

Partnerships for Disaster Reduction-South East Asia  
Phase 4

STRENGTHENING INSTITUTIONAL  
CAPACITY DEVELOPMENT  
for COMMUNITY-BASED  
DISASTER RISK MANAGEMENT

Q & A

GUIDE for LOCAL GOVERNMENT UNITS

EUROPEAN COMMISSION



Humanitarian Aid







## TABLE OF CONTENTS

1	INTRODUCTION
2	WHAT IS...? INSTITUTIONALIZING A DISASTER RISK MANAGEMENT OFFICE
10	POINTS TO PONDER
12	WHAT IS...? MAINSTREAMING DISASTER RISK REDUCTION IN LAND USE PLANNING
16	POINTS TO PONDER
19	WHAT IS...? ENHANCING COMMUNITY-BASED EARLY WARNING SYSTEM, COMMUNICATION PROTOCOL, AND EVACUATION PROCEDURE
36	POINTS TO PONDER

# **Strengthening Institutional Capacity Development for Community-Based Disaster Risk Management**

## **Q & A**

Guide for Local Government Units

March 2008

Mel Capistrano, MD, MPH

Cedric Daep

Ruth Rodriguez

Partnerships for Disaster Reduction-South East Asia  
Phase 4


## INTRODUCTION

Promulgated in 1978, Presidential Decree 1566 entitled "Strengthening the Philippine Disaster Control Capability and Establishing the National Program on Community Disaster Preparedness," mandated the organization of local Disaster Coordinating Council (DCCs) at all levels of government (national, regional, provincial, city/municipal, and barangay). The DCC system banks on the political will, innovation, and resourcefulness of Local Government Units (LGUs) to implement initiatives on Community-based Disaster Risk Management (CBDRM). This is in line with the government's principle of decentralization and devolution of functions and powers of LGUs as enshrined in the Local Government Code of 1991.

Disappointingly, a number of LGUs have been slow in taking positive steps to move forward the constitution of local DCCs and the establishment of necessary disaster communication and evacuation systems. In the actual operations in most LGUs, the local DCCs are convened and activated only when there is an impending threat or upon declaring the area under state of calamity. To a certain extent, the issue of "unorganized" and "reactive" local DCCs lies in the lack of available information or practical tools on how to operationalize and sustain disaster mitigation and preparedness activities.

Through the Partnerships for Disaster Reduction in South East Asia (PDRSEA) Phase 4 Project, the Asian Disaster Preparedness Center (ADPC), Office of Civil Defense (OCD), and Albay Public Safety and Emergency Management Office (APSEMO) documented the basic concepts and main steps on how to enhance LGUs' institutional capacity in building a strong foundation to CBDRM by re-examining the LGUs' policies, plans, strategies, and organizational structures to serve as entry points for the integration process.

This document has three major parts, namely; 1) Institutionalizing a Disaster Risk Management Office, 2) Mainstreaming Disaster Risk Reduction in Land-Use Planning, and 3) Enhancing Community-based Early Warning System, Communication Protocol, and Evacuation Procedures. As part of the PDRSEA 4 Project, the CBDRM processes and outputs of the workshops conducted in the Municipalities of Camalig, Daraga, and Oas, Province of Albay, were used as practical references in drafting this document.



## WHAT IS...? INSTITUTIONALIZING A DISASTER RISK MANAGEMENT OFFICE

**Q: How is a local Disaster Risk Management Office created?**

**A: There are ten (10) key implementation steps in creating a local DRMO:**

**STEP 1:**

Identify a **focal person** to be designated as the over-all coordinator of the organizational development plan.

**STEP 2:**

Conduct **initial research and coordination with the Civil Service Commission (CSC) Regional Office** on matters regarding organizational and functional structures, position titles, and qualifications of identified proposed posts per division.

**STEP 3:**

**Negotiate with the Local Chief Executive (LCE)** for the approval of the proposal and subsequently **advocate for legislative support** from the provincial, city or municipal presiding officer.

**STEP 4:**

Organize a **team to formulate the organizational development plan**. The team may be composed of representatives from the following offices; Budget, Human Resource Management, Social Welfare, Planning and Development, local legislative body, and representative of the Local Chief Executive (LCE).

**STEP 5:**

Develop a **proposal/project justification** to be submitted to the LCE for his approval and endorsement to the legislative body for the latter to approve said resolution.

**STEP 6:**

**Submit the approved resolution** with the proposed organizational structure, functional structure, and individual position titles by division and qualification standards to the CSC Regional Office for review and approval.

**Purpose:**

At the end of this section, the reader should be able to:

- a. Enumerate the key steps in creating a Disaster Risk Management Office (DRMO)
- b. Describe the role of the DRMO and the functions of its divisions and sections
- c. Elaborate on the advantages and disadvantages of having a DRMO
- d. Describe a typical Disaster Operations Center (DOC)

STEP 7:

Upon approval of the CSC, **prioritize the identified positions** to be filled up with permanent personnel.

STEP 8:

Prepare a **proposed budget** indicating the amount of expected expenses for Personnel Services (PS) and Maintenance and Other Operating Expenses (MOOE) that will include among others, emergency research and emergency expenses.

STEP 9:

**Integrate the proposed budget to the regular appropriations** for the coming fiscal year to be submitted to the Department of Budget and Management (DBM) for review and approval.

STEP 10:

Upon approval of the budget by the DBM, **publish the open positions for hiring**. Once the DRMO has recruited the identified staff, the Office can begin planning and implementing disaster mitigation and preparedness projects and activities.

**Q: What is the role and purpose of the DRMO? How does it link with other DCCs and the general public?**

**A:** The DCCs have over-all supervision in the effective implementation of disaster management program as prescribed by Presidential Decree 1566. On the other hand, the DRMO shall act as the **Secretariat** of the local DCC. The DRMO shall closely **coordinate with member-agencies of the local DCC, non-government organizations, and other private sector** in the area to facilitate the implementation of disaster mitigation and preparedness projects and activities. The DRMO shall also **formulate policies and plans** for the protection and preservation of the welfare of the local populace in times of calamities and other emergencies. The Office shall also **develop programs for information, education and training** of the general public, DCCs concerned, volunteer workers and the like.

**Q: What and how many divisions and sections will the DRMO require? What will be the functions of the respective divisions and sections?**

**A:** A typical DRMO at the municipal level may have three (3) divisions and one (1) section, namely; 1) Disaster Planning and Operations Division; 2) Information and Training Division, 3); Research, Documentation, and Statistics Division; and an 4) Administrative Section.

The **Disaster Planning and Operations Division** shall formulate comprehensive contingency plans; release appropriate advisories and alert messages corresponding to warning information on impending threats; integrate action plans of local DCCs and NGO support groups; liaise with other stakeholders who support disaster preparedness and response activities; and recommend the declaration of "state of calamity" to the DCC Chairman as necessary.

The **Information and Training Division** shall establish an early warning and information system in the area; disseminate warning and emergency messages to local broadcast network for public information and awareness; and keep official records on disaster related activities and other reports. This Division shall also formulate seminars/skills training modules for various tasks units of the local disaster coordinating councils such as communication and warning, medical, fire-fighting, transportation, evacuation, community kitchen volunteers, search, rescue and recovery. Such modules will be used in the conduct of disaster related workshop and training activities. It shall also provide secretariat services during DCC meetings or conferences and press briefings.

The **Research, Documentation, and Statistics Division** shall gather statistical data on local resources and facilities (i.e. food and non-food supplies, medicines, transportation, evacuation centers, water and power facilities, etc.) which may be needed during disaster response. This Division shall formulate risks and resource maps and update the same periodically. This Division shall make the necessary recommendations on the allocation of resources to calamity affected areas.

The **Administrative Section** shall act on all incoming and outgoing correspondence. It shall plan, direct, and supervise personnel matters and general services pertaining to supplies, records management, clerical, janitorial, security, transportation, property utilization, and repair of equipment necessary for the internal operation of the DRMO. This Section shall also assist in the formulation, review and revision of current policy guidelines, memorandum-circulars, and rules and regulations on DRR emanating from national government departments and other organizations. It shall also be in-charge in the inventory of relief donations.

**Q: What position titles must be filled up? How significant are they as permanent positions?**

**A: Technical and supervisory** positions can be initially prioritized for hiring purposes. These positions are significant to research, education and training, administration and operations.

**Q: How can the number of personnel be increased in the newly created office in case of budgetary limitations?**

**A: Considering financial constraints, augmentation of personnel requirements in the DRMO can be done through detail service,**

**job order, and casual employment.** Another viable option is the **transfer of personnel from other Departments** to be temporarily designated in the DRMO.

