3. Inputs provided to the Project

3.1 Japanese side

(1)Dispatch of the experts

In total, two long-term experts were dispatched to the Project. They are:

- Mr. Hideto Namiki, June 2010 to June 2012
- Mr. Minoru Arai, July 2012 until date

As for the dispatch of the short-term experts, Oriental Consultants, Co., Ltd. is responsible under the guidance of JICA. A list of the short-term experts dispatched to the Project is shown in Table 1. In the course of the project implementation, additional tasks were assigned to the experts[3] in October 2011. Hence, the m/m of the second year was increased when compared with the original plan.

Table 1 List of the experts dispatched

Expertise	First Year Plan (m/m)	First Actual (m/m)	Second Year Plan (m/m)	Second Year Actual (m/m)	Third Year Plan (m/m)
Team leader/ Disaster management policy/ Early warning system	3.00	3.00	3.00	5.63	3.00
Local disaster management administration/ Community-based disaster management	2.33	2.33	3.00	4.27	3.00
Meteorological forecasting	3.00	3.00	3.00	3.50	3.00
Sediment disaster countermeasures (Monitoring)	1.67	1.67	1.00	1.00	1.00
Sediment disaster countermeasures (Structural measure)	1.00	1.00	2.17	2.17	2.17
Urban development	2.83	2.83	3.00	3.50	3.00
Disaster management techniques	1.00	1.00	1.00	1.13	1.00
Meteorological forecasting model*	N.A.	N.A.	0.50	0.50	0.00
Local disaster management plan	N.A.	N.A.	1.40	1.40	0.00
Landslide monitoring	N.A.	N.A.	N.A.	N.A.	2.00
TOTAL	14.83	14.83	17.57	22.60	18.17

*One expert specializes in Meteorological forecasting model was dispatched in the second year of the project implementation.

(2)Dispatch of locally hired project staff members

Nine local consultants were mobilized under the Project to fill the shortage of the C/Ps

[3] The additional works are Activity 1.6 Evaluation and revision of district level Preparedness & Response Plan and Activity 5.3 Implementation of community based disaster management activities. These activities are under implementation in Batticaloa and Matale.

assigned to the Project. The list of local consultants procured by the Japanese side is given in Table 2.

Table 2 List of the local consultants

JFY	Assigned Organization	Unit (m/m)
2010	DMC	14.00
2011	DMC	36.00
	DOM	1.00
	NBRO	2.00

(3)Local cost borne by the Japanese side

The costs borne by the Japanese side are indicated in Table 3.

Table 3 Costs borne by the Japanese side

Year*	2010	2011	2012**	Total
Amount (JPY)	16,365,000.00	13,959,000.00	13,629,000.00	43,953,000.00

*'Year' used in Table 3 begins in April, and ends in March. This is JICA fiscal year (JFY).
**Year 2012 shows the approved amounts by JICA.

(4)Training in Japan

The training courses conducted under the Japanese budget are given in Table 4.

Table 4 List of training courses conducted in Japan

Course Title	Duration	Name of Participants	Position/ Organization
JFY2010			
Disaster Management	August 26 – September 10, 2010	Ms. A. A. A. K. K.Seneviratne	Assistant Director (Technology and Mitigation)/ DMC
		Mr. M. P. Nuwan Chanaka AMARATHUNGA	Scientist (Landslide Studies and Services Division)/ NBRO
		Mrs. B. A. K. Chandralatha	Deputy Director (Planning Branch)/ ID
		Mr. Dahanayake Ananda Jayasinghearachchi	Meteorologist in Charge (Agro-Meteorological Division)/ DOM
JFY2011			
Flood and sediment disaster control measures, and weather forecasting for disaster prevention in Japan	October 16 – November 5, 2011	Mr. WIMALASURIYA Awalikara G. M. M.	Meteorologist/ DOM
		Mr. DISANAYAKE MUDIYANSELAGE Sugathadasa	Director (Awareness)/ DMC
		Mr. SOMARATNE Rankothge Mahesh Bandara	Scientist (Geologist) (Landslide Studies & Services Division)/ NBRO
		Mr. CHANDRASIRI Adhikari Mudiyanselage A. N.	Assistant Director/ District Disaster Management Coordinating Unit (DDMCU) in Gampaha
		Mr. SEENITHAMBY Mohanarajah	Regional Director/ ID in Batticaloa

(5)Equipment procured

In the Project, the counterparts (C/Ps) and the experts are utilizing equipment procured in the JICA grant project as well as the Study. In addition, new equipment was procured under the Project. The equipment procured by the Japanese side is listed in Table 5. The condition of the equipment listed below is mostly good. Several pieces of equipment below in columns 'Condition' marked as 'Destroyed' were no longer in use,

since the spots where the equipment was installed were hit by landslide.

Table 5 List of equipment procured – As of August 2012

Unit: LKR 1.65 = JPY 1.00

No.	Name of Equipment	Product Number	Date of Purchase	Price (JPN)	CP Organization	Conditions
1	Raingauge Data Logger	NetLG-201E	2010/6/1	158,300	NBRO	Good
2	Raingauge Data Logger	NetLG-201E	2010/6/1	158,300	NBRO	Good
3	Raingauge Tipping Bucket	RS-1 OSASI	2010/6/1	126,000	NBRO	Good
4	Raingauge Tipping Bucket	RS-1OSASI	2010/6/1	126,000	NBRO	Good
5	Network Controller	NetCT-1E OSASI	2010/6/1	116,700	NBRO	Good
6	Extensometer	SLG-30E OSASI	2010/6/1	141,600	NBRO	Good
7	Extensometer	SLG-30E OSASI	2010/6/1	141,600	NBRO	Good
8	Extensometer	SLG-30E OSASI	2010/6/1	141,600	NBRO	Good
9	Extensometer	SLG-30E OSASI	2010/6/1	141,600	NBRO	Good
10	Extensometer	SLG-30E OSASI	2010/6/1	141,600	NBRO	Good
11	Extensometer	SLG-30E OSASI	2010/6/1	141,600	NBRO	Good
12	Extensometer	SLG-30E OSASI	2010/6/1	141,600	NBRO	Good
13	Extensometer	SLG-30E OSASI	2010/6/1	141,600	NBRO	Good
14	Three-core cable	500m OSASI	2010/6/1	75,400	NBRO	Destroyed
15	Water level Sensor	DS-1OSASI	2010/6/1	220,700	NBRO	Good
16	Water level Sensor	DS-1OSASI	2010/6/1	220,700	NBRO	Good
17	Water level Sensor	DS-1OSASI	2010/6/1	220,700	NBRO	Destroyed
18	Water level Sensor	DS-1OSASI	2010/6/1	220,700	NBRO	Destroyed
19	Water level Data Logger	NetLG-001E OSASI	2010/6/1	150,200	NBRO	Good
20	Water level Data Logger	NetLG-001E OSASI	2010/6/1	150,200	NBRO	Good
21	Water level Data Logger	NetLG-301E OSASI	2010/6/1	452,400	NBRO	Destroyed
22	Water level Data Logger	NetLG-301E OSASI	2010/6/1	452,400	NBRO	Destroyed
23	Inclinometer	KB-10HC Tokyo Sokki	2010/6/1	620,000	NBRO	Good
24	Inclinometer	KB-10HC Tokyo Sokki	2010/6/1	620,000	NBRO	Good
25	Inclinometer Data Logger	TC-32K Tokyo Sokki	2010/6/1	278,000	NBRO	Good
26	Inclinometer Data Logger	TC-32K Tokyo Sokki	2010/6/1	278,000	NBRO	Good
27	Adapter for Inclinometer	IA-32 Tokyo Sokki	2010/6/1	85,100	NBRO	Good
28	Adapter for Inclinometer	IA-32 Tokyo Sokki	2010/6/1	85,100	NBRO	Good
29	Carrying case	KBF-60 Tokyo Sokki	2010/6/1	53,200	NBRO	Good
30	Carrying case	KBF-60 Tokyo Sokki	2010/6/1	53,200	NBRO	Good
31	ArcGIS	Single Licence Ver.10 ESRI	2010/8/2	286,144	DMC	Good
32	Desktop PC	Extensa E270 Acer	2010/7/22	132,158	DMC	Good

33	Laptop PC	Aspire 4736 Acer	2010/7/22	122,188	DMC	Good
34	Multifunction Copier	iR 2318L Canon	2010/7/7	171,258	DMC	Good
35	Handy GPS	Dakota 20 GARMIN	2010/5/26	45,000	DMC	Good
36	Server	Power Edge R410 Dell	2010/12/24	798,400	DOM	Good
37	HDD	1TB	2010/12/24	18,600	DOM	Good
38	Compiler	Composer XE 2011Intel	2010/12/24	181,600	DOM	Good
39	Guide Tube for Inclinometer	KBF-31-3 Tokyo Sokki	2012/3/7	224,100	NBRO	Good
40	Water level Sensor	DS-1 OSASI	2012/3/7	220,700	NBRO	Good
41	Water level Data Logger	NetLG-001E OSASI	2012/3/7	169,600	NBRO	Good
42	Network Controller	NetCT-1E OSASI	2012/3/7	139,500	NBRO	Good

3.2 Sri Lankan side

(1)Placement of the C/Ps

The Secretary of the Ministry of Disaster Management is the Project Director. The Director General of DMC is the Project Coordinator. In addition, the following persons are assigned to the Project to perform the following three roles:

- Supervisors
- Responsible staff members from the technical organizations
- Responsible staff members from DMC

The main role given to 'the supervisors' is to promote active participation of appropriate staff members as the C/Ps, who are named as 'the responsible staff members' in Table 6. Moreover, the supervisors are held responsible for dissemination of the experiences and lessons learned by the C/Ps to other concerned officers in the respective organizations. The functions performed by 'the responsible staff members' are to work directly with the experts under the project framework. Table 6 is the list of the C/Ps who were assigned by at the time of the project commencement and today (as of September 2012).

Table 6 List of the C/Ps

Plan	Actual (at the time of the terminal evaluation)
Output 1 - DMC	
<Output 1-1> Supervisors: (1) Mr. Nandarathna, (2)Mr. Chandradasa, (3) Brig. Weragama DMC: (1) Mr. Palitha, (2) Ms. Anoja, (3) Major Dhammika	<Output 1-1> Supervisor: Mr. Sugath DMC: Mr. Palitha
<Output 1-2> Supervisor: Brig. Weragama DMC: Mr. Hiran	<Output 1-2> Supervisor: DG (on acting basis) DMC: Mr. Hiran
<Output 1-3> Supervisors: (1) Brig. Weragama, (2) Mr. Chandradasa, (3) Ms. Imbulane DMC: (1) Mr. Ravi, (2) Mr. Srimal, (3) Ms. Jayasundara	<Output 1-3> Supervisor: DG (on acting basis) DMC: Mr. Jayaweera
<Output 1-4> Supervisor: Mr. Chandradasa DMC: Ms. Anoja	<Output 1-4> Supervisor: DG (on acting basis) DMC: Ms. Anoja
<Output 1-5> Supervisor: (1) Mr. Nandarathna, (2) Brig. Weragama DMC: (1) Mr. Herath, (2) Mr. Pradeep	<Output 1-5> Supervisor: Mr.Sugathadasa DMC: Mr. Palitha
<Output 1-6> Originally not planned	<Output 1-6> Supervisor: Mr. Jayaweera Responsible: DDMCU Assistant Director in (1) Batticaloa, (2) Matale DMC: Mr. Chathura
Output 2 - DOM	
Supervisor: Mr. Kariyawasam Responsible: Mr. Jayasekera DMC: Mr. Pradeep	Supervisor: Mr. Kariyawasam Responsible: (1) Mr. Jayasekara, (2) Mr. Dayananda, (3) Mr. premalal, (4) Mr. Jayasinghearachchi, (5) Mr. Nuwan, (6) Mr. Malika DMC: not available
Output 3 - NBRO	
Supervisor: Mr. Bandara Responsible: Mr. Mahesh DMC: Mr. Srimal	Supervisor: Mr. Bandara Responsible: (1) Mr. Mahesh, (2) Mr. Lakisiri, (3) Mr. Nuwan DMC: not available
Output 4 - DMC	
Supervisors: (1) Brig. Weragama,(2) Mr. Chandradasa DMC: (1) Mr. Pradeep, (2) Mr. Ravi, (3) Mr. Srimal	Supervisor: DG (on acting basis) DMC: (1) Mr. Pradeep, (2) Mr. Ravi, (3) Mr. Srimal
Output 5 – DMC, DDMCU	
Supervisor: Mr. Ananda, Director Disaster Management Coordinator Responsible: Assistant Coordinator DMC: (1) Mr. Palitha, (2) Col. Asoka	Supervisor: Mr. Sugathadasa Responsible: DDMCU Assistant Director in (1) Kalutara, (2) Ratnapura, (3) Nuwara Eliya DMC: Mr. Palitha

(2)Financial and in-kind inputs

The Sri Lankan side provided expenses such as daily allowance and travel costs for the project members from Sri Lankan side as agreed in the Record of Discussions (R/D) for the most part. Office space was made available to the Project by DMC, DOM and NBRO at the national level. Internet connection, telephone line for domestic use, air conditioning, desks and chairs were also provided to the Project. Similarly, utilities such as electricity and water used in the project office are provided by the organizations listed above.

4. Achievements and implementation process of the Project

4.1 Outputs

Achievements of the five outputs are responsible of the following organizations:

- Output 1: DMC
- Output 2: DOM
- Output 3: NBRO
- Output 4: DMC, particularly the Early Warning Division
- Output 5: DMC, particularly the Training, Education and Public Awareness Division

The Team assessed the achievement levels of the outputs by reviewing the existing project documents and discussions with the target groups. For Output 1, six outputs were set to assess the achievement levels. Three indicators for Output 2, two outputs for each Output 3 and 4, and four outputs for Output 5 were also set. The achievements of each output are highlighted in Table 7.

Table 7 Achievements until date - Outputs

Objectively Verifiable Indicators	Achievements until date
Output 1	
1-1 Number of coordination meetings on disaster management organized and outputs from those meetings 1-2 Development of National Emergency Operation Plan (NEOP) 1-3 Increase of contents of the annual report about disaster	• NDMCC organized meetings 9 times in 2011, with the assistance of United Nations Development Programme (UNDP)[4]. As per the recommendations made from the experts to DMC, DMC proposed to establish an Inter-Ministerial Committee and to set up three core groups. Necessary works to establish these new structures are in progress. • NEOP is under finalization with the support of UNDP. The experts contributed to the improvement of NEOP through providing information/recommendations based on Japanese experience, and assisted DMC in facilitating the consultation processes with other

[4] DMC, DOM, NBRO, the Ministry of Health, the Ministry of Education were the participating organizations of the meetings.

