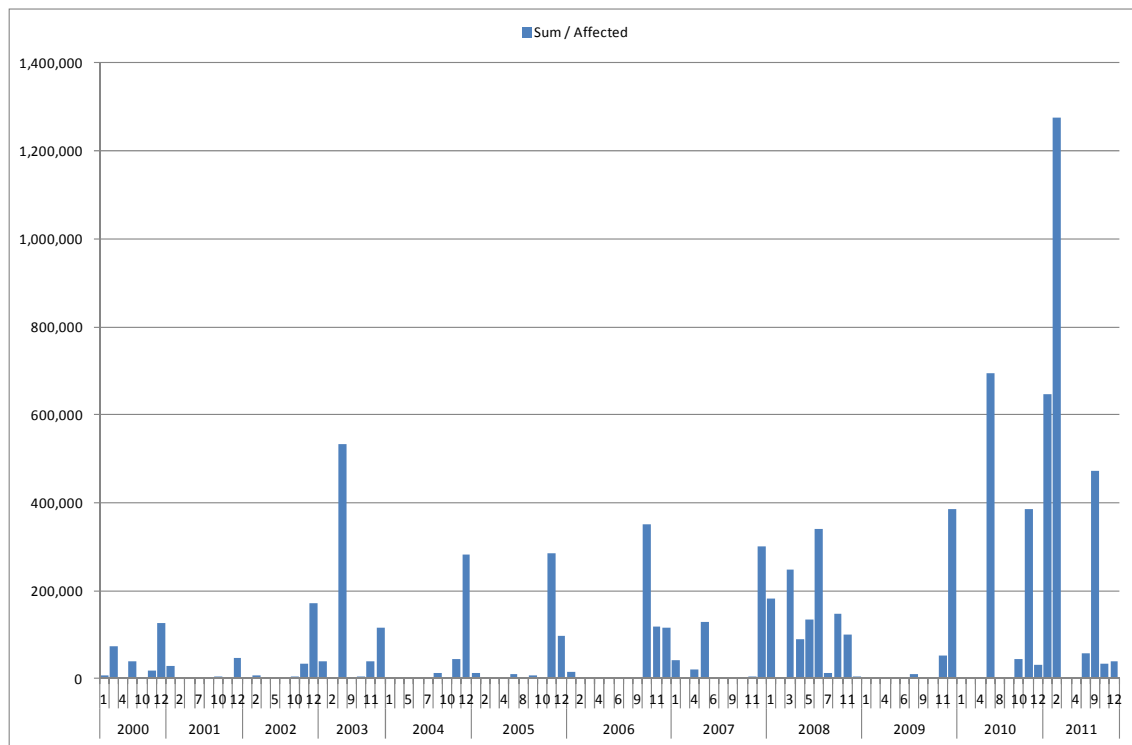


Annex 6-1: Spatial Distribution of Flood Damage

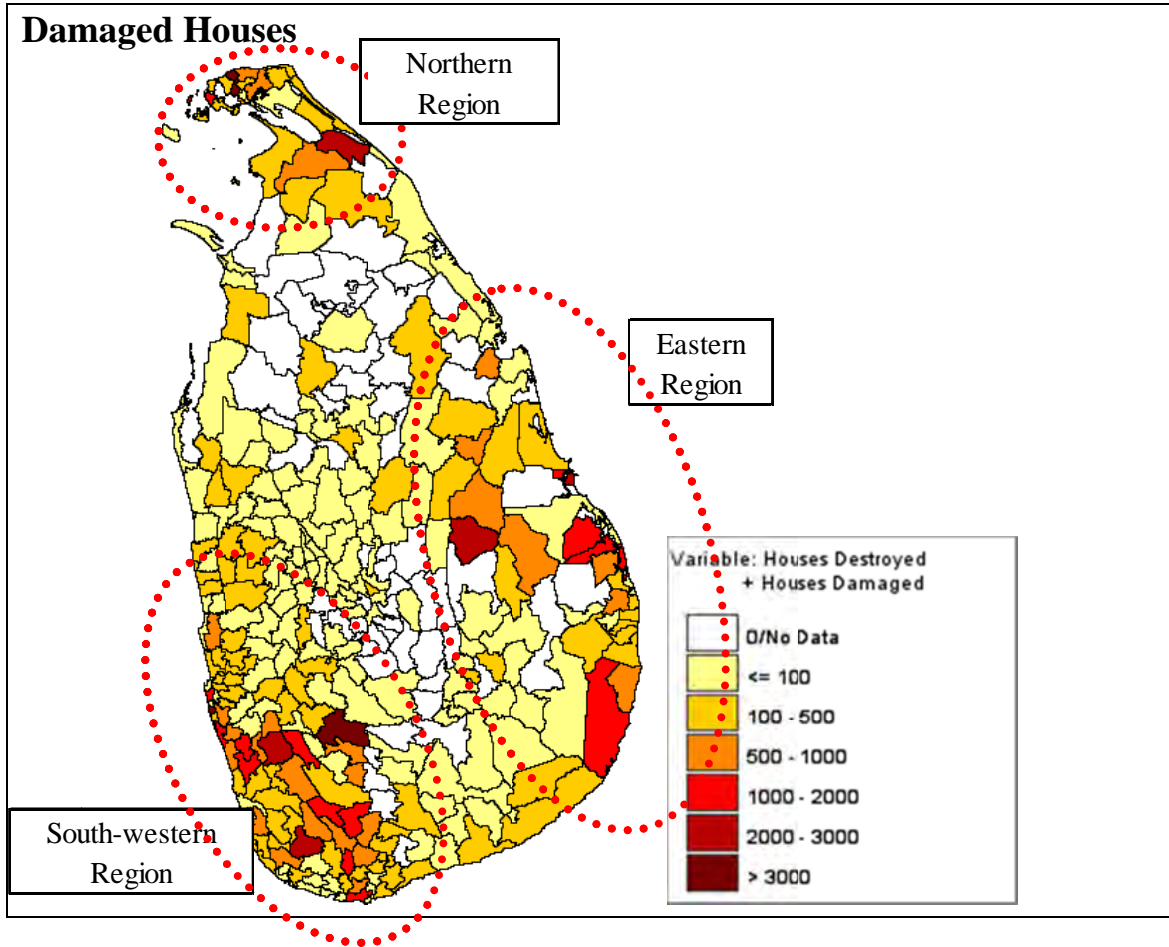
Affected People



Affected People

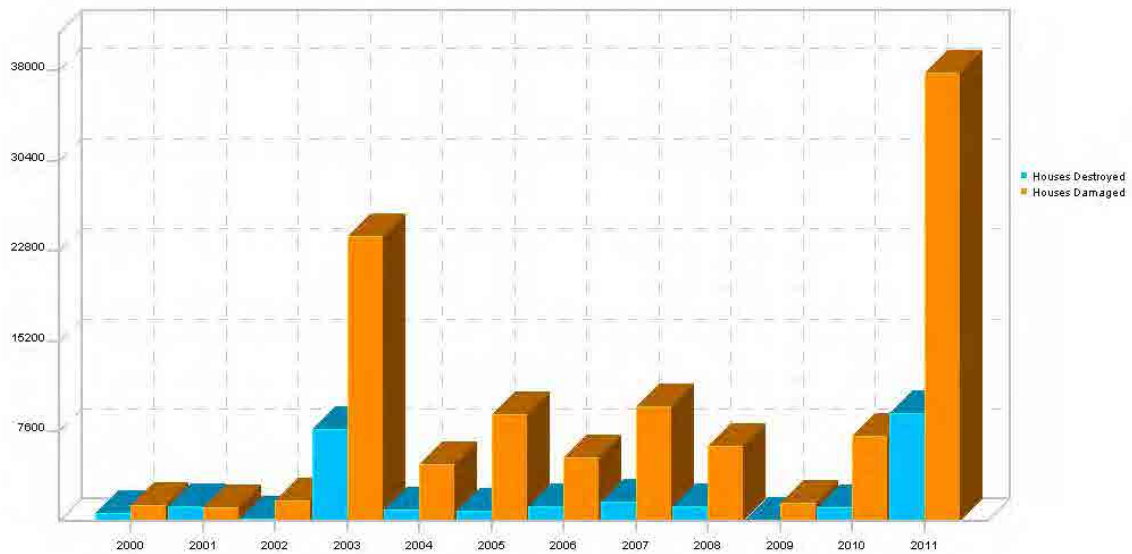


Annex 6-1: Spatial Distribution of Flood Damage

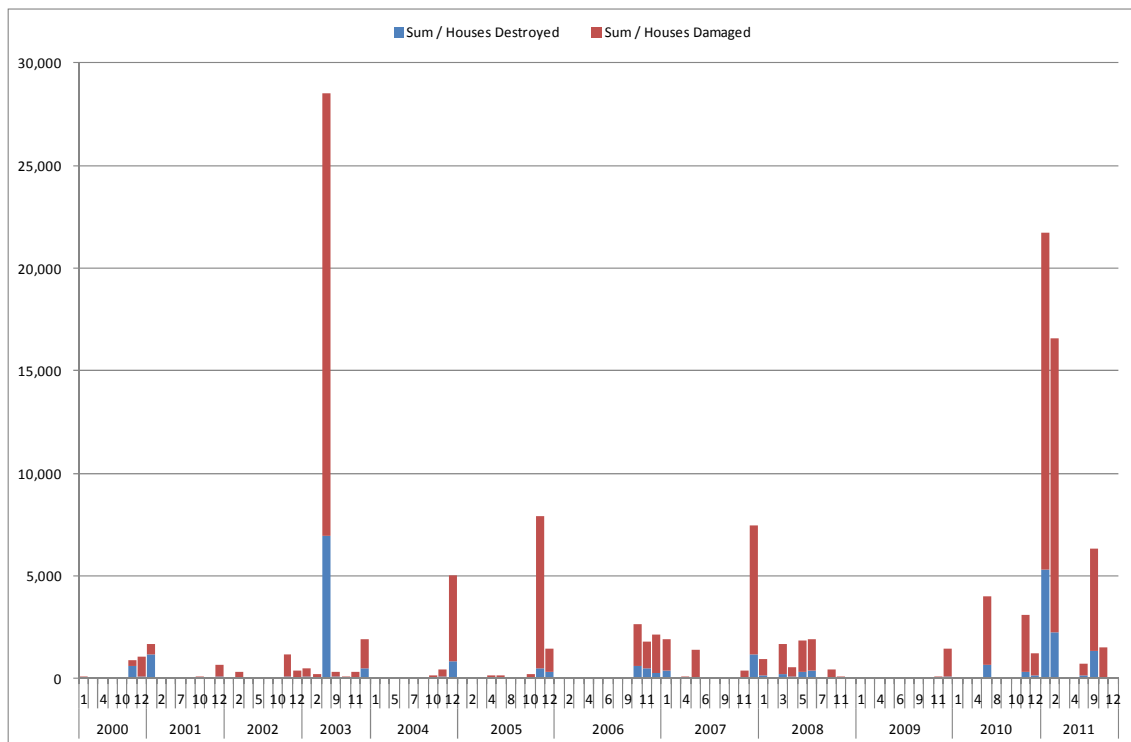


Annex 6-1: Spatial Distribution of Flood Damage

Damaged Houses

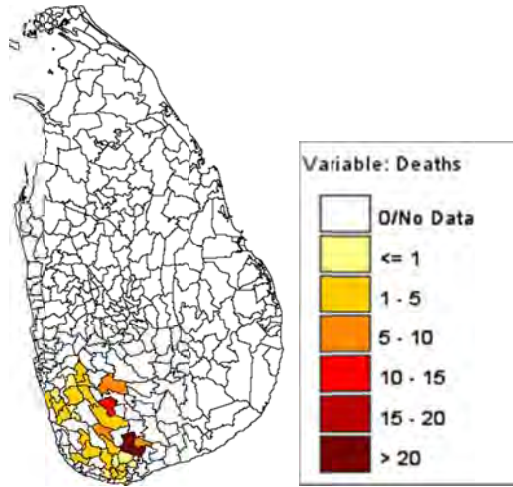


Damaged Houses

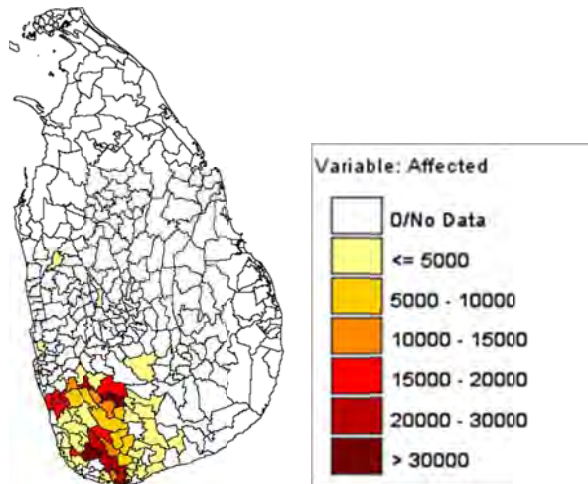


**Flood in May 2003
(Severe Flood in South-western Region)**

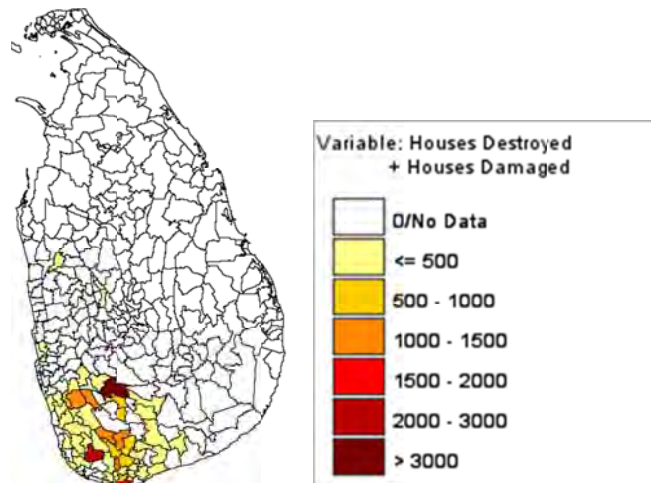
Deaths



Affected People



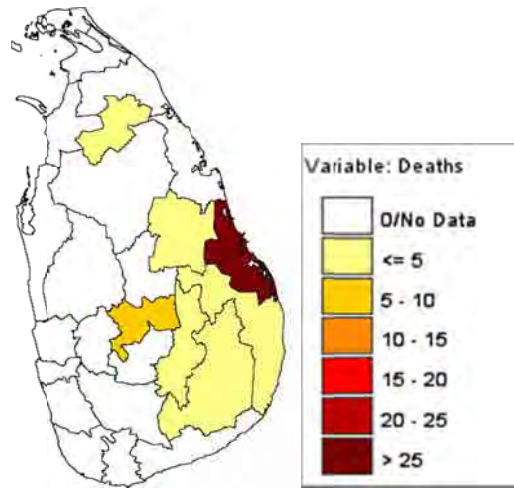
Damaged Houses



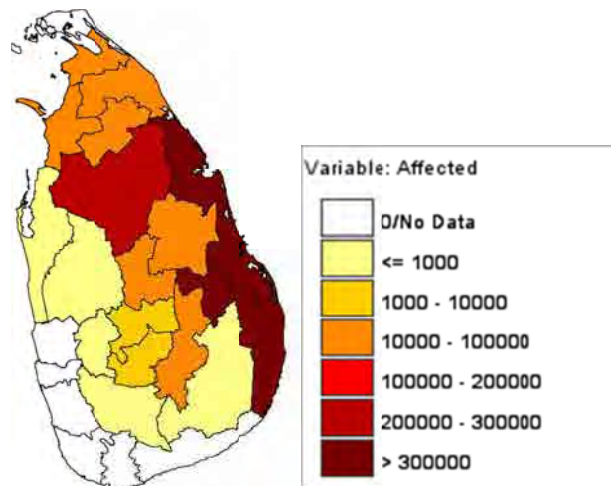
Flood in Jan & Feb 2011

(Severe Flood in whole Sri Lanka, Especially in Eastern Region)