**Q: What is the minimum allocation for Personnel Services (PS) and Maintenance and Other Operating Expenses (MOOE) out of the local government budget?**

**A: The initial funding requirements of to support the operations of the DRMO are approximately five hundred thousand pesos (PhP500,000.00) for PS and three hundred thousand pesos (PhP300,000.00) for MOOE.**

**Q: Who will be the proponent to push for the passage of the proposed resolution to pass by the local board?**

**A: The Committee on Budget and Appropriation or Social Services of the Sangguniang Bayan** can be an expert advocate for the creation of a DRMO.

**Q: What is a doable timetable of implementation for the creation of the DRMO?**

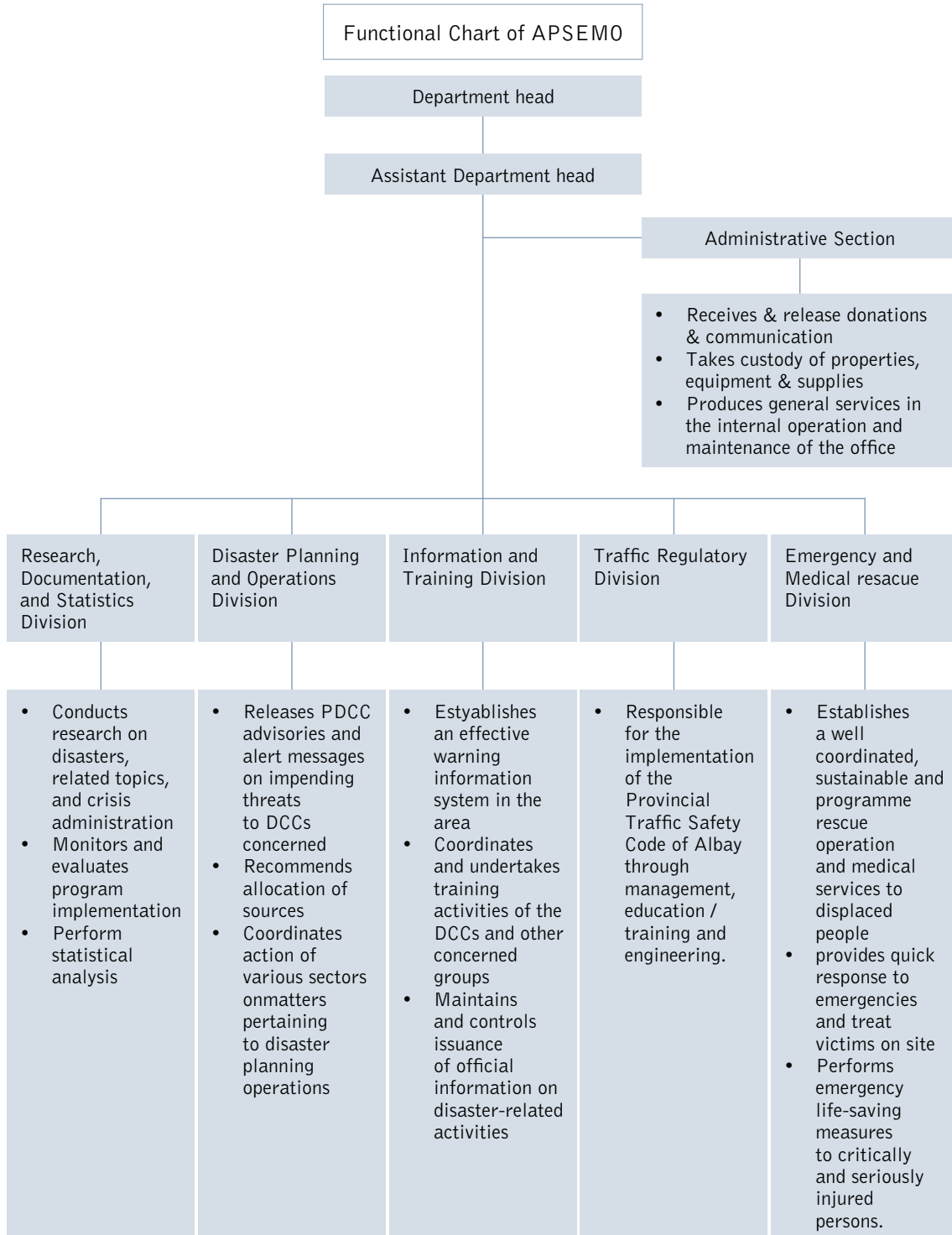
**A: Project justification, preparation of a resolution, and budget proposal can be done in the first year. Integration of proposed budget and subsequent approval from the DBM can be accomplished in the following year. Fifteen (15) months** is a feasible timeframe.

**Q: What are the advantages and disadvantages of having a DRMO?**

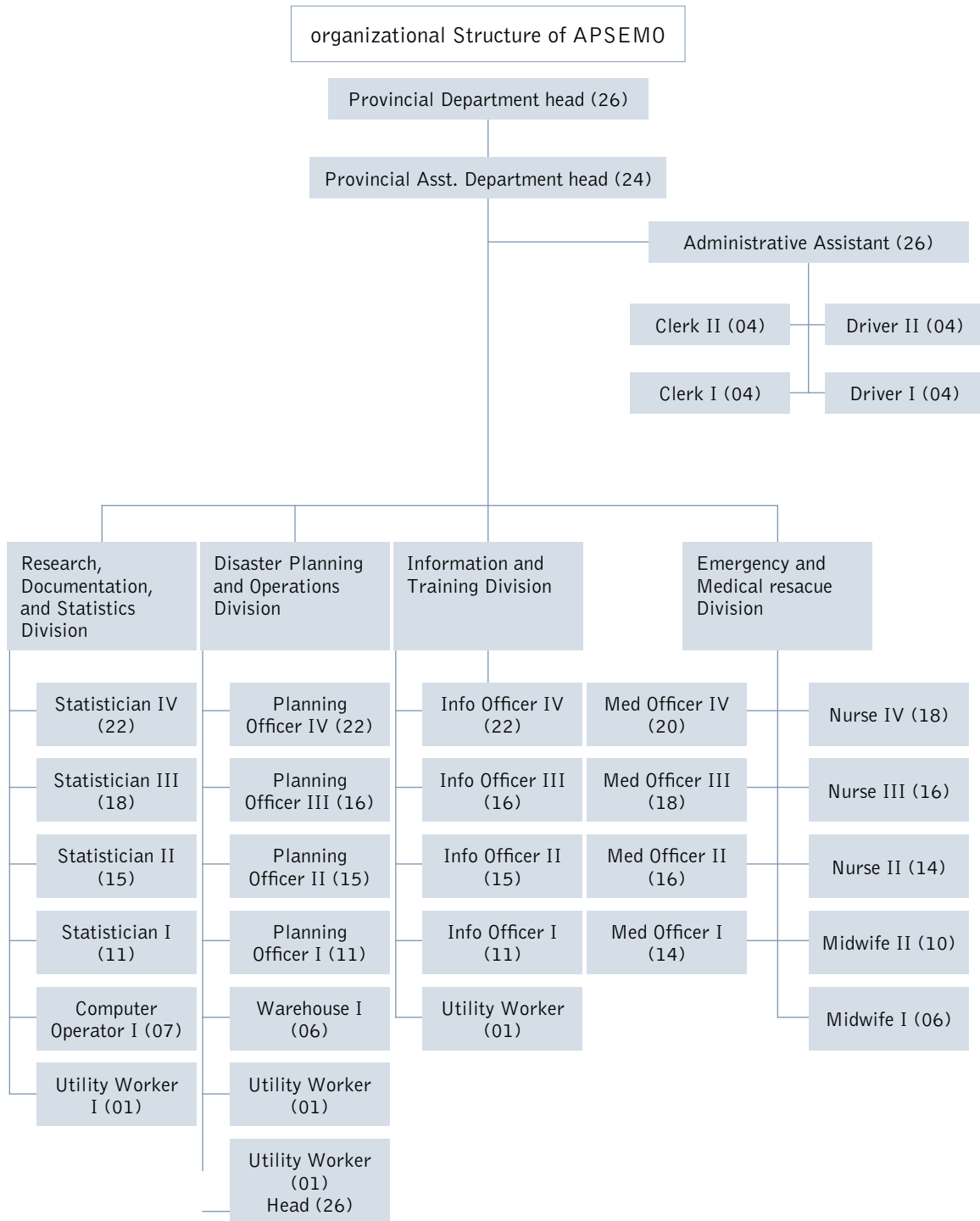
**A: Under Presidential Decree 1566, the National Disaster Coordinating Council (NDCC) and the Regional Disaster Coordinating Council (RDCCs) have the Office of Civil Defense (OCD) as the Secretariat and Executive Arm of these councils. However, from the provincial down to the barangay DCCs, there is no permanent office which functions as the OCD.**