analysis 1-4 Formulation and trail of system 1-5 Number of development and execution of disaster management training program 1-6 District level Preparedness & Response Plan is evaluated and revised*.	concerned organizations in the course of NEOP development. • Annual report 2011 was drafted by DMC taking into considerations of the recommendations made by the experts. • Disaster Impact Assessment (DIA) checklist was developed by the Project. Checklist manual is under development. These tools will be tested with cooperation with Road Development Authority, NBRO and Irrigation Department (ID) in the road sector. DMC is working with RDA to conduct a trial. • Trainings for officers of DDMCU and other organizations concerned at national level and other workshops were conducted. 'Training guideline on planning, preparation and management' is under development. • District-level Preparedness & Response Plan are under revision.
Output 2	
2-1 The data acquired in Automatic Weather Station (AWS) set up does not disappear. 2-2 Trial and improvement of short term forecasting (more than two days forecasting). 2-3 Trial of the warning standard at a regional level.	• As per the AWS operational manual, maintenance manual and trouble-shooting manual prepared, regular maintenance activities are being conducted. Using the checklist developed, maintenance is continuously conducted by DOM. AWS stations are in operating as planned. But four data-loggers are not working as on September 13th, 2012. DOM is finalizing an arrangement with the Japanese maker of AWS system for low-cost replacement arrangement. • Numerical Weather Prediction (NWP) system was installed in 2011. DOM is verifying NWP system to be suited to Sri Lankan climate. • AWS collects data every 10 minutes. Warning standard was tested with DOM. Local level meteorological warning criteria is under development.
Output 3	
3-1 Cost effective sediment disaster measures technique is executed in one place or more by Sri Lankan side. 3-2 The result of the execution of the landslide risk evaluation and the behavior analysis is brought together as a report.	• Mahawera site in Nuwara Eliya and Galaboda site in Ratnapura were selected as the pilot sites. In both sites, sediment disaster measuring techniques were utilized (i.e., installation of monitoring equipment and data monitoring using the equipment). • 'The Manual for Evaluation of Landslide Disasters and Countermeasures' is under preparation. This manual will capture the results of the execution of the landslide risk evaluation, the behaviour analysis and mitigation measures.
Output 4	
4-1 Warning is transmitted to the pilot area according to the warning official announcement rule. 4-2Warning transmission trainings are executed one or more times in each pilot area.	• The warning official announcement rule was followed in tsunami warning exercises. The experts illustrated the necessity of improvement. 'Early Warning and Information Transfer Manual for Landslide' is under finalization. Similar manual for flooding is under progress. • The Project made recommendations to DMC based on the finding identified when observing the tsunami exercises, which were conducted five times by DMC. Information transfer exercise on landslide was conducted in the pilot areas in the second year. Preparation of other exercises for landslide and flood are under progress.
Output 5	
5-1 Number of topics of coordination meetings on disaster management organized and outputs from those meetings. 5-2The hazard map is made by the guidance of the local	• Some topics were discussed in the district level disaster management committee meetings organized and held with the support of the Project. One of the matters discussed was the capacity enhancement of district disaster management committee members, particularly in Nuwara Eliya. To respond to the CD need addressed, CD program in Nuwara Eliya was conducted. In Ratnapura, Search & Rescue training was discussed and organized by the Project. Re-operation of Intra-Government

government organization in the communities of the pilot areas. 5-3 Regular evacuation trainings at the community level in the pilot area are executed by the guidance of the local government organization. 5-4 Countermeasures for priority issues in the additional pilot communities are implemented*.	Network(IGN) was also discussed. • Hazard maps were prepared in all on the selected communities in the pilot areas, and DDMCUs are extending the community based disaster management activities including the preparation of hazard maps to other communities. • Assistant Directors and other staff members at district level, officers at divisional level and Grama Niladhari received training on community-based disaster management activities by the Project. By utilizing the knowledge accumulated under the Project, DDMCUs organized community-based disaster management activities including awareness raising program, evacuation drills and preparation of hazard maps using the visual aids developed with the support of JICA prior to the Project. • Community-based disaster management activities were conducted in Sittandi of Batticaloa District and Nawapadeniya of Matale District. While the hazard map was prepared and evacuation drill is being planned in Sittandi, living condition at evacuation center was improved through installation of some boats and cooking utensils. In Nawapadeniya, civil works for drainage improvement were conducted by villagers themselves with the support of the Project.

Note: The Project originally selected Ratnapura, Kulutara and Nuwara Eliya as the pilot areas.
*Additional pilot areas are Batticaloa and Matale.

According to the C/Ps, the duration of the stays in Sri Lanka by the short-term experts was too short. In particular, the Sri Lankan side expressed the need for dispatch of a long-term expert in the area of Meteorology Forecasting and Landslide Prevention. During the terminal evaluation, the Team could not identify clear cause-effect relationships between the achievement levels of each outputs and the experts' duration of stays in Sri Lanka.

Table 8 highlights both promoting and hindering factors, which the Team found at the time of terminal evaluation.

Table 8 Promoting and hindering factors - five outputs

Promoting Factors	Hindering Factors
Output 1	
• Recommendations made by the experts were reflected in terms of improvement of the efficiency of NDMCC. • In Annual Report 2011 (draft version), there are some information regarding the assistance provided by JICA to DMC. • Introduction of DIA is agreed by the Sri Lankan side. DIA is going to be tested in road sector. • DMC is working with development partners to move forwards on disaster risk management.	• Shortage of personnel in DMC, from director level to assistant level against the volume of work given to DMC. • Limited budget allocation for smooth implementation of the activities given to DMC.
Output 2	
• DOM demonstrated high commitment to the Project. • Capacity of forecasting is enhancing. • An inventory of collaborative rain-gauge stations in two districts, which stated the latitude, longitude and altitude of each station, was developed by the Project. Such inventory was not updated by DOM, and can be a good tool for monitoring.	• Shortage of staff members with scientific and technical background and qualifications. • AWS system is operational expect for the two locations, which AWS installation await. AWS system in Jaffna is to be installed by March 2013.
Output 3	
• Publication of a paper called "Instrumentation and Monitoring of Mahawewa Landslide off Walapane in Central Hills of Sri Lanka" by NBRO[5]. • New policy/regulation to define the roles and responsibilities of NBRO under preparation. • Staff members of NBRO demonstrated strong leadership to build stronger foundation for landslide reduction in Sri Lanka.	• Shortage of personnel against the volume of work under NBRO.
Output 4	
• Although the area of coverage is limited, the Project provided direct assistance to communities. Communities are the end receiver of information transmitted by DMC or other organizations responsible depending on the type(s) of disaster. • The Project enhanced the effectiveness of the evacuation drills for tsunami warning conducted, so that lessons learned are available as reference.	• Necessary data such as water level from ID does not come to DMC (because of malfunction of equipment). • IGN is not fully operational, including coverage/connection of concerned organizations. • Capacity of DDMCU's personnel is not sufficient to disseminate the accurate information to communities.
Output 5	
• DDMC is working with Sri Lankan Red Cross, local foundation and NGOs to carry out community-based disaster management activities. • Staff members of DDMC are highly committed to their mandate.	• Shortage of personnel against the volume of work in DDMCU. • Quality assurance of the activities carried out by DDMCU is not adequately done by DMC. • Limited budget allocation to carry out the necessary activities at community-level.

[5] This paper was prepared by NBRO and the University of Moratuwa, Sri Lanka. This paper was presented at International Symposium on Advances in Civil and Environmental Engineering Practices for Sustainable Development, held at Galle, Sri Lanka in March 2012. The symposium was organized and hosted by Department of Civil and Environmental Engineering, University of Ruhuna, Sri Lanka in collaboration with Saitama University, Japan. It was sponsored by Japan Society for the Promotion of Science and Science and Technology Research Partnership for Sustainable Development Program, Japan.

Based on the progress shown above, the achievement levels of the outputs are assessed as substantial. The possibility of achieving the project purpose is relatively high. The C/Ps are enhancing their knowledge and know-how regarding disaster risk management in their respective areas of expertise mainly through On-the-Job-Training (OJT) from the experts and the trainings conducted by the Project.

4.2 Project Purpose

The attainment status of the target set for the project purpose in the PDM is highlighted in Table 9. For Indicator 1, activities for improvement of transmission speed and decrease of false report of disaster information, which sent from disaster observation organization to the pilot areas through DMC are in progress. According to DMC, transmission speed and false report of disaster information sent out are decreasing when compared with the situations before the project commencement. For Indicator 2, the prevention activities and early warning alerts in Nuwara Eliya, Ratnapura and Kalutara are in progress using information, which DMC transmitted are also in progress.

Table 9 Achievement levels - the project purpose

Objectively Verifiable Indicators	Achievements till Date
1. Improvement of transmission speed and decrease of false report of disaster information which sent from disaster observation organization to the pilot areas through DMC.	• In progress. Transmission speed and false report of disaster information sent out are decreasing when compared with the situations before the project commencement.
2. The disaster prevention activities and early warning alert are done in the pilot areas using information which DMC transmitted.	• In progress. The planned activities are under implementation in Nuwara Eliya, Ratnapura and Kalutara.

4.3 Overall Goal

The attainment status of the target set for the overall goal in the PDM is summarized in Table 10. The objectively verifiable indicators for the overall goal are same as the ones for the project purpose. The only difference is the target areas.

No written documentation could be obtained for Indicator 1. To realize Indicator 2, DMC is working with development partners such as UNDP, Sri Lankan Red Cross, INGOs and NGOs to implement preparedness and mitigation activities in some areas. According to GOSL, management and quality control of each activity are getting complex and more challenging. One of the reasons is that several development partners tend to be directly involved in the activities mentioned above.

Table 10 Achievement levels - the overall goal

Objectively Verifiable Indicators	Achievements till Date
1. Improvement of transmission speed and decrease of false report of disaster information which sent from disaster observation organization to district, divisions, and communities through DMC.	• No written documentation could be obtained. The current achievement level is unknown.
2. The disaster prevention activities and early warning alert are done in districts, divisions, and communities using information which DMC transmitted.	• DMC is working with development partners such as UNDP, Sri Lankan Red Cross, INGOs and NGOs to implement some disaster prevention activities. The activities include raising-awareness trainings and evacuation drills in the areas other than the pilot areas selected under the Project. A master inventory list to record the status of activities in process or completed does not exist. Hence, the current achievement level is unknown.

4.4 Crosscutting implementation process

(1)Revision of the Project Design Matrix (PDM)

The PDM was slightly modified during the project implementation when compared between the signing of the Minutes of Meeting (M/M) during the project formulation and the time of the terminal evaluation. The changes were presented. Main reasons for the modification were not only to reflect the changes in needs and situations of Sri Lankan side, but also to respond to the 2011 disaster hit two areas namely Batticaloa and Matale. No changes were made to the overall goal and the project purpose. The changes made to the objectively verifiable indicators of the outputs were highlighted in Table 11. For implementation of the additional responsibilities given to the Project (please refer to the actual Indicators 1-6 and 5-4), additional m/m of short-term experts was provided. Based on the results of the interviews conducted to the C/Ps and the experts, the Team believes the changes in the PDM were appropriate.

Table 11 Changes in the PDM – plan and actual

Plan (M/M)	Actual (Version 5)
Output 1	
1-1 Number of coordination meetings on disaster management organized and outputs from those meetings	1-1 No change
1-2 Development of National Emergency Operation Plan	1-2 No change
1-3 Increase of contents of the annual report about disaster analysis	1-3 No change
1-4 Establishment of a system to assess and mitigate disasters that may be caused by development projects	1-4 Formulation and trail of system
1-5 Number of development and execution of disaster management training program	1-5 No change
	1-6 District level Preparedness & Response Plan is

	evaluated and revised*.
Output 2	
2-1 The data acquired in AWS set up does not disappear.	2-1 No change
2-2 Trial of short term forecasting (more than two- day forecasting).	2-2 Trial and improvement of short term forecasting (more than two-day forecasting).
2-3 The warning standard at a regional level is operated.	2-3 Trial of the warning standard at a regional level.
Output 3	
3-1 Low-cost sediment disaster measures technique is executed in one place or more by Sri Lankan side own.	3-1 Cost effective sediment disaster measures technique is executed in one place or more by Sri Lankan side.
3-2 The result of the execution of the landslide risk evaluation and the behavior analysis is brought together as a report.	3-2 No change
Output 4	
4-1 Warning is transmitted to the pilot area according to the warning official announcement rule.	4-1 No change
4-2 Warning transmission trainings are executed one or more times in each pilot area.	4-2 No change
Output 5	
5-1 Number of topics of coordination meetings on disaster management organized and outputs from those meetings.	5-1 No change
5-2 The hazard map is made by the guidance of the local government organization in the communities of pilot area.	5-2 No change
5-3 Regular evacuation trainings at the community level in the pilot area are executed by the guidance of the local government organization.	5-3 No change
	5-4 Countermeasures for priority issues in the additional pilot communities are implemented*.

*Additional pilot areas are Batticaloa and Matale.

The Team found the attainment status of Indicator 3-1 difficult to assess. The definition of 'cost effectively' is not clearly defined by the Project. Hence, there is a need to make the term clear between the C/Ps and the experts. It is expected that such clarification is made, and both sides agree to the definition before the project termination.

(2)Monitoring and decision making

The experts prepared several progress reports of the Project, which were submitted to the Sri Lankan side and JICA, while the project's progress and activities planned for the following year(s) were presented to the JCC members during the JCC meetings held. Regular C/P meetings and annual seminar were conducted by the Project. The JCC members, the project director and the project coordinator in collaboration with the experts made decisions regarding the Project as required until date. JICA Sri Lanka

Office also provided its support and advice as needed. Sharing of the project's progress, lessons learned and exchange ways forwards among the project members from both Sri Lankan and Japanese sides were the main objectives of these meetings and seminar.

At the time of project formulation, a mid-term review was recommended. Instead of a mid-term review, JICA Headquarters conducted a monitoring mission in March 2012, which put focus on reviewing the progress of the activities 1-1, 1-2, 1-3 and 1-5.

(3)Communication

According to the experts and the C/Ps, there were some problems regarding communication at the beginning of the project implementation. The problems were mostly solved by the third year of the project implementation.

The Project produced and disseminated newsletters written in English. The newsletters were used a tool for information sharing to the target groups and other organizations that are working in the field of disaster risk management.

5. Evaluation results[6]

5.1 Relevance

The relevance of the Project is high since the project objectives not only remain consistent with the development policy but also are in line with needs of GOSL. In particular, the Disaster Management Act No. 13 of 2005, which was in line with the Hyogo Framework for Action 2005-2015 illustrated the disaster management as the priorities of GOSL. To complement the policy direction set by the GOSL, it demonstrated the highest commitment by appointing the President of Sri Lanka as the chairperson of National Council for Disaster Management (NCDM) which is the highest policy-making body in Sri Lanka in the field of disaster management. The relationship among NCDM, the Ministry of Disaster Management, DMC and other government agencies concerned are illustrated in Figure 1.

[6] JICA applies the following ratings: high, relatively high, fair, relatively low, and low.

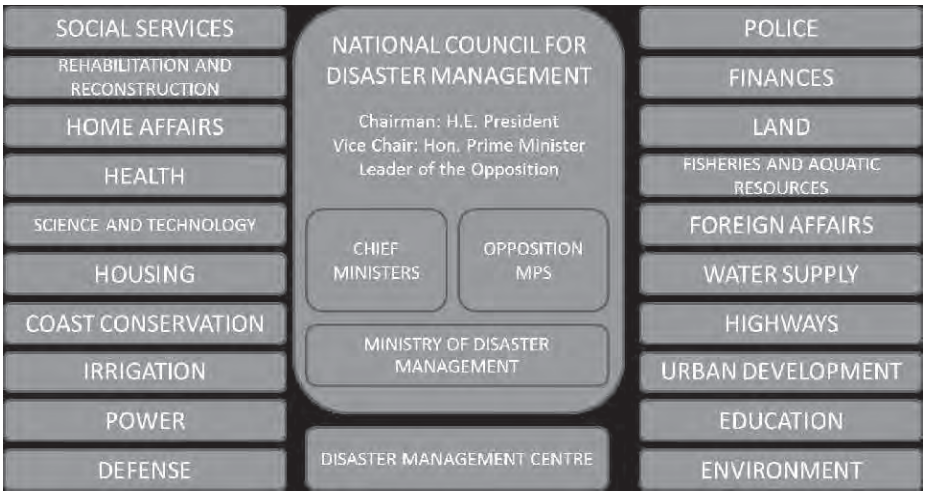


Figure 1 NCDM structure

Source: Annual Report 2011 (draft version)

The Project is consistent with the assistance policy of GOJ for Sri Lanka. JICA follows the policy of GOJ, and develops its assistance strategy for Sri Lanka. Particularly, the Project was designed as the result of the assistance provided by JICA, which commenced in 2005. In 2005, a study was conducted to develop a program in the field of disaster management for Sri Lanka. As per the recommendations of the study, another study was conducted with the support of JICA from 2006 to 2009. In parallel to the study, JICA grant aid was provide to Sri Lanka, which procured 35 AWS. The said assistance laid basic elements of the Project, which is under implementation. "Towards a Safer Sri Lanka – Road Map for Disaster Risk Management[7]" also emphasize the importance of institutional development, risk assessment, early warning system, disaster mitigation, community-based disaster management, and education and training. The aspects listed above were dealt with in the Project.

The pilot areas selected under the Project are at high risk of floods and/or landslide. Hence, the Team found the selection of the pilot areas was appropriate.

5.2 Effectiveness

The effectiveness of the Project can be assessed as relatively high. Although it is difficult to assess with confidence whether the outputs stated in the PDM (Version 5) are sufficient for attaining the project purpose. The preparation of NEOP is in progress with the support of the Project, while the National Disaster Management Plan

[7] In April 2006, the Ministry of Disaster Management (former Ministry f Disaster Management and Human Rights) prepared the Road Map with the support of UNDP.

(NDMP) is also in progress to finalize before the project termination. However, the Team believes that the project purpose is going to be achieved if the same level of commitment demonstrated by the C/Ps and the experts continues until the project termination.