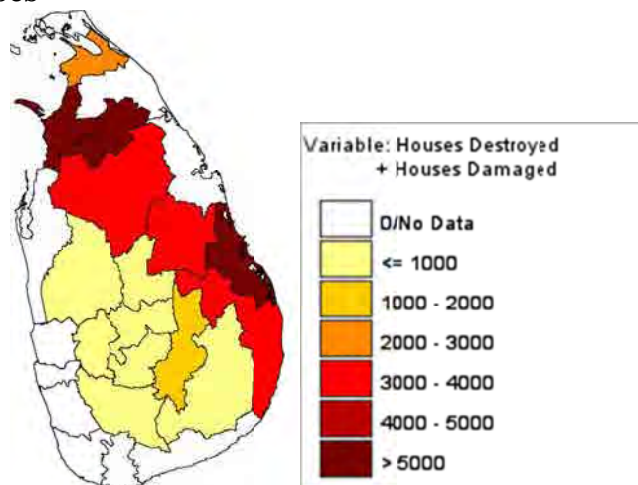
Deaths



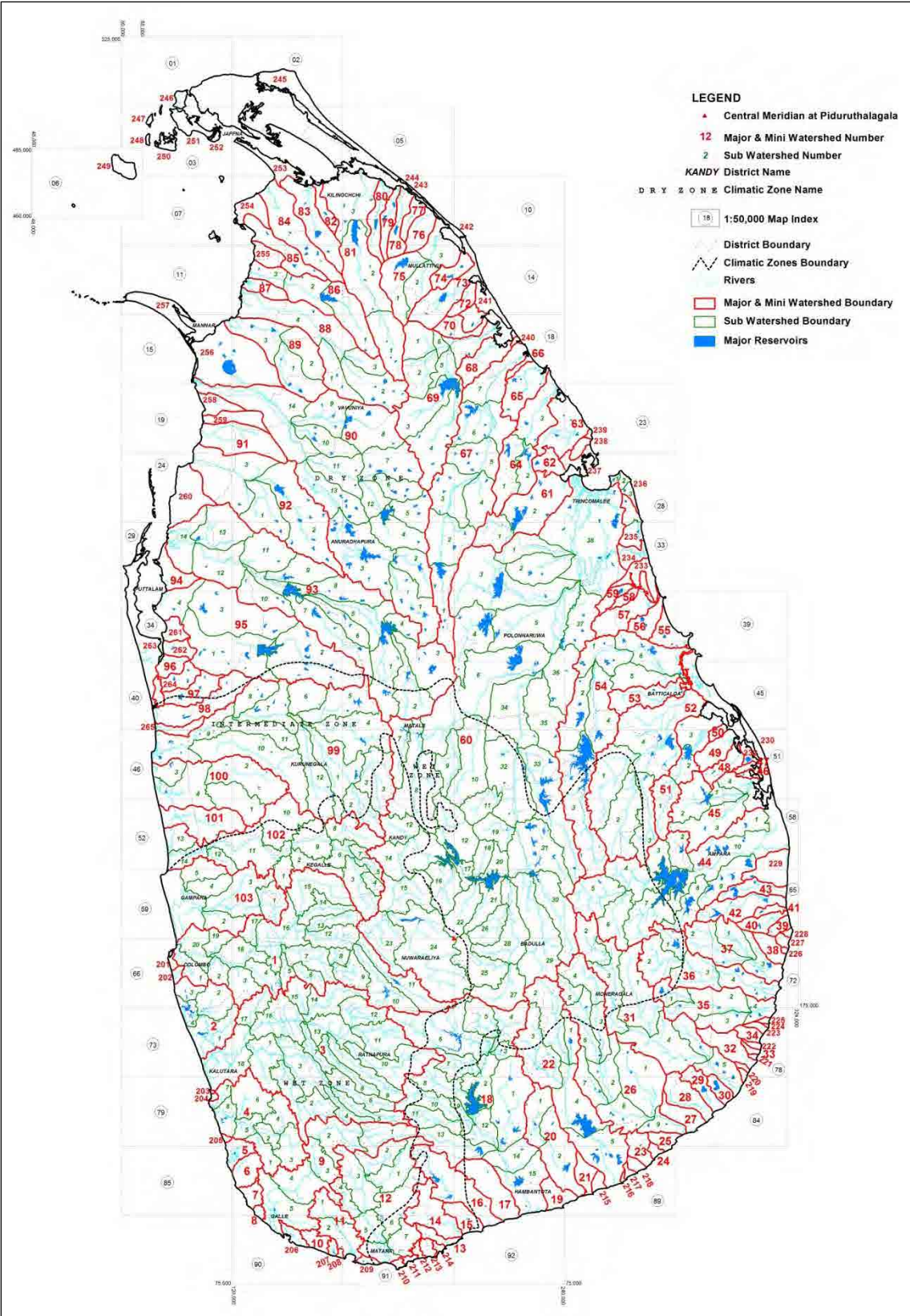
Affected People



Damaged Houses



103 River Basins



Annex 6-2: 103 River Basins

List of 103 River Basins

Watershed No.	Watershed Name	Area (km ²)	Watershed No.	Watershed Name	Area (km ²)
1	Kelani Ganga	2,321	53	Miyangolla Ela	185
2	Bolgoda Ganga	433	54	Maduru Oya	1,487
3	Kalu Ganga	2,784	55	Pulliyampota Aru	104
4	Benthota Ganga	729	56	Kirimechchi Odai	95
5	Madu Ganga	73	57	Bodigoda Aru	175
6	Madampe Lake	95	58	Mandan Aru	34
7	Telwatta Ganga	53	59	Makarachchi Aru	56
8	Ratgama Lake	16	60	Mahaweli Ganga	10,372
9	Gin Ganga	924	61	Kantalai Aru	459
10	Koggala Lake	55	62	Palampotta Aru	78
11	Polwatta Ganga	239	63	Panna Oya	236
12	Nilwala Ganga	1,024	64	Pankulam Aru	499
13	Seenimodara Oya	49	65	Kunchikumban Aru	200
14	Kirama Oya	209	66	Palakutti Aru	22
15	Rekawa Oya	93	67	Yan Oya	1,529
16	Urubokka Oya	348	68	Mee Oya	158
17	Kachigala	226	69	Ma Oya	1,063
18	Walawe Ganga	2,538	70	Churiyan Aru	88
19	Karagan Oya	86	71	Chavar Aru	58
20	Malala Oya	427	72	Palladi Aru	59
21	Embilikala Oya	70	73	Mannal Aru (Munadal Aru)	241
22	Kirindi Oya	1,176	74	Kodalikallu Aru	94
23	Bambawe Aru	84	75	Per Aru	479
24	Mahasiliwa Oya	19	76	Kalmaduru Aru (Pali Aru)	107
25	Butawa Oya	54	77	Maruthapillay Aru	60
26	Menik Ganga	1,278	78	Theravil Aru	111
27	Katupila Aru	101	79	Piramenthal Aru	91
28	Kuranda Aru	148	80	Nethali Aru	124
29	Nabadagas Aru	96	81	Kanakarayan Aru	905
30	Karambe Aru	54	82	Kalawalappu Aru	64
31	Kumbukkan Oya	1,211	83	Akkarayan Aru	260
32	Baguru Oya	142	84	Mandekal Aru	336
33	Girikula Oya	14	85	Pallavarayan Kadu Aru	179
34	Helawa Aru	43	86	Pali Aru	474
35	Wila Oya	500	87	Chappai Aru	75
36	Heda Oya	609	88	Paranki Aru (Menankaddy)	875
37	Karanda Oya	435	89	Nay Aru	537
38	Semani Aru	74	90	Malwathu Oya (Aruvi Aru)	3,183
39	Tandiadi Aru	36	91	Kal Aru	277
40	Kangikadichi Aru	79	92	Moderagama Aru	1,142
41	Rufus Kulam	30	93	Kala Oya	2,847
42	Pannel Oya	195	94	Moongil Aru	104
43	Ambalam Oya	107	95	Mi Oya	1,561
44	Gal Oya	1,877	96	Madurankuli Aru	66
45	Andella Oya	583	97	Kalagama Oya	142
46	Thumpankeni	18	98	Rathambala Oya	260
47	Namakada Aru	18	99	Deduru Oya	2,687
48	Mandipattu Aru	93	100	Karambalan Oya	799
49	Pathanhoddathne Aru	114	101	Ratmal Oya	265
50	Vett Aru	25	102	Maha Oya	1,517
51	Magalavatavan Aru	386	103	Attanagalu Oya	889
52	Mundeni Aru	1,355		Total	61,454

Source: Natural Resource Management Center, Department of Agriculture, Sri Lanka.

Dam Safety and Water Resources Planning Project (DSWRPP)

Outline of DSWRPP

Component 01 - Dam Safety and Operational Efficiency Improvement

32 large dams of the country, identified as high risk to the public safety, will be fully rehabilitated.

Dams to be rehabilitated

http://www.damsafety.lk/Information/List_of_dams.html

Department of Irrigation

- 1 [Parakrama Samudraya](#)
- 2 [Minneriya Wewa](#)
- 3 [Girithale Wewa](#)
- 4 [Kawudulla Wewa](#)
- 5 [Vendrasan Wewa](#)
- 6 [Kanthale Wewa](#)
- 7 [Nachchaduwa Wewa](#)
- 8 [Nuwara Wewa](#)
- 9 [Thisa Wewa](#)
- 10 [Rajanganaya Reservoir](#)
- 11 [Usgala-Siyambalangamuwa](#)
- 12 [Hurulu Wewa](#)
- 13 [Inginimitiya Reservoir](#)
- 14 [Ridiyagama Reservoir](#)
- 15 [Thabbowa Reservoir](#)
- 16 [Nalanda Reservoir](#)

Mahaweli Authority of Sri Lanka

- 1 [Bowathenna Reservoir](#)
- 2 [Polgolla Diversion](#)
- 3 [Victoria Reservoir](#)
- 4 [Randenigala Reservoir](#)
- 5 [Rantambe Reservoir](#)
- 6 [Kothmale Reservoir](#)
- 7 [Kala Wewa](#)
- 8 [Kandalama Reservoir](#)
- 9 [Dambulu Oya Reservoir](#)
- 10 [Maduru Oya Reservoir](#)
- 11 [Chandrika Wewa](#)

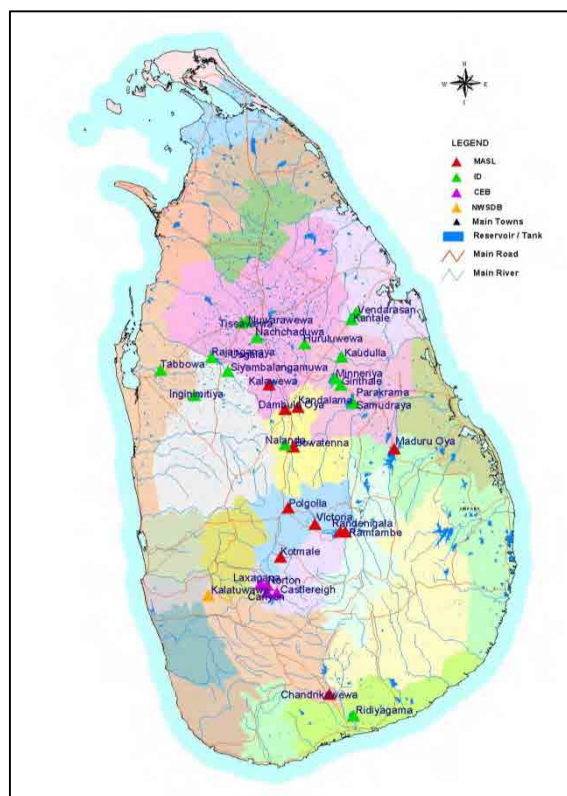
Ceylon Electricity Board

- 1 [Canyon](#)
- 2 [Castlereigh](#)
- 3 [Lakshapana](#)
- 4 [Norton](#)

National Water Supply and Drainage board

- 1 [Kalatuwawa](#)

Annex 6-3: Outline of Dam Safety and Water Resources Planning Project (DSWRPP)



Reports

Rated reports are available in following URL;

http://www.damsafety.lk/ProjectM&E/Reports/ISC_Deliverables.html

Component 02 - Hydro-Meteorological Information System Improvement

Upgrade and modernize current Hydro-Meteorological Information System (HMIS)

- Upgrade & modernize 122 hydro-metric stations (40 renovated and 82 newly established)
- Modernize and establish Data Bank at Irrigation Department and Water Management Secretariat of MASL.
- Improve flood protection procedure, tools and training.
- Establish ground water monitoring system.

Reports

Rated reports are available in following URL;

http://www.damsafety.lk/ProjectM&E/Reports/ISC_Deliverables.html

Component 03 - Multi-Sectoral Water Resources Planning

The expected outcome of this component would be water resource development plans at national level and for two selected river basins, pre-feasibility and feasibility studies for selected high priority strategic projects, and enhanced institutional capacity and skills for water resources planning and management. This component will comprise:

1. Development of a National Water-use master plan to achieve the country's long-term social, environmental and economic development goals and objectives as expressed in the national development framework (Mahinda Chinthanaya) based on an analysis of updated estimates of present and future water demand and supply in the 103 river basins in the country;.

Annex 6-3: Outline of Dam Safety and Water Resources Planning Project (DSWRPP)

2. Preparation of an updated Mahaweli Water Resources Development Plan for the Mahaweli Ganga and adjoining connected river basins based on an optimization study of water supply and water demand in all sectors; in addition, pre-feasibility and feasibility studies would be undertaken for the highest priority investment projects recommended in the agreed plan; and
3. Preparation of an integrated and comprehensive water resources development plan for the Mundeni Aru river basin (of the Eastern Province), and pre-feasibility and feasibility studies of priority investment projects.