Aware of the afore-stated constraint, the Provincial Government of Albay, the Albay Provincial Government created the Albay Public Safety and Emergency Management Office (APSEMO) to serve as the technical and administrative arm of the Albay PDCC. Being the secretariat of the PDCC, the APSEMO does not compete nor overlap the functions of the LGU. It appears to have advantages

Diagram 1\_ The Albay Public Safety and Emergency Management Office (APSEMO)



Source : Working Paper. "APSEMO: A permanent Disaster Management Office: Visible, Measurable Impact over the Years." Oxfam GB. March 2008.



having **pre-disaster activities implemented without using the five percent (5%) local calamity fund due to the regular funds provided for by the local government under its annual budget appropriations.** The APSEMO has been performing functions focused in the context of Disaster Risk Reduction (DRR) completing the cycle of prevention (preparedness and mitigation), disaster control (response), and disaster recovery phase (repair, reconstruction, and rehabilitation).

The presence of a permanent institution performing regularly the mandated functional roles and responsibilities **sustains the implementation of DRR activities with the financial support of the local government.** Moreover, **NGOs and aid organizations can be assured of continuous project implementation and monitoring** having local personnel assigned to handle the project support requirements. **Advocacy for local legislation on DRR** may also emanate from the DRMO.

In areas with no permanent DRMO, the NDCC through the OCD designates a Civil Defense Deputized Coordinator (CDDC). The CDDCs act as the Action Officers of the local DCCs and serve as the regular contact persons of OCD in various LGUs. The CDDCs are mostly co-terminus with the LCE. They are temporarily designated through an executive order or an office order issued by the governor or mayor. The designation status is not politically stable; CDDCs have no security of tenure.

Prior to the creation of the APSEMO, the Albay PDCC has no available funding for pre-disaster activities or a permanent secretariat and technical personnel that monitor disaster incidents. As such, there was limited data on risk assessments or disaster-related information and coordination mechanisms between the LGU and other partners for DRR were not well established.

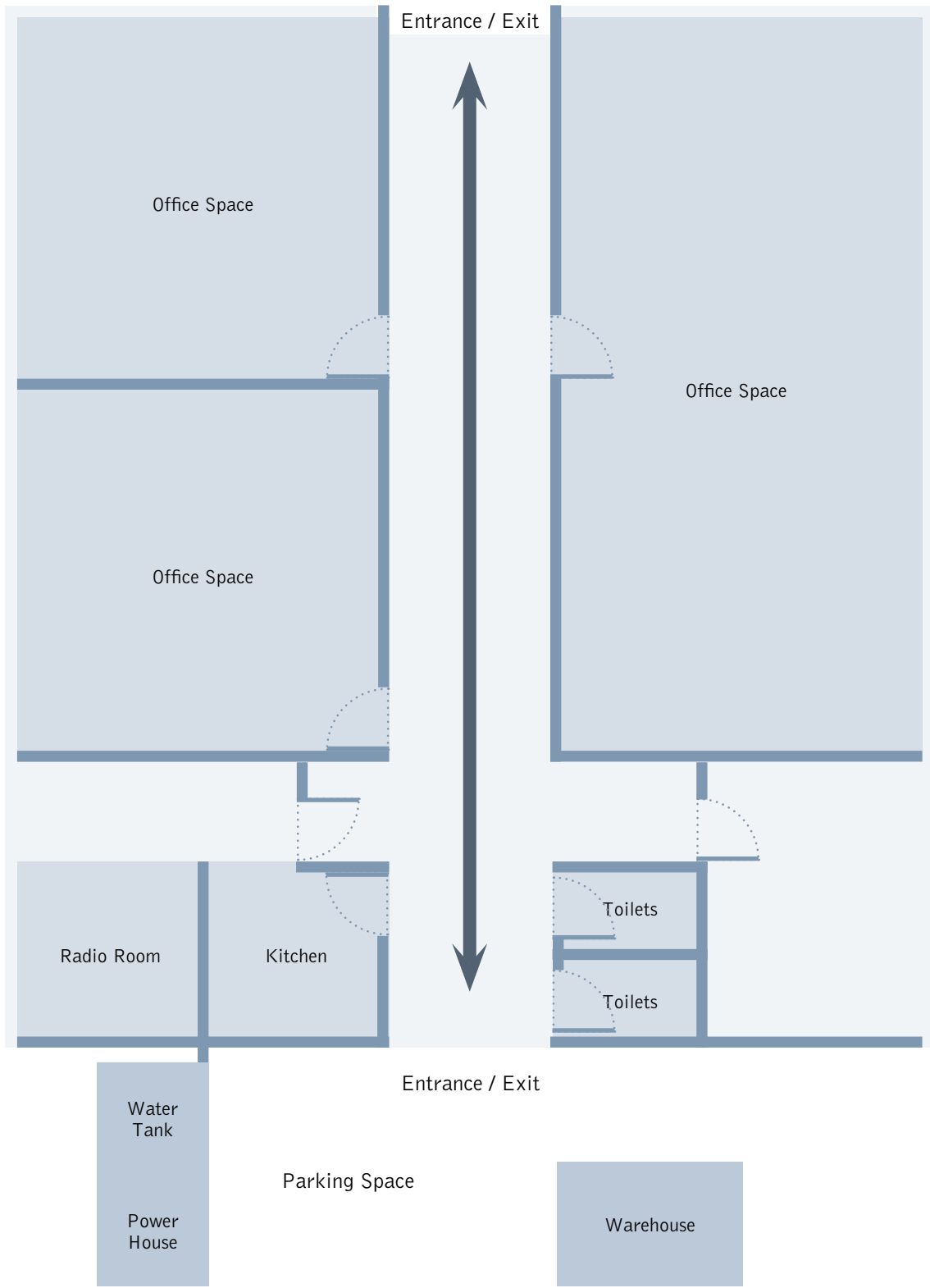
The need for DRR activities is continuous especially in areas more frequently visited by natural calamities. To establish a permanent office with staff championing DRR is in the interest of public safety.

### Q: What is a Disaster Operations Center (DOC)?

A: A standard DRMO has a Disaster Operations Center (DOC) which can serve as the **hub for research, planning, resource mapping, coordination, and communication as well as a repository of database disaster-related information.** The DOC can serve as a facility where DCC meetings, conferences, press briefings, and workshops are held. During disaster mode, the DOC can be the **command post** where major decisions are made regarding disaster response operations and early recovery requirements.

A DOC usually has the following facilities, namely; office spaces; warehouse; power generator; library; conference room; radio room; staff quarters; communication and documentation equipment; early warning devices (rain gauges, GPS, etc.); off-road vehicles; and rescue ambulance equipped with stretchers, spine boards and emergency medical and rescue kits.

Diagram 2\_ Disaster Operation Center (Proposed Lay-out)



## POINTS TO PONDER

Do you think there will be substantial change in the local implementation of DRR activities if there is a permanent DRM0?

Is there an available space in the local government office that can be readily used as the office space for the DRM0? Is there adequate space for an operations center?

What existing facilities and equipment does the LGU have that can immediately be transferred to the DRM0 and DOC?

What are the resource gaps that will require external support?

In the absence of any existing office space and/or DOC, can the province/municipality/city afford to procure a new lot or construct a new building? If yes, how much is the estimated cost? Who will pay? What is your timeframe for procurement and/or construction? Is renting an office space a viable option instead?

Does the local legislature support the creation of a DRM0?

Would there be volunteers to support the daily operations of the DRM0?





## WHAT IS...? MAINSTREAMING DISASTER RISK REDUCTION IN LAND USE PLANNING

**Q:** What does “mainstreaming DRR in land use planning” mean? What are the key implementation steps?

**A:** The LGUs are mandated to develop a local Comprehensive Land Use Plan (CLUP) as basis for government investments within the development framework of the local government strategies. In areas that are highly vulnerable to major impacts of natural calamities, the considerations for huge investment planning are the development potentials and opportunities and not the underlying development constraints such as exposure to hazards of vulnerable population and physical assets. Thereby, there are major investments such as school buildings, business establishments, hospitals, bridges, and other public works that were destroyed by landslides, floods, and other hazards due to poor development planning processes.