There were some difficulties to carry out the activities at the beginning of the Project due to confusion of the responsibilities given to C/Ps by Sri Lankan side. At the time of the terminal evaluation, the C/Ps explained to the Team that there is no longer such confusion by Sri Lankan side.

There was no major problem in regard to dispatch of the Japanese experts as well as the equipment procurement from Japanese side. According to the Sri Lankan side, the C/P training in Japan was an effective approach to expose some of the C/Ps to the disaster management systems applied in Japan. Yet, there is a room for improvement in ways to design the content of the training course when the duration is rather short (i.e., two weeks).

Shortage of the C/Ps was a major constraint for the project implementation. The experts overcame the obstacle by involving local consultants. By the end of the Project, the experts could suggest a model of the implementation mechanism with local consultants as an alternative option to DMC, DOM and NBRO.

One feedback provided by the participants in the C/P training is that a two-week training course could not accommodate all the expectations and area of interests.

The JCC meeting was held once a year to monitor the project progress and provide advisory as needed to ensure effective project implementation.

5.3 Efficiency

Efficiency of the Project is assessed as relatively high since the achievement levels of the outputs are relatively high. The main factor for the assessment is that the project activities have been carried out as planned for the most part. According to the experts, there are some delays in the progress of Output 3 and 4. However, they expect that the remaining activities would be completed before the project termination.

The inputs from the Japanese side have been provided as stated in the R/D. Upon the

proposal made by the experts, the number of experts dispatched to Sri Lanka from Japanese side was increased. From a view point of Sri Lankan side, there is no major concern in regard to the inputs provided by Japanese side although dispatch of more long-term experts could be valued. According to the C/Ps and the experts, equipment, knowledge and experience transferred from Japanese side to Sri Lankan side have been appropriate and useful.

According to the participants in C/P training, the duration of training in Japan was too short to meet the needs of all concerned agencies. Hence, some participants of the trainings were not fully satisfied with the contents. Despite the fact that some exposure visits to observe monitoring activities related to (1) landslide and (2) flood management in Japan was arranged, there was not enough time to fully meet the expectations of the participants.

The inputs from Sri Lankan side have been provided to the Project as planned excluding human resources and financial inputs to some extent. At the time of the terminal evaluation, the Team has observations regarding the current staffing conditions of the implementation agencies especially DMC. Shortage of staff members at DMC is one of the critical hindering factors identified and should be highlighted.

Identification and appointment of supervisors from Sri Lankan side as a vehicle to involve the mid-level and junior staff members from the implementation agencies proved to be an efficient arrangement for the project implementation. According to some of the C/Ps who are at mid and/or junior levels, understanding and approval of the supervisors were necessary to allocate time for the Project.

5.4 Impact (Prospects)

Impact of the Project is fair.

It is likely that a model for complete communication network in disaster observation, forecasting and community level activities in the pilot areas will be prepared as a result of the Project. Hence, the Project is likely to contributing to the achievement of the overall goal.

The C/Ps suggested that the OJT conducted have boosted their confidence. Although it is not clear how much is attributable to the Project, the top management of the

implementation agencies observed that the performance of their staff members who are involved in the Project is improving. One example is reduction of the time required for issuing early warning from DMC to concerned communities. Another example is adequacy of data collected, which are needed for early warning issuance in DOM.

At the time of the terminal evaluation, the Team found both positive and negative factors in respect to the attainment status. The positive and negative factors identified by the Project are shown in Table 12. The project outputs are expected to contribute to improvement of management and implementation structure of disaster risk management in Sri Lanka as long as GOSL will not make drastic changes to the current high priority given to the field of disaster management in the coming years. Hence, the Team evaluated that there are sufficient positive factors to forecast the achievement of the overall goal.

Table 12 Positive and negative effects identified by the Team

Positive Effects	Negative Effects
• The C/Ps are enhancing their technical capacity on disaster risk management through the Project. They have also gained their confidence in their areas of expertise through the Project. • NBRO is creating exposure opportunities to local universities in data collection and analysis activities in one of the pilot areas. The knowledge and know-how transferred to the C/Ps are disseminated to concerned persons who are outside NBRO. • DOM is well maintaining the NWP system. • ID is enhancing its coordination with DMC. • Development of NDMP is underway. • Development of NEOP is in progress. • Establishment of radio and mobile communication network for dissemination of early warning messages. • Involvement of police and army in communication for dissemination of early warning messages. • Recruitment of staffs in DMC and DOM is in progress.	• Shortage of qualified and capable personnel in the target groups found at national and regional levels. • Limited funds allocation to the target groups for implementation of the necessary countermeasures for disaster risk reduction in a timely manner. • No existence of NDMP. • No existence of NEOP. • No structured monitoring mechanism in place by DMC to assess quality of activities carried out with the support of development partners. • Disaster management is not yet fully mainstreamed in Sri Lanka.

5.5 Sustainability (Prospects)[8]

Based on the assessment below, it is likely that the achievements attained by the Project will be maintained. Hence, it can be assessed that the project's sustainability is between fair and relative high.

[8] Sustainability was assessed with view point of the following aspects: (1) organizational and policy aspects, (2) technical aspect, and (3) financial aspect.

(1)Organizational and policy aspects

The project's sustainability from organization and policy aspects are relatively high.

The target groups of the Project are faced with shortage of qualified and capable staff members to carry out their mandate. With the current volume of works already assigned to these organizations without additional manpower, the model which was established by the Project in the pilot areas may not be extended to other areas in a timely manner. It is therefore good that, while DMC, DOM and NBRO have plans to recruit more staff members including scientists and technical persons, these organizations should recognize the necessary inputs to execute the activities introduced by the Project.

In line with the recommendations made by the experts, DMC is taking the initiatives to revise the current operational structure of National Disaster Management Coordination Committee (NDMCC). NDMCC is currently placed in between NCDM and DMC in a line of decision-making. Three core groups are proposed to be formed under the framework of NDMCC. At the time of the terminal evaluation, the final outcomes of the proposed revision could not be examined.

As per the Disaster Management Act no. 13 of 2005, establishment of NCDM was required. Ministry of Disaster Management performs the secretariat role of the NCDM. As the planning and coordination body on disaster risk management in the country, DMC is responsible to work closely with other organizations especially NBRO, DOM, ID and Geological Survey and Mines Bureau at national and regional levels. Although further institutional development of the said organizations is needed, they continue to be the main actors for execution of disaster risk management activities. As long as there is no major change in the responsibilities given to these organizations in the field of disaster management, they will continue to work in the field.

According to DMC, the 2005 Act mentioned above is under revision. When the Act is amended, some changes are expected to take place. The expected changes include the types of authorities given to DMC and establishment of a Governing Board. DMC believes that the amendment of the Act is needed to improve its leadership and coordination role. NBRO is also taking a legal action to define the roles and

responsibilities of NBRO as National Building Research Institute. NBRO will take a further step with the objective of institutional capacity enhancement.

In regard to policy matters, the Team believes both NDMP and NEOP should be developed as soon as possible. Without these plans, it is difficult to appropriately take necessary actions for disaster management needed for Sri Lanka.

(2)Technical aspect
The project's sustainability from a technical view point is relatively high at the time of the terminal evaluation.

The Project was not designed to monitor the progress of the C/Ps' technical capacity using any quantitative indicator(s). The Team collected qualitative data to assess the project's sustainability from a technical view point. According to the experts, technical capacity of the C/Ps is strengthening owing to the Project. Furthermore, they believe that the capacity of the C/Ps will be further enhanced during the remaining duration of the Project. The C/Ps are expected to continue to carry out the same, if not, similar CD activities by themselves after the project termination. For example, staff members of DOM trained on the use of NWP are likely to continue to utilize the NWP to improve accuracy of weather forecasting.

(3)Financial aspect
The project sustainability from a financial view point is fair.

According to the C/Ps, some funds are allocated to the implementing agencies of the Project via the Ministry of Disaster Management for execution of activities with objectives to reduce risks from natural disasters from national level to community level. Similarly, they explained that the amounts of funds required to cover all the areas prone to disasters in Sri Lanka is unknown. The Team could not obtain the exact amounts of funds allocated to each implementing agency from the Ministry of Disaster Management. Hence, it is difficult to assess the project's sustainability from a financial view point at the time of terminal evaluation based on the actual budget approved amounts and expenditures from the Sri Lankan side. However, the Team found some positive effects. According to GOSL, Disaster Management continues to be one of the top priorities, which indicates that GOSL is likely to allocate necessary funds

based on their financial availability. For example, 186.00 million LKR were allocated in 2011 for mitigations projects implemented by GOSL as shown in Table 13.

Table 13 Allocation of funds for mitigation projects in 2011

Unit: Million LKR

Name of Project	Funds Allocated
Disaster Mitigation Projects	120.00
Flood mitigation projects in Ampara, Baticaloa, Polonnuaruwa and Puttalam districts	30.00
Mitigation and stabilization of slopes in high risk landslide and rock fall in Kandy, Matale, Badulla and Nuwaraeliya districts	36.00

Despite the findings highlighted above, the results of the interviews to the C/Ps indicated some financial challenges faced by DMC, NBRO, DOM, and ID. These organizations also addressed the difficulties from a financial view point to apply the same interventions/approaches taken in the Project. For example, to replace one part (i.e., data-logger) of the equipment provided by the previous JICA grant-aid project, DOM requires USD 13,000.00. There may be a need to study the costs of investment from the Japanese side to the Project carefully by Sri Lankan side before the project termination.

6. Conclusion

The Team assessed that the progress of the Project is satisfactory owing to the high commitment demonstrated and achievements made to date by the C/Ps and the experts. The Team concluded the achievement level of the project purpose is relatively high at the time of terminal evaluation. The results of assessment based on the five evaluation criteria are as follow:

- The project's relevancy is high.
- The project's effectiveness is relatively high.
- The project's efficiency is relatively high.
- Impact of the Project is fair to relatively high.
- The project's sustainability is fair to relatively high.

7. Recommendations

7.1 General

(1)It is needed to identify necessary inputs such as costs, duration required and the number of personnel and labors to perform activities carried out under the Project to secure the sustainability of activities.

(2)As totally more than 100 vacant positions in DMC and DOM are planned to be filled, each department should organize appropriate training for new employees by effectively utilizing the outputs of the Project.

(3)Each organization should consider making necessary arrangement to institutionalize the various activities which the Project introduced.

(4)Knowledge and experiences gained by training and seminar conducted by the Project including C/P training in Japan should be shared with other staffs in the respective organizations.

7.2 DMC

(1)DMC should strengthen the monitoring and supervision of the activities performed by DDMCU and should provide necessary training to DDMCU, since it is found that capacity of DDMCU staff needs to be further enhanced.

(2)Training program on basic knowledge of disaster management organized by DMC should be regularly conducted, and expanded to DDMCU Assistant Coordinators and other officials concerned.

(3)It is important for DMC to accumulate knowledge and experience to apply DIA to public works through a trial of DIA in RDA, and to improve DIA mechanism to be expanded to other sectors.

7.3 DOM

(1)In order to secure the sustainability of NWP analytical works, DOM should make necessary arrangement to train more staff members in the use of NWP system.

(2)The two remaining AWSs should be installed to establish the whole AWS system which consists of 38 AWSs, and a full scale operation of AWS system should be realized.

(3) Since it is found that the inventory of collaborative rain-gauge stations in two districts updated by the Project is very useful for the effective use of rainfall data, it is encouraged to regularly update the inventory in other districts.

7.4 NBRO

NBRO should enhance the capacity of mitigation measures.

7.5 ID

It is recommended that water level gauge stations are rehabilitated for the issuance of flood early warning in a timely manner.

7.6 Others

Based on the discussions held during the terminal evaluation mission, the Team identified the following recommendations which would be beyond the scope of the Project.

(1)It is recommendable to review the impacts of activities so far performed for disaster management and identify the next steps for further improvement, since an overall picture of disaster management seems to be unclear.

(2)NDMP and NEOP need to be established urgently, since NDMP and NEOP are to form the basis of disaster management in accordance with the Disaster Management Act. To formulate NDMP and NEOP, it is critical to hold intense and detailed discussions between DMC and each concerned ministry/agency to make mutual consensus.

(3)Coverage/connection of the IGN including DDMCUs and others should be enhanced for more effective and efficient disaster management.

8. Lessons learned

The Project broadly covered several fields on disaster management, and would achieve the development of basic capacity and the establishment of collaboration among the organizations concerned as one of the steps of mainstreaming of disaster management in the country. It is, however, necessary to further enhance capacity in some specific fields such as meteorological forecasting and landslide analysis. Therefore, it is

recommended that the next step of capacity development on disaster management focuses on deepening technical and scientific knowledge and experiences.

Annex 1

Evaluation Grid

Item	Evaluation Question		Source of Information
	Main Question	Sub-Question	
Relevancy	Relevance of priority	Are the overall goal and the purpose of the Project consistent with national strategy/plan/policy of the Government of Sri Lanka?	• National plan(s) of the Government of Sri Lanka • Policy document(s) and plan(s) related to disaster management prepared by the Government of Sri Lanka, if available. • Interview to the JCC members
	Relevance of needs	Does the Project meet the needs of the Government of Sri Lanka?	• Interview to the JCC members Interview to the project members from Sri Lankan side
	Commitment of Sri Lankan side	Is the commitment level from Sri Lankan side for successful project implementation high?	• Interview to JICA Sri Lanka Office • Project progress report(s) • Interview to the JCC members
	Relevance to the Japanese ODA policy	Are the overall goal and the purpose of the Project consistent with Japanese ODA policy of for Sri Lanka?	MOFA and JICA strategy/policy documents related to Sri Lanka
	Relationship with other development partner(s)	Are there comparability/synergy between the Project (JICA) and other development partner(s) in the field of disaster management in Sri Lanka?	• Interview to the project members from Sri Lankan side • Interview to other development partners(i.e., UNDP)
	Advantage of Japanese technology	Do the Japanese experience, technology, and techniques have the comparative advantage?	Project preliminary study report
Effectiveness	Prospect of achieving the project purpose	What is the possibility of achieving the project purpose before the project termination?	• Project progress report(s) • Interview to the Japanese experts • Interview to the project members from Sri Lankan side • Questionnaire
		What are the countermeasures taken in order to achieve the project purpose?	• Interview to the Japanese experts • Interview to the project members from Sri Lankan side • Questionnaire
	Adequacy of cause/effect of the project purpose, outputs and external factors/important assumption(s)	What is the achievement level of the project purpose based on the achievement levels of the expected outputs and external factor(s), and important assumption(s)?	• Project progress report(s) • Interview to the Japanese experts • Interview to the project members from Sri Lankan side • Questionnaire
		What are the external factor(s) and important assumption(s) in regard to the Project?	• Project progress report(s) • Questionnaire
	Project management structure	Are the monitoring structure, decision making structure, and	• Interview to the Japanese experts • Interview to the project members

Item	Evaluation Question		Source of Information
	Main Question	Sub-Question	
		communications adequate/ appropriate?	from Sri Lankan side • Questionnaire
	Factor(s) might affected the achievement of the project purpose	Are there any promoting factors for achieving the project purpose?	• Interview to the Japanese experts • Interview to the project members from Sri Lankan side • Questionnaire
		Are there any hindering factors for achieving the project purpose?	• Interview to the Japanese experts • Interview to the project members from Sri Lankan side • Questionnaire
Efficiency	Achievement level of Outputs	Are the expected outputs going to be realized as planned?	• Interview to the Japanese experts • Interview to the project members from Sri Lankan side • Questionnaire
		Is each output contributing to achieve outcome(s) of the Project?	• Interview to the Japanese experts • Interview to the project members from Sri Lankan side • Questionnaire
		Are the verifiable indicators set for the outputs adequate?	• Interview to the Japanese experts • Interview to the project members from Sri Lankan side • Questionnaire
		Were the approaches taken for technology transfer under the Project appropriate?	• Questionnaire • Interview to the Japanese experts • Interview to the project members from Sri Lankan side
	Timing of implementation of project activities and placement of inputs	Are the dispatch timing of Japanese experts and other inputs adequate?	• Project progress report(s) • Questionnaire • Interview to the Japanese experts • Interview to the project members from Sri Lankan side
		Is the placement of the project members from Sri Lankan side timely and adequate?	• Project progress report(s) • Questionnaire • Interview to the Japanese experts • Interview to the project members from Sri Lankan side
	Appropriateness of quantity, quality, and time of inputs	Experts and the project members from Sri Lankan side	• Interview to the Japanese experts • Interview to the project members from Sri Lankan side • Questionnaire
		Equipment	• Interview to the Japanese experts • Interview to the project members from Sri Lankan side
		Training in Japan	• Project progress report • Interview to the participants of training in Japan • Questionnaire