Completed tasks under the component 03 (as of Dec. 2012)

- a) Develop Strategic Planning Framework
- b) Develop Knowledge Base
- c) Develop Modeling/Decision Support System Tools
- d) Develop Strategic Environmental and Social Assessments

On-going tasks under the component 03 (as of Dec. 2012)

- a. Develop Integrated Water Resource Plans
- b. Strengthen Institutional Capacity

Reports

Reperated reports are available in following URL;

http://www.damsafety.lk/ProjectM&E/Reports/ISC_Deliverables.html

Annex 6-4: Major Dams Managed by the Irrigation Department

Major Dams Managed by Irrigation Department

NO	RESERVOIR	District	GROSS EXTENT (acr)	FSD (Full Supply Depth)		GROSS CAPACITY		DEAD STORAGE		16 Dams to be rehabilitated by DSWRPP
				(ft)	(m)	(ac.ft)	(mcm)	(ac.ft)	(mcm)	
1	Ambalan Oya	Ampara	4,520	25.5	7.8	35,950	44,344	3,500	4.32	
2	Ekgal Oya	Ampara	2,500	33.0	10.1	23,500	28,987	1,200	1.48	
3	Namal Oya	Ampara	3,700	39.4	12.0	43,450	53,595	4,000	4.93	
4	Pallan Oya	Ampara	3,500	55.0	16.8	93,000	114,714	2,250	2.78	
5	Pannalgama	Ampara	2,700	41.0	12.5	27,600	34,044	2,500	3.08	
6	Rottikulama	Ampara	1,460	15.5	4.7	5,100	6,291	0	0.00	
7	Senanayaka Sam	Ampara	120,000	110.0	33.5	770,000	949,781	0	0.00	
8	Abaya Wewa	Anuradapura	385	15.6	4.8	1,675	2,066	0	0.00	
9	Huruluwewa	Anuradapura	10,621	27.5	8.4	55,000	67,842	2,250	2.78	Hurulu Wewa
10	Mahakandarawa	Anuradapura	6,240	19.0	5.8	36,250	44,714	3,800	4.69	
11	Mahawilachchiya	Anuradapura	2,700	22.2	6.8	32,500	40,088	1,000	1.23	
12	Manankattiya	Anuradapura	1,500	18.0	5.5	4,928	6,079	403	0.50	
13	Nachchaduwa	Anuradapura	7,000	25.0	7.6	45,100	55,630	100	0.12	Nachchaduwa Wewa
14	Nuwara Wewa	Anuradapura	2,500	23.0	7.0	36,050	44,467	1,000	1.23	Nuwara Wewa
15	Padaviya	Anuradapura	13,800	24.0	7.3	85,000	104,846	4,000	4.93	
16	Rajangana	Anuradapura	17,820	35.0	10.7	81,600	100,652	4,500	5.55	Rajangana Reservoir
17	Tisa Wewa	Anuradapura	1,284	19.3	5.9	3,500	4,317	255	0.31	Tisa Wewa
18	Wahalkada	Anuradapura	2,000	28.5	8.7	43,000	53,040	2,025	2.50	
19	Ambewela	Badulla	1,000	17.0	5.2	1,850	2,282	650	0.80	
20	Dambarawa	Badulla	1,507	20.0	6.1	12,910	15,924	1,835	2.26	
21	Kande Ela	Badulla	2,450	27.5	8.4	1,762	2,173	60	0.07	
22	Mapakada	Badulla	1,359	27.0	8.2	7,700	9,498	180	0.22	
23	Nagadeepa	Badulla	4,225	41.0	12.5	23,833	29,398	1,500	1.85	
24	Sorabora	Badulla	2,000	19.5	5.9	14,200	17,515	150	0.19	
25	Navakiri	Batticaloa	17,500	31.0	9.4	53,000	65,375	1,000	1.23	
26	Rugam	Batticaloa	9,752	15.6	4.8	18,600	22,943	0	0.00	
27	Urnichchi	Batticaloa	12,757	33.0	10.1	58,500	72,159	85	0.10	
28	Vakaneri	Batticaloa	9,880	19.2	5.9	13,500	16,652	0	0.00	
29	Badagiriya	Hambantota	1,650	14.0	4.3	9,050	11,163	250	0.31	
30	Debarawewa	Hambantota	945	8.0	2.4	700	0,863	65	0.08	
31	Kekiriobada	Hambantota		54.2	16.5	2,200	2,714	45	0.06	
32	Lunugamwehera	Hambantota	12,750	41.0	12.5	183,000	225,727	13,300	16.41	
33	Mau Ara	Hambantota	1,811	20.0	6.1	33,300	41,075	6,950	8.57	
34	Muruthawela	Hambantota	4,226	49.0	14.9	38,875	47,952	3,200	3.95	
35	Ridiyagama	Hambantota	8,497	18.8	5.7	27,000	33,304	1,600	1.97	Ridiyagama Reservoir
36	Tissawewa	Hambantota	2,750	15.6	4.8	3,516	4,337	35	0.04	
37	Weheragala	Hambantota		25.4	7.7	61,000	75,242	6,655	8.21	
38	Weerawila	Hambantota	2,300	13.0	4.0	11,450	14,123	2,015	2.49	
39	Yodawewa	Hambantota	3,267	12.3	3.7	8,375	10,330	100	0.12	
40	Ellewela	Matara	1,339	32.3	9.8	850	1,048	0	0.00	
41	Kekandura	Matara	1,100	35.8	10.9	2,310	2,849	0	0.00	
42	Dewahuwa	Matale	2,342	28.5	8.7	9,700	11,965	100	0.12	
43	Nalanda	Matale	400	69.5	21.2	12,400	15,295	0	0.00	Nalanda Reservoir
44	Wemedilla	Matale	1,800	36.0	11.0	4,594	5,667	286	0.35	
45	Ambakolawewa	Kurunegala	840	16.5	5.0	6,700	8,264	300	0.37	
46	Attaragalla	Kurunegala	1,036	15.5	4.7	3,668	4,524	0	0.00	
47	Batalagoda	Kurunegala	7,634	12.8	3.9	4,840	5,970	150	0.19	
48	Hakwatuna	Kurunegala	6,370	27.0	8.2	19,727	24,333	3,000	3.70	
49	Kimbulwana	Kurunegala	2,224	20.0	6.1	6,900	8,511	450	0.56	
50	Mediyawa	Kurunegala	1,200	14.0	4.3	2,595	3,201	0	0.00	
51	Magalla	Kurunegala	6,000	18.0	5.5	7,440	9,177	70	0.09	
52	Palukadawala	Kurunegala	2,025	27.3	8.3	7,688	9,483	15	0.02	
53	Usgala Siyabalan	Kurunegala	2,100	18.4	5.6	17,350	21,401	1,665	2.05	Usgala-Siyabalangamuwa
54	Ethimale	Monaragala	1,002	16.5	5.0	5,500	6,784	450	0.56	
55	Handapanagala	Monaragala	1,700	18.0	5.5	5,800	7,154	390	0.48	
56	Muthukandiya	Monaragala	2,000	37.0	11.3	24,600	30,344	1,800	2.22	
57	Giritale	Polonnaruwa	7,600	42.7	13.0	18,800	23,189	500	0.62	Giritale Wewa
58	Kaudulla	Polonnaruwa	12,498	30.0	9.1	104,000	128,282	4,500	5.55	Kaudulla Wewa
59	Minneriya	Polonnaruwa	22,475	38.1	11.6	110,000	135,683	4,000	4.93	Minneriya Wewa
60	Pss	Polonnaruwa	24,947	25.0	7.6	109,000	134,450	15,000	18.50	Parakrama Samudrava
61	Inginimitiya	Puttalam	5,335	22.0	6.7	58,835	72,572	4,250	5.24	Inginimitiya Reservoir
62	Tabbowa	Puttalam	2,092	18.0	5.5	15,000	18,502	190	0.23	Thabbowa Reservoir
63	Kantale	Trincomalee	21,884	38.8	11.8	114,000	140,617	0	0.00	Kanthale Wewa
64	Mahadivul Wewa	Trincomalee	1,390	19.0	5.8	16,400	20,229	800	0.99	
65	Mora Wewa	Trincomalee	4,000	28.0	8.5	31,000	38,238	1,700	2.10	
66	Vendrasan	Trincomalee	1,750	39.5	12.0	20,200	24,916	0	0.00	Vendrasan Wewa
67	Wan Ela	Trincomalee	1,620	13.5	4.1	2,160	2,664	55	0.07	
68	Pavatkulam	Vavuniya	4,135	19.4	5.9	27,000	33,304	500	0.62	
69	Akathimuruppu	Mannar	6,231	9.9	3.0	7,000	8,634	0	0.00	
70	Giants Tank	Mannar	24,438	11.5	3.5	31,500	38,855	175	0.22	
71	Viyathikulam	Mannar	1,223	11.1	3.4	1,800	2,220	0	0.00	

Legal Framework on Water Resources Management

Table Main Enactments & Authorities Related to Water Resources Conservation & Development

	Act (to read with later Amendments)	Main Objective/s	Responsible Implementation Authority
1	Irrigation Ordinance-1900 (Cap 453)	Irrigation development and maintenance (major works)	Irrigation Department
2	Mahaweli Authority of Sri Lanka Act 23 of 1979	Water resources development in the areas declared under the Act	Mahaweli Authority of Sri Lanka
3	Agrarian Services Act No 58 of 1979	Development and maintenance of small irrigation works. cons	Department of Agrarian development
4	National Water Supply and Drainage Board Act of 2 of 1974	Mainly urban and industrial water supply	National Water Supply and Drainage Board
5	Water Resources Board Act No 29 of 1964	Although the Act provides for advisory services covering all aspects of water resources, in practice, confined to groundwater survey and development.	Water Resources Board
6	Sri Lanka Land Reclamation and Development Corporation Act of 1968 and 1976	Land reclamation and drainage	Sri Lanka Land Reclamation and Development Corporation
7	Ceylon Electricity Board Act 17 of 1969	Hydro Electricity generation and distribution	Ceylon Electricity Board
8	Sustainable Energy Authority Act No 35 of 2007	Promote developing indigenous energy sources. Promote small scale hydro power development.	Sustainable Energy Authority
9	Meteorological Department	Weather data and forecasting	Meteorological Department
10	National Environment Act No 47 of 1980	Overall environment conservation	Central Environment Authority
11	North Western province Environmental Statute No 12 of 1990	Environment conservation in the NWP	NWP Provincial Council
12	Forest Ordinance-1907/Cap 453)	Forest conservation	Department of Forest Conservation
13	Flora and Fauna Protection Ordinance-1937	Conservation of Forest and Wildlife Resources	Departments of Forest Conservation and Wildlife Conservation.

Annex 6-5: Legal Framework on Water Resources Management

	Act (to read with later Amendments)	Main Objective/s	Responsible Implementation Authority
14	Land Development Ordinance of 1935 I	State and alienation for agricultural activity and land development	Land Commissioner's Department
15	State Lands Ordinance No 8 of 1947	Alienation and management of state land e excluding land covered by the LDO	Ministry in charge of the subject of lands, through the Divisional Secretaries.
16	Soil Conservation Act No 1951/ 1996	Soil conservation	Department of Agriculture
17	Mines and Minerals Act 33 of 1992	Surveying and administration of mining of minerals.	Geological Survey and Mines Bureau
18	13 Amendment to the Constitution	Provincial Councils with related central departments on devolved and concurrent subjects	Provincial Councils
19	Land Use Policy Planning Act (*The Department has been established and the enactment is under way)	Mapping of land use and developing land use policy.	Land use Planning Department

Source: Initial Assessment Report, National Water Use Master Plan Volume I (DSWRPP)

Flood Inundation Area in Eastern Region



Source: IWMI

Tools for Weather Forecast (for DOM)

Category		Forecast Range	AWS	Doppler Radar	GMS ¹	POS ²	NWP	GPS Radiosonde	Lightning Detection	Effective Forecast
Meteorological Advisory/ Warning		to 1 day	A	A	A	B	/	/	B	- Flood - Landslide - Lightning
Forecast	Nowcasting	0 to 2 hrs	A	A	A	C	/	B	B	- Flood - Landslide - Lightning
	Very Short Range	2 to 6 hrs	B	A	B	C	C (MSM*3)	B	/	- Flood - Landslide
	Short range	6 to 72 hrs	B	B	B	/	A (MSM*3)	B	/	- Flood - Landslide
	Medium Range	3 to 7 days	/	/	/	/	B (GSM*4)	/	/	- Flood - Landslide
	Extended Medium	10 to 30 days	/	/	/	/	B (GSM*4)	/	/	
	Long Range	1 to 3 months	/	/	/	/	B (GSM*4)	/	/	- Agriculture - Water resource - Water Sector

Notes : A; Effective B; Moderate C; Less Effective

*1: Geostationary Meteorological Satellite

*2: Polar Orbiting environmental Satellite(less effective)

*3: Meso Scale Model

*4: Global Spectral Model

Annex 8-1: Action to be Taken (Flood Management)

Action to be Taken	Year										Remarks	No. of Required Action	
	1	2	3	4	5	6	7	8	9	10			
HFA1: Governance													
- Preparation of coordination frameworks of flood management at central level and basin level (103 river basin).		■	■	■								Central level 1st pilot basins 2nd pilot basins Other basins level	F1.1
- Review/re-formulation of legal framework related to the flood management including the urban development and land use.					■	■	■						F1.2
- Provision of appropriate funding mechanism of the flood management activities					■	■	■						F1.3
HFA2: Risk Identification, Assessment, monitoring and early warning													
- Preparation of the national hydrological hydro-meteorological data collection network and its' information system, including the FEWS to the public.	■	■	■	■								(on going) Upgrading	F2.1
- Update the topographic maps in the flood prone areas, including land use	■	■	■	■									F2.2
- Update flood hazard map of the flood prone basins	■	■	■	■									F2.3
HFA3: Use knowledge, innovation, education, build culture													
- Promotion of CDRMPs to the all flood prone areas	■	■	■	■	■	■	■	■	■	■	■	Pilot communities Overall	F3.1
- Prepare the technical guidelines of flood management works				■	■	■	■						F3.2
- Enhancement of capacity of the engineers/officials related to the flood management	■	■	■	■	■	■	■						F3.3
- Promotion of the engagement to the media for the flood				■	■	■	■						F3.4
HFA4: Reduce the underlying risk factors													
- Rehabilitation of the aged trunk flood mitigation facilities (tank, bund, channel, drainage pump, etc.)	■	■	■	■	■	■	■	■	■	■	■	Priority structures Other selected	F4.1
- Preparation of the flood management master plans in the respective flood prone basins (including urban flood)		■	■	■	■	■	■	■	■	■	■	1st priority basins 2nd priority basins Other priority	F4.2
- Implementation of the flood management master plans in the respective flood prone basins (including urban flood)					■	■	■	■	■	■	■	1st priority basins 2nd priority basins	F4.3
- Revision of the urban development and land use plans in accordance with the formulated flood management master plan					■	■	■	■	■	■	■	Priority area Overall	F4.4
- Operation and maintenance of the flood management facilities, including enforcement of the urban development and land use	■	■	■	■	■	■	■	■	■	■	■		F4.5
- Promotion of the development of financial risk-sharing and risk transfer mechanism, particularly insurance and reinsurance						■	■	■	■	■	■		F4.6
HFA5: Preparedness for effective response and recovery													
- Preparation/revision/implementation of the national and district emergency response plans.	■	■	■	■	■	■	■	■	■	■	■	National District	F5.1
- Promotion of community based search and rescue teams		■	■	■	■	■	■	■	■	■	■	Pilot communities Overall	F5.2