### Purpose:

At the end of this section, the reader should be able to:

- a. Explain the significance of mainstreaming disaster risk reduction in land use planning
- b. Compare and contrast the different maps use in disaster planning for development
- c. List possible policy recommendations to support the integration of disaster risk reduction strategies and land use plan

The DRR integration to the local CLUP is a disaster risk mitigation measure that will help safeguard socio-economic investments and protect communities from the brunt of disasters. This planning process involves 1) barangay hazard map review; 2) risk and resource analyses; 3) proposed land uses and policy recommendations by level of risk; and 4) policy approval for adoption on the CLUP.

**Q:** What is a geo-hazard map? What is a risk map? Why are these maps useful?

**A:** A geo-hazard map serves as major input in development planning and decision-making. The map **will guide the planners in identifying danger zones by type of hazards** and the **safe areas for new investments**.

A risk map, on the other hand, shows the hazard situation in the area, at-risk population, and the available resources (i.e. transportation, evacuation sites, hospitals, etc.). The thematic presentation of

these maps graphically illustrates the risk areas when the vulnerable population, critical resources, and hazard maps are overlaid or superimposed. For example, using the risk map the school building located in the hazard prone area may no longer be recommended for new investments or for emergency evacuation purposes. In the same manner, areas threatened by landslides will no longer be recommended for residential purposes. This analysis rationalizes the inclusion of appropriate structural countermeasures in the CLUP.

### Q: How can a geo-hazard map or a risk map be used in development planning purposes?

A: The proposed land uses for new investments may be safe from future disaster impact if risk maps are considered. For example, lending institutions may not allow loan grants intended for areas within the six kilometer radius permanent danger of a volcano. This somehow protects both the interests of the lending institution and the investor. This has been done in the Province of Albay, where the Albay Public Safety & Emergency Management Office (APSEMO) issues certification of those areas within the danger zone which are periodically being updated with vulnerability assessment reports provided by the Philippine Institute of Volcanology and Seismology (PHIVOLCS) to the Province of Albay through the APSEMO.

In preparing the CLUP, there is a need to physically evaluate and assess the vulnerability conditions of respective areas. Evaluation reports may be used as tools in decision-making. The areas that are considered as high risk zones may be treated as not suited for big investments. Areas under low to moderate risk may sustain existing investments but will require additional structural and non-structural mitigation measures to protect the area. The strategic locations for new investments are those that are deemed as safe zones.

The technical assistance from geologists, volcanologists, seismologists, and hydrologists will be highly recommended. Local planners need to consult concerned scientists and experts and may invite even these individuals as subject matter experts of the local DCC. Their participation in the development of the CLUP will significantly contribute both in the decision- making and policy recommendations.

The basic requirement for the integration of DRR strategies to the CLUP is a geo-hazard map as a tool in determining the development project sites.

The map may classify the land according to level of hazard status such as:

- **High Risk** – the physical exposure of the total land area to major effects of disaster is at least 70%
- **Low to Moderate Risk** – the physical exposure of the total land area to major effects of disaster is from 20 % to 69%
- **Safe** - the physical exposure of the total land area to the major effects of disaster is not more than 19%

It must be clearly delineated in the map which areas will fall under each category. The land classification is the basis of the local government planners in deciding which type of project shall be approved or the kind of investments to be recommended in a particular land by risk classification. This classification of land must be supported with appropriate local resolutions as follows:

- Resolution approving and adapting the geo-hazard map of the province showing the areas delineated by type of hazard status and level of risk.
- Resolution instructing the Provincial, City or Municipal Development Councils through the local Planning and Development Offices to:
  - Disallow settlement of land and disapprove new big investments in the high risk areas and relocate any existing major economic investments including residential houses;
  - Consider the low to moderate risk areas for investment of structural mitigation projects to protect existing ventures. Relocating existing investments will be more costly than providing structural protection projects; and
  - Declare safe areas as sites for new development investments.
- Resolution disallowing development support to houses or residents in areas classified within the high risk zone such as electrical connection, water pipes, construction of school facilities, communication facilities, roads, bridges and other basic utilities.

The above resolutions must be supported with appropriate Implementing Rules and Regulations to be enacted by the local legislature and to be duly approved by the LCE.

### Q: What policy recommendations may be done in the process?

A: At present, there is no existing local or national policy mandating the LGUs to integrate DRR with the CLUP. Due to this limitation, an academic disconnect exists between DRR and CLUP; these two are treated independently by most disaster experts and development planners.

The immediate solution to facilitate the integration of these two concepts is for respective Provincial Boards to enact a local resolution mandating concerned departments of the LGUs (Provincial/City/Municipal Planning and Development Office and Disaster Management Office) to produce an integrated DRR Plan and CLUP before it will be submitted for approval by the Local Development Council (LDC) for appropriate endorsement to NEDA and subsequent inclusion in the Regional Development Plan.

Nonetheless, there are long-term options to consider, as follows:

1. A national law that maybe enacted by the legislature;
2. An Executive Order to be issued by the President of the Republic of the Philippines; and
3. A Memorandum Circular to be issued by the Secretary of the Department of Interior and Local Government (DILG).

**Q: How can respective LGUs adopt the policy on integration of DRR into CLUP?**

**A:** A law to be enacted by the national government may be adapted by the local government as it will be implemented once approved. All LGUs shall be mandated to implement what is provided for in the national policy.

A local resolution may also be passed by the local legislature and approved by the LCE in a particular province. In this case other provinces, cities or municipalities not covered by the local resolution may adopt the same to make it applicable in their respective territorial jurisdiction.

## POINTS TO PONDER

Are geo-hazard and risk maps available in the province? city? municipality? If none, are there individuals or organizations with technical expertise that can assist the LGU in producing such maps? How much will it cost? Is there funding source for this mapping activity?

Are you aware of any major hazard threats in your community or area of territorial jurisdiction? What are these threats? What are the specific areas and which communities are most vulnerable to which hazards? Do you have a copy of the approved local Comprehensive

Hazard and Vulnerability Identification			
Hazard Threats	Threatened Areas	Threatened Population	Critical Resource and Lifelines
Volcanic Hazards <ul style="list-style-type: none"> <li>• Pyroclastic flow</li> <li>• Mudflow</li> <li>• Lava flow</li> <li>• Ash fall</li> <li>• Volcanic Avalanche</li> <li>• Tsunami</li> </ul>			
Typhoon <ul style="list-style-type: none"> <li>• Sheet flood</li> <li>• Flash flood</li> <li>• Mud and debris flow</li> <li>• Storm surge</li> <li>• Rock falls</li> <li>• Strong wind</li> <li>• Landslides</li> </ul>			
Hazard and Vulnerability Identification			
Earthquake <ul style="list-style-type: none"> <li>• Structural Failure</li> <li>• Liquefaction</li> <li>• Landslide</li> <li>• Rock falls</li> <li>• Seismic Sea Wave (tsunami)</li> </ul>			
Fire			
Others			

Land Use Plan (CLUP)? If none, is there a committee task to draft the CLUP? Any anticipated problems in formulating the CLUP? How can these expected barriers be prevented or mitigated?

Is the organization of a workshop in integrating DRR with CLUP feasible? If yes, when can this be conducted? Who are the participants and resource persons to be invited?

Upon completion of the integrated DRR and CLUP, how can this be put into actual implementation? What is the best tool (i.e. resolution/ executive order, funding, staff complement) that can be use in order for it to be immediately implemented? Why and How?

Do you know of any existing local policy that advocates for DRR? Should you need to recommend policies on DRR, what will they be?



## WHAT IS...? ENHANCING COMMUNITY-BASED EARLY WARNING SYSTEM, COMMUNICATION PROTOCOL, AND EVACUATION PROCEDURE

**Q: What is the significance of Community-Based Early Warning System (CBEWS)?**

**A: Community-based Early Warning System (CBEWS)** is designed to **give warning forecast on the likelihood of hazards affecting a particular area**. An effective warning system empowers organizations, individuals, and communities threatened by hazards to **act timely and appropriately** so as to reduce the possibility of injury, loss of life, damage to property, and loss of livelihood. It provides the community and disaster risk management (DRM) workers **with advance information on the hazards (volcanic eruption, floods, landslides, etc) that can be readily translated to disaster prevention, preparedness and response actions**. CBEWS also **helps reduce economic losses** by allowing people to better protect their assets and livelihood.