Item	Evaluation Question		Source of Information
	Main Question	Sub-Question	
	Contributing and/or hindering factor(s) to increase efficiency	Are there any contributing factor(s) to increase the project efficiency?	• Interview to the Japanese experts • Interview to the project members from Sri Lankan side • Questionnaire
		Are there any hindering factor(s) to increase the project efficiency?	• Interview to the Japanese experts • Interview to the project members from Sri Lankan side • Questionnaire
	Collaboration with other ODA project(s)	Were there any collaboration/ coordination with other JICA project(s), assistance of the Japanese Government, and/or other development partner(s) in the same or similar field?	• Interview to the JCC member(s) • Interview to the Japanese Experts • Interview to the project members from Sri Lankan side • Interview to any other concerned person(s)
Impact	Prospects of achieving the overall goal in 3-5 years after the project termination	Is the achievement of the overall goal of the Project high?	• Interview to the JCC member(s) • Interview to the project members from Sri Lankan side • Questionnaire
		What are the external factors and the important assumptions?	• Interview to the JCC member(s) • Interview to the Japanese experts • Interview to the project members from Sri Lankan side • Questionnaire
Sustainability	Organizational and policy aspects	Are the policies/act(s)/system(s) to sustain the outcomes/outputs of the Project in effect/place?	• Interview to the project members from Sri Lankan side • Questionnaire
	Human resource aspect	Is it like that that Sri Lankan side will allocate adequate person(s) to sustain the outcomes/outputs after the project termination?	• Interview to the project members from Sri Lankan side • Questionnaire
	Financial aspect	Is it likely that Sri Lankan side will allocate adequate funds to sustain the outcomes/outputs of the Project after the project termination?	• Interview to the project members from Sri Lankan side • Questionnaire
	Technical aspect	Is the technology/technique(s) required for Sri Lankan side to sustain the outcomes/outputs of the Project by itself developed?	• Interview to the project members from Sri Lankan side • Questionnaire
	Lessons learned	What are the lessons learned of which the Project found so far in regard to the project design, implementation process, and sustainability?	• Interview to the Japanese Experts • Interview to the project members from Sri Lankan side • Interview to any other concerned person(s)

Schedule of the terminal evaluation

			Mr. AMANO	Mr. TANAKA	Ms. MITANI
			Head of the Mission/ Disaster Management Administration	Mission Planning/ Disaster Management Administration2	Project Evaluation
1	29-Aug	Wed			Departure from Tokyo11:10 - Colombo 23:55 (SQ 468)
2	30-Aug	Thu			09:30 Courtesy Call on JICA Sri Lanaka ofiice 11:30: Courtesy cal lon the Ministry of Disaster Management 14:40: Meeting with DC of DMC and Mr. Chandradasa 16:00 Courtesy call to DC of the Department of Meteorology
3	31-Aug	Fri			Meeting with JICA experts(Chief Advisor and Team Leader) and Listening Survey with them @DiMCEP Project office
4	1-Sep	Sat			Making Report
5	2-Sep	Sun			Making Report
6	3-Sep	Mon			10:00 Meeting with DG of National Building Research Organization and Mr. Bandara 15:00 Coutesy call on UNDP
7	4-Sep	Tue			10:00 Coutesy call on Irrigation Depertment: **Irrigation Depertment is not directly concerned the Project but it participates in CP Training Program and Information Transfer Drill of the Project.* 14:00 Listening Survey with the experts and the C/Ps from DMC
8	5-Sep	Wed			Site Visit (Pilot Area) 1. Monitoring situation at land slide site and 3.Community Disaster Management activities, 2. Coutesy call on local
9	6-Sep	Thu			Site Visit (Pilot Area) 1. Interview to DDMCU officers, 2. AWS maintenance situation, 3. Interview to NBRO officer at district level, 4. Interview to members of community disaster management committee
10	7-Sep	Fri			AM Making Draft Evaluation Report 14:00 Meeting with the experts
11	8-Sep	Sat		Departure from Tokyo12:00 - Bangkok-Colombo 23:00 (UL 423)	Making Draft Evaluation Report
12	9-Sep	Sun	Departure from Tunisia - Colombo 08:45(EK650)	Making Draft Evaluation Report 14:00 Internal Meeting by Japanese side	
			PM: Internal Meeting Making Draft Evaluation Report		
13	10-Sep	Mon	8:30-Meeting with Depertment of Meteorology 10:30-Meeting with DMC officials Discussion about the Draft Evaluation Report and exchange of opinions 12:00: Internal Meeting with JICA experts @JICA Sri Lanka office 14:30-Joint Meeting with ERD & NPD (Ms. D.L.U Peiris - ERD, Mr. Susantha Perera & Ms. Chandrika -NPD)		
14	11-Sep	Tue	Report the Draft Evaluation Report and exchange of opinions among concerned organizations 10:00: Coutesy call on Irrigation Depertment 14:00- Depertment of Meteorology		
15	12-Sep	Wed	9:00-12:00 Making Draft Minutes of Discussions (M/D) on the Draft Evaluation Report 13:00-14:00 National Building Research Organization 14:30-16:30 Meeting between NPD(Evaluator) and JICA@JICA Sri Lanka office		
16	13-Sep	Thu	14:30-16:00: Round Meeting about Draft Minutes of Discussions (M/D) among DMC, DOM, NBRO and ID @JICA Sri Lanka office (Inviting Project Monitoring Division (Evaluator))		
17	14-Sep	Fri	Meeting with DG of DMC : Explanation of draft M/D Report to JICA Sri Lanka Office, Embassy of Japan		
			Departure from Colombo	Stay in Colombo	Departure from Colombo
18	15-Sep	Sat	Arrive at Tokyo	Departure from Colombo 10:05(EK651)- Dubai - Islamabad 20:30(PK212) Making Report Mission in Pakistan	Arrive at Tokyo

Project Design Matrix (Ver.5: 13th September 2012)

Project name : Disaster Management Capacity Enhancement Project Adaptable to Climate Change
Implementation Agency : Disaster Management Centre (DMC), Department of Meteorology (DOM), Department of Irrigation (DOI), National Building Research Organization (NBRO) Duration: March 2010 to March 2013

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Overall Goal The disaster management model is disseminated.	1. Improvement of transmission speed and decrease of false report of disaster information which sent from disaster observation organization to districts, divisions and communities through Disaster Management Centre. 2. The disaster prevention activities and early warning alert are done in districts, divisions and communities using information which DMC transmitted.	• Project final report • Reports issued by DMC, technical and local level organizations • Project progress report • Reports issued by concerned organizations • Emergency response plan • Annual report of DMC • Reports issued by local level organizations • Training guideline, manual, and implementation report	• No major change in policy and organization • Adequate budget and human resources for concerned organizations • No rapid change of natural environment • Counterparts who acquired skills through the project are not transferred
Project Purpose A model for complete communication network in disaster observation, forecasting & community level activities including evacuation in the pilot areas are prepared.	1. Improvement of transmission speed and decrease of false report of disaster information which sent from disaster observation organization to pilot areas through Disaster Management Centre. 2. The disaster prevention activities and early warning alert are done in the pilot area using information which DMC transmitted.		
Outputs 1. Leadership and coordination capacity of DMC is strengthened.	1-1 Number of coordination meetings on disaster management organized and outputs from those meetings 1-2 Development of National Emergency Operation Plan 1-3 Increase of contents of the annual report about disaster analysis 1-4 Formulation and trial of system 1-5 Number of development and execution of disaster management training program 1-6 District level Preparedness & Response Plan is evaluated and revised. (*)		
2. Analysis and monitoring capacity of DOM is enhanced.	2-1 The data acquired in AWS set up doesn't disappear. 2-2 Trial and improvement of short term forecasting (more than 2 days forecasting) 2-3 Trial of the warning standard at a regional level.		
3. Analysis and monitoring capacity of NBRO is enhanced.	3-1 Cost effective sediment disaster measures technique is executed in one place or more by Sri Lankan side own. 3-2 The result of the execution of the landslide risk evaluation and the behavior analysis is brought together as a report.		
4. Disaster management information is regularly transferred.	4-1 Warning is transmitted to the pilot area according to the warning official announcement rule. 4-2 Warning Transmission Trainings are executed one or more times in each pilot area.		
5. Disaster management capacities of districts, divisions and communities in pilot areas are improved.	5-1 Number of topics of coordination meetings on disaster management organized and outputs from those meetings 5-2 The hazard map is made by the guidance of the local government organization in the communities of pilot area. 5-3 Regularly evacuation trainings at the community level in the pilot area is executed by the guidance of the local government organization. 5-4 Countermeasures for priority issues in the additional pilot communities are implemented. (*)		

Activities	Inputs		
1.1 Enhancement of DMC capacity in facilitating effective functioning of the existing committees 1.2 Development of National Emergency Operation Plan 1.3 Improvement of DMC capacity to improve analytical approach in producing the performance report(s) 1.4 Formulation and trial of a system to assess and mitigate disasters that may be caused by development projects 1.5 Development and implementation of disaster management training program targeting on staff members of DMC, DOI, NBRO, DOM and other concerned person(s) 1.6 Evaluation and revision of district level Preparedness & Response Plan (*)	**Japanese side** • Long Term Expert (1) Project Leader / Policy • Expert Team : (1) Disaster management (2) Community based disaster management (3) Meteorological forecasting (4) Landslide management (5) Urban development (6) Regulation planning (7) Regional Level Disaster Management Plan		**Pre-condition** No major change in policy
2.1 Effective utilization and maintenance of equipments such as automatic weather station (AWS) and other sensing tools installed by JICA 2.2 The operation and the maintenance management manual are revised or are made according to the extracted problem. 2.3 Execution of the training concerning analysis of state of the weather 2.4 Formulation and trial of weather warning standard at regional level. 2.5 Trial and Improvement of short term weather forecast	• Procurement of monitoring equipments (water level sensor, rain gauge, computers, etc)		
3.1 Execution of cost effective sediment disaster measure technique 3.2 Formulation and execution of sediment disaster monitor and evaluation approach 3.3 Formulation and trial of sediment disaster warning standard	• Counterpart training in Japan • Overseas project supporting fund		
4.1 Development of rules on warning issuance and organization of information management trainings related to operation of early warning 4.2 Execution of disaster information transmission training	**Sri Lanka side** • Placement of counterparts • Allocation of work station(s) for Japanese experts and counterparts		
5.1 Enhancement of district capacity in pilot areas in managing the existing disaster management committees 5.2 Implementation of community based disaster management promotion activities targeted districts in pilot areas 5.3 Implementation of community based disaster management activities at district in pilot areas and additional pilot areas(*) (installation of simple water level sensor(s) and rain gauge(s), small scale preventative work, organization of evacuation training(s))	• Allocation and release of project management funds		

Pilot Areas: Ratnapura, Kalutara, Nuwara Eliya Additional Pilot Areas: Batticaloa, Matale (*)

DiMCEP Terminal Evaluation Meeting at JICA Office on Thursday, 13th September 2012

NO	NAME	ORGANIZATION	CONTACT NOS	SIGNATURE
1.	S.Shanmugasivanavanthan	Irrigation Dept	0112584485 0718287859	
2.	A.A. Jayasinghearachchi	DOM	0772772780 0112684746	
3.	Anoja Seneviratne	DMC	071-8053125	
4.	VAIDEHI ANUSHYANTHAN	DPMM / MOF	011-2477914	
5.	R.M.S. Bandara	NBRO	071-4401673	
6.	Minoru ARAI	JICA Expert	077-7668982	
7.	Yoshihiko Uchikura	Consultant	077-548-4429	
8.	Yosuke SATO	JICA Srilanka office		
9.	Yusuke AMANO	JICA HQ		
10.	Kenji TANAKA	JICA HQ		
11.	Asiri Karunanayake	NBRO	0773943490	
12.	KINUKO MITANI	JICA Mission		
13.				
14.				

Minutes of Meeting

on

Joint Coordinating Committee

for

The Disaster Management Capacity Enhancement Project

Adaptable to Climate Change

(DiMCEP)

Colombo, 12 February 2013

Mrs. Wasantha Samaraweera
Additional Secretary
For Secretary
Ministry of Disaster Management

Mr. Minoru Arai
Project Leader
DiMCEP

Meeting Name:	Joint Coordinating Committee (JCC) for the Disaster Management Capacity Enhancement Project Adaptable to Climate Change (DiMCEP)
Date and Time:	12 February 2013, 9:30am – 11:00am
Venue:	Meeting Room, Disaster Management Centre Vidya Mawatha, Colombo 07
Chairperson:	Mrs. Wasantha Samaraweera, Additional Secretary, Ministry of Disaster Management
Participants:	JCC members from relevant institutions (see Appendix 1)

Background and Objectives

In accordance with the Minutes of Meeting (hereinafter referred to as "M/M") for "the Disaster Management Capacity Enhancement Project Adaptable to Climate Change" (hereinafter referred to as "the Project") agreed upon between Ministry of Disaster Management (hereinafter referred to as "M/DM"), Ministry of Irrigation and Water Resources Management (hereinafter referred to as "M/IWRM") and Japan International Cooperation Agency (hereinafter referred to as "JICA") on 24 March 2010, the Project was officially commenced.

The objectives of this Joint Coordinating Committee (hereinafter referred to as "JCC") meeting were to explain, discuss and confirm the progress of the DiMCEP and to conclude all of the activities of the DiMCEP for last three years.

Opening Remarks

Opening remarks was done by Mrs. Wasantha Samaraweera, Additional Secretary, M/DM. Opening remarks highlighted the assistance provided by DiMCEP to improve the capacity of disaster management related agencies, mechanisms and approaches to sustain the introduced programmes, and showed the appreciation of assistance provided by DiMCEP.

Achievement of the Project

JICA Experts presented the progress of activities after annual seminar held in last December, the overall achievements of DiMCEP, and the recommendations for future disaster management in Sri Lanka. The actual inputs to DiMCEP from Japanese side including expenses for local staff were shown for the sustainability of the introduced activities and practices by DiMCEP. They were generally agreed by the Sri Lankan side.

The followings are main comments and points of the discussion.

Activity 1-4

- Disaster Impact Assessment (DIA) concept and checklist system were timely requirement relevant to assess extensive damage conditions on development activities. Road Development Authority (RDA) has realized the need of DIA system in road sector and well incorporated the concept in road development project assessments. With that, 200 road sector engineers in the country will be trained on DIA. It is an encouraging point with respect to the promotion of the DIA applications in other development sectors. Further support from JICA for this promotion is expected.

Output 2

- The capacity enhancement by DiMCEP was very helpful for improvements of forecasting ability of weather situations. Also, survey on rain gauge stations in four districts (Rathnapura, Kandy, Nuwaraeliya and Matale) supported by DiMCEP has been appreciated as assistance on timely need of DOM.

Output 3

- NBRO could achieve a vast knowledge on landslide mitigation techniques as well as early warning dissemination systems by this project. Although the countermeasure at Galaboda site could not be implemented under DiMCEP due to the time constraints, NBRO appreciates JICA's assistance given during its project period and expects continued assistance mainly on mitigation activities.

Output 4

- Assistance to establish an inter-agency network like IGN was a remarkable step for emergency early warnings. The mock drills related to tsunami, landslide and floods were conducted by DMC. DiMCEP has been supporting surveys and evaluations for the mock drills. It was a great assistance for DMC to improve the processes with standard methodologies.

Output 5

- DMC appreciated the assistance extended on CBDRM activities in pilot project areas. Communities who benefited by this project also showed their gratitude on JICA's assistance for developing the disaster management systems at the community levels.

<u>Others</u>

- The need of integrated water management plan was recommended by JICA Expert. Importance of this idea was confirmed by M/DM, DMC as well as M/IWRM. M/DM pointed out the need of mandates on national level issues to be developed for integrated

cooperation on water management. JICA has already introduced initiatives through technical support to water management sector.

- The requirement of support for disaster management needs to be sought in balanced way not only on the national level system development but also ground level disaster risk management from the experience of Great East Japan Earthquake.

Closing Remarks

- M/DM summed up that the support extended by JICA through Technical Cooperation Project and emphasized the importance of sustainability in its stand by relevant agencies.
- JICA Sri Lanka Office thanked all who assisted to succeed DiMCEP and highlighted the intention of follow ups of DiMCEP activities. Future cooperation on water management will be considered by JICA too.
- DG of DMC thanked JICA for the cooperation extended to improve the capacity of Disaster Management from 2006 to 2013. At the Final JCC, it was clearly highlighted & presented the excellent works done by JICA. Finally, he further added that knowledge transfer on skills and improvement of people awareness through DiMCEP was highly appreciated and grateful on behalf of all stakeholders involved in DiMCEP.