Annex 8-2: List of Candidate Projects (Flood Management)

List of Candidate Projects

Kind of Disaster	No. of Required Action	Project No.	Project Title	Time Frame										Budget (Mill. USD)	Partner (Lead Agency in Bold)		
				1	2	3	4	5	6	7	8	9	10				
Flood	F1.2	F 01	Institutional Framework - Review/re-formulation of legal framework related to the flood management including the urban development and land use													1.5	MoI&WRM
Flood	F1.1, F2.1, F3.1, F3.2, F3.3, F4.1, F4.2, F4.4, F4.5	F 02	Comprehensive Flood Management Master Plan for 1st Priority River Basins (tentative priority basins: South-Western Region or Eastern Region)													5.0	ID, MASL, SLLRDC, DMC
Flood	F1.1, F2.1, F3.1, F3.2, F3.3, F4.1, F4.2, F4.4, F4.5	F 03	Comprehensive Flood Management Master Plan for 2nd Priority River Basins													5.0	ID, MASL, SLLRDC, DMC
Flood	F1.1, F2.1, F3.1, F3.2, F3.3, F4.1, F4.2, F4.4, F4.5	F 04	Urban Drainage Improvement Plan in Selected Cities (Priority cities in 1st priority basins)													4.0	ID, MASL, SLLRDC, DMC
Flood	F4.1, F4.5	F 05	Urgent Rehabilitation Plan for aged Flood Mitigation Structures (Bund, Tank, Channel, Drainage Pump, etc.)													1.5	ID, MASL, SLLRDC, DMC
Flood	F2.1, F3.1, F3.4, F5.2	F 06	Upgrading and Expanding of Flood Early Warning System and CBDRM													5.0	DMC, ID, MASL, DOM
Flood	F2.2, F2.3, F5.1	F 07	Nationwide Flood Risk Assessment for DM Plans													5.0	DMC, ID, MASL
Flood	F3.3	F 08	Capacity Enhancement for Flood Management in Irrigation Department (Pre-condition: enhancement of sub-department of disaster management)													3.5	ID
Flood	F3.3, F4.5	F 09	Coordinating Dam Operation for Flood Management (Pre-condition: accurate flood prediction is available)													3.5	DMC, ID, MASL, DOM, CEB, NWSDB
Flood	F3.3, F4.3, F4.5	F 10 (IP F02)	Detailed Design and Implementation for Priority Project(s) on Comprehensive Flood Management Master Plan for 1st Priority River Basins													80.0	ID, SLLRDC, DMC
Flood	F3.3, F4.3, F4.5	F 11 (IP F03)	Detailed Design and Implementation for Priority Project(s) on Comprehensive Flood Management Master Plan for 2nd Priority River Basins													80.0	ID, MASL, SLLRDC, DMC
Flood	F3.3, F4.3, F4.5	F 12 (IP F04)	Detailed Design and Implementation for Priority Project(s) on Urban Drainage Improvement Plan in Selected Cities													50.0	ID, MASL, SLLRDC, DMC
Flood	F3.3, F4.3, F4.5	F 13 (IP F05)	Detailed Design and Implementation for Priority Project(s) on Urgent Rehabilitation Plan for aged Flood Mitigation Structures													30.0	ID, MASL, SLLRDC, DMC

Annex 8-3: Criteria of Future program (Flood Management)

Necessary Condition

Candidate- Projects

	F 01	F 02	F 03	F 04	F 05	F 06	F 07	F 08	F 09	F 10	F 11	F 12	F 13
(1) Whether the project has a demand from the government?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(2) Whether the project needs to assist?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(3) Whether the project is assisted by the other donors?	-	-	-	-	-	-	-	-	-	-	-	-	-
(4) Whether JICA can implement the Project?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(5) Whether there is no issues of social and environmental matters?	✓	less	less	less	less	✓	✓	✓	✓	less	less	less	less

Sufficient Conditions in Detail

Screening Level	Criteria	Check point	F 01	F 02	F 03	F 04	F 05	F 06	F 07	F 08	F 09	F 10	F 11	F 12	F 13
Level 1: Feasibility	Feasibility	Whether the project goal can be achieved ?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Maturity	Whether the executive agencies are determined and coordinated?		✓			✓					✓	✓	✓	✓
		Whether the executive agencies have enough capacities or the project has capacity enhancement aspect?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Whether EIA is required for the implementation, or EIA is included in the prohect?		✓	✓	✓	✓					✓	✓	✓	✓
		Whether the land acquisition and resettlement are included in the project and there is achievable before the project?		✓	✓	✓	✓					✓	✓	✓	✓
	Financial Status	Whether there is any other financial resources other than JICA?	No	No	No	No	No	No	No	No	No	No	No	No	No
Level 2: Need/Impact	Effectiveness	Whether the project is effective in term of reduce of the disaster?		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Efficiency	Whether the project is efficient in term of time and/or finance?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Impact	How beneficial is the project to the people of Sri Lanka?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Sustainability	How sustainable is the benefit of the project or whether the project includes the component to secure the sustainability?	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
Level 3: Applicability	Japan's experience	Whether the Japan's experiences is applicable to the project in the engineering and managerial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Time frame	Whether JICA can commit the project with that time frame?		✓		✓	✓		✓		✓		✓	✓	

Annex 8-4: Project Sheet (Flood Management)

Program: F 02 + F 05 & F 10 & F 13

(Technical cooperation for development planning and Loan Aid)

Comprehensive Flood Management Master Plan for 1st Priority River Basins
- together with Urgent Rehabilitation Plan for aged Flood Mitigation Structures
(tentative priority basins: South-Western Region or Eastern Region)

Agencies involved:

Irrigation Department (ID)

Mahaweli Authority of Sri Lanka (MASL)

Sri Lanka Land Reclamation and Development Corporation (SLLRDC)

Disaster Management Centre (DMC)

Background:

South-western region / eastern region in Sri Lanka is suffering from severe floods every year. Urgent flood mitigation measures are required to ensure the human life and economic activity in the region. On the other hand, water management in Sri Lanka has long history over millenniums. Therefore, consideration of Sri Lankan culture of water-use is also important for flood management planning.

Objectives:

- To establish suitable coordination frameworks for flood mitigation at central level and basin level
- To formulate feasible and appropriate flood management master plan together with the coordination bodies
- To formulate urgent rehabilitation plan for aged flood mitigation structures
- Implementation of project(s) based on the "Comprehensive Flood Management Master Plan" and "Urgent Rehabilitation Plan for aged Flood Mitigation Structures"

Time frame of implementation:

Coordination framework: 2015 ~ 2016

Comprehensive flood management master plan: 2015 ~ 2017

Urgent rehabilitation plan for aged flood mitigation structures: 2015

D/D and Project implementation for comprehensive flood management: 2018 ~ 2022

D/D and Project implementation for Urgent rehabilitation plan: 2016 ~ 2017

Geographical area of implementation:

South-western region / eastern region

Selected flood mitigation structures

Activities:

- Preparation of coordination frameworks for flood management at central level
- Preparation of coordination frameworks for flood management at basin level
- Policy/consensus making against flood among the residents and local communities such as farmer's organization in the basin
- Formulation of comprehensive flood management master plan
 - for South-western region: Revision of Flood Management Plan for Kelani, Kalu, Gin and Nilwara Rivers
 - for Eastern region: Review of Flood Mitigation in Ampara & Batticaloa Districts of Sri Lanka (DMC/UNDP)
 - Structural measures:
 - Proactive/critical structural measures against flood (structural measure)
 - Non-structural measures:
 - Provision of FEWS
 - Preparation of CBDRMPs for pilot communities

Annex 8-4: Project Sheet (Flood Management)

- Selection of priority project(s)
- Feasibility study on priority project(s)
- Preparation of implementation program for priority project(s)
- Formulation of urgent rehabilitation plan for aged flood mitigation structures and implementation program
 - Inventory study on aged flood mitigation structures
 - Review of basic flood management strategies for structures
 - Selection of priority structures for urgent rehabilitation
 - Preparation of implementation program for urgent rehabilitation
 - Detailed Design on selected priority structures for urgent rehabilitation
- Detailed Design and Implementation of Project(s) on "Comprehensive Flood Management Master Plan for 1st Priority River Basins"
- Implementation of "Urgent Rehabilitation Plan for aged Flood Mitigation Structures"

Outputs:

- Coordination frameworks for flood mitigation at central, basin and local levels
- Comprehensive flood management master plan 1st priority river basins
- Urgent rehabilitation plan for aged flood mitigation structures
- Flood mitigation structural measures
- FEWS
- CBDRMPs for pilot communities
- Strengthening of existing flood mitigation structures (Rehabilitated structures)

Budget:

Planning stage

for comprehensive flood management and urgent rehabilitation: 6.5 million USD

Implementation stage for comprehensive flood management: 30.0 million USD

Implementation stage for urgent rehabilitation: 80.0 million USD

Funding status:

Local and International Funding

Annex 8-4: Project Sheet (Flood Management)

Program: F 04 & F 12

(Technical cooperation for development planning and Loan Aid)

Urban Drainage Improvement Plan in Selected Cities

(Priority cities in 1st priority basins)

Agencies involved:

Irrigation Department (ID)

Sri Lanka Land Reclamation and Development Corporation (SLLRDC)

Disaster Management Centre (DMC)

Background:

Cities in low lying area in Sri Lanka are suffering from severe flood/inundation by local heavy rainfall every year. Urgent flood/inundation mitigation measures are required to ensure the economic activity in the area.

Objectives:

- To formulate feasible and appropriate drainage improvement plan together with the flood mitigation coordination bodies
- Implementation of project(s)

Time frame of implementation:

Drainage improvement plan: 2018 ~ 2019

D/D and Project implementation: 2020 ~ 2024

Geographical area of implementation:

Selected cities

Activities:

- Cooperation with coordination frameworks for flood management at basin level
- Policy/consensus making against flood/inundation among the residents and local communities in the area
- Formulation of drainage improvement plan
 - Review of Flood Management Master Plan for the objective basin
 - Proactive/critical structural measures against flood/inundation
 - Provision of FEWS
 - Preparation of CBDRMPs for pilot communities
- Selection of priority project(s)
- Feasibility study on priority project(s)
- Preparation of implementation program for priority project(s)
- Detailed Design and Implementation of Project(s)

Outputs:

- Drainage improvement plan for selected cities
- FEWS
- CBDRMPs for pilot communities
- Flood mitigation structural measures

Budget:

Planning stage: 4.0 million USD

Implementation stage: 50.0 million USD

Funding status:

Local and International Funding

Annex 8-4: Project Sheet (Flood Management)

Program: F 07 (Technical cooperation project)

Nationwide Flood Risk Assessment for Disaster Management Plans

Agencies involved:

Disaster Management Centre (DMC)
Irrigation Department (ID)

Background:

DMC is preparing the Flood Hazard Map (FHM) working with related agencies and flood event map for south-western region was published. This information is helpful for preparation of Flood management strategy and Disaster Management (DM) plan. DMC also prepared revised district DM plan for Matale and Batticaloa based on the vulnerability and risk assessment. It is desired that these activities cover the whole of Sri Lanka.

Objectives:

- Update the topographic maps in the flood prone areas, including land use
- Update flood hazard map of the flood prone basins
- Provision of district DM plans

Time frame of implementation:

2014 ~ 2016

Geographical area of implementation:

Flood Risk Assessment: Nationwide
District DM Plan: Selected districts

Activities:

- Review of flood condition in Sri Lanka
- Updating of the existing topographic maps
- Provision of nationwide DEM for simulation model
- Development of preliminary flood simulation model
- Preparation of FHMs and/or Flood Risk Maps
- Study on flood risk assessment
- Preparation district DM plans for selected districts

Outputs:

- Nationwide DEM
- Preliminary flood simulation model
- FHMs and/or Flood Risk Maps
- District DM plans for selected districts

Budget:

5.0 million USD

Funding status:

Local and International Funding

Annex 9-2: List of Candidate Projects (Sediment -related Disaster Management)

List of Candidate Projects (as of *****)

Kind of Disaster	No. of Required Action	Project No.	Project Title	Time Frame										Budget (Mill. USD)	Partner (Lead Agency in		
				1	2	3	4	5	6	7	8	9	10				
Sediment-related disaster (landslide)	L-2.1, 2.4, 3.1, 3.3, 3.4, 3.5, 3.6	L1	Project of Capacity Enhancement for Sediment-related Disaster Mitigation -Phase 1													5.0	NBRO/(RDA)
	L-2.2	L2	Project for updating base map in 1:10,000 scale with LIDAR													50.0	Survey Department/ NBRO/(RDA)
	L-1.1, 2.3, 3.2, 3.7, 3.8	L3	Project of Capacity Enhancement for Potential Sediment-related Disaster Mitigation - Phase 2 (including establishment of laws and regulations for landslide)													5.0	NBRO/MLLD/UDA
	L-4.1	L4	Project of Road Protection against Sediment-related Disaster for Priority Areas-Phase 1													120.0	RDA/(NBRO)
	L-4.2	L5	Project of Road Slope Disaster Mitigation for Road Widening Areas-Phase2													120.0	RDA/(NBRO)
	L-4.3	L6	Project of Sediment-related Disaster Mitigation Works : (high priority 16 sites)													30.0	NBRO
	L-4.4	L7	Project of Sediment-related Disaster Mitigation Works : (other existing 29 sites)													50.0	NBRO
	L-4.5	L8	Project of Sediment-related Disaster Mitigation Works : (identified potential sites)													30.0	NBRO
	L-3.9	L9	Project for promotion of public awareness in landslide prone areas													2.0	DMC/ NBRO

Annex 9-3: Criteria of Future Program (Sediment-related Disaster Management)

Necessary Condition

Candidate-Projects

	L-1	L-2	L-3	L-4	L-5	L-6	L-7	L-8	L-9
(1) Whether the project has a demand from the government?	✓	✓	✓	✓	✓	✓	✓	✓	✓
(2) Whether the project needs to assist?	✓	✓	✓	✓	✓	✓	✓	✓	
(3) Whether the project is assisted by the other donors?									
(4) Whether JICA can implement the Project?	✓	✓	✓	✓	✓	✓	✓	✓	✓
(5) Whether there is no issues of social and environmental matters?	✓	✓	✓	✓	✓	✓	✓	✓	✓

Sufficient Conditions in Detail

Screening Level	Criteria	Check point	L-1	L-2	L-3	L-4	L-5	L-6	L-7	L-8	L-9
Level 1: Feasibility	Feasibility	Whether the project goal can be achieved ?	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Maturity	Whether the executive agencies are determined and coordinated?	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Whether the executive agencies have enough capacities or the project has capacity enhancement aspect?	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Whether EIA is required for the implementation, or EIA is included in the prohect?	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Whether the land acquisition and resettlement are included in the project and there is achievable before the project?	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Financial Status	Whether there is any other financial resources other than JICA?									
Level 2: Need/Impact	Effectiveness	Whether the project is effective in term of reduce of the disaster?	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Efficiency	Whether the project is efficient in term of time and/or finance?	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Impact	How beneficial is the project to the people of Sri Lanka?	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Sustainability	How sustainable is the benefit of the project or whether the project includes the component to secure the sustainability?	✓	✓	✓	✓	✓	✓	✓	✓	✓
Level 3: Applicability	Japan's experience	Whether the Japan's experiences is applicable to the project in the engineering and managerial	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Time frame	Whether JICA can commit the project with that time frame?	✓		✓	✓	✓				
		New Number of the projects	L-1		L-2	L-3	L-4				

Annex 9-4: Program Sheet (Sediment-related Disaster Management)

L1: Project of Capacity Enhancement for Sediment-related Disaster Mitigation -Phase 1

Agencies involved:

National Building Research Organisation (NBRO)

Background and Rationale:

In Sri Lanka, the number of sediment-related disasters is increasing rapidly caused by heavy rains under the influence of climate change, and increasing development activities in mountainous area.