### Purpose:

At the end of this section, the reader should be able to:

- a. List the elements and components of community-based early warning system (CBEWS)
- b. Discuss the value of CBEWS for disaster preparedness
- c. Explain the challenges in establishing an CBEWS
- d. Illustrate the flow of a standard multi-tier emergency communication protocol
- e. Describe the process of establishing a community-wide evacuation procedure

**Q: What are the basic elements in the design of CBEWS?**

**A: An effective CBEWS comprises of six (6) fundamental elements (as shown on the next page):**

1. Prediction. Predicting a hazard based from historical information has an enormous potential for reducing its possible disastrous consequences. Short advance warning advisories give time to protect lives and properties. A long period warning provides an opportunity to relocate community residents and properties.
2. Forecasting and Warning. This includes a number of interrelated activities, each of which forms the following integral part of the operation: collection of real-time data; assessment of weather conditions and volcanic activities such as: Lava Flow, volcanic

quakes, SO<sub>2</sub> emission, etc., Preparation and issuance of Warning Bulletins; Dissemination of discharge warnings or information to the local, municipal and provincial government offices, disaster coordinating council and the general public by PHIVOLCS observatory station, OCD, local government agencies as well as the print and the broadcast media.

3. Detection. The use of scientific observation radar, rain gauge, seismograph, EDM. etc. vs. indigenous observation
4. Communication. Relay of information from the warning agencies to the response teams and community recipients.
5. Decision. Decision-making is based from the developed criteria done by the disaster managers and scientists.
6. Mobilization. Issuance of warning information and evacuation order according to plan.

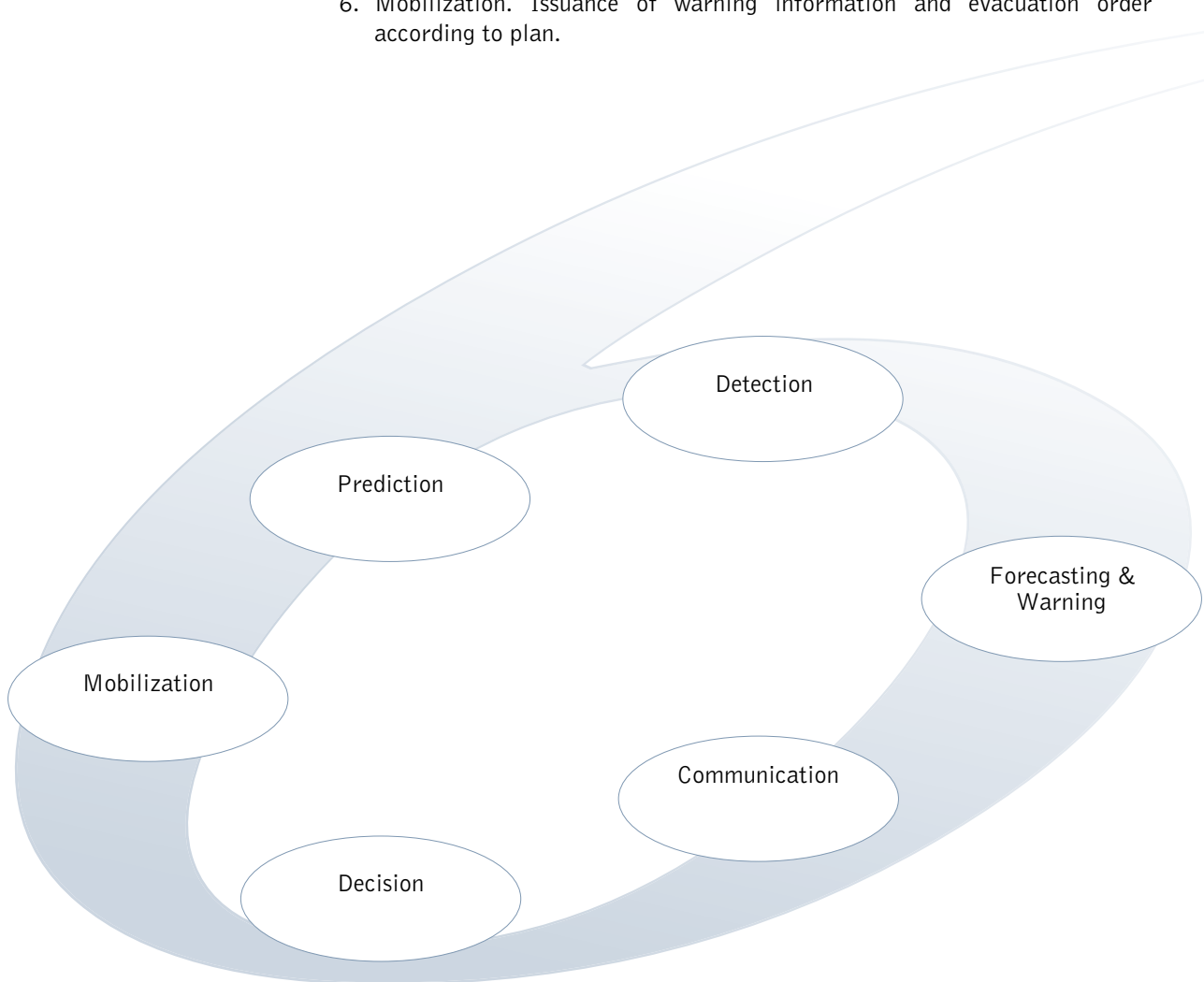


Diagram 3\_ Early Communication System in Albay Province

Mayon Volcano Eruption Warning			
Alert Level	Criteria	Interpretation	Required Actions
0	No alert, Quiet	Normal	None
1	Low level unrest	Abnormal	Monitoring
2	Low to moderate level of seismic and unrest	Alarming	Monitoring and review of preparedness plan
3	Relatively high unrest	Critical	Execute some evacuation plans
4	Intense unrest	Eruption Imminent	Evacuation in all danger zones
5	Eruption in progress	Eruption in Progress	Relief Phase

Mud Flow Warning			
Alert Level	Criteria	Interpretation	Required Actions
0	No Rain	Normal	Normal Community Activities
1	Rain at 10-15 mm per hour	Alert Stage	Monitoring of river condition and rainfall
2	Rain at 25-30 mm per hour	Preparedness Stage	BDCC and Community are preparing for evacuation
3	Rain at 35-40 mm per hour	Evacuation Stage	Community is evacuating
4	No Rain	Normal	Normal Community Activities
5	Rain at 10-15 mm per hour	Alert Stage	Monitoring of river condition and rainfall

**Q: What are the components of CBEWS?**

**A:** The following are the components

- a. **Observers:** Observation of threats or hazards
- b. **Communication Network:** Relays information to response team and disaster agencies when alert and critical level is reached or declared

- c. **Decision Component:** DCC concerned and the community decide whether or not to evacuate based on weather bulletin or warning issued
- d. **Response:** Mobilization of support and activates action plans. Community evacuates to designated safe shelters.

**Q: What are the key implementation steps in establishing an CBEWS?**

**A:** The following are the key steps:

- a. Take stock of available warning equipment; their capacity and maintenance.
- b. Organize data monitoring team that would regularly observe rainfall and river conditions
- c. Analyze and interpretation data
- d. Translate data into warning information and advisories
- e. Relay warning information and advisories
- f. Activate alert, preparedness and/or evacuation stage, as the need arises
- g. Mobilize necessary resources

**Q: What are the institutional challenges in establishing CBEWS?**

**A:** The following are some challenges that a DCC could face in establishing CBEWS:

- a. Limitations in organizational structure and functions
- b. Unavailability of hazard assessments or risk maps
- c. Absence of monitoring equipment
- d. Unsupportive partner agencies and other stakeholders
- e. Lack of community interest
- f. Costly repair and maintenance expenses of equipment

**Q: What is the role of PAGASA and PHIVOLCS in early warning?**

**A:** In the Philippines, the sources of official warning information are the Philippine Institute of Volcanology and Seismology (PHIVOLCS) and the Philippine Atmospheric Geo-Physical Astronomical Services Administration (PAGASA).

The information that PAGASA regularly releases include forecast, weather outlook, and detected weather disturbances. The major disturbances reported through weather bulletin are tropical storm, typhoon, inter-tropical convergence zone, southeast monsoon, northeast monsoon, and active low pressure area. Drought and flood warnings are issued on case to case basis. The warning information issued related to weather hazards are specifically focused on wind strength.

