

Attachment
of
Supporting Report (2) XXVII

- Attachment - 1 Plan of Operation
- Attachment - 2 OCD Manual on Mud and Debris Flow Forecasting and Warning
- Attachment - 3 Disaster Management Manual (Barangay DCC)
- Attachment - 4 Mud and Debris Flow Disaster Response (Barangay)
- Attachment - 5 Standard Operating Procedure (DPWH Region V)
- Attachment - 6 Bulletin Prepared
- Attachment - 7 Assessment Sheet

Study on Comprehensive Disaster Prevention
Around Mayon Volcano in the Republic of the Philippines

**Plan of Operation for Pilot Project
of
Forecasting, Warning and Evacuation**

1. Background

The JICA is undertaking the captioned study in accordance with the request made by the Government of the Philippines. The objectives of the study are:

- formulation of a Master Plan for disaster prevention
- feasibility study on the priority projects selected in the Master Plan
- technology transfer to the staff of GOP

The JICA is carrying out the Study entrusting the works to the Study team formed by the selected consultants and formulated the proposed Master plan as presented in the Interim Report prepared in July 1999. The Steering Committee and Working Group organized by the GOP to steer and cooperate the works of the JICA duly accepted the proposed Master plan at the meeting held in August 1999 in Manila.

The Master plan focused on the following plans as effective measures to disaster:

- Structural mitigation plan
- Resettlement plan and
- Forecasting, warning and evacuation plan

The implementation of a Pilot Project to conduct forecasting, warning and evacuation in a selected barangay is one of the highlights of the study. In this connection, the Steering Committee and the Working Group agreed to specify the Pilot Project as follows:

- Barangay : Mabinit
- Hazard : Mud and debris flow
- Schedule : End November 1999
- Activity : Disaster prevention
(Forecasting, warning, evacuation and release)

2. Objective

The objective of the Pilot Project is to examine the forecasting, warning and evacuation methods proposed in the Master Plan for their effectiveness. The identified issues are to be reflected in the final forecasting, warning and evacuation plan.

3. Concept of the Pilot Project

3.1 Scenario

- a. 1st warning /RDCD/DPDH/PDCC/CDCC/BDCC (lead time of 4 hours?)

PAGASA gives situationer on the possibility of the heavy rainfall in the area. OCD and DPWH monitor the rainfall in the watershed area of the Pawa-Burabod river on the basis of the rainfall data transmitted from the rainfall gauging stations established on the right bank of the Pawa-Burabod river and the left bank of the Padang river. The rainfall depth in the watershed area is to be estimated automatically in accordance with the program installed in the data processor.

In case the combination of accumulated rainfall and rainfall intensity exceeds the designated value, the processor will disseminate the first warning to the staff of ROCD and DPWH. The first warning is to arouse the attention of the staff of both agencies. The responsible staff of the agencies must sit in front of the monitor and watch the fluctuations of rainfall. Staff of both agencies shall watch and wait for further development in accordance with the manual. The ROCD will issue a status report to PDCC. PDCC will issue warning to CDCC and BDCC and ask them to be on stand by for further instruction.

- b. 2nd Warning/ROCD, PDCC, CDCC, BDCC and individual persons (lead time of 3 hours?)

The next warning will be disseminated automatically to ROCD and DPWH if the rainfall increase further, either accumulated rainfall or intensity or both, and exceed the designated value. The second warning is to urge to start the preparations for evacuation. The information will be transmitted through the existing SSB communication system to the provincial and city DCC from ROCD. The information will be transmitted to barangay DCC from CDCC through cellular telephone. The BDCC disseminates the 2nd warning to individual persons in accordance with the procedure stipulated in the Manual. The warning will also be announced through radio in coordination with the Public Information Agency (PIA). Each family commences to prepare to evacuate in accordance with the procedure written in Manual. CDCC prepares the evacuation vehicle to fetch the evacuees and request the evacuation center (Gogon Elementary School) to receive evacuees.

- c. 2nd warning/DPWH

The warning is, on the other hand, to urge DPWH to commence the preparation to preserve infrastructures to secure the availability of the facilities. DPWH shall organize Disaster Mitigation Team. The staff are dispatched to the sites. Staff shall investigate the strategic parts of infrastructures in accordance with the Manual. Staff shall report the situations of infrastructure to the organized team in the central office.

The team formulates emergency response plan such as the emergency protection of dikes. The Team prepares to execute the plan.

- d. 3rd warning/ROCD, PDCC, CDCC, BDCC and individual persons (lead time of 2 hours?)