NBRO mainly has been corresponding to sediment-related disasters with accumulation of technology, however capacity of NBRO for tackling with sediment-related disasters is insufficient.

Therefore, capacity enhancement and technical improvement of NBRO is required, and the expectation for Japanese technical support is high.

Objectives:

- to identify the high - risk landslide locations from among the reported landslides and select the most critical ones needing urgent mitigation
- to plan and implement appropriate and cost effective mitigation measures to eliminate/ minimize future landslide risks
- to promote coordination and collaboration of all stakeholders towards landslide mitigation and strengthen them through education and training
- to enhance capacity of NBRO to effectively deal with landslide mitigation efforts
- to conduct research to improve the systems and methods developed for; landslide hazard zonation mapping, updating these maps incorporating the land use maps and land use changes and landslide forecasting using the hazard zonation maps, rainfall and ground movement thresholds etc

Time frame:

Year1-4: Short term:

Geographical Area:

Landslide prone areas (Mainly Badulla, Kandy, Matale and NuwaraEliya Districts)

Activities:

- Improvement of early warning system for sediment-related disaster (increase

Annex 9-4: Program Sheet (Sediment-related Disaster Management)

- number of rain fall gauges)
- Identify high-risk landslide locations
 - Enhance capacity for identifying high-risk landslide locations (existing landslides)
 - Enhance capacity for investigations/ surveys of landslide prone areas
 - Prepare technical manuals/ guidelines for investigations/ surveys of landslide prone areas
 - Enhance capacity for analysis, design, supervision and maintenance for landslide countermeasure works
 - Prepare technical standards for design and supervision for landslide countermeasure works

Output:

Technical standard of landslide

Network of early warning system for sediment-related disaster (combination of automatic rain fall gauge)

Enhancement of NBRO's capacity for landslide mitigation

Budget

USD 5.0 million

Funding status:

Local and International Funding (technical adviser, equipment, training)

Annex 9-4: Program Sheet (Sediment-related Disaster Management)

L2: Project of Capacity Enhancement for Potential Sediment-related Disaster Mitigation -Phase 2

Agencies involved:

National Building Research Organisation (NBRO)

Background and Rationale:

The "Project of Capacity Enhancement for Sediment-related Disaster Mitigation -Phase 1" aims at capacity enhancement for "existing risks of landslides".

In the Phase -2, capacity enhancement for "potential risks of landslide" is the main purpose of the project.

This project is related to the "Project for road slope disaster mitigation for road widening areas - Phase 2".

Potential landslide risks caused by such as road widening are main targets of the project.

Objectives:

- to support implementation of appropriate mitigation measures to minimize potential landslide risks
- to support capacity enhancement of NBRO for mitigation works for potential landslide risks
- to establish laws and regulations for landslide including control of development activities and land use in landslide prone areas

Time frame:

Year5-7: Middle term:

Geographical Area:

Landslide prone areas (Mainly Badulla, Kandy, Matale and NuwaraEliya Districts)

Activities:

- Establish laws and regulations for landslide including control of development activities and land use in landslide prone areas
- Update landslide hazard zonation map (scale1:10,000) using updated base map
- Identify potential high-risk landslide locations
- Prepare technical standards for inspection and maintenance in landslide prone areas and cutting slopes along main national roads

Annex 9-4: Program Sheet (Sediment-related Disaster Management)

- Prepare construction/ development guidelines for landslide prone areas considering land use plan and urban development plan

Output:

Laws and regulations for landslide including control of development activities and land use in landslide prone areas

Updated landslide hazard zonation map (scale 1:10,000)

Enhancement of NBRO's capacity for potential landslide mitigation

Budget

USD 5.0 million

Funding status:

Local and International Funding (technical adviser)

Tentative

Annex 9-4: Program Sheet (Sediment-related Disaster Management)

L3: Project of Road Protection against Sediment-related Disaster for Priority Areas-Phase1

Agencies involved:

Road Development Authority, National Building Research Organization

Background and Rationale:

In Sri Lanka, the number of sediment-related disasters is increasing rapidly caused by heavy rains under the influence of climate change, and increasing development activities in mountainous area.

Sediment-related disasters have affected road networks and economic activities in Sri Lanka.

On main national highways, RDA has been implementing landslide countermeasures, however with limited countermeasures landslides are still one of the most important problems.

It is in agreement also with the policy of Sri Lanka to ensure the safety of a mountains road, and the necessity is high.

Objectives:

- To design and conduct countermeasure works for slopes along major national highways in the selected landslide prone areas with the highest priorities. (model of countermeasure works)
- To support design and construction of countermeasure works of slopes along major national highways in the selected landslide prone areas with higher priorities.
- To introduce early warning system for landslide along major national roads.
- Consulting services for geological surveys, detailed designs, bidding assistance, supervision, etc.

Time frame:

Year1-5 – Short-Middle term

Geographical Area:

Seven (7) Districts in mountain area

Activities:

- Geological surveys in landslide countermeasure planned sites with high priorities

Annex 9-4: Program Sheet (Sediment-related Disaster Management)

- Design of countermeasure works against landslides
- Support of tender and contract
- Construction of countermeasure works (high priority sites)
- Introduction of early warning system for landslide
- Preparation of technical standards of design method, inspection and maintenance for road cutting slope in landslide prone areas
- Training for counterpart (design, inspection, maintenance)

Output:

Improvement of road slope safety (priority areas)

Network of early warning system for landslide in road sector

Enhancement of capacity of RDA and NBRO for landslide mitigation

Budget

USD 120.0 million

Funding status:

Local and International Funding (technical adviser, equipment, training)

L4: Project of Road Slope Disaster Mitigation for Road Widening Areas-Phase2

Agencies involved:

Road Development Authority, National Building Research Organization

Background and Rationale:

Sediment-related disasters have affected to national road networks and economic activities in Sri Lanka.

Recently, many landslides have occurred in cutting slopes with construction/ widening roads, therefore landslides caused by road widening are one of the potential risks in road sector.

In the NRMP, there are many road widening plans in mountainous areas.

Therefore, mitigation works for road widening areas are required and also in the future.

Objectives:

- To support design and conduct countermeasure works for road widening areas in major national highways (in high risk areas of landslide)
- To support prediction, investigation, monitoring, design, countermeasure works and maintenance of road widening areas in high risk areas of landslide.
- To support operation of early warning system for road widening areas.

Time frame:

Year6-10 –Middle - Long term:

Geographical Area:

Seven (7) Districts in mountainous areas

Activities:

- Updating landslide hazard maps
- Identify and selection of landslide potential risk areas
- Surveys, analysis, designs and supervisions
- Technical standard for road widening areas such as design, inspection, and maintenance
- Training for counterpart

Output:

Annex 9-4: Program Sheet (Sediment-related Disaster Management)

Improvement of road widening slope safety

Improvement of operation of early warning system for landslides in road widening areas

Enhancement of capacity of RDA and NBRO for landslide caused by road widening

Budget

USD 120.0 million

Funding status:

Local and International Funding (technical adviser)

Tentative

Annex 10-1: Action to be Taken (Meteorological Observation/Early Warning)

Action to be Taken	Year										Remarks	No	
	1	2	3	4	5	6	7	8	9	10			
HFA1: Governance													
- Preparation of framework of meteorological management for data sharing networks including tsunami.												Central level Overall country	M-1.1
- Review/re-formulation of legal framework related to the meteorological management													M-1.2
- Provision of appropriate funding mechanism of the meteorological management activities												Usual management Cosidering Climate Change	M-1.3
- Installation of Maintenance and Calibration Facility													M-1.4
- Installation of Doppler Radar at Matale												in the central-northern part	M-1.5
- Installation of meteorological stations												4 stations	M-1.6
- Installation of GPS radiosonde station at Pottuvil												in south-eastern part	M-1.7
- Installation of lightning detection and tracking system (LDS)													M-1.8
HFA2: Risk Identification, Assessment, monitoring and early warning													
Preparation of the national meteorological data collection network and its' information system, including EWS to the public.													M-2.1
- Development of Automatic Weather Analysis System													M-2.2
- Improvement of Global telecommunication System													M-2.3
- Stabilize VSAT communicartion system													M-2.4
- Keep adequate maintenance													M-2.5
- Keep stable operation of Automatic Weather Station (AWS) System												38 AWSs Additional AWSs	M-2.6
- Improve capacity for appropriate use of dopplor radar (DR)												Southern part: Gongala Northern part: Matale	M-2.7
- Increase number of observation of GPS radiosonde												2 times/ week -> 1 time/ day 1 time/ day -> 2 times/ day	M-2.8
- Set warning criteria												Pilot areas Overall country Other issues such as strong winds, thunder storm, etc.	M-2.9
- Keep adequate operation of warning standard (WS)													M-2.10
- Develop guidance													M-2.11
- Improve Numerical Weather Prediction (NWP) system												MSM Phase-1 MSM Phase-2, GSM Phase-1	M-2.12
HFA3: Use knowledge, innovation, education, build culture													

Annex 10-1: Action to be Taken (Meteorological Observation/Early Warning)

Action to be Taken	Year										Remarks	No	
	1	2	3	4	5	6	7	8	9	10			
- Promotion of CBDRMPs to all meteorological hazards prone areas	■	■	■	■	■	■	■	■	■	■	■	Pilot area Overall	M-3.1
- Prepare networks among organizations related to disaster	■	■	■										M-3.2
- Upgrade the media unit in DOM for advisories and early warnings	■	■	■										M-3.3
HFA4: Reduce the underlying risk factors													
- Promote the integration of risk management associated with existing climate variability and future climate change into strategies				■	■	■	■	■	■	■	■		M-4.1
HFA5:Preparedness for effective response and recovery													
- Promote and support exchange of information among organizations related to disaster management at all levels	■	■	■	■	■	■	■	■	■	■	■	National District	M-5.1

Annex 10-2: List of Candidate Projects (Meteorological Observation/Early Warning)

List of Candidate Projects

Kind of Disaster	No. of Required Action	Project No.	Project Title	Time Frame										Budget (Mill. USD)	Partner (Lead Agency in Bold)		
				1	2	3	4	5	6	7	8	9	10				
Meteorological disaster	M 1.4, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10, 2.11, 2.12, 3.1, 3.2, 3.3, 5.1	M 1	Project for effective improvement of current weather infrastructure - Phase 1 - Enhance stable operation of AWS system - Enhance data sharing network system - Develop Automatic Weather Analysis System - Improve Global Telecommunication System (GTS) - Improve NWP system - Develop warning standard - Improve capacity for utilization of DR data													5.3	DOM /Concerned agencies such as DMC
	M 2.6, 2.8, 2.9, 2.11, 2.12, 3.1, 5.1	M 2	Project for enhancement of weather forecasting - Phase 2 - Increase number of AWSs and keep stable operation - Expand monitoring areas to entire island with new doppler radar utilization - Improve NWP system - Set warning standard to entire island													2.75	DOM /Concerned agencies such as DMC
	M 2.8, 2.9, 2.11, 3.1, 5.1	M 3	Project for enhancement of weather forecasting - Phase 3 - Improve NWP system with GSM - Set warning standard for other issues - Strengthen EWS													1.2	DOM /Concerned agencies such as DMC
	M 1.5, 1.6	M 4	Project for installation of Doppler Radar/ AWS - Doppler radar - Meteorological stations													3.9	DOM
	M 1.7, 1.8	M 5	Project for installation of equipments for weather forecasting - GPS radiosonde - Lightning detection and tracking system													2.1	DOM
	M 1.2	M 6	Project for provision of appropriate funding - Phase 1													2.5	DOM /MFP
	M 1.2, 4.1	M 7	Project for provision of appropriate funding consideration of climate change- Phase 2													2.5	DOM /MFP

Annex 10-3: Criteria of Future Program (Meteorological Observation/Early Warning)

Necessary Condition

Candidate- Projects

	M-1	M-2	M-3	M-4	M-5	M-6	M-7	
(1) Whether the project has a demand from the government?	✓	✓	✓	✓	✓	✓	✓	
(2) Whether the project needs to assist?	✓	✓	✓					
(3) Whether the project is assisted by the other donors?	✓	✓	✓					
(4) Whether JICA can implement the Project?								
(5) Whether there is no issues of social and environmental matters?	✓	✓	✓	✓	✓	✓	✓	

Sufficient Conditions in Detail

Screening Level	Criteria	Check point	M-1	M-2	M-3	M-4	M-5	M-6	M-7		
Level 1: Feasibility	Feasibility	Whether the project goal can be achieved ?	✓	✓	✓	✓	✓	✓	✓		
	Maturity	Whether the executive agencies are determined and coordinated?	✓	✓	✓	✓	✓	✓	✓	✓	
		Whether the executive agencies have enough capacities or the project has capacity enhancement aspect?	✓	✓	✓	✓	✓	✓	✓	✓	
		Whether EIA is required for the implementation, or EIA is included in the prohect?	✓	✓	✓	✓	✓	✓	✓	✓	
		Whether the land acquisition and resettlement are included in the project and there is achievable before the project?	✓	✓	✓	✓	✓	✓	✓	✓	
	Financial Status	Whether there is any other financial resources other than JICA?									
Level 2: Need/Impact	Effectiveness	Whether the project is effective in term of reduce of the disaster?	✓	✓	✓	✓	✓	✓	✓		
	Efficiency	Whether the project is efficient in term of time and/or finance?	✓	✓	✓	✓	✓	✓	✓		
	Impact	How beneficial is the project to the people of Sri Lanka?	✓	✓	✓	✓	✓	✓	✓		
	Sustainability	How sustainable is the benefit of the project or whether the project includes the component to secure the sustainability?	✓	✓	✓	✓	✓	✓	✓	✓	
Level 3: Applicability	Japan's experience	Whether the Japan's experiences is applicable to the project in the engineering and managerial	✓	✓	✓	✓	✓	✓	✓		
	Time frame	Whether JICA can commit the project with that time frame?	✓	✓	✓						

Annex 10-4: Program Sheet (Meteorological Observation/Early Warning)

M2: Project for enhancement of weather forecasting - Phase 2

Agency involved :

Department of Meteorology (DOM)

Background and Rationale:

In Sri Lanka, more than 90% of natural disasters are weather or climate related. Every year, floods, droughts, thunder, and lightning activity and strong winds cause disasters in various parts of the island.