Warning Indicators for Flashflood and Debris Flow

Observation Period	Monitoring/ Alert Status (mm)	Preparedness Status (mm)	Evacuation Status (mm)
24 hourly	Below 120		
12 hourly	Below 30		
6 hourly	Below 15		
hourly	Below 10	10 to 20	20-40

Warning Indicators for Landslide (Antecedent Rainfall)

Observation Period	Monitoring/ Alert Status	Preparedness Status	Evacuation Status
3 hourly	Below 100	120	180

Warning Indicators for Sheet Flooding

Observation Period	Monitoring/ Alert Status (mm)	Preparedness Status (mm)	Evacuation Status (mm)
12 hourly			
6 hourly			
3 hourly			
hourly	At least 2.5	2.5-5.0	5.0-6

The threatened population is informed through local broadcast media for immediate awareness. Rainfall information is also made available to the public. For example, “the Province of Albay is expected to be affected by isolated rain showers and thunderstorms during the warning period and therefore the public is advised to take the necessary precautionary measures for disaster avoidance.” The information being issued by PAGASA is a good reference for local government units in the application of the CBEWS on flash flood, landslide, and debris flow.

On the other hand, the PHIVOLCS deals with volcanic hazards such as pyroclastic flow, lava flow, mud and debris flow, ash fall, volcanic avalanche, and tsunami. PHIVOLCS releases regular volcanic and tsunami updates and bulletins which the concerned DCC uses as official references in issuing warning and advisories for public information and awareness.

**Q: What are warning indicators?**

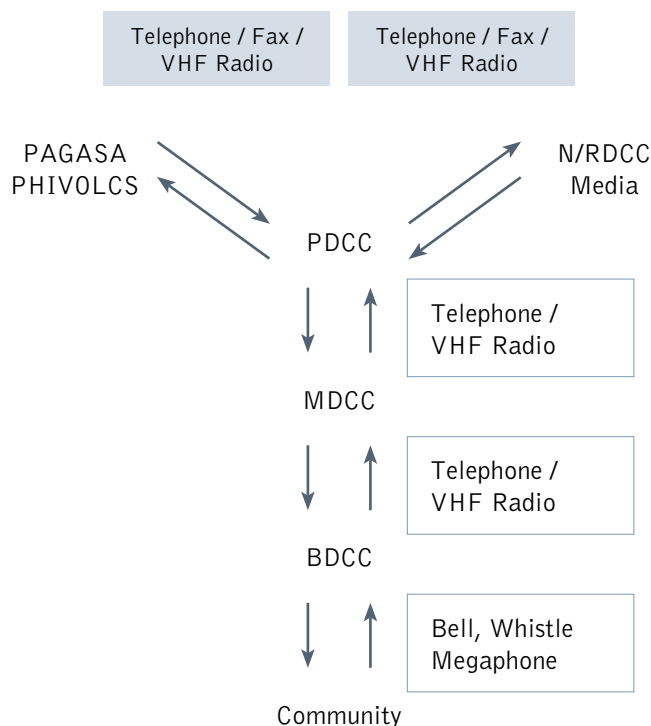
**A: To support a rainfall monitoring station, there is a need to develop appropriate warning indicators. The table above shows some examples.**

The above warning indicators may not be applicable in certain areas due to factors such as terrain, type of soil, etc. Local geologists, hydrologists, and meteorologists can best help in the technical procedures in developing the warning indicators for DCCs concerned.

**Q: What is an emergency communication protocol?**

**A: An emergency communication protocol comprises of communication system (hardware) and information system (network flow).**

**Diagram 4\_ Communication Protocol of Albay Public Safety and Emergency Management Office (APSEMO)**



The local DCC shall establish communication networks with stakeholders from the provincial down to the community level. These networks include telephone lines, mobile phones, VHF or UHF radio system and links to local broadcast media. A two-way communication system is a basic tool that can help relay information that facilitates community awareness of any impending threat.

In support to warning information, local authorities may utilize appropriate communication equipment to effect early warning information and real time data needed to save the lives of population-at-risk.

The warning bulletins, weather updates, alert status, and other advisories are the emergency information that shall be relayed to the vulnerable population through the established communication network. Time element in the release of emergency information is very critical. Delays in few hours or even


minutes can result to casualties or delays in the delivery of emergency support.

**Q: What are the key implementation steps in establishing communication protocol?**


**A: The following are the key steps:**

1. Organize a communication team composed of licensed radio and telephone operators who have the technical capacity to operate and maintain required equipment.
2. Designate a radio room
3. Establish communication contacts with provincial, municipal, and barangay network
4. Maintain an official logbook of daily communication traffic
5. Provide financial allocation for the maintenance and repair of communication equipment
6. Conduct training for radio communication operators
7. Establish communication links with PAGASA and PHIVOLCS
8. Formulate a communication plan and test said plan by conducting a communication drill with the waning task unit and other concerned stakeholders.

Diagram 5\_ PAGASA Flood Advisory (SAMPLE)



**REPUBLIC OF THE PHILIPPINES**  
**Department of Science and Technology**  
**Philippine Atmospheric, Geophysical and**  
**Astronomical Services Administration (PAGASA)**  
PAGASA Science Garden, Agham Road, Diliman, Quezon City 1100




**GENERAL FLOOD ADVISORY #4**  
**REGION 4-A (CALABARZON)**  
(Province of Quezon)  
Issued at 9:00 AM, 15 May 2008  
(VALID UNTIL THE NEXT ISSUANCE AT 9 AM TOMORROW)

**PRESENT WEATHER:**  
AT 2:00 A.M. TODAY, TROPICAL DEPRESSION "COSME" WAS ESTIMATED BASED ON SATELLITE AND SURFACE DATA AT 390 KMS WEST SOUTHWEST OF CALAPAN, ORIENTAL MINDORO (12.8°N 117.5°E) WITH MAXIMUM WINDS OF 55 KPH NEAR THE CENTER. IT IS FORECAST TO MOVE NORTH AT 7 KPH. MEANWHILE, AN ACTIVE LOW PRESSURE AREA (ALPA) WAS ESTIMATED AT 170 KMS EAST NORTHEAST OF CASIGURAN, AURORA (17.0°N 123.8°E).

**PAST 24-HRS OBSERVED RAINFALL FROM 8:00 AM 14 MAY to 8:00 AM TODAY, 15 MAY 2008:**

INFANTA	=	13.0 mm
ALABAT	=	69.4 mm
TAYABAS	=	1.0 mm



24 HR RAINFALL FORECAST BASED ON High Resolution Model

**FORECAST RAINFALL:**  
MODERATE TO HEAVY RAINS FOR THE NEXT 24 HOURS.

**WATERCOURSES LIKELY TO BE AFFECTED:**  
RIVERS AND STREAMS IN **QUEZON PROVINCE** PARTICULARLY AGOS RIVER, TIGNOAN RIVER, LABAYAT RIVER, BUCAL RIVER, MAAPON RIVER, LUGAN (MALAYBALAY) RIVER, STA. LUCIA RIVER, MACALELON RIVER, CATANAUAN RIVER, SILONGIN RIVER, LAGOLA-PAGSANJAN RIVER, YABAHAAN RIVER, BIGOL RIVER, GUINHALINAN RIVER,, LAWAYA RIVER, MALAKING ILOG RIVER, CALAUAG RIVER, PANDANAN RIVER, VINAS RIVER AND IYAM RIVER.


**PUBLIC WARNINGS:**  
PEOPLE LIVING NEAR THE MOUNTAIN SLOPES OF THE ABOVE MENTIONED PLACES ARE ADVISED TO BE ALERT FOR POSSIBLE OCCURRENCE OF FLASHFLOODS AND LANDSLIDES. LIKEWISE, PEOPLE LIVING NEAR OR ALONG THE RIVER COURSE AND THOSE IN THE FLOOD-PRONE/LOW-LYING AREAS NEAR THE ABOVE MENTIONED RIVER SYSTEMS ARE ADVISED TO BE ALERT FOR POSSIBLE FLOODING.  
THE LOCAL DISASTER COORDINATING COUNCILS CONCERNED ARE ADVISED TO TAKE APPROPRIATE ACTIONS.

Prepared by:  
**ALP/SRE/HMBJr./SSS**  
Duty Hydrologists  
Main Operation Center-Flood Forecasting and Warning Section (MOC-FFWS)  
"tracking the sky... helping the country!"