Appendix 1

List of Participants

Sri Lankan Side

Ministry of Disaster Management

Mrs. Wasantha Samaraweera, Additional Secretary, Ministry of Disaster Management

Disaster Management Centre

Major General Gamini Hettiarachchi (Retd), Director General, Disaster Management Centre
Mr. Sugath Dissanayake, Director, (Education, Training & Public Awareness)
Mr. J. M. S. Jayaweera, Director, (Preparedness Planning)
Ms. Anoja Senevirathne, Assistant Director, (Mitigation)
Mr. S. M. S. P. Bandara, Assistant Director, (Education, Training & Public Awareness)
Mr. J. M. A. R. Jayarathna, Assistant Director, (Early Warning)
Mr. K.A.D.P.K.Kodippili, Assistant Director, (Early Warning)
Mr. Chathura Liyanaarachchi, Assistant Director, (Preparedness Planning)
Mr. N.P. Madawan Arachchi, Assistant Director, (Preparedness Planning)
Mr.Hiran Tilakaratne, Assistant director, (Emergancy operations)
Mr. Srimal Samansiri, Assistant Director, (Research and Development)
Lt. Col. W. S. N. Perera, Deputy Director & Military Coordinator (Emergency Operations)
Major. W.J.M.D.Nawarathne (Retd.), Assistant Director, (Emergency Operations)
Mr. Thushitha Waidyarathne, Assistant Director, (Communication)

Department of Meteorology

Mr. D.A. Jayasinghearachchi, Meteorologist in Charge

National Building Research Organization

Ms. Kumari M. Weerasinghe, Senior Scientist, (Landslide Research & Risk Mgt. Division)

Ministry of Irrigation and Water Resources Management

(Eng.) Mr. R.M.W. Rathnayake, Director, (Water Resources Planning-1)

Department of Irrigation

Mrs.T.J. Meegastenna, Director, (Water Management)
Mr. R.G. Wickramaratne, Director, (Disaster Management)

Road Development Authority

(Eng.) Mr. S.H.U. De Silva, Director, (Environment, Social Development)

Japanese Side

Embassy of Japan

Mr. Shuhei Takahashi, Second Secretary

JICA Sri Lanka Office

Mr. Yosuke Saito, Representative

Japanese Experts

Mr. Minoru Arai, Project Leader
Mr. Yoshihiko Uchikura, Team Leader/Disaster Management Policy/Early Warning System

Appendix 0-2 Newsletters

DiMCEP Newsletter No.1 June 2011

JICA Disaster Management Capacity Enhancement Project Adaptable to Climate change

2nd Year of DiMCEP Started

The 2nd year of DiMCEP (Project Period: 3 years) has started in April 2011. On this occasion, JICA Expert Team has decided to start to publish the Newsletter to record the activity and share the progress of the project.

This newsletter features the outline of the project, the counterpart meeting, and landslide and flood assessment mission by short term expert team.

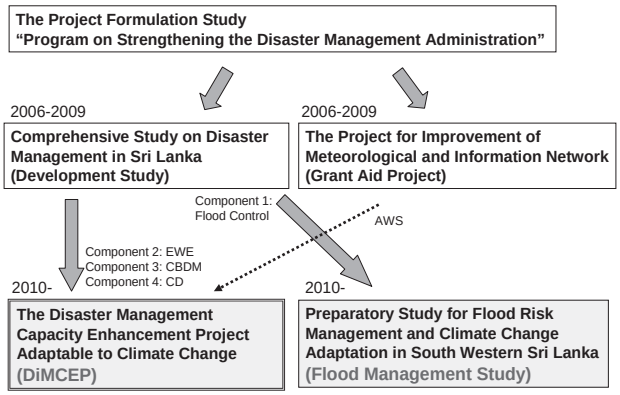
More detailed information is available in the Project Office in Disaster Management Centre (DMC).

In This Issue：

Outline of Project

Background

Indian Ocean Tsunami Disaster in 2004 inflicted a massive damage on Sri Lanka. Taking this opportunity, GOSL (Government of Sri Lanka) enacted the Disaster Management Act, No.13 of 2005 and established the National Council for Disaster Management, Ministry of Disaster Management and Human Rights and Disaster Management Centre based on the Act. GOJ (Government of Japan) has supported these efforts of GOSL from both structural and non-structural aspects. Responding the requests by GOSL, several projects have been organized and implemented by JICA so far since 2005. The Disaster Management Capacity Enhancement Project Adaptable to Climate Change (DiMCEP) is one of these projects.



Background of DiMCEP

Objective

【Overall Goal】

The disaster management model is disseminated

【Project Purpose】

A model for complete communication network in disaster observation, forecasting & community level activities including evacuation in the pilot areas are prepared

Output and Activity

Output 1	Leadership and coordination capacity of Disaster Management Centre (DMC) is strengthened.
[Activity]	Activation of DM Committees, Preparation of NEOP, Improvement of Annual Report, Establishment of DIA system, Preparation of Training Program
Output 2	Analysis and monitoring capacity of Department of Meteorology (DOM) is enhanced.
[Activity]	Operation and Maintenance of AWS, Preparation of Local Level Warning Criteria, Trial of NWP Model
Output 3	Analysis and monitoring capacity of National Building Research Organization (NBRO) is enhanced.
[Activity]	Monitoring and Analysis of Landslide Behavior, Implementation of Low-Cost Countermeasure, Preparation of Landslide Warning Criteria
Output 4	Disaster Management information is regularly transferred.
[Activity]	Preparation of rules for warning issuance and information transfer, Implementation of information transfer exercise
Output 5	Disaster management capacities of districts, divisions and communities in pilot areas are improved.
[Activity]	Activation of local level DM committee, Implementation of CBDM activity

DiMCEP is implemented based on the Project Design Matrix (PDM). More detail information on DiMCEP such as PDM, progress in the first year, and the plan of second year are available in the Project Office at DMC.

Counterpart Meeting

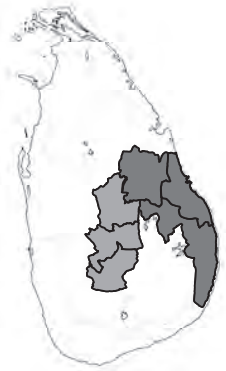
The counterpart meeting (CP Meeting) will be held every two weeks to share the progress of the project among counterpart members and JICA expert team members. The tentative schedule of the meeting is shown below.

No.	Date	Theme
1	June 9	Basic Approach for Implementation
2	June 22	Activity 1.4: Disaster Impact Assessment
3	July 6	Output 3: Landslide Monitoring
4	July 20	Output 2: AWS Condition
5	August 3	Output 4: Information Transfer Exercise
6	August 17	Output 5: District Level DM Committee
7	August 31	Output 1: Disaster Analysis
8	September 21	Activity1-4／Output 2: DIA / Short Term Weather Forecasting
9	October 5	Output 4: Intra-Governmental Network
10	October 26	Output 1: Training Program
11	November 9	Output 3: Landslide Countermeasures
12	November 23	Activity1-4／Output 2: DIA / AWS
13	December 7	Output 5: Community Activity

The First CP Meeting was held in June 9th. Basic approach to implement the 2nd year of DiMCEP was discussed and agreed.

Landslide and Flood Assessment Mission

For an encouragement of the activities related to the Output 1 "Leadership and coordination capacity of DMC is strengthened", JICA arranged the additional assignment of short term experts to survey and assess the landslide and flood disaster occurred in Eastern and Central Provinces. The objective of this mission is to survey damages and responses of government organizations, and to make recommendations for the better preparation and response to the disasters in the future. Mission Schedule is as follows:



1st batch: April 26-May 3
Field Survey for Landslide
(Nuwara Eliya, Kandy, Matale)

2nd batch: May 24-June 1
Field Survey for Flood
(Ampara, Batticaloa, Polonnaruwa)

1st batch conducted the field survey not only at the landslide sites but also steep slope failure and rock fall sites in the central province. The efforts conducted by NBRO for the hazard mapping and low cost mitigation works were highly evaluated. At the same time, preparation of categorized hazard map was recommended.

Photos at Central Province

2nd batch carried out the field survey at the flood sites in Eastern province. The short term expert team recommended the necessity of integrated flood management, institutional arrangement, and tank management etc.

Photos at Eastern Province

The short term expert team held the debrief session in June 3rd at the conference room in the Ministry of Disaster Management inviting the Secretary of Ministry. Several recommendations such as revision of local level Preparedness and Response Plan, promotion of CBDM activities at the affected area etc. were made in the session.

Debriefing Session

Next Issue

- Output 2: Short Term Forecating
- Output 4: IGN Meeting
- 2nd Counterpart Meeting

DiMCEP Newsletter No.1 (June 2011)
JICA Expert Team
on Disaster Management Capacity Enhancement Project
Adaptable to Climate Change
c/o Disaster Management Centre, 2nd Floor,
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DiMCEP Newsletter No.2 August 2011

JICA Disaster Management Capacity Enhancement Project Adaptable to Climate change

Information Transfer Exercise on Landslide Conducted

The information transfer exercise on landslide was conducted by NBRO, DMC and selected local level organizations in 1st August.

The aim of the exercise is to discuss, confirm and familiarize the actions to take for the information transfer. Furthermore, it is purposed to reflect the confirmed actions to "Preparedness and Response Plan"(PRP) or "Standard Operation Procedure"(SOP) etc.

In This Issue:

Information Transfer Exercise on Landslide

Schedule and Participating Organizations

Participating organizations supported by DiMCEP team conducted the information transfer exercise on landslide under the following schedule.

July	Middle of July		Interview Survey to DDMCU
	26th		Preparatory Meeting (DMC and NBRO)
	27th- 29th		Explanation to GA, DDMCU, DS, GN
August	1st	AM	Explanation to DMC
		14:00	Exercise
	5th, 10:30-		Evaluation Meeting (DMC, NBRO, DDMCU)

4 districts and, 1 DSD and GND of each district shown below were selected as targets.

GA/DDMCU	DSD	GND
Badulla	Haliela	Godegama
Kegalle	Kegalle	Bogala
Rathnapura	Rathnapura	Mahawala
Nuwara Eliya	Walapane	Alakolawewa

Preparatory Meeting

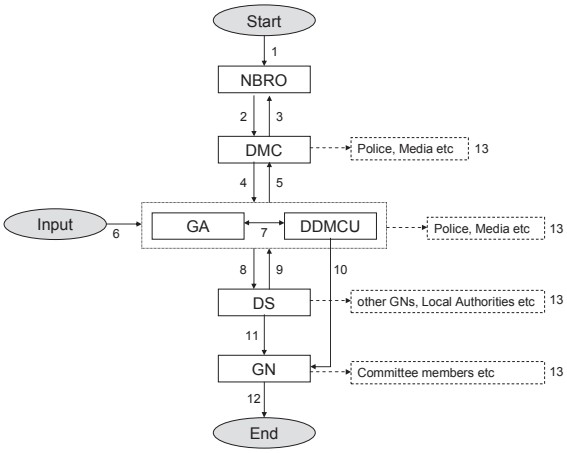
The pre-meeting was held in 26th July. DiMCEP team explained the outline of the information transfer exercise. DMC and NBRO officers shared the overview of the exercise.

Explanation to GA, DDMCU, DS, GN

From 27th to 29th July, DiMCEP team visited target DDMCU in order to explain about the exercise to DDMCU coordinators and related officers. At the same time, DiMCEP team interviewed about the reality and issues of information transfer at local level.

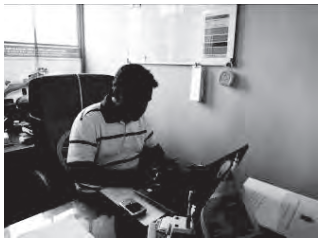
The Outline of the Exercise

At the exercise, the 2 warning messages, level 1 and level 2 messages issued by NBRO were transferred to GN via DMC, DDMCU. The information flow for transferring level 2 message is shown below.

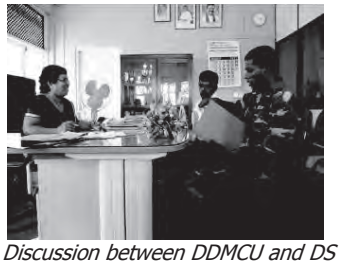


Level 2 message is "get ready to evacuate". At the exercise, local information from GN (rock fall etc) was also given to the DDMCU coordinators. Based on the level 2 message and the local information, GA and DDMCU discuss and make appropriate instructions to DSD and GND.

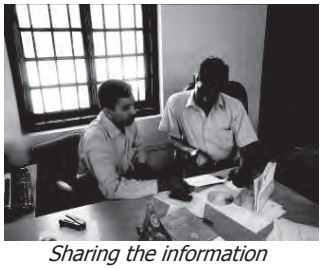
Receiving the information (Kegalle)



Issuing the warning document (Nuwara Eliya)



Discussion between DDMCU and DS (Rathnapura)



Sharing the information (Badulla)

Evaluation Meeting

The evaluation meeting of the exercise was held in August 5th. Following 4 items are discussed based on the result of the exercise.

- How to transfer without any omitting or error?
- To which organizations should the information be transferred?
- How to judge and select the local area to be affected?
- How to handle and take countermeasures to the field information from communities?

The periodical information transfer exercises, Disaster Imagination Game (DIG) and the continuous discussions were proposed. Additionally, it is suggested that the result of the exercise and discussion is reflected to PRP or SOP.

DiMCEP team requested DMC to join the preparatory meeting at the first level, to participate the exercise as evaluators and to understand the necessity of providing the minimum equipments for information transfer such as fax to local level organizations.

Counterpart Meeting

To share the information on the progress of the project, a series of CP meeting was held.

The 2nd Counterpart Meeting

The 2nd counterpart Meeting was held at conference room of DMC in June 22nd.

The presentations on Activity 1-4 of Output 1, Disaster Impact Assessment (DIA) and the point of review of Preparedness and Response Plan were made.

The 3rd Counterpart Meeting

In July 6th, the 3rd counterpart meeting was held at meeting room of DMC. A presentation on Output 3, landslide monitoring was made by NBRO and DiMCEP team.And a presentation on the questionnaire survey on tsunami watch was also made.

The 2nd Counterpart Meeting

The 3rd Counterpart Meeting

The 4th Counterpart Meeting

The 4th counterpart Meeting was held in July 25th. The progress of Output 2, Automatic Weather Station (AWS) and Numerical Weather Prediction (NWP) systems relevant to Department of Meteorology was reported. The participants discussed lively on the data sharing of AWS.

A presentation on the investment effect for disaster management was also made.

Joint Coordinating Committee

Joint Coordinating Committee (JCC) was held at conference room of DMC in August 4th, chaired by Ms. S. M. Mohamed, Secretary of Ministry of Disaster Management.

Objectives

JCC is the annual occasion for counterparts, JICA and DiMCEP team to gather and discuss on the project.

This time, JCC was held for the objectives to explain, discuss and confirm the progress and work plan of the DiMCEP (Item 1), the proposal of additional activity (Item 2), and the proposal of modification of the Project Design Matrix (PDM) (Item 3).

Contents of Discussion

The contents of discussion on each item are as follows:

Item 1

On item 1, the progress and work plan of the DiMCEP were explained, discussed and confirmed. Department of Irrigation (DOI) requested to be included as a target of the capacity enhancement of the project.

DG of DMC expressed the importance of the data sharing on rainfall and water level.

Item 2

JICA Sri Lanka office explained the idea of the additional activity to review the district level PRP based on the recommendation of the short term expert team which was dispatched in April, May and June, 2011.

Item 3

Original PDM was modified, and PDM (Ver.2) was prepared based on the proposal by both sides.

The 4th Counterpart Meeting

Joint Coordinating Committee

Next Issue

- Automatic Weather Station (AWS) / Numerical Weather Prediction (NWP)
- Activity for Output 5

DiMCEP Newsletter No.2 (August 2011)
JICA Expert Team
on Disaster Management Capacity Enhancement Project
Adaptable to Climate Change
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Tel: +94-(0)112-136-210 e-mail: jica.dmc@gmail.com

DiMCEP Newsletter No.3 October 2011

JICA Disaster Management Capacity Enhancement Project Adaptable to Climate change

Activities for Output 2 and Output 5

In this issue, the progress for Output 2 (Activity for Department of Meteorology) and Output 5 (Activity for DDMCU) is reported.