DOM is responsible for the provision of warnings and advisories on bad weather (including cyclone, heavy rain, lightning, etc.) and Tsunami.

To provide reliable weather information, capacity enhancement and technical improvement of DOM is required, and the expectation for Japanese technical support is high.

The "Project for enhancement of weather forecasting-Phase1" aims at capacity enhancement for real time weather analysis and forecast.

In the Phase- 2, capacity enhancement for short range weather forecast is the main purpose.

Objective:

- to increase number of AWSs and keep stable operation
- to expand monitoring areas to entire island with new Doppler Radar
- to improve NWP
- to set warning standard to entire island

Time Frame:

Year 4 -7: Medium Term

Activities:

- to add new AWSs in data sparse areas
- to introduce new Doppler Radar for the observation of northern part of island
- to improve the WRF Model and to develop the Meso Scale Model
- to introduce warning standard for entire island

Output:

- Improvement of Nowcast and Early Warning
- Improvement of Short Range Forecast
- Provision of weather information and warning for small area

Budget:

2.75 M USD

Funding:

Local and International Funding(technical, equipment, training)

Annex 10-4: Program Sheet (Meteorological Observation/Early Warning)

M3: Project for enhancement of weather forecasting – Phase 3

Agency involved :

Department of Meteorology (DOM)

Background and Rationale:

In Sri Lanka, more than 90% of natural disasters are weather or climate related. Every year, floods, droughts, thunder, and lightning activity and strong winds cause disasters in various parts of the island.

DOM is responsible for the provision of warnings and advisories on bad weather (including cyclone, heavy rain, lightning, etc.) and Tsunami.

To provide reliable weather information, capacity enhancement and technical improvement of DOM is required, and the expectation for Japanese technical support is high.

This project is in succession to the “Project for enhancement of weather forecasting- Phase 2”. In the Phase 2, aiming at short range (3 days) forecast, in this project, aiming at medium range (7 days) forecast.

Objectives:

- to enhance capacity of weather forecasting aiming at 7days forecasting
- to set warning standard for o strong wind, thunder storm, etc.
- to strengthen EWS

Time Frame:

Year 8-10: Long term

Focus Area:

DOM head quarter and district observation stations

Activities:

- to improve NWP system with GSM
- to set warning standard for other issues
- to strengthen EWS

Output:

- Seven (7) days forecasting
- Warning standard for other issues
- Well-coordinated EWS system with 7 days forecasting and warning standard with other issues

Budget:

1.2 M USD

Funding:

Local and International Funding (technical, equipment, training)

Annex 11-1: Action to be Taken (Overall Disaster Management)

Action to be Taken	No.	Year										Remarks
		1	2	3	4	5	6	7	8	9	10	
HFA1: Governance												
- Strengthening a technical advisory system in DMC (technical advisor)	PA-1.1		■	■	■							
HFA2: Risk Identification, Assessment, monitoring and early warning												
- Complete district disaster preparedness plans for response	PA-2.1		■	■								ongoing
- Complete "Grama Nildari Level" preparedness plans	PA-2.2		■	■	■							ongoing
- Complete disaster impact assessment and development future action plan for CBDRM	PA-2.3		■	■								
HFA3: Use knowledge, innovation, education, build culture												
- Planning training courses for CBDRM, Awareness and Education	PA-3.1	■										ongoing
- Enhancing awareness through curriculum and school activity	PA-3.2	■	■	■	■	■						ongoing
- Integration of DM in higher, professional and continuing education curriculum	PA-3.3		■	■								ongoing
HFA5: Preparedness for effective response and recovery												
- Capacity building for sustainable CBDRM activities for all disasters	PA-5.1		■	■	■	■	■	■	■	■	■	■
- Training all stakeholders for emergency response, by emphasizing search and rescue training for communities and professionals	PA-5.2		■	■	■	■						

Annex 11-2: List of Candidate Projects (Overall Disaster Management)

List of Candidate Projects (as of *****)

Kind of Disaster	No. of Required Action	Project No.	Project Title	Time Frame 1-2: Short (S) 3-5: Medium (M) 6-10: Long (L)	Budget (Mill. USD)	Partner (Lead Agency in Bold)
CBDRM & PA	PA-2.1 PA-2.2 PA-2.3	PA-01	Strengthening District Disaster Management Centers' functions	M	5	DMC/DM line agencies, SLRCS, NGOs and CBOs
CBDRM & PA	PA-3.1 PA-3.2 PA-3.3 PA-5.1 PA-5.2	PA-02	Capacity Building for Sustainable CBDRM, Preparedness and Response, and Public Awareness	S to M	3	DMC, MoDM, SLIDA, MOE, University
CBDRM & PA	PA-1.1	PA-03	Strengthening a technical advisory system in DMC (technical advisor)	S	1	DMC, MoDM

Annex 11-3: Criteria of Future Program (Overall Disaster Management)

Necessary Condition

	Candidate Projects		
	PA-01	PA-02	PA-03
(1) Whether the project has a demand from the government?	✓	✓	✓
(2) Whether the project needs to assist?	✓	✓	✓
(3) Whether the project is assisted by the other donors?		✓	✓
(4) Whether JICA can implement the Project?	✓	✓	✓
(5) Whether there is no issues of social and environmental matters?	✓	✓	✓

Sufficient Conditions in Detail

Screening Level	Criteria	Check point	PA-01	PA-02	PA-02
Level 1: Feasibility	Feasibility	Whether the project goal is achivable ?	✓	✓	✓
	Maturity	Whether the executive agencies are determined and coordinated?	✓	✓	✓
		Whether the executive agencies have enough capacities or the project has capacity enhancement aspect?	✓		
		Whether EIA is required for the implementation, or EIA is included in the prohect?			
		Whether the land acquisition and resettlement are included in the project and there is achievable before the project?			
Financial Status	Whether there is any other financial resources other than JICA?	✓	✓	✓	
Level 2: Need/Impact	Effectiveness	Whether the project is effective in term of reduce of the disaster?			
	Efficiency	Whether the project is efficient in term of time and/or finance?	✓	✓	✓
	Impact	How beneficial is the project to the people of Sri Lanka?	✓	✓	✓
	Sustainability	How sustainable is the benefit of the project or whether the project includes the component to secure the sustainability?	✓	✓	✓
Level 3: Applicability	Japan's experience	Whether the Japan's experiences is applicable to the project in the engineering and managerial aspects?	✓	✓	✓
	Time frame	Whether JICA can commit the project with that time frame?	✓	✓	✓

PA-01: Strengthening District Disaster Management Centers' Functions

Agencies involved:

DMC, District Secretaries, Local Authorities in collaboration with SLRCS, CBOs and NGOs,

Background and Rationale:

Establishing CBDM resource centers, 25 centers over 25 districts, was proposed in the Road Map for DRM Sri Lanka, 2005 as a sub-component of the Community-based Disaster Risk Management activity. The expected functions are being a resource center for local authorities, NGOs, universities and technical institutions on overall DM information, and supporting DM activities as primal facilitator at district level.

Initially, the Road Map planned to team up 5,000 DRM community teams in villages over 500 GN divisions, and to build 10 CBDRM resource centers; yet, there is no district resource centers established yet. As for community teams, DMC does not have tangible information since there is no documentation.

On the other hand, Emergency Operation Centers (EOCs) were established as planned in all districts and ready to be activated in case of any emergencies. EOCs maintain all necessary information required for responding to disasters and stock necessary resources, including equipment and contacts of skilled personnel for emergency. EOCs are also structured to be a leading actor for Incident Command System (ICS), providing necessary control in utilizing available resources to reach out affected people. They also closely work with governmental agencies and NGOs and SLRCS branches from district to community levels, so EOCs will be the center to connect disaster resource networks.

Further activities proposed for EOCs in the NDMP are 1) to strengthen institutional framework and coordination mechanism to facilitate the delivery of emergency response, 2) to sustain the resources network for emergency response effectively and 3) to enhancing the capacities of local authorities.

It is, therefore, proposed to upgrade existing facilities to a District Disaster Management Center, incorporating the functions of CBDM resource center, originally proposed in the Road Map, by utilizing the existing EOCs. The functions of CBDM resource center remain same as proposed before, i.e. 1) to disseminate disaster management information to communities and NGOs, 2) to improve adaptation of communities to new knowledge and 3) to improve their ownership through CBDM activities.

District disaster management center will function as information center based on district preparedness plan and as median station for DMC to reach out communities.

By end of 2010 sixteen (16) district disaster preparedness plans have been completed. Two districts, Matale and Batticaloa Badulla, have revised their plans in 2012 with technical supports from JICA. It is expected that remaining 14 districts will also update the data and revise their district disaster preparedness plans. DMC plans to complete the balance 9 districts: Vavuniya, Killinochchi, Jaffna, Trincomali, Batticaloa, Mulative, Monaragala and Mannar by the end of 2013. As for the preparedness and response plans for Grama Nildari level, less than 10% of plans

Annex 11-4 Program Sheet (Overall Disaster Management)

were drawn up so far; thus, the DMC needs to strive much effort on this to cover all. In order to expedite the progress it is necessary to establish a median station, i.e. district disaster management center, to outreach GNs and provide collective training to the leaders and committee members to support them drawing up their preparedness and response plans.

Table: Number of Preparedness and Response Plan Completed (2012)

Preparedness and Response Plan	Year				
	2009	2010	2011	2012	Remaining
1. District Plan (25 districts)	12	4	0		9
2. GN Plans (Drafts) (14,022 GN)	197	135	0	573	13,117

Source: DRR Activities-12.10.2012 PPT. DMC.

Note: Number of total GN: Referred to Ministry of Public Administration and Home Affairs' Homepage.

Objectives:

Set up a District Disaster Management Center in each district, functioning as CBDM Resource Center, Emergency Operation Center, Emergency Supply Storage and Emergency Shelter.

Time frame:

Year 2-5 (2014-2016) Middle term

Geographical Area:

District and GN levels

Activities:

1. Formulate a standard design (non-physical structure) of CBDM information center, prepare necessary materials, and disseminate the information.
2. Train DMC district unit's staff to be a facilitator of CBDM activities (training will be covered in PA-02).
3. Prepare district disaster preparedness plans for response
4. Support communities to prepare "Grama Nildari Level" preparedness plans for response through CBDRM approach.
5. Maintain database of CBOs, NGOs and community teams for effective networking.
6. Strengthen institutional framework and coordination mechanism to facilitate the delivery of emergency response.
7. Sustain the resources network for emergency response effectively.
8. Enhance the capacities of local authorities in emergency response

Annex 11-4 Program Sheet (Overall Disaster Management)

Output:

District Disaster Risk Management Centers are established in 25 districts with intended functions, trained staff, necessary resources, and the median center of community outreach and the DMC.

Budget

USD5.0 million

Funding status:

Local and International Funding

Tentative

Annex 11-4 Program Sheet (Overall Disaster Management)

PA-02: Capacity Building for Sustainable CBDRM, Preparedness and Response, and Public Awareness

Agencies involved:

DMC, MoDM, MoE, SLIDA, Universities, CBOs and NGOs

Background and Rationale:

Training and Public Awareness division of DMC is responsible for training and public awareness activities for internal staff and also external bodies, such as governmental and non-governmental stakeholder organizations.

The main issues of training on disaster risk management identified in the Road Map are 1) unstructured training programs because of no prior needs assessment, 2) insufficient capacity of trainers and limited training materials, and 3) a general lack of coordinated allocation of training opportunities for sub-national authorities, public officers and community people. Strategies for probable solutions to the above issues were drawn in the Road Map and nine projects were proposed for enhancing public awareness, incorporating awareness programs in school education, and training public officers, professionals and people in general.

DMC conducted training programs for its staff, i.e. a refresher training, an Incident Command System (ICS) training, an introduction training for newly recruited staff and a capacity building training for assistant directors on technical aspects of flood, landslide mitigation and response in past few years; yet, all of them were short-program, maximum five days, and rather incidental programs, but not a structural training. It also coordinated and/or implemented capacity building training for stakeholder agencies; for example, a two day training program for 122 technical personnel in the Northern Province on disaster management with UNDP. DMC also allocated funds to strengthen the capacity of district level stakeholders, like the Police, local authorities' government officers and teachers from vulnerable schools.

Public awareness in school curriculum development on disaster risk management activities were well conducted by responsive agencies, DMC, Ministry of Education, National Institute of Education, Ministry of Tertiary Education and supporting donor agencies, such as giz, UNICEF, UNDP and international NGOs. "Disaster safety education booklet," "Disaster safety education resource kit for national colleges of education," "National guidelines – school disaster safety" and corresponding teachers' manuals were developed by giz, MoE and NIOE, and already distributed to all primary and junior secondary schools. They will be implementing school disaster safety activities to all schools and supporting them to prepare school emergency response plans in next five years.

As for higher education, two universities have master's degree on disaster management and more universities are now providing short-course, diploma courses, on disaster management for students and professionals; yet, training programs and implementation of them are still limited, so 1) training of professionals and 2) developing training program in continuing education are considered as remaining challenges in the education and training sector.

The key strategies in public awareness, education and training remain same for next five years, which are;

Annex 11-4 Program Sheet (Overall Disaster Management)

- to formulate a strategic policy and action plan to design, conduct and supervise all training under DRM's administration;
- to structure quality assurance system of DRM training, which are delivered by partner governmental agencies and academic institutions;
- to develop partnership with regional and academic institutions for reachable access to all stakeholders in the country; and
- to develop manuals and guidelines in various subject areas, which can be also used for training and awareness activities.