Postal Address: P.O. Box 3278 Manila Tel No. (63-2) 929-4865 (w/Fax) & 434-9040

Source: Office of Civil Defense - National Disaster Coordinating Council, Philippines

Diagram 6\_ PAGASA Gale Warning (SAMPLE)



ASTRONOMICAL SERVICES ADMINISTRATION (PAGASA)  
 Weather Forecasting Section, Weather Branch  
 WFPC Bldg., BIR Road, Diliman, Quezon City 1100  
 TELEX: 66582 WXMNL PH FAX NOS: 9264258, 9282031, 9272677, 9271541  
 Website: <http://www.pagasa.dost.gov.ph> Email: [pagasa.ch@psc.dost.gov.ph](mailto:pagasa.ch@psc.dost.gov.ph) Voice Server: 433-ULAN



**TROPICAL CYCLONE WARNING FOR SHIPPING**

**WTPH RPMM 160000  
 GALE WARNING 03 (FINAL)**

AT 0000 16 MAY TROPICAL STORM (0803) (MATMO) WAS ESTIMATED BASED ON SATELLITE AND SURFACE DATA AT TWO FOUR POINT SIX NORTH ONE THREE ZERO POINT NINE EAST. FORECAST TO MOVE NORTHEAST AT ONE ZERO METERS PER SECOND ROUGH TO HIGH SE. WITHIN THREE ZERO ZERO KILOMETER RADIUS EAST SEMI-CIRCLE TWO SEVEN ZERO KILOMETER RADIUS ELSEWHERE ESTIMATED CENTRAL PRESSURE NINE NINE FOUR HECTOPASCALS MAXIMUM WINDS TWO ONE METERS PER SECOND NEAR CENTER ONE THIRTY METERS PER SECOND WITHIN THREE ZERO ZERO KILOMETER RADIUS EAST SEMI-CIRCLE TWO SEVEN ZERO KILOMETER RADIUS ELSEWHERE FORECAST POSITIONS AT 160600 TWO SIX POINT EIGHT NORTH ONE THREE FOUR POINT ZERO EAST WITH THIS DEVELOPMENT THIS IS THE FINAL WARNING FOR THIS TROPICAL CYCLONE FROM WEATHER MANILA PD

**WEATHER MANILA**

---

**SEVERE WEATHER BULLETIN NUMBER TWO (FINAL)  
 TROPICAL CYCLONE ALERT: TROPICAL STORM "DINDO"  
 ISSUED AT 11:00 AM, 16 MAY 2008**

**TROPICAL STORM "DINDO" HAS ACCELERATED NORTHEASTWARD TOWARDS THE NORTHEASTERN BOUNDARY OF THE PHILIPPINE AREA OF RESPONSIBILITY (PAR).**

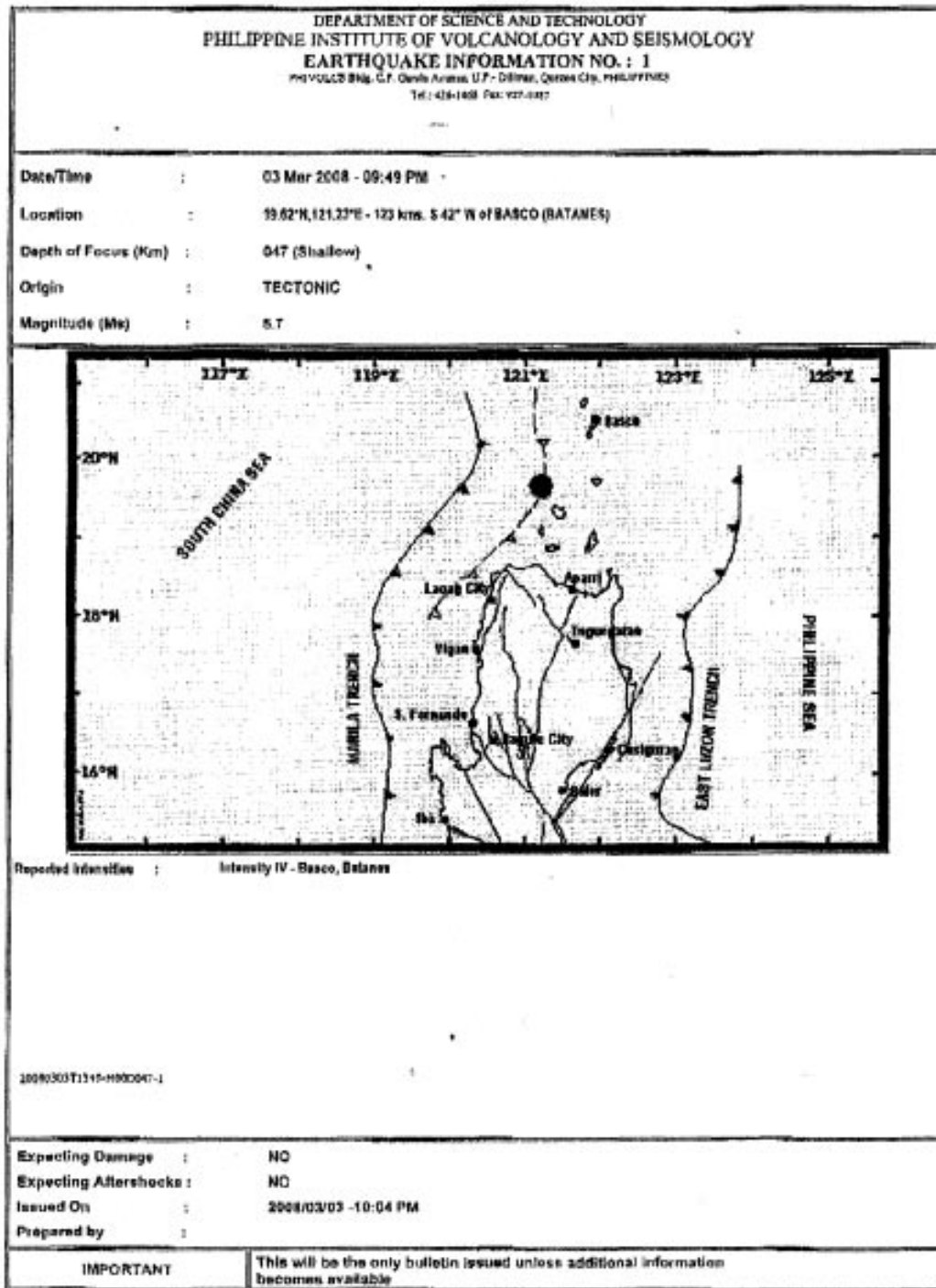
<b>Location of eye/center:</b>	At 10:00 AM today, the center of Tropical Storm "DINDO" was estimated based on satellite and surface data at 1,070 kms Northeast of Basco, Batanes or at 410 kms East Southeast of Okinawa, Japan. (25.2°N, 131.9°E).	
<b>Strength:</b>	Maximum sustained winds of 75 kph near the center and gustiness of up to 90 kph.	
<b>Movement:</b>	Forecast to move Northeast at 37 kph.	
<b>Forecast Positions:</b>	Tropical Storm "DINDO" is expected to be at 1,300 kms Northeast of Basco, Batanes or at 500 kms East of Okinawa, Japan this afternoon.	

- Tropical Storms "COSME" and "DINDO" will continue to enhance the southwest monsoon and bring it over Luzon and Western Visayas. Residents in low lying areas and near mountain slopes are advised to take all the necessary precautions against possible flashfloods and landslides.
- Residents along the coastal areas of Luzon and Western Visayas are alerted against big waves generated by these tropical cyclones.
- With this development, this is the final bulletin for this weather disturbance.

  
 PDN / NAC / RISS / RMM / CFP / LMA / MP

Source: Office of Civil Defense - National Disaster Coordinating Council, Philippines

Diagram 7\_ PHIVOLCS Earthquake Advisory(SAMPLE)



Source: Office of Civil Defense - National Disaster Coordinating Council, Philippines

### Q: What is evacuation?

A: Evacuation is the immediate countermeasure done in the event that a hazard threatens to wreck havoc in a particular area. Like in most natural and man-made calamities, evacuation is the first option decided by local authorities in order to save lives in properties. For instance, in Albay Province during the strong typhoons in 1995 and 1998, zero casualty was reached due to early evacuation of at least 320,000 people following the warning and advisories issued by local authorities.

### Q: What are the basic steps in crafting an evacuation procedure at the community level?

A: The following are the basic steps:

- a. Identify at-risk population and place them in an official master list
- b. Establish selection criteria and determine safe evacuation centers
- c. Organize evacuation team composed of one task unit leader, assistant task unit leader and members
- d. Draft evacuation plan
- e. Identify safe evacuation centers in the plan by using appropriate symbols or legends
- f. Establish selection criteria for the safe evacuation centers
- g. Make a final list of safe evacuation centers based on selection criteria developed
- h. Prepare alternate plans if safe evacuation centers are insufficient
- i. Establish coordination among DCCs for timely support and complementation
- j. Develop an evacuation drill plan and subsequently put this plan into a test.