The 3rd warning is to be disseminated when the occurrence of hazard is convinced. The information is to be transmitted from ROCD to PDCC, CDCC through SSB and to BDCC through cellular telephone. BDCC advises the individual person to evacuate. ROCD, PDCC and MDCC shall monitor evacuation through the communication system. CDCC sends vehicles for evacuation to the designated pick up points and fetch evacuee to convey them to the center. The evacuation center receives and registers evacuees. The center allocates rooms and supplies necessary goods to the evacuees.

- e. 3rd warning/DPWH

DPWH starts to execute the plan.

- f. Release

When rainfall subsides and hazard is confirmed not to occur any more, release information is to be disseminated and all the staff and individual persons may resume their ordinary activity.

CDCC sends vehicle to the center to send evacuees back to the pick up points.

DPWH prepares the report on the emergency response to record the activities and to materialize for the future improvement of maintenance works.

3.2 Participants

Agencies : ROCD, PDCC, CDCC, BDCC (Mabinit) Legazpi City,
CSWDO, CHO, PNP, BFP, DECS, Gogon Elementary School,
DPWH, PAGASA, PHI VOLCS

Barangay : Mabinit

Observer : JICA Study Team

3.3 Facility and Equipment

Forecasting : Telemetered rainfall-gauging system
Gauging station - Mabinit and Buyuan
Control Station - ROCD and DPWH Region V

Warning : ROCD, PDCC, CDCC – VHF
CDCC, BDCC - Cellular phone

Evacuation : City truck

Inspection : 4WD vehicle

Emergency response : Dump truck or other heavy equipment

Evacuation Center : Gogon Elementary School

Release : City Truck

Manual : Barangay - Barangay Disaster Management Manual (Evacuation)
 ROCD – Emergency Response Manual
 DPWH – Emergency Response Manual

3.4 Observation and Analysis

Motion-Time Study : Forecasting, warning, evacuation, inspection and emergency response

Analysis : Assessment of the proposed forecasting system, warning system, evacuation center, the accommodation of evacuation center, the procedure of the organization of Disaster Mitigation Term, the procedure to inspect site, the Procedure to implement the emergency response and manuals

3.5 Time Table of the Scenario

ACTIVITY	EXPECTED OUT PUT	TIME	OPR
WARNING LEVEL 1			
Situation :The Buyuan and Mabinit rainfall gauging stations detect a heavy rainfall			
a) Issuance of information on the possibility of heavy rainfall in the area	- PDCC activated	5 minutes	PAGASA
b) Issuance of 1st warning level to CDCC and PDCC	- CDCC and BDCC activated	5 minutes	ROCD
c) Dissemination of the warning to BDCC through VHF radio.	- BDCC on stand-by	5 minutes	CDCC
d) Close monitoring of the rainfall fluctuations	- Issuance of appropriate notice determined	60 minutes	ROCD and DPWH

ACTIVITY	EXPECTED OUTPUT	TIME	OPR
WARNING LEVEL 2			
<p>Situation: Monitoring systems both at the ROCD and the DPWH Region V detect that rainfall reached the critical level</p> <p>a) Issuance of 2nd warning level to CDCC and PDCC</p> <p>b) Dissemination of warning to BDCC</p> <p>c) Dissemination of the warning to the people by siren blast or church bells radio announcement</p> <p>c) Preparation of evacuation kits</p> <p>d) Preparation of evacuation center to receive evacuees</p> <p>e) Sending of warning to the District Engineer</p> <p>f) Investigation of the Pawa-Burabod river at strategic points</p> <p>g) Planning of the emergency maintenance of the channel</p>	<p>- Notice for preparation to evacuate transmitted</p> <p>- Required manpower and logistics mobilized to disseminate notice to residents</p> <p>- Residents informed of the preparation to evacuate</p> <p>- Residents prepared to go to the designated pick-up points</p> <p>- Required manpower. to rooms and facilities in place</p> <p>- Disaster Mitigation Team activated to undertake repairs</p> <p>- Need for any type of emergency maintenance determined</p> <p>- Damage control plan formulated</p>	<p>5 minutes</p> <p>5 minutes</p> <p>5 minutes</p> <p>15 minutes</p> <p>60 minutes</p> <p>5 minutes</p> <p>60 minutes</p> <p>30 minutes</p>	<p>ROCD</p> <p>CDCC</p> <p>BDCC PIA</p> <p>Residents</p> <p>Gogon Elementary School</p> <p>DPWH</p> <p>DPWH</p> <p>DPWH</p>