In addition, additional activity (evaluation and revision of District Level Preparedness and Response Plan, and additional community activity) is introduced.

In This Issue:

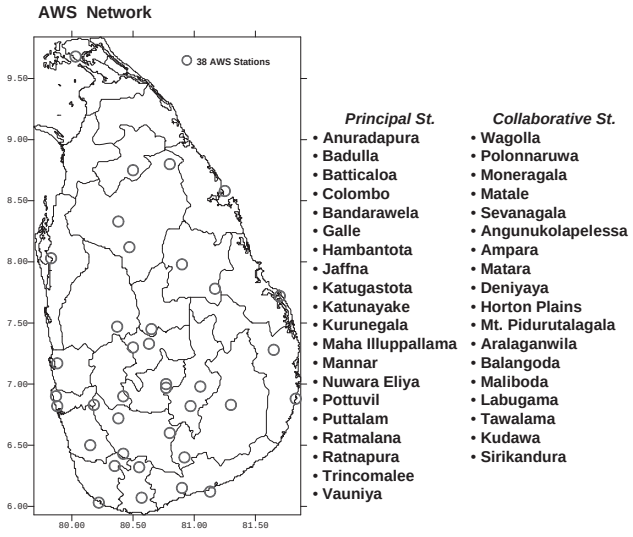
Outline of Output 2 and Output 5

The details of Output 2 and Output 5 are as follows:

Output 2	Analysis and monitoring capacity of Department of Meteorology (DOM) is enhanced.
[Activity]	- Operation and Maintenance of AWS - Preparation of Local Level Warning Criteria - Trial of NWP Model
Output 5	Disaster management capacities of districts, divisions and communities in pilot areas are improved.
[Activity]	- Activation of local level DM committee - Implementation of CBDM activities

Activity for Output 2

There were several issues on AWS such as on the data logger, the pressure sensor and the hygrometer, and connection with VSAT. However, most of these issues have been already solved.



Location and Name of AWS

Recent Activies

Operation and Maintenance of AWS

Periodical checkup of AWS has been continued. Also, DiMCEP team joined the periodical checkup at AWS of Ratmalana Airport in 26th August.

Reviewing this periodical checkup, following recommendations were made:

1. Addition of checkup items
2. Record of manually observed data
3. Implementation of data backup

Additionally, conventional weather station and AWS were compared and examined.

AWS in Ratmalana

Trial of NWP Model

The result of calculation was backed up. Comparison of data is conducted. At the same time, double power-supply and server rack was installed.

Preparation of Local Level Warning Criteria

The collection and analysis of rainfall amount data at observation station of DOM were conducted.

Next Activities

Operation and Maintenance of AWS

The issue on connection with VSAT needs to be solved soon. Additionally, DiMCEP team continues discussion with counterparts on implementation of the recommended ideas.

Trial of NWP Model

The trial and improvement of NWP model will be continued. In addition, the training in Japan will be utilized to improve the model.

Preparation of Local Level Warning Criteria

The collected rainfall data will be analyzed.

Activity for Output 5

Achieved Activities for Output 5

For Output 5 “Disaster management capacities of districts, divisions and communities in pilot areas are improved”, the following activities are done since the Project started.

Activation of local level DM committee

DiMCEP team conducted the surveys on frequency of meeting, agenda, etc of DM committees in the pilot areas and determined their outcomes and issues.

Implementation of CBDM activities

DiMCEP team is continuously supporting CBDM activities in selected pilot communities of Nuwara Eliya, Ratnapura and Kalutara.

Recent Activities

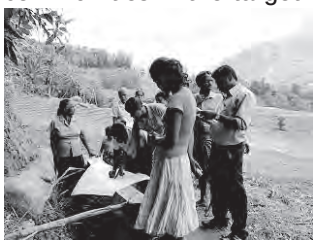
Activation of local level DM committee

The activation of DM committee of Nuwara Eliya District was discussed. During the discussion, it is identified that the implementing a program for the enhancement of the participants' capacity and knowledge about disaster management will be more effective for effective discussion in the DM committee meeting. Therefore, the preparation of the program has been undertaken.

Additionally, the progress was found on preparation of more effective DM committee in Ratnapura District.

Implementation of CBDM activities

The 2nd Community Activity (Town watching and hazard mapping) was conducted in all 5 pilot communities in the target District.




The 2nd Community Activity

Next Activities

Activation of local level DM committee

The preparation of DM committee will be continued based on the schedule. DiMCEP team supports the preparation.

Implementation of CBDM activities

The 3rd Community Activity will be implemented.

Additional Activity

Background of Additional Activity

The eastern and central area of Sri Lanka was largely affected by the flood and landslide etc. on January / February 2011. It is said that this is the worst disaster after the establishment of new disaster management structure in Sri Lanka.

In this context, JICA dispatched the short term expert team to survey damages and responses of government organizations, and to make recommendations to better prepare and respond to the disasters in the future. (Details of this survey are shown in the Newsletter No.1.)

Based on the recommendation by this survey, JICA has decided to conduct the following activities in DiMCEP.

Additional Activity 1:
Evaluation and Revision of District Preparedness and Response Plan (PRP)
Additional Activity 2:
CBDM Activities in Additional Communities

Both activities are conducted in Batticaloa District and Matale District from October 2011 to March 2012.

Evaluation and Revision of District PRP

Although DMC has been supporting to prepare the district / division / GN level Preparedness and Response Plan (PRP) in all over Sri Lanka for the effective response to the disaster, some issues have been raised during the disaster occurred in Jan-Feb 2011. In this additional activity, DiMCEP team supports to evaluate and revise PRP based on the experience of this disaster for more effective use of the plan. Through this activity, the process to review the plan after the major disasters will be shared by related organizations, because it is noticed in PRP that the plan shall be revised after the major disasters.

CBDM Activities in Additional Communities

Most of the affected communities in the eastern and central area of Sri Lanka are very vulnerable to disasters without any structural measures to protect the areas from disaster. CBDM activity is one of the effective activities to minimize the damage from disasters for such vulnerable areas. DiMCEP supports the CBDM activities in the selected communities in Batticaloa and Matale in addition to the activities in Nuwara Eliya, Ratnapura and Kalutala. The result of evaluation and revision of PRP will be referred to discuss the contents of community activity.


Affected House in Matale (left) and
Meeting with Affected People in Batticaloa (right)

Next Issue

- Activity 1-4 for Disaster Impact Assessment
- Report on Counterpart Training Program in Japan

DiMCEP Newsletter No.3 (October 2011)
JICA Expert Team
on Disaster Management Capacity Enhancement Project
Adaptable to Climate Change
c/o Disaster Management Centre, 2nd Floor,
No.498, R.A.de Mel Mawatha, Colombo-3, Sri Lanka
Tel: +94-(0)112-136-210 e-mail: jica.dmc@gmail.com

DiMCEP Newsletter No.4 December 2011

JICA Disaster Management Capacity Enhancement Project Adaptable to Climate Change

Counterpart Training Program in Japan

Counterpart Training Program in Japan was conducted from 17 October to 4 November. Five trainees from Counterpart Organizations such as DMC, DDMCU, DOI, DOM and NBRO have participated.

In This Issue：

Counterpart Training Program in Japan

Outline of Training Program

Objective

- Awareness for Disaster Management is enhanced and the necessity to work together for disaster management with related organizations is recognized through the study on disaster management system in Japan.
- Knowledge and experience by the training program are utilized to solve the issues for implementation of the project.

Schedule

	Sediment disasters (DMC, NBRO)	Flood disaster (DDMCU, DOI)	Meteorology (DOM)
17 Oct			Weather forecasting service in Sri Lanka
18			Training of NWP Model
19			Training of NWP Model
20	*Arrival at Narita*		Application of weather forecast guidance
21	Lecture on Tsunami Disaster in Japan		
22	Field Study in Tsunami affected area		
24	Flood management in Japan Sediment disaster countermeasures in Japan		
25	Landslide monitoring and countermeasures	Flood management at Tone river	Weather information provision to public / Improvement of forecast operation of DOM
26	Countermeasures for slope failure	Flood management facilities in urban area	
27	Midterm debrief session Information sharing on disaster management		
28	Disaster management training program for local government		Forecast operation for disaster management by JMA
30	Kinki Area Comprehensive Disaster Management Drill		
31	Tank management for Disaster Management		
1 Nov	Disaster management at prefecture level		
2	Disaster management at municipality level		
4	Presentation / Evaluation meeting		

Participants

Name	Position	Organization
Eng.S. Mohanarajah	Regional Director, Batticaloa Region	Department of Irrigation (DOI)
Mr.A.G.M.N. Wimalasuriya	Meteorologist	Department of Meteorology (DOM)
Mr.R.M.B. Somaratne	Scientist/Geologist	National Building Research Organization (NBRO)
Mr.Sugath Dissanayaka	Director, Training & Public Awareness Division	Disaster Management Centre (DMC)
Mr.A.M.A.N. Chandrasiri	Assistant Director, Gampaha DDMCU	District Disaster Management Coordinating Unit (DDMCU)

Program

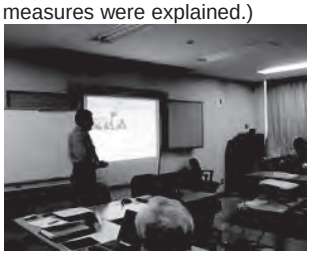
Field visit to Tsunami affected area (Destroyed city was inspected.)

Participation to Comprehensive DM Drill (Facility to experience the heavy rainfall was challenged.)

Study on the tank management for flood (Biggest tank in Kagawa Prefecture was inspected.)

Study on the role of prefectural government (Flood control measures were explained.)

School education for 12 years old students (discussion with school children was made.)



Evaluation Meeting (Presentation on their experience and idea for application to Sri Lanka.

Utilization of Experience

This training experience has been shared with related officers by following programs.

Counterpart Meeting (on 21st November)

The training participants presented the training result. And the attendees discussed actively regarding the topics which were raised by the participants.

Annual Seminar 2011

The group discussion was held at the seminar program on 1st December. The discussion theme was provided based on the topics which had been presented at above counterpart meeting.

Activity 1-4 for Disaster Impact Assessment (DIA)

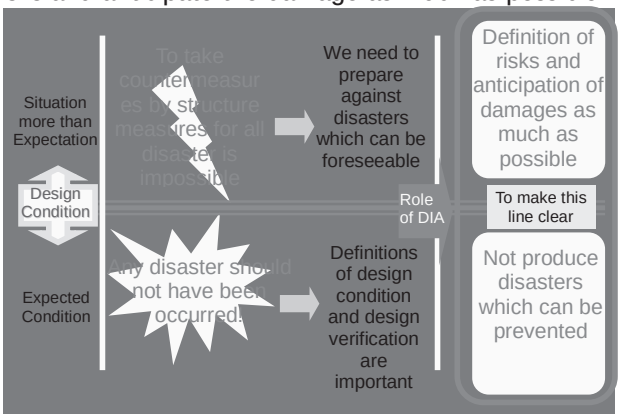
Progress of Activity 1-4

Activity 1-4 is "Formulation and trial of a system to assess and mitigate disasters that may be caused by development projects". The following is the contents of the activity.

1) Survey on the progress of establishment of the system
2) Site survey and data collection
3) Development of DIA concept
4) Selection of target project for trial of DIA
5) Support of establishment of the DIA system

Conducting site survey and development of DIA concept

DIA concept was developed based on the result of site survey. Purpose of DIA is to assess the influence of disasters and countermeasures to minimize the damage for the development actions holistically. And the role of DIA is to make clear the design condition and define the risks and anticipate the damage as much as possible.

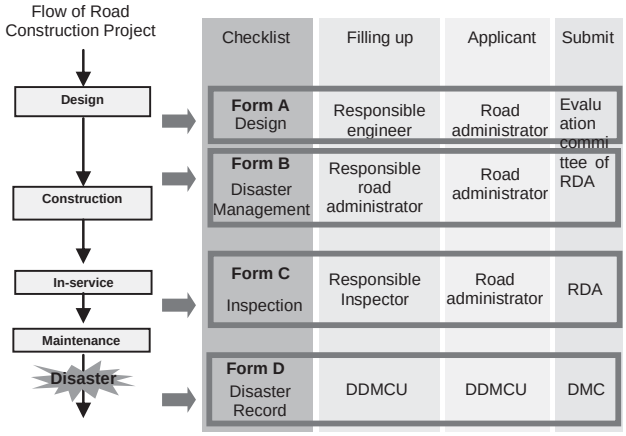


Concept of DIA

Preparation of checklists

After developing the DIA concept, DMC and DiMCEP team prepared draft checklists for road projects based on the DIA concept.

The objective of the checklist is confirmation of hazardous areas and countermeasures to minimize the damage of the road and surrounding area. The checklist consists of four forms as shown below.



Checklist for Road Project

Form A is to confirm design standard and design condition. And also hazard locations and structural measures for each location are confirmed.

Form B is to understand the hazard locations, hazardous state and the structural countermeasures. And also the non-structural measures, cooperation with local government and related organizations etc are confirmed.

Form C is to inspect the condition of hazardous locations and structural measures by periodical checkup.

Form D is to record the disaster situation by site visits and interviewing people in the affected area.

Current activities

DMC have requested RDA to check the contents of checklist Form A, B and C. Form D is being checked by DDMCU. After the check by RDA and DDMCU, the checklist will be finalized.

Site Survey and Discussion with RDA

Next Activities

1) Preparation for Guideline of DIA system for road project
2) Preparation for Checklist manuals and samples
3) Conducting trial of this DIA system for a selected road project
4) Evaluation of trial results and modification of the DIA system
5) Introduction of this system to other relevant sectors

DiMCEP Newsletter No.4 (December 2011)
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DiMCEP Newsletter No.5 March 2012

JICA Disaster Management Capacity Enhancement Project Adaptable to Climate Change

Activities Responding to the Disaster in Jan-Feb 2011 –CBDRM and Evaluation and Revision of District Level Preparedness and Response Plan (PRP) were Conducted

After the flood in January and February 2011, JICA and Government of Sri Lanka agreed to conduct additional activities by DiMCEP.

Batticaloa and Matale district where got the serious damage by the flood were selected as pilot districts.

In This Issue：

Community Based Disaster Management Activities for Batticaloa and Matale

Schedule

Additional Community Based Disaster Management has been conducted, following the schedule shown below:

Month	Activities
October	Discussion on the additional activities with c/p
	Selection of pilot communities
	Preparation of detail of activities
November	Baseline survey in pilot communities
	Planning of Detailed Community Activities
December | February	Implementation of Workshops

To select the pilot communities, DiMCEP team took consideration on the social conditions such as income level, history of community activities in each district. As a result, Sittandi of Batticaloa district and Nawapadeniya of Matale district were selected as pilot communities. Both of the communities have needs to take disaster management activities since they had serious damage by flood in January and February 2011. At the same time, the low income level of both communities added urgency to the community based disaster management activity.

Workshops in Pilot Communities

DiMCEP team arranged 4 workshops in each pilot community. Activities in each workshop are as following:

【1st Workshop】

The 1st workshop is conducted to give the general knowledge of disaster management to participants. Participants can be aware of what disaster is and what kind of disasters they have in communities.

【2nd Workshop】

In the 2nd workshop, town watching and hazard mapping is conducted. Participants can grasp the disaster of their own community. At the same time, they can consider what to do as countermeasures against the disaster.

【3rd Workshop】

Based on the hazard map prepared in the 2nd workshop, participants discussed countermeasures against the disaster in community.

【4th Workshop】

Participants implemented the countermeasures against the disaster in community.

Workshops in Sittandi of Batticaloa District

Sittandi is a community located along the lagoon and threatened by flood every year. People need to evacuate to school and temple and stay for several days until the water level is decreased.

After the 2nd workshop, it was revealed that the annual flood could not be prevented by structural countermeasures within the budget, though the participants expected the reduction of flood damage by structural countermeasures.

Therefore DDMCU and participants went to the border area of lagoon and community again in the 3rd workshop so that DDMCU officer could explain the situation and convince participants to find other nonstructural countermeasures.

Hazard mapping

Discussing the countermeasures

Workshops in Nawapadeniya of Matale District

Nawapadeniya is a community located in Dambulla city. Income level of the community is relatively low and

people have no measures to reduce the damage by annual flood. There are mainly 3 channels connected to the river which flows in eastern part of the community.