In addition, there is a need to increase the number of trainers to conduct capacity enhancement for CBDRM, awareness and education for coordinated allocation of available regional training opportunities.

Objectives:

Enhance the capacity of stakeholders in different tiers, national, sub-national and community to uphold sustainable CBDRM and public awareness activities, which concurrently to strengthen disaster resilient society

Time frame:

Year1-5 (2014-2018)- Short to Middle term

Geographical Area:

National level, District level, Grama Nilidari level

Activities:

1. Designing, implementing and monitoring training courses for CBDRM, public awareness, targeting DCM staff, related governmental agencies, educational institutions and professionals.
2. Specific awareness programs for government officials at sub-national level
3. General public awareness program at communities
4. Develop syllabus for continuing education and short-course at colleges and universities
5. Develop and implement specific-purpose training for state, non-state institutions and volunteers for emergency response, with emphasis on search and rescue for communities and professionals.
- 6.

Output:

Establishment of training course with several modules, including preparedness, DIA method, mapping, local evacuate unit, search & rescue, recovery, education, campaign and event for awareness.

50 trainers for CBDRM will be trained at DMC; at least two trainers for each districts, by 2015,

Annex 11-4 Program Sheet (Overall Disaster Management)

Budget

3 million USD

Funding status:

Local and International Funding

Tentative

PA-03: Strengthening a technical advisory system in DMC (technical advisor)

Agencies involved:

DMC, MoDM,

Background and Rationale:

Considering the institutional capability of DMC, however, it is essential to rebuild from the ground of the organization by reviewing its various aspects, such as human resource development, personnel evaluation system, personnel interchange with other governmental agencies concerned to complement the deficiency of experts at DMC, to develop proper standard operation procedure (SOP), and to introduce an executive advisory engineer who oversees all institutional development and technical matters of all divisions in DMC. It is also essential that DMC will strengthen its coordination and guidance capacities to work efficiently and effectively with related state and non-state institutions.

One of the imperative challenges is to review and revise existing laws and regulations associated to the Disaster Management Act. It was pointed out during the survey that some of existing laws and regulations are enacted right after the colonization era and there has been no update or revision, and there are some contradictions and sometimes do not comply with the Act, or the Act does not fully encompass the preceding laws in it. It was also revealed that roles and functions among related state agencies were not clearly demarcated, and project execution plans were not quite coordinated among related state agencies. In order to effectively implement disaster management plan and emergency response plan, it is inevitable to periodically monitor and provide feedbacks to executing agencies which operate the activities of plans, and if it is necessary, amending laws, regulations or technical standards should be carried out for strengthening disaster management administration. In particular, DMC has overlooked the monitoring and evaluation of the Road Map, which indicated the establishment of a steering committee for those purposes, but so far it is not set out to properly evaluate the outputs of the activities. Although there are brief evaluations in the corporate plan and reports produced by other donor agencies, they do not distinctly reveal the degree of achievement, specific recommendations, or lessons learned from the activities. Considering all abovementioned aspects, it is suggested that an executive advisory engineer or administrator shall be appointed to strengthen overall administration of DMC, and to facilitate coordination among vertically-segmented state agencies' administrative system.

Objectives:

Strengthen administrative capabilities, functions and technical advisory system in DMC

Time frame:

Year1-3 (2014-2016)- Short term

Geographical Area:

National level, District level, Grama Nilidari level

Activities:

1. Appoint a technical advisor to oversee and strengthen overall administration of

Annex 11-4 Program Sheet (Overall Disaster Management)

DMC, and to facilitate coordination among related state ministries and agencies.

Output:

Administrative capabilities, functions and technical advisory system are improved, and DMC will be able to formulate necessary disaster management policies, review and amend laws and regulations, and properly coordinate with and provide disaster management related technical supports to state ministries and agencies concerned.,

Budget

1 million USD





Funding status:

International Funding

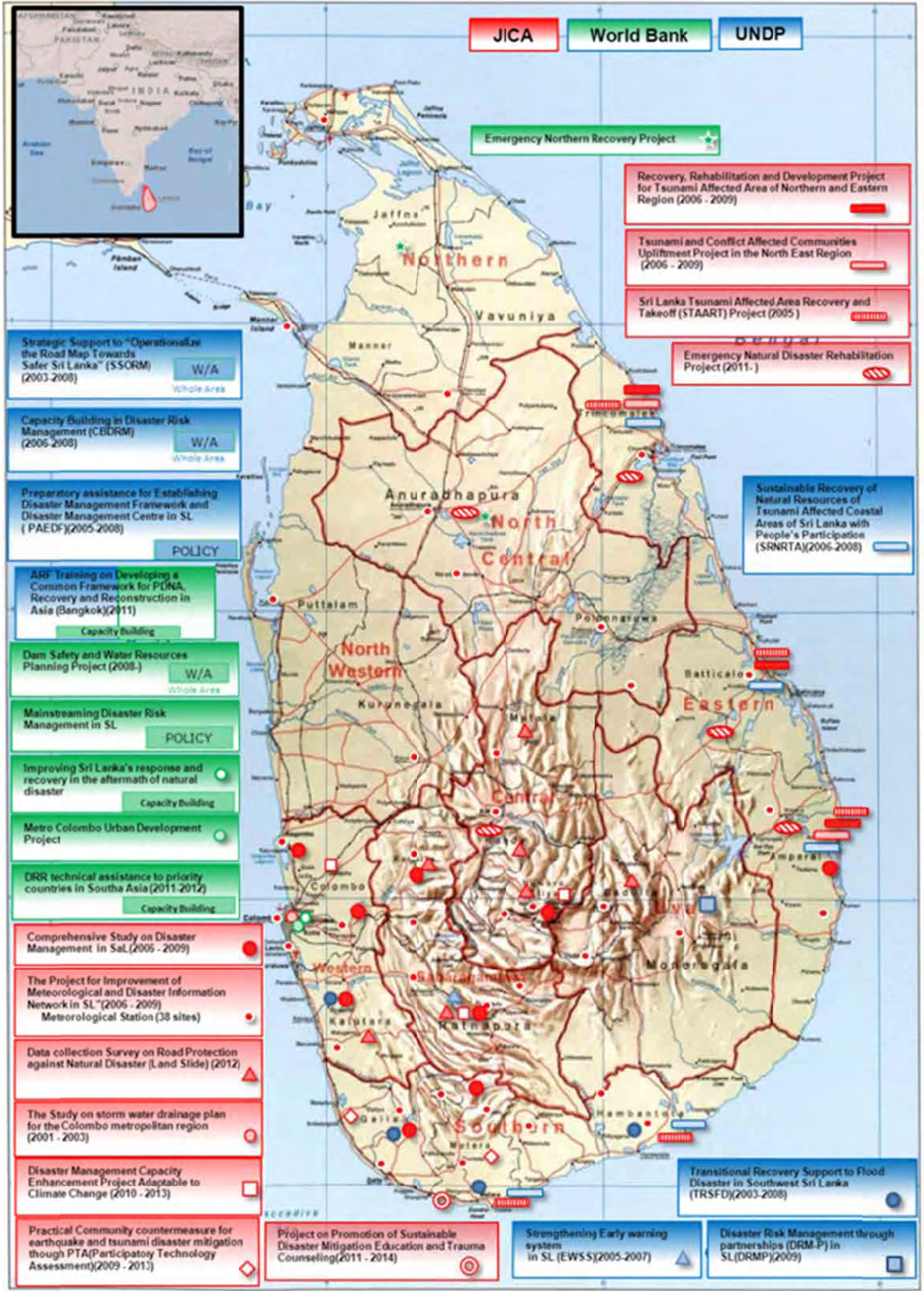
Tentative

Annex 13: Longlist of DRM

Program	JFY Quarter	No.	Project Title	2012				2013				2014				2015				2016				2017				2018				2019				2020				2021				2022				2023																					
				1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																						
Enhancement of Planning Capacity /Coordination Mechanism		1	DiMCEP	●				Disaster Management Capacity Enhancement Project (DiMCEP)																																																													
		2	Survey on Disaster Management Program					●				Date Collection Survey for Disaster Management Program																																																									
		3	Expert on Disaster Management									Expert on Disaster Management																																																									
		4	Policy Dialogue on Water Resource Management					●				Policy Dialogue on Water Resource Management (Flood Control)																																																									
Enhancement of disaster prevention		5	Disaster Management	●				DiMCEP								Project of Capacity Building for Sustainable CBDRM activities and Public Awareness																																																					
												Project of Strengthening District Disaster Management Centers' functions																																																									
Enhancement of disaster prevention		6	Road Protection against Natural Disaster					F/F, Appraisal				Project of Road Protection against Sediment-related Disaster - Phase 1												Project of Road Slope Disaster Mitigation for Road Widening Areas - Phase 2																																													
Enhancement of disaster prevention		7	T/C for Land Slide Capacity					●				T/C of Capacity Enhancement for Sediment-related Disaster Mitigation - Phase 1												●				T/C of Capacity Enhancement for Potential Sediment-related Disaster Mitigation - Phase 2																																									
Enhancement of disaster prevention		8	T/C for forecast and weather analysis					●				Project for Effective Improvement of Current Weather Infrastructure - Phase 1												●				Project for Enhancement of Weather Forecasting- Phase 2																																									
Enhancement of disaster prevention		9	T/C for Comprehensive Flood Management					●				T/C Project on Nationwide Flood Risk Assessment for Disaster Management Plans																																																									
Enhancement of disaster prevention		10	Comprehensive Flood Management Project					●				Urgent Rehabilitation Project on Flood Mitigation Structures																																																									

-  : Data collection Survey /Preparatory survey
-  : Technical Cooperation Project
-  : Grant Aid
-  : ODA Yen Loan

Annex 14: Project Location Map Assisted by International Agencies



Annex 15: Survey Schedule

Date		Schedule/Content of the Study							
		Ryuichi HARA: Team Leader/ Program Planning	Yosuke USUI: Disaster Management Governance/ Others	Osamu ABE: Evaluation Analysis/ Management Policy Assistance	Hideki ARAKI: River Management	Akira OHKAWARA: Sediment-related Disaster	Tetsuro Fukui: Meteorological Observation/ Early Warning System	Hodaka IGO: Integrated Flood Management	Akira SASAKI: Project Coordination/ River Management 2
1-Nov-12	Thu								
2-Nov-12	Fri								
3-Nov-12	Sat								
4-Nov-12	Sun								
5-Nov-12	Mon								
6-Nov-12	Tue								
7-Nov-12	Wed								
8-Nov-12	Thu								
9-Nov-12	Fri								
10-Nov-12	Sat								
11-Nov-12	Sun								
12-Nov-12	Mon								
13-Nov-12	Tue	Move to Sri Lanka	Move to Sri Lanka			Move to Sri Lanka	Move to Sri Lanka		
14-Nov-12	Wed	Meeting w/JICA, JICA Experts	Meeting w/JICA, JICA Experts			Meeting w/JICA, JICA Experts	Meeting w/JICA, JICA Experts		
15-Nov-12	Thu	Symposium: UNDP	Symposium: UNDP			Preparation of ICR	Preparation of ICR		
16-Nov-12	Fri	Meeting w/ ID, NBRO, DOM	Symposium: UNDP			Meeting w/ ID, NBRO, DOM	Meeting w/ ID, NBRO, DOM		
17-Nov-12	Sat	Site Survey in Ratnapura	Site Survey in Ratnapura			Site Survey in Ratnapura	Site Survey in Ratnapura		
18-Nov-12	Sun	Review and Analysis of Collected Data	Review and Analysis of Collected Data			Review and Analysis of Collected Data	Review and Analysis of Collected Data		
19-Nov-12	Mon	Meeting w/MDM	Meeting w/MDM			Meeting w/MDM	Meeting w/MDM		
20-Nov-12	Tue	Meeting w/Mahaweli Authority	Meeting w/MASL, DSWRPP			Meeting w/Mahaweli Authority	Meeting w/Mahaweli Authority		
21-Nov-12	Wed	Meeting w/ERD, WB	Meeting w/ERD, WB			Meeting w/ERD, WB	Meeting w/ERD, WB		
22-Nov-12	Thu	Meeting w/JICA Experts	Meeting w/JICA Experts			Meeting w/JICA Experts	Meeting w/JICA Experts		
23-Nov-12	Fri	Preparation of Draft Interim Report	Preparation of Draft Interim Report			Preparation of Draft Interim Report	Preparation of Draft Interim Report		
24-Nov-12	Sat	Preparation of Draft Interim Report	Preparation of Draft Interim Report			Preparation of Draft Interim Report	Preparation of Draft Interim Report		
25-Nov-12	Sun	Preparation of Draft Interim Report	Preparation of Draft Interim Report			Preparation of Draft Interim Report	Preparation of Draft Interim Report		
26-Nov-12	Mon	Meeting w/UDA	Meeting w/UDA			Meeting w/UDA	Meeting w/UDA		
27-Nov-12	Tue	Preparation of Draft Interim Report	Preparation of Draft Interim Report			Preparation of Draft Interim Report	Preparation of Draft Interim Report		
28-Nov-12	Wed	Meeting w/RDA	Preparation of Draft Interim Report			Meeting w/DOM	Preparation of Draft Interim Report		
29-Nov-12	Thu	Meeting w/ DMC	Meeting w/ DMC		Move to Sri Lanka	Meeting w/ DMC	Meeting w/ DMC		
30-Nov-12	Fri	Meeting w/SLLRDC	SINCOLD Seminar		Meeting w/SLLRDC	Meeting w/DOM	Meeting w/SLLRDC		