ACTIVITY	EXPECTED OUTPUT	TIME	OPR
WARNING LEVEL 3			
Situation: Residents will have to be evacuated to Gogon Elementary School			
a) Issuance of the 3rd and final warning to CDCC and PDCC	- Notice for immediate evacuation transmitted	5 minutes	ROCD
b) Dissemination of the final warning to BDCC	- Required manpower and logistics mobilized to disseminate notice to residents	5 minutes	CDCC
c) Dissemination of the notice to evacuate to the residents through siren blast or church bells and radio announcement	- Residents prepared to go to the pick-up points	5 minutes	BDCC PIA
d) Movement from residences to pick-up points	- Residents informed of assigned vehicles	15 minutes	Residents. BDCC
e) Mobilization of manpower and vehicles	- Required number of manpower and vehicles dispatched to pick-up points	15 minutes	CDCC
f) Organization of medical teams in Barangay Mabinit and in the evacuation center	- Required medical personnel and medical supplies dispatched to the barangay for first aid and emergency treatment on site and at the evacuation center	60 minutes	CHO
g) Transport of evacuees to Gogon Elementary School	- All evacuees brought to the evacuation center according to the prioritization	50 minutes	CDCC. BDCC
h) Barangay Mabinit secured	- Security in the area maintained	180 minutes	PNP, BDCC
i) Designation of the evacuees to respective rooms	- All evacuees were registered and given room assignments at the evacuation center	120 minutes	DECS, CSWDO

ACTIVITY	EXPECTED OUTPUT	TIME	OPR
j) Conduct of session with the evacuees	- Evacuees provided information on disaster management	60 minutes	CSWDO
k) Preparation and distribution of the food to the evacuees	- Evacuees given their meals at the evacuation center		CSWDO, BSBI
l) Provision of water supply at the evacuation center	- Adequate water supply assured	60 minutes	BFP
m) Maintenance of peace and order at the evacuation center	- Evacuation center secured	240 minutes	PNP
n) Dispatch of the emergency response team to the site	- Damage control plan implemented	40 minutes	DPWH
o) Transport of the medical team from Barangav Mabinit to the city	- Medical term return to normal duty	50 minutes	CHO
NORMAL ACTIVITY			
Situation The rainfall subsides			
a) Issuance of notice to CDCC and PDCC that the danger is over	- Notice to return to the barangay recommended	5 minutes	ROCD
b) Announcement to the BDCC that the situation is back to normal and the evacuees can return home.	- Notice to return to the barangay is issued	5 minutes	CDCC
c) Dissemination of the information to return to the barangay to the residents	- Residents prepared to go home	5 minutes	BDCC, PIA

ACTIVITY	EXPECTED OUTPUT	TIME	OPR
d) Mobilization of manpower and transportation facilities	- Total number of manpower and vehicles dispatched	15 minutes	CDCC
e) Movement from the evacuation center to the vehicles	- Residents get into the assigned vehicle	15 minutes	CDCC, BDCC, Residents
f) Transport of residents to Barangay Mabinit	- All residents assisted in their return to the barangay	50 minutes	CDCC, BDCC
g) Transport of the medical team at the evacuation center back to the CHO	- Medical team resumed normal duty	10 minutes	CHO
h) Preparation of report on the emergency response	- Improvement plan recommended	15 minutes	DPWH

4. Schedule (Tentative)

First meeting (Participants)	10 (Fri) Aug. 1999
Preparation of Manual (BDCC)	by 15 Nov. 1999
Preparation of Manual (DPWH)	by 15 Nov. 1999
Preparation of Manual (OCD)	by 15 Nov. 1999
Second Meeting (Participants)	17 (Thu) Nov. 1999
Workshop (Barangay)	24 (Wed) Nov. 1999
Pilot Project	27 (Sat) Nov. 1999
Workshop (Barangay)	2 (Thu) Dec. 1999

ACRONYMS

BDCC	Barangay Disaster Coordinating Council
BFP	Bureau of Fire Protection
BSBI	Bicol Small Business Institute
CDCC	City Disaster Coordinating Council
CHO	City Health Office
CSWDO	City Social Welfare and Development Office
DPWH	Department of Public Works and Highways
PAGASA	Philippines Atmospheric, Geophysical
PDCC	Provincial Disaster Coordinating Council
PIA	Public Information Agency
PNP	Philippines National Police
ROCD	Office of Civil Defense, Region V