In the 2nd workshop, participants walked around the community to find out the location of channels. At the same time, they realized the water height during the flood. At the closing of workshop, they got two options as countermeasures: to rehabilitate the edges of each main channel or to construct 1 main channel.

In the 3rd workshop, participants discussed which option they should select as effective countermeasures. As a result, they decided to construct 1 main channel. 3 households in the community indicated to use the part of area where they live in for construction.

DDMCU supported the decision making of participants by preparing correct community map and introducing some flood countermeasures. Mr. Ranaweela, the assistant director of DDMCU Matale, suggested to collect funds from other donors in order to rehabilitate the river and channels of community in future.

Town watching

Discussing for flood countermeasures

Evaluation and Revision of District Level Preparedness and Response Plan (PRP)

Background

District level preparedness and response plan (PRP) is the comprehensive action plan for member organizations of DM committee in each district in case of emergency. PRP should be distributed and utilized by the member organizations.

However, existing PRP has not been utilized by relevant organizations because its contents are rather comprehensive and complicated for actual use. In fact, disaster management system mentioned in the PRP is different from the system practiced by district. Additionally, role and responsibility of relevant organizations in emergency are not clearly mentioned.

Therefore, DiMCEP team aimed to share the understanding toward PRP with members of DM committee of each pilot district at first and clarify "role and responsibility" of each member organizations by holding committee meeting and DIG session.

District Disaster Management Committee in Pilot Districts

【Matale District】

District DM committee was held in 10th February. DiMCEP team explained the concept of district level PRP and urged participants to understand "role and responsibility" mentioned in PRP by conducting Disaster Imagination Game (DIG).

DM Committee members gathered

Mapping the disasters by DIG

【Batticaloa District】

District DM Committee meeting was held in February 28th. In Batticaloa district, participants reviewed the existing PRP and "role and responsibility" of each relevant organization. The participants had group discussion in order to deepen their understanding toward "role and responsibility".

Taking lectures

Group discussion

【Debrief session in Colombo】

Debrief session was held in 2nd March in Colombo. Assistant directors of all districts gathered. They had discussed on the revision of PRP and its revised contents.

DG giving a speech

Discussing on the revised contents of PRP

Next Issue

- Training Program on Disaster Management in Colombo: Enhancement of Capacity for training program building

DiMCEP Newsletter No.5 (March 2012)
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DiMCEP Newsletter No.6 March 2012

JICA Disaster Management Capacity Enhancement Project Adaptable to Climate Change

Training Programme on Disaster Management Implemented

One of targets DiMCEP is setting is to establish sustainable training programme on DM (disaster management) for relevant DM organization.

As the first step to the establishment, DMC conducted 4-day programme for internal officers of DMC at Hector Kobbekaduwa Agrarian Research and Training Institute from 27th to 30th September 2011.

Next step is to conduct the programme for officers from relevant organizations. On 6th March, the programme was held successfully gathering around 30 persons from the organizations at the same premise.

In This Issue：

Training Programme on Disaster Management for Internal Officers

Outline of the Training Programme

Training Programme was conducted as one of activities of DiMCEP (Disaster management Capacity Enhancement Project Adaptable for Climate Change). The objective of this programme is to improve DMC's capacity to establish training programmes.

According to the history of disasters in Sri Lanka, flood, slope movement and Tsunami are considered to be major disasters. Therefore DMC conducted the training programme for these disasters.

Detailed activities on the training programme are shown in the following table.

Date	Time	Activities
Sep-27 Tue	AM	Address by D.G. (60min) Orientation (30min) for what to do in Group Work
	PM	Group Work of 4 Groups (20min) Presentation from 4 Groups (4 Presentations * 20min)
		Discussion on Disaster Management in Sri Lanka with Resource Persons from DMC (90min)
Sep-28 Wed	AM	Flood Disaster lectured by DOI (90min) Director General Dr. Godaliyadda
		Slope Disasters lectured by NBRO (90min) Mr. R M B Somarathne
	PM	Weather Forecasting for Disaster Management lectured by DOM (90min) Mr. M D Dayananda
		Tsunami & Earthquake lectured by Prof. Samantha Hettiarachchi University of Moratuwa Civil Engineering Department
Sep-29 Thu	AM	Site Visit (Dyke Management in Kelani River and M.D. Office)
	PM	Site Visit (DOM and NBRO)
Sep-30 Fri	AM	Lectures for Follow-up organized by Mr. Namiki (90min)
		Preparation for presentation (60min) Presentation from several groups for evaluation
	PM	Presentation from several groups for evaluation

Schedule of Training Programme

Activities on Training Programme

This training program was consisted of lectures, group discussions and site visit. Additionally, evaluation of the training programme by participants was included.

Trainees shared and deepened their knowledge of disaster management.

Group discussion in 27th Sep

Presentation in 27th Sep

Lecture by Prof. Hittiarachchi in 28th Sep

Site Visit in 29th Sep (NBRO)

Evaluation on the training programme

Participants made the evaluation on achievement of trainees and training programme itself in the last day of programme.

As a whole, participants gained the knowledge and experience of disaster management, though there was a gap between each participants' capacity of disaster management for the particular disasters. To pursue the goal of this training programme, it is recommended to continue the training programme targeted at officers of other relevant organizations. At the same time, it is preferable that DMC will secure budget for such programme constantly in order to make the programmes sustainable.

Training Programme on Disaster Management for Relevant Organizations

Outline of the Training Programme

The key elements of DM are 1) Identification & Early Warning, 2) Preparedness & Awareness, 3) Emergency Operation and 4) Mitigation. And each organization relevant to DM has different responsibilities, tasks and ways of implementation. Sharing knowledge and having experience on those things are essential for conducting appropriate and effective DM. And establishing human network and developing mutual understandings are the best ways for enhance coordination in case of emergencies.

In this context, DiMCEP conducted training programme on DM among relevant organizations. This time, the programme focused on two elements, those are, Identification & Early Warning and Preparedness & Awareness. Presentation from key agencies and discussion on the presentation were the basic components of the programme.

The table below shows the contents of the programme.

Contents of the programme

			Day1
AM	Sessin 1 (Identification of disaster & Early warning)	8:30–9:00	Registration
		9:00–9:15	Address by D.G.(15min)
		9:15–10:45	Presentation from key Agencies
		10:45–11:00	Tea break
		11:00–12:30	Discussion
		12:30–13:00	Wrap up by DMC officer
Lunch			
PM	Sessin 2 (Preparedness & Awareness)	14:00–15:30	Presentation from key Agencies
		15:30–15:45	Tea break
		15:45–17:15	Discussion
		17:15–17:45	Wrap up by DMC officer

Opening remarks

Presentation by key agency

Evaluation on the training programme

As the project (DiMCEP), this is the first training programme targeting at relevant organization for disaster management. Not only we accepted the officers from whole the organizations we invited, but also Department of Agrarian Development (DAD) had requested us to make a lecture as a key agency. These facts show the high interest of the relevant organizations. In this context, we could say this programme was successfully conducted.

Following table shows the number of participants aside from DMC and the lecturer for each elements of DM.

Participants from relevant organizations

Organization	No. of Participants	Key Agencies that made presentation	
		Identification & Early Warning	Preparedness & Awareness
Min. of Disaster Management	1		
NBRO	3	■	■
DOM	3	■	■
DOI	3	■	■
NARA	2	■	
GSMB	1	■	
CCD	1		■
CEA	1		
Fire Service Dept.	1		
Nevy Headquarters	1		
Air Force Headquarters	1		
Army Headquarters	1		
Police Headquarters	1		
Ministry of Health	1		
Min of Education	1		■
Dept. of Agrarian Services	1	■	
Dept. of National Planning	1		
	24		

Through this programme, we could foster the mutual understandings and help to establish networking, which will enhance the coordination in case of emergency.

Regarding target of DiMCEP establishing training programme for relevant organization, it could be estimated that the activity made a significant stride toward the goal.

Premise of the programme

DiMCEP Newsletter No.6 (March 2012)
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DiMCEP Newsletter No.7 June 2012

JICA Disaster Management Capacity Enhancement Project Adaptable to Climate change

Workshop on Mitigation of Disaster for Development and Implementation of DM Training Programme (Activity 1-5)

Activity 1-5 for Output 1 is development and implementation of disaster management training program targeting on staff members of DMC, DOI, NBRO, DOM and other concerned person(s). DiMCEP has set to establish the sustainable training programme on DM (disaster management) for relevant organizations by conducting a series of workshops on DM.

Additionally, DiMCEP conducted the interview survey on tsunami evacuation warning information transfer.

In This Issue:

Workshop on Mitigation of Disasters (Activity 1-5)

Outline of the Workshop

Activity 1-5 for Output 1 is development and implementation of disaster management training program targeting on staff members of DOI, NBRO, DOM, DMC and other concerned person(s). DiMCEP has set to establish the sustainable training programme on DM (disaster management) for relevant organizations by conducting a series of workshops on DM.

This series of workshops deals with key elements of disaster management such as "Identification & Early Warning", "Preparedness & Awareness", "Mitigation" and "Emergency Operation".

1st workshop focusing on "Identification & Early Warning" and "Preparedness & Awareness" was held last March and successfully finished. This time, as the 2nd workshop, DiMCEP conducted the workshop focusing on "Mitigation of disasters" on 18th May. 31 participants from 18 organizations attended. In the workshop, 7 presentations from professionals and experts concerning this topic were made and overall discussion was organized for identification of issues, gaps and probable solutions.

The table below shows the contents of the workshop.

Contents of the Workshop

Date & Time		Agenda
May 18th	8:30–9:00	Registration
	9:00–9:15	Opening
	9:15–10:15	Presentation from Key Agencies (3 Presentations)
	10:15–10:30	Tea Break
	10:30–11:50	Presentation from Key Agencies (4 Presentations)
	11:50–12:00	Short Break
	12:00–12:30	Discussion
	12:30–12:35	Closing

Opening remarks

Presentation by key agency

Evaluation on the Workshop

Comparing to the 1st workshop, the number of participants was 31 people as shown in the following table and it's same as the number of 1st workshop. It means that relevant agencies keep high interest on this series of workshop. Also, DMC accumulated the knowledge and strengthened the connection with relevant agencies through two times workshop. Therefore, this series of workshop continuously should be held for development of the disaster management training programme and further enhancement of capacity of disaster management in Sri Lanka.

Participants from relevant organizations

No.	Organization	Number of Participants	Remarks
1	Department of Irrigation	2	Presenter
2	National Physical Planning Department (NPPD)	1	Presenter
3	Sri Lanka Land Reclamation & Development Coperation (SLLRDC)	2	Presenter
4	National Building Research Organization (NBRO)	2	Presenter
5	Mahaweli Authority (MASL)	3	Presenter
6	National Aquatic Resource & Dev. Agency (NARA)	2	
7	Geological Survey & Mines Bureau (GSMB)	1	
8	Coast Conservation Department (CCD)	1	
9	Central Environmental Authority (CEA)	1	
10	Fire Service Department	1	
11	Sri Lanka Navy Headquarters	1	
12	Air Force Headquarters	1	
13	Army Headquarters	2	
14	Police Headquarters	1	
15	Ministry of Health (Disaster Management)	1	
16	Ministry of Disaster Management	2	
17	Disaster Management Centre (DMC)	3	Presenter
18	JICA-DiMCEP	4	Presenter
Total		31	

It can be considered that it was difficult for participants to deepen discussion due to time limitation in the workshop.

Additionally, DMC exercised the leadership by

appealing to participants for collaboration among relevant agencies for improvement of disaster management in Sri Lanka through the presentation. Strong Leadership is essential for the actual situation of disasters and Output 1, one of the five outputs of DiMCEP, is to foster the leadership of DMC. In this context, we could say this programme was successfully conducted.

At present, DMC is preparing the establishment of core groups as the subcommittee of NDMCC, which focus on the respective specific issues to be tackled. Therefore, relevant agencies are recommended to utilize this forum for further discussion after establishment of core groups.

Interview Survey on Tsunami Evacuation Warning Information Transfer

Due to two earthquakes occurred off-coast of northern Sumatra on 11th Apr. 2012, tsunami warning was issued by the Department of Meteorology and DMC immediately transferred the warnings to the coastal area. Fortunately only minor rise of sea level was observed in some places and there was no damage caused by it.

Since one of outputs of DiMCEP is "Disaster management information is regularly transferred", JICA expert observed the emergency operation and found that the output pertaining to tsunami information transfer was successfully achieved as mentioned above.

DiMCEP conducted mainly 2 surveys; the interview survey targeting to organizations and the one targeting to local people. The results are following.

Targeting to Organizations

The interview to relevant organizations such as DOM and DMC was conducted to enhance the observation result by JICA experts. This survey is mainly focused on the information transfer and its flow.

DiMCEP made some evaluation and recommendation based on the result. After receiving the information on tsunami from foreign organizations such as PTWC (Pacific Tsunami Warning Centre), DOM and DMC made quick and accurate decision on tsunami warning issuance.

The information was transferred efficiently from DOM, DMC to DDMCU as a whole.

JICA expert recommended to cooperate with other agencies such as GSMB and NARA to make the warning much more accurate and efficient in the future.

Targeting to Local People

One of the findings by the general observation is that there is little information regarding evacuation behavior, whereas the warning transmitted to the coastal area. In order to collect the information and analyze the behavior for the use of conducting safer and more efficient evacuation, the interview survey on the evacuation behavior has been conducted in 3 districts of Batticaloa, Hambantota and Gampaha.

As the preparation work for the survey, pilot test was implemented in Gampaha district on June 6. Issues and gaps identified by this test will be utilized for the actual survey. The survey will be finished in the beginning of July. DiMCEP will share the result with CPs and relevant organizations.

Survey Team

Situation of Interview

New Project Leader of DiMCEP

Project Leader of DiMCEP was succeeded. Mr. Hideto Namiki, the former Project Leader went back to Japan and Mr. Minoru Arai took turn as a new project leader. Here's his comment:

"My name is Minoru ARAI and I'm JICA Long Term Expert of DiMCEP attached to DMC. I became to be the Project Leader as the successor of Mr. Hideto Namiki since June 25th.

It is honorable for me to be involved in such an important project and I'm very glad to work with kind Sri Lankan people. Sri Lanka and Japan has been good relationship for a long time and both countries has helped each other in the hard situation. Therefore, I also would like to contribute for the capacity enhancement of disaster management in Sri Lanka through this project.

I work in the office next to the EOC on 3rd floor in the Ministry of Disaster Management, and please feel free to talk to me if you see me."

Mr. Namiki, the former Project Leader and Mr. Gamini, DG DMC

Mr. Arai, the new Project Leader

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DiMCEP Newsletter No.8 August 2012

JICA Disaster Management Capacity Enhancement Project Adaptable to Climate change

The Final Year of DiMCEP Started

DiMCEP started in 2010, aiming to prepare a model for complete communication network in disaster observation, forecasting & community level activities including evacuation in the pilot areas.

This year, 2012 is the 3rd and final year of DiMCEP. On starting the activities, Project Team had some occasions to share the accomplishment of past years and target of this year with relevant counterparts, such as JCC and counterpart meetings on each output.

In This Issue：

Work Plan of the Final Year

DiMCEP started in 2010, aiming to prepare a model for complete communication network in disaster observation, forecasting & community level activities including evacuation in the pilot areas.

The target of each output and activity for the final year is as following.

	Targets of the Final Year
	Output 1: Leadership and coordination capacity of Disaster Management Centre (DMC) is strengthened.
Activity 1-1	Enhancement of DMC capacity in facilitating effective functioning of the existing committees
	DiMCEP clarifies the mechanism to operate NDMCC and Core Groups, and discusses how to promote the involvement in the operation of NDMCC and Core Groups by DMC.
	The JICA Expert provides discussion topics for the Core Groups and participants in a Core Group to activate the discussions through introduction of Japanese experiences.
Activity1-2	Development of National Emergency Operation Plan
	DiMCEP reviews the contents of the draft NEOP with DMC staff.
	DiMCEP invites Japanese expert in disaster management plan to disseminate the importance of the development of NEOP in the seminar to be held next October.
Activity1-3	Improvement of DMC capacity to improve analytical approach in producing the performance report(s)
	DiMCEP conducts the interview survey to determine the situation of the coastal area for Tsunami evacuation warning issued on April 11th. The result of the survey will be analyzed with DMC staff to consider a safer and more efficient evacuaiton.
	DiMCEP conducts the training for DMC staffs for analyzing disaster trends by utilizing the DesInventar. Also, an analytical report will be produced with DMC staff as an article of the Annual Report.
Activity1-4	Formulation and trial of a system to assess and mitigate disastres that may be caused by development projects.
	The DIA checklist system for the road development sector will be conducted.
	DMC will be able to stress the importance of disaster management for the development projects and future development of this system through the presentation of a series of activities to the relevant agencies.
Activity1-5	Development and implementation of disaster management training program targeting on staff members of DOI, NBRO, DOM and other concerned person(s)
	DiMCEP supports DMC to conduct the workshop focusing on "Mitigation of Disasters" and the training program on disaster management targeting DMC staffs and staffs from other organizations.
	DiMCEP will develop the training guideline on planning, preparation and management based on the training programs and workshops conducted by DiMCEP.