Annex 15: Survey Schedule

Date		Schedule/Content of the Study							
		Ryuichi HARA: Team Leader/ Program Planning	Yosuke USUI: Disaster Management Governance/ Others	Osamu ABE: Evaluation Analysis/ Management Policy Assistance	Hideki ARAKI: River Management	Akira OHKAWARA: Sediment-related Disaster	Tetsuro Fukui: Meteorological Observation/ Early Warning System	Hodaka IGO: Integrated Flood Management	Akira SASAKI: Project Coordination/ River Management 2
1-Dec-12	Sat	Preparation of Draft Interim Report	Preparation of Draft Interim Report		Preparation of Draft Interim Report		Preparation of Draft Interim Report	Preparation of Draft Interim Report	
2-Dec-12	Sun	Preparation of Draft Interim Report	Preparation of Draft Interim Report		Preparation of Draft Interim Report		Preparation of Draft Interim Report	Preparation of Draft Interim Report	
3-Dec-12	Mon	Preparation of Draft Interim Report	Preparation of Draft Interim Report		Preparation of Draft Interim Report	Move to Sri Lanka	Preparation of Draft Interim Report	Preparation of Draft Interim Report	
4-Dec-12	Tue	DiMCEP Seminnar	DiMCEP Seminnar		DiMCEP Seminnar	DiMCEP Seminnar	DiMCEP Seminnar	DiMCEP Seminnar	
5-Dec-12	Wed	Meeting w/MOI Meeting w/ JICA	Meeting w/MOI Meeting w/ JICA		Meeting w/MOI Meeting w/ JICA	Meeting w/JICA	Meeting w/JICA	Meeting w/MOI Meeting w/ JICA	
6-Dec-12	Thu	Meeting w/NBRO	Preparation of Draft Interim Report		Preparation of Draft Interim Report	Meeting w/NBRO	Meeting w/DOM Preparation of report	Preparation of Draft Interim Report	
7-Dec-12	Fri	Meeting w/RDA	Preparation of Draft Interim Report		Preparation of Draft Interim Report	Meeting w/RDA	Meeting w/DOM Preparation of report	Preparation of Draft Interim Report	
8-Dec-12	Sat	Preparation of Draft Interim Report	Preparation of Draft Interim Report		Preparation of Draft Interim Report	Preparation of Draft Interim Report	Preparation of Draft Interim Report	Preparation of Draft Interim Report	
9-Dec-12	Sun	Preparation of Draft Interim Report	Preparation of Draft Interim Report		Preparation of Draft Interim Report	Preparation of Draft Interim Report	Preparation of Draft Interim Report	Preparation of Draft Interim Report	
10-Dec-12	Mon	Site Survey in Nuwara Eliya	Preparation of Draft Interim Report		Preparation of Draft Interim Report	Site Survey in Nuwara Eliya	Meeting w/DOM Preparation of report	Preparation of Draft Interim Report	
11-Dec-12	Tue	Site Survey in Nuwara Eliya	Preparation of Draft Interim Report		Preparation of Draft Interim Report	Site Survey in Nuwara Eliya	Meeting w/DOM Preparation of report	Preparation of Draft Interim Report	
12-Dec-12	Wed	Meeting w/Survey Department	Meeting w/SD Rain Water Seminar		Meeting w/SD Rain Water Seminar	Meeting w/Survey Department	Return to Japan	Meeting w/SD Rain Water Seminar	
13-Dec-12	Thu	Symposium by NBRO	Symposium by NBRO		Meeting w/MOI Sympo. by NBRO	Symposium by NBRO		Symposium by NBRO	
14-Dec-12	Fri	Preparation of Draft Interim Report	Preparation of Draft Interim Report		Preparation of Draft Interim Report	Preparation of Draft Interim Report		Preparation of Draft Interim Report	
15-Dec-12	Sat	Preparation of Draft Interim Report	Preparation of Draft Interim Report		Preparation of Draft Interim Report	Preparation of Draft Interim Report		Preparation of Draft Interim Report	
16-Dec-12	Sun	Preparation of Draft Interim Report	Preparation of Draft Interim Report		Preparation of Draft Interim Report	Preparation of Draft Interim Report		Preparation of Draft Interim Report	
17-Dec-12	Mon	Meeting w/ NBRO	Preparation of Draft Interim Report		Preparation of Draft Interim Report	Meeting w/ NBRO		Preparation of Draft Interim Report	
18-Dec-12	Tue	Meeting w/ GSMB	Meeting w/ GSMB Meeting w/DG of ID		Meeting w/DG of ID	Meeting w/ GSMB		Meeting w/DG of ID	
19-Dec-12	Wed	Meeting w/ JICA	Meeting w/IWMI Meeting w/JICA		Meeting w/IWMI Meeting w/JICA	Meeting w/JICA		Meeting w/IWMI Meeting w/JICA	
20-Dec-12	Thu	Meeting of Interim Report	Meeting of Interim Report		Meeting of Interim Report	Meeting of Interim Report		Meeting of Interim Report	
21-Dec-12	Fri	Meeting w/CCD Meeting w/DMC	Meeting w/CCD Meeting w/DMC		Meeting w/DMC	Meeting w/CCD Meeting w/DMC		Meeting w/CCD Meeting w/DMC	
22-Dec-12	Sat	Preparation of Draft Final Report	Preparation of Draft Final Report		Preparation of Draft Final Report	Preparation of Draft Final Report		Preparation of Draft Final Report	
23-Dec-12	Sun	Preparation of Draft Final Report	Preparation of Draft Final Report		Preparation of Draft Final Report	Preparation of Draft Final Report		Preparation of Draft Final Report	
24-Dec-12	Mon	Meeting w/NBRO	Preparation of Draft Final Report		GIS Data Collection Preparation of DFR	Meeting w/NBRO		GIS Data Collection Preparation of DFR	
25-Dec-12	Tue	Preparation of Draft Final Report	Preparation of Draft Final Report		Preparation of Draft Final Report	Preparation of Draft Final Report		Preparation of Draft Final Report	
26-Dec-12	Wed	Site Survey along Expressway	Preparation of Draft Final Report		Preparation of Draft Final Report	Site Survey along Expressway		Preparation of Draft Final Report	
27-Dec-12	Thu	Preparation of Draft Final Report	Preparation of Draft Final Report	Move to Sri Lanka	Preparation of Draft Final Report	Preparation of Draft Final Report		Return to Japan	

Annex 15: Survey Schedule

Date		Schedule/Content of the Study							
		Ryuichi HARA: Team Leader/ Program Planning	Yosuke USUI: Disaster Management Governance/ Others	Osamu ABE: Evaluation Analysis/ Management Policy Assistance	Hideki ARAKI: River Management	Akira OHKAWARA: Sediment-related Disaster	Tetsuro Fukui: Meteorological Observation/ Early Warning System	Hodaka IGO: Integrated Flood Management	Akira SASAKI: Project Coordination/ River Management 2
28-Dec-12	Fri	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report			
29-Dec-12	Sat	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report			
30-Dec-12	Sun	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report			
31-Dec-12	Mon	Meeting w/ID, RDA	Meeting w/ID	Preparation of Draft Final Report	Meeting w/ID	Meeting w/RDA			

Annex 15: Survey Schedule

Date		Schedule/Content of the Study							
		Ryuichi HARA: Team Leader/ Program Planning	Yosuke USUI: Disaster Management Governance/ Others	Osamu ABE: Evaluation Analysis/ Management Policy Assistance	Hideki ARAKI: River Management	Akira OHKAWARA: Sediment-related Disaster	Tetsuro Fuku: Meteorological Observation/ Early Warning System	Hodaka IGO: Integrated Flood Management	Akira SASAKI: Project Coordination/ River Management 2
1-Jan-13	Tue	Meeting w/DMC	Meeting w/DMC	Meeting w/DMC	Meeting w/DMC	Return to Japan			
2-Jan-13	Wed	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report				
3-Jan-13	Thu	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report				
4-Jan-13	Fri	Meeting w/DG of DMC, w/ DMC	Meeting w/DG of DMC, w/ DMC	Meeting w/DG of DMC, w/ DMC	Meeting w/DG of DMC, w/ DMC				
5-Jan-13	Sat	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report				
6-Jan-13	Sun	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report				Move to Sri Lanka
7-Jan-13	Mon	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report				Preparation of Draft Final Report
8-Jan-13	Tue	Meeting w/ NPPD	Meeting w/ NPPD	Preparation of Draft Final Report	Meeting w/ID				Preparation of Draft Final Report
9-Jan-13	Wed	Site Survey in Kurunegala	Site Survey in Kurunegala	Preparation of Draft Final Report	Site Survey in Kurunegala				Site Survey in Kurunegala
10-Jan-13	Thu	Meeting w/ GIZ	Preparation of Draft Final Report	Meeting w/ GIZ	Preparation of Draft Final Report				Meeting w/ GIZ
11-Jan-13	Fri	Preparation of Draft Final Report	Meeting w/ID	Preparation of Draft Final Report	Meeting w/ID				Preparation of Draft Final Report
12-Jan-13	Sat	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report				Preparation of Draft Final Report
13-Jan-13	Sun	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report				Preparation of Draft Final Report
14-Jan-13	Mon	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report				Preparation of Draft Final Report
15-Jan-13	Tue	Meeting w/ DMC Meeting w/JICA	Meeting w/ DMC, ID, JICA	Meeting w/ DMC Meeting w/JICA	Meeting w/OCHA, ID, JICA				Meeting w/ DMC Meeting w/JICA
16-Jan-13	Wed	Meeting w/ JICA, Red Cross	Meeting w/ JICA, w/ID, w/MOI	Meeting w/ JICA, Red Cross	Meeting w/ JICA, w/ID, w/MOI				Meeting w/ JICA, Red Cross
17-Jan-13	Thu	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report	Return to Japan				Preparation of Draft Final Report
18-Jan-13	Fri	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report					Preparation of Draft Final Report
19-Jan-13	Sat	Meeting w/ JICA	Meeting w/JICA	Meeting w/JICA					Meeting w/JICA
20-Jan-13	Sun	Preparation of Draft Final Report	Preparation of Draft Final Report	Preparation of Draft Final Report					Preparation of Draft Final Report
21-Jan-13	Mon	Meeting w/ DOM	Return to Japan	Meeting w/ DOM					Meeting w/ DOM
22-Jan-13	Tue	Meeting of DFR		Meeting of DFR					Meeting of DFR
23-Jan-13	Wed	Preparation of Draft Final Report		Preparation of Draft Final Report					Preparation of Draft Final Report
24-Jan-13	Thu	Preparation of Draft Final Report		Preparation of Draft Final Report					Preparation of Draft Final Report
25-Jan-13	Fri	Site Survey in Matale		Seminar of ICE					Site Survey in Matale
26-Jan-13	Sat	Preparation of Draft Final Report		Preparation of Draft Final Report					Preparation of Draft Final Report
27-Jan-13	Sun	Preparation of Draft Final Report		Preparation of Draft Final Report					Preparation of Draft Final Report
28-Jan-13	Mon	Meeting w/JICA		Meeting w/JICA					Meeting w/JICA
29-Jan-13	Tue	Meeting w/UNDP		Meeting w/UNDP					Meeting w/UNDP
30-Jan-13	Wed	Preparation of Draft Final Report		Preparation of Draft Final Report					Preparation of Draft Final Report
31-Jan-13	Thu	Return to Japan		Return to Japan					Return to Japan

Annex 16: List of People Met by the Mission

Organizations		
No.	Name	Designation
Ministry of Disaster Management (MDM)		
1	S. M. Mohamed	Secretary
2	S. Ranasinghe	
3	U. K. Bandara	

Ministry of Finance & Planning		
4	M. P. D. U. K. Mapa Pathirana	Director General
5	D. L. U. Peiris	Director

Ministry of Irrigation & Water Resources Management (MoI&WRM)		
6	K. W. Ivan de Silva	Secretary
7	Upali Wickramaratna	Additional Secretary (Technical)
8	D. D. Ariyaratne	Director (Plan Implementation)
9	P. U. Wikramaratne	

Ministry of Land & Land Development Survey Department		
10	S. Sivanantharaja	Senior Superintendent of Surveys

Disaster Management Centre (DMC)		
11	Gamini Hettiarachchi	Director General
12	Ravi Jayarathne	Acting Director
13	Anoja Senevirathne	Mitigation Division
14	Palitha Bandara	Training & Awareness Division

National Physical Planning Department (NPPD)		
15	J. M. L. Jayasekara	Director General

Irrigation Department of Sri Lanka (ID)		
16	Bandra Kamaladasa	Director General of Irrigation
17	M. Thuraisingham	Additional Director General of Irrigation Former Director of Irrigation (Plan Implementation, Drainage & Flood Protection)
18	Y. Abdul Majeed	Additional Director General of Irrigation

Annex 16: List of People Met by the Mission

Organizations		
No.	Name	Designation
19	R. G. Wickramaratne	Director of Irrigation (Disaster Management)
20	Sarath Wijesekara	Director of Irrigation (System Management)
21	T. Janaki Meegastenna	Director of Irrigation (Water Management)
22	Prema Hettiarachchi	Deputy Director Hydrology Division
23	D. N. H. L. Madawalagama	Former Deputy Director Dam Safety Division
24	Kithsiri Weligepola	Chief Engineer, Water Resources Planning
25	S. P. C. Sugeeshwara	Chief Engineer, Drainage Branch
26	J. D. Amarasekara	Irrigation Engineer
27	Sudharam Elakanda	Dam Safety and Water Resources Planning Project (DSWRPP) Project Director

Department of Meteorology (DOM)		
28	Lalith Chandrapala	Director
29	S. H. Kariyawasam	
30	Mr. Ajith	
31	Mr. Jauasomghe	
32	Mr. Jayasekara	
33	Mr. Kelm	
34	Mr. Malika	
35	Mr. Nuan	

National Building Research Organization (NBRO)		
36	Asiri Karanawela	Director General
37	R. M. S. Bandara	Director
38	Harshan de Silva	Senior Engineering Geologist

Sri Lanka Land Reclamation & Development Corporation (SLLRDC)		
39	Harshan de Silva	Chairman
40	K. Rajapakes	Additional General Manager
41	C. B. Amarasinghe	Deputy General Manager
42	A. H. Thushari	Assistant General Manager
43	P. Wijeratne	Assistant General Manager

Annex 16: List of People Met by the Mission

Organizations		
No.	Name	Designation
Coast Conservation Department (CCD)		
44	A. H. Gamini Hiwagi	Deputy Director
45	Chandrika Jayanelk	Chief Engineer
Geological Survey and Mines Bureau(GSMB)		
46	B. Anil Peris	Director General
47	Dr. Prame	Deputy Director / Geology
Mahaweli Authority of Sri Lanka		
48	W. M. T. D. Weerakoon	
Road Development Authority (RDA)		
49	H. M. K. G. G. Bandara	Director Planning
50	Namlie Siyambalapitiya	Deputy Director
51	P. R. D. Fernando	Planning Division
52	J. A. V. S. Jayakody	
53	Shantha Samarasinghe	
Urban Development Authority (UDA)		
54	P. G. Pushpa Gamage	
United Nations Development Programme (UNDP)		
55	Enrico Gaveglia	Deputy Country Director (Programme & Operations)
56	Ananda Mallawatantri	Assistant Country Director (Programme)
World Bank (WB)		
57	Surauga Kahandawa	
German Development Cooperation (GIZ) (Deutsche Gesellschaft für Internationale Zusammenarbeit)		
58	Elke Krause Hannak	Advisor - Ministry of Education
59	Menake Wijesinghe	Advisor - Disaster Safety and Innovative Teaching

Annex 16: List of People Met by the Mission

Organizations		
No.	Name	Designation
International Water Management Institute (IWMI)		
60	Ranjith Ariyaratne	
Sri Lanka Red Cross Society (SLRCS)		
61	S. B. Madugalle	Deputy Director General
62	Gothami Chandraratne	Programme Office - Disaster Management