Targets of the Final Year
Output 2: Analysis and monitoring capacity of Department of Meteorology (DOM) is enhanced.
Regular maintenance activity for all AWS stations is implemented and inspection records are archived.
Quantitative weather forecast based on the guidance is trialed in DOM internally and rainfall forecast hitting ratio is improved.
Regional warning standards for rainfall are proposed in DOM internally and warning issuance based on the observed rainfall data and guidance is trialed.
As for weather forecast and warning, the result of trial by proposed methods is compared from the traditional method, and the discussion for their official utilization is started during the project period.
Output 3: Analysis and monitoring capacity of National Building Research Organization (NBRO) is enhanced.
The countermeasures are implemented on the Galaboda site and their effectiveness is confirmed.
A series of activities in this project is summarized in the manual.
the recognition of the importance of the activities is shared among organizations concerned through the counterpart meetings and seminars and so on.
Output 4: Disaster management information is regularly transferred.
Information transfer exercise will be conducted and evaluated in the pilot areas and the capacity to conduct it voluntarily will be enhanced.
The procedure to revise the manual based on the exercise or actions at the time of actual disaster will be presented at the seminar etc., and its importance will be understood among concerned organizations.
The O/M cost for IGN after DiMCEP will be secured.
Output 5: Disaster management capacities of dictricts, divisions and communities in pilot areas are improved.
Organize at least one committee meeting in each pilot district.
"Promotion of CBDM" shall be included as one point on the agenda of the committee meeting.
Organize similar meetings in any division in the pilot district.
Preparation of a community hazard map and install the map in a public place
Implementation of small-scale mitigation works that are discussed and agreed between the community people and sub-national level governmental organizations

JCC (Joint Coordinating Committee) Held in 16th July

The 2nd JCC was held at DMC conference room in 16th July. JCC was started with the opening remarks by Secretary of Ministry of Disaster Management. Activities accomplished till the past 2 years and this year's targets of each output were shared with relevant counterparts and JICA project team. Additionally, Japanese side and Sri Lankan side agreed on the modification of Project Design Matrix (PDM).

Opening Remarks by Secretary

JICA Project Team Explaining the Work Plan of the 3rd Year

Discussion by Relevant Counterparts and JICA Project team

Sharing the Progress and Targets of the Final Year

Counterpart Meetings Held in June-July

A Series of counterpart meetings has been held to share the progress of each output by JICA project team and counterpart. The following chart shows its contents.

Date	Discussion Topics
June 21st	- Work Plan for the 3rd Year - Modification of PDM
June 28th	- Preparation of Next Proposal - History of JICA's Cooperation and Its Scheme
June 29th	- Activity of Output 2 in the 3rd Year
July 20th	- Activity of Output 5 in the 3rd Year - Report of Kick-off Meeting Held in Nuwara Eliya

Discussion on Work Plan for the Final Year

Sharing Ideas on the Proposal for Next Project

Responsible Counterpart Explaining the Progress of Outputs

Gaining Understanding toward JICA Cooperation Scheme

Observation and Evaluation of Tsunami Simulation Exercise

DMC conducted the tsunami simulation exercise in 22nd June. JICA project team observed this local level exercise in Puttalam district, Gampaha district and Kalutara district.

Evacuation Site at Puttalam

Evacuation Site at Gampaha

After observing the exersice, JICA Project Team made an evaluation report. According to the report, the exercise was conducted successfully, though the team found both pros and cons. The team recommended following items as lessons from the exercise.

1. Clarification of Objectives
2. Selection of Evacuation Place for Exercise
3. Preparation of Manual and Action Plan
4. Selection of Appropriate Target Area for Tsunami Exercise
5. Coordination Arrangements with CBDRM Activities

Among the five items, it can be said for 1, "Clarification of Objectives", that the condition and understanding toward the exercise at local level did not fit to the objectives preliminarily determined by DMC. For instance, one of the objectives was to check the effectiveness of last-mile dissemination and response, though the local participants started evacuation on time when they were instructed to. At local level, the exercise was conducted rather as an awareness program.

For more details, the Evaluation Report is available at DiMCEP office in DMC.

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DiMCEP Newsletter No.9 November 2012

JICA Disaster Management Capacity Enhancement Project Adaptable to Climate change

Japan's Experience of Earthquake and Tsunami Introduced to Sri Lanka by Japanese Experts

On 23rd October 2012, the Ministry of Disaster Management with the support of JICA-DiMCEP conducted the international seminar to share knowledge and experience of Tsunami and Earthquake in Japan. More than 200 people from governmental organizations, universities and other organizations participated in the seminar.

In This Issue:

Knowledge and Experience Sharing Seminar on Disaster Management

On 23rd October 2012, the Ministry of Disaster Management with the support of JICA-DiMCEP organized the international seminar to share knowledge and experience of Tsunami and Earthquake in Japan. More than 200 people from governmental organizations, universities participated in the seminar. The seminar was held at the conference hall of Ministry of Disaster Management. Simultaneously, the pictures which show the situation of affected areas by Great East Japan Earthquake (GEJE) occurred in 11th March 2011 and the assistance by Sri Lankan Rescue Team to the affected people were exhibited in panels.

Audience at the Seminar

Panel Exhibition of GEJE

Background and Objective of the Seminar

In last April, Tsunami evacuation warning was issued in the coastal area of Sri Lanka due to the great earthquake off west coast of Sumatra Island. Fortunately, the slight rise of sea level was observed though, tremors in different magnitudes became to be experienced more often in several parts of Sri Lanka recently. Therefore, the concerns on Tsunami and earthquake are being increased in Sri Lanka. Simultaneously, Japan has also frequently been suffered from disasters. Particularly GEJE might be still fresh in the people's memory. More than 15,000 people were killed by unprecedented Tsunami waves and still many challenges remain to be recovered in the devastated areas. Under this disastrous condition, the importance of dissemination of experiences is highlighted as lesson learnt by GEJE in Japan. In this background, Ministry of Disaster Management of Sri Lanka and JICA decided to hold the seminar on disaster management to share the experience and knowledge of Tsunami and Earthquake in Japan.

Presentations

At the seminar, 3 presentations were made by Japanese experts. Dr. Imamura, the Professor in Tsunami Engineering of Tohoku University, emphasized the importance of collecting the information from old documents and Tsunami trace to prepare the unprecedented scale of Tsunami occurring every several hundred years. Dr. Nishikawa, Director General of Audit Department of Japan Water Agency, mentioned that the disaster management system of Japan was established in systematic and comprehensive approach after 1959 Ise-Wan Typhoon, and he stressed the importance of inter-ministerial coordination and the necessity of continuous efforts for disaster management. Dr. Narafu, Senior Adviser of JICA, stated the aspects to be considered in introducing building guideline and the importance of prioritization based on social needs.

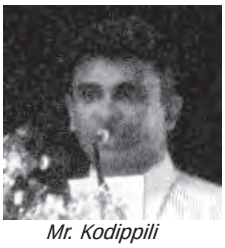
Dr. Imamura

Dr. Nishikawa

Dr. Narafu

In the connection with these presentations, 3 Sri Lankan experts including DMC officer made presentations on disaster warning dissemination system and earthquake countermeasures for building in Sri Lanka. Mr. Pradeep Kodippili, Assistant Director of Early Warning Division of DMC, presented the Present Status of Early Warning in Sri Lanka. Dr. N.P. Wijayananda, Chairman of Geological Surveys and Mines Bureau explained the

present development of earthquake detective system and forecasting in Sri Lanka. Mr. Sahabandu, chairman of Earthquake Guidline Committee of DMC, gave the presentation on future structive countermeasures against earthquake in Sri Lanka.



Mr. Kodippili

Dr. Wijayananda

Mr. Senabandu

As closing remarks, Mr. Perera of NBRO mentioned the importance of continuous exchange of experience and knowledge. Many participants mentioned that they learned the importance of preparedness through this seminar.

Information Transfer Exercise

Objective of the Exercise

The information transfer exercise was conducted for Output 4 of DiMCEP collaborating with selected relevant organizations and communities in 2nd October. This time, target organizations and community have different objectives for each as following.

- Local People: Confirm whether they can conduct the activities which are determined in community such as observation of rainfall, information transfer and evacuation, etc efficiently or not.
- Government Organizations: Confirm whether they can transfer information based on the prepared manual appropriately or not. Revise and improve the manual based on the result of the exercise.
- DMC: Gain knowledge and experience to be utilized in the future exercises which will be implemented by DMC after the project.

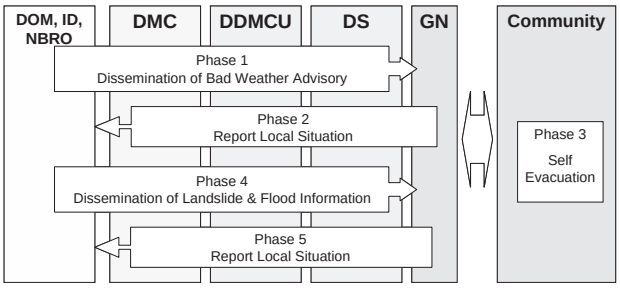
Participating Organizations

- National level: DMC, DOM, Irrigation Department (ID) and NBRO
- Regional level: Following districts, DS and GN

District	DS	GN
Nuwara Eliya	Wallapane	Landupita
Ratnapura	Kollona	Ranhotikanda
Kalutara	Millaniya	Paathakada

Overview of the Exercise

The exercise was divided to 5 phases. Each organization delivered and received the warning message and local situation as shown in the chart below. Selected 2 communities (Landupita and Ranhotikanda) conducted Evacuation Drill.



DMC

DDMCU Kalutara

Walapane DS (Nuwara Eliya)

Ranhotikanda GN with Community (Ratnapura)

Issues and Considerations

Reviewing the exercise, following findings were suggested and discussed with DiMCEP project team and participants.

- Meaning of Exercise: Whenever exercises are conducted, it is required for all participants to understand objectives and the meaning of the exercise.
- Relation with National Emergency Operation Plan (NEOP): Along with the preparation of NEOP which will state the role and responsibility of each organization, it is necessary to upgrade the information transfer exercise.
- Self Evacuation by Community: It is necessary for government agencies to prepare to manage self evacuation by community.
- Contents of Warning Message: Misunderstanding toward the category of warning message was found among the participants. Therefore, the warning message by the technical organizations should be redefined and organized.

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Appendix 0-3 Photo Gallery

Photo 1-6: Formulation and Trial of DIA Checklist System

Photo 1
Interview Survey on DIA

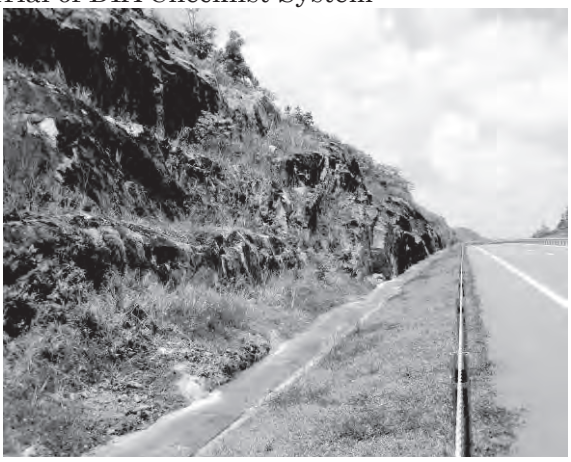

Photo 2
Disaster Site Visit on DIA

Photo 3
DIA Workshop (Finalization of the System)

Photo 4
DIA Workshop (Finalization of the System)

Photo 5
DIA Workshop
(Introduction to relevant organizations and future development)

Photo 6
DIA Workshop
(Introduction to relevant organizations and future development)

Photo 7-12: Activity 1-6 Evaluation and Revision of District Level PRP

Photo 7
Site Survey in the flood affected area

Photo 8
Site Survey in the flood affected area

Photo 9
Workshop for DMC Officers (Colombo)

Photo 10
Workshop for DMC Officers (Colombo)

Photo 11
DDMC Meeting (Matale District)

Photo 12
DDMC Meeting (Matale District)

Photo 13-18: Output 2 Enhancement of DOM's Analysis and Monitoring Capacity

Photo 13
O&M of Observation Equipments

Photo 14
O&M of Observation Equipments

Photo 15
Cleaning of AWS Station

Photo 16
AWS

Photo 17
O&M of Observation Equipments

Photo 18
O&M of Observation Equipments

Photo 19-24: Output 3 Enhancement of NBRO's Analysis and Monitoring Capacity

Photo 19
Installation of Monitoring Equipments

Photo 20
Installation of Monitoring Equipments

Photo 21
Installation of Monitoring Equipments

Photo 22
Installation of Monitoring Equipments

Photo 23
Installed Extensometer

Photo 24
Training of Setup and Data Acquisition

Photo 25-30: Organization of Early Warning and Evacuation System, Implementation of Information Transfer Exercise

Photo 25
Tsunami Exercise

Photo 26
Tsunami Exercise

Photo 27
Preparation Meeting for Information Transfer Exercise

Photo 28
Preparation Meeting for Information Transfer Exercise

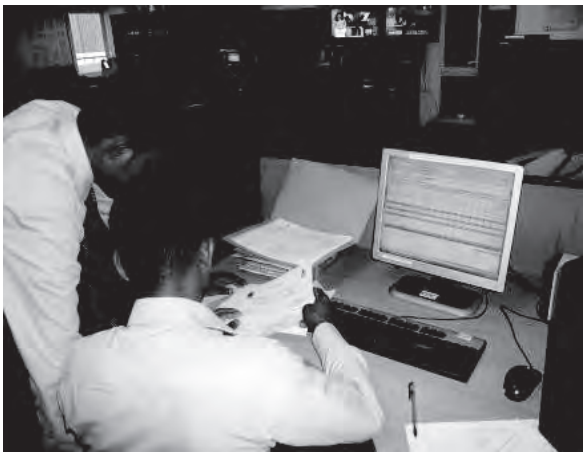

Photo 29
Information Transfer Exercise

Photo 30
Information Transfer Exercise

Photo 31-36: Output 5 Enhancement of Districts, Divisions and Communities' Disaster Management Capacity

Photo 31
District Level DM Committee Meeting (Nuwara Eliya)

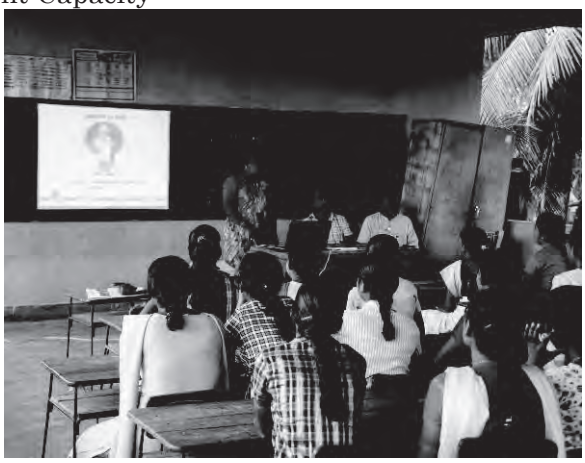

Photo 32
Discussion on Community Level Disaster Management (Matale)

Photo 33
Community Level Evacuation Drill

Photo 34
Community Level Evacuation Drill

Photo 33
Installation of Small Water Drainage at the Community (Matale)

Photo 34
Contributed Siren and Kitchen Utensils to the Community
(Batticaloa)

Photo 37-38: JCC

Photo 37
The 1st JCC

Photo 38
The 2nd JCC

Photo 39-40: Final Annual Seminar

Photo 39
Discussion

Photo 40
Participants to the Seminar

Photo 41-42: Counterpart Meeting

Photo 41
Counterpart Meeting

Photo 42
Counterpart Meeting