To make evacuation movement timely and more organized, there is a need to develop an evacuation plan with identified selection criteria for vulnerable population. The risk map is the basic input in identifying who are to evacuate and where.

For example, the plan may state the population that needs to evacuate by type of hazard:

1. **Landslide** - Population located within the landslide areas identified by geologist with a proportionate ground distance of at least 6 kilometers for every kilometer height of the slope.
2. **Mudflow** - Population to be evacuated for protection against mudflow effects are those residing near river channels with an average elevation of at least three meter elevation above the rim of riverbank regardless of distance from the source of deposits and the quality of house or property.
3. **Typhoon due to strong wind** - People to be evacuated are those occupying houses of which wind load capacity is equal to or lower than that the strength of the expected typhoon.

4. **Seismic sea waves (tsunami)** – People to evacuate in case of tsunami are coastal residents of areas having less than 10 meter elevation above sea level.
5. **Pyroclastic flow of volcanic eruption** – in the case of Mayon Volcano, the population residing inside the 6-km-radius permanent danger zone are the first to evacuate at Alert Level No. 3 while those inside the 7-8 kilometer extended high risk zone in the south-east quadrant are the next to move once Alert Level No. 4 is declared.

Name of Barangay	Total Population	Unsafe Population due to				Safe Population
		Flood	Landslide	Tsunami	Mudflow	
<b>Total</b>						

The selection criteria for vulnerable population can be decided through a warning and evacuation planning workshop organized at the community level. List of vulnerable population can be identified and presented as shown in the table.

**Q: What are the criteria in the selection of safe evacuation centers?**

**A: Community members are in the best position in identifying evacuation centers. Structures commonly used as evacuation centers are school**

**buildings, government facilities, and private houses. However, not all are considerably safe by their geographical location and structural integrity. That is, there had been reported casualties who evacuated in unsafe structures.**

Evacuation centers can be considered "safe" if they are: located in a high elevation, far from steep slopes and coastlines, distant from river channels, accessible to road network, and with sanitation facilities. The community, through a planning workshop, can best develop localized criteria.

There are many communities that are physically unsafe due to poor status of accessibility. In case of identifying safe evacuation routes, many local planners aptly consider roads, trails,

Name of Road Section/Trail, others	Hazard Threat	Status for the last 10 years	Remarks
1. Pawa-Bogtong Bridge	Mud flow	Unsafe at 60mm but safe at 40mm hourly rainfall or below.	Early evacuation
2. Tagaytay Road	Flood	Heavy flooding during heavy rains	Early evacuation
3. Sto. Domingo-Salvacion Road	Tsunami	No experience of Tsunami	Safe anytime except during tsunami
4. Legazpi-Daraga Road	None	Not affected by any type of hazard except fallen electric post after a strong typhoon	Safe anytime before the event of typhoon

and catwalks as safe evacuation routes. Even farms and private open lands can be considered safe evacuation routes as long as they are not threatened or affected by previous impacts of hazards. On the previous page is a sample matrix how safe evacuation routes can easily be understood in the community and integrated in the contingency plan.

**Q: What is the task of an evacuation unit?**

**A:** The Philippines has been well guided by Presidential Decree 1566 in terms of DCC structures from the national down to the barangay level. Said decree provides for the creation of various task units under the operational supervision of the local DCC Chairman. One of the units to be organized is the Evacuation Task Unit. The unit is composed of a task unit leader and several members depending on the size of population, size of the threatened area, and the number of puroks. It is recommended that each purok must be properly represented in each unit. However, at a minimum, it is preferred that puroks with hazard threats must be duly represented.

**Q: What is the task of the transportation unit?**

**A:** Evacuation movement is usually supported by sufficient number of transport vehicles in order to make the movement faster. This is especially so if the evacuation activity is done right when the impact of the hazard was felt. If early warning and evacuation is done ahead of the impact or within the period of safe lead time, no transportation support is much needed, except to assist the disabled, children, women, and the sick.

The public transportation facilities can be effectively and efficiently support the community’s evacuation movement if done according to plan. The matrix below can help guide the community in organizing transportation support upon receipt of order to evacuate.

Name of Vehicle	Driver	Capacity (persons)	Place of Assignment	Target Barangay	Destination (Evacuation Center)
SCX 233	Mr. X	50	Pick-Up Area 1	Mabinit	Gogon Elem. Sch.
UNH 197	Mr. V	20	Pick-up area 2	Bogtong	Ibalong Elem. Sch.
SCX 550	Mr. S	40	Pick-up area 3	Padang	Legazpi Port E. S.
SCX 668	Mr. N	6	Emergency	On-Call	Hospital

**Q: What is a safe pick-up area?**

**A:** Safe pick-up areas are those identified nearby places where vulnerable population are to gather before they will be transported to designated evacuation centers. These pick-up station points can be chapels, open spaces, known trees, or any other places that are considered safe and accessible to emergency support vehicles. Safe pick-up points can also be triage areas where sick persons and those with contagious diseases are identified for appropriate treatment and/or referral.

Name of Barangay \_\_\_\_\_

Name of Purok	Name of Safe Pick-Up Area	Location	Vehicle Assigned	Designated Evacuation Center
Purok 1	Chapel	Purok 7	SCX 557	Albay Elem. School
2				
3				
4				

Safe pick up areas are pre-identified by the community but validated by technical staff of local authorities. The table on the left shows a simple presentation checklist of safe pick-up areas.

**Q: What is an evacuation plan?**

**A:** A hazard specific evacuation plan may be drafted within two or three days. Note that an evacuation plan for typhoon is not appropriate for volcanic eruption; evacuation requirements differ from one particular hazard to another.

The list of population at risk, checklist of evacuation routes, list of support vehicles, and names of members of the support task units (transportation, medical, evacuation and warning) are considered as inputs in the planning workshop process. It appears in most workshop results that evacuation capability in most cases is insufficient taking into account limitations in local resources. For instance, identified number of safe evacuation centers is not enough to accommodate all population to be evacuated. The table below shows a tabular illustration of an evacuation plan.

Evacuation Plan on Flood

Name of Municipality: _____				Name of Barangay: _____			
Purok	Total Population	Vulnerable Population	Safe Population	Name of Safe Evacuation Center	Capacity	Population w/o Evacuation Center	Option

### Q: What is a table-top exercise?

A: A table-top-exercise puts to test the applicability of the draft evacuation plan. The drill revolves around a scenario that describes the type, extend, and severity of the hazard; possible effects; affected population; and the areas to be affected. The exercise will assess the capacity of each vulnerable barangay in terms of utilization of their resources, time management, communication mechanism, coordination arrangements, readiness of the DCC, and cooperation among stakeholders.

In the drill plan, the countermeasures will be focused on warning and evacuation wherein actors from the DCCs' task units both in the barangay and municipal levels will be activated. The plan has to be finalized only after the table top exercise is done. Templates of warning system, communication protocol, information materials (i.e. advisories), operational structure, shall be developed, defined and validated. A sample plan is presented on the succeeding pages.

## Diagram 8\_ Evacuation Drill Plan of Albay Province (SAMPLE)

Provincial Disaster Coordinating Council  
Province of Albay

### EVACUATION DRILL PLAN

#### OBJECTIVES OF THE EXERCISE

The Provincial Disaster Coordinating Council, in cooperation with the PHIVOLCS, Office of Civil Defense, Department of Education, Phil. National Red Cross, Local Government Units, Department of Health, Department of Social Welfare and Development, and the Philippine National Police, had conceptualize the pilot project for the conduct of an emergency evacuation drill in Barangay X, Camalig Albay. The project is created to guide the participants how to handle Mud and Debris Flow Early Warning System and Evacuation Procedures they might confront due to possible mudflow coming from the higher slope of Mayon Volcano. The focus is testing the evacuation capability of PDCC-Albay, MDCC-Camalig and BDCC X in terms of coordination using their existing warning and communication resources that is being operated by the MDCC and BDCC X.

The participants will be informed of the general objectives and scenario. The exercise will immediately be followed by an evaluation and debriefing.

The intention of the early warning and evacuation drill is to test the capacity of various DCCs in responding to mud and debris flow using their existing local resources in terms of:

- Manpower
- Rain gauge
- Communication support equipment (fax machine, VHF radio sets)

- Warning equipment such as siren, megaphone and warning board
- Time management, in terms of emergency response by the community members
- Transportation support to evacuate people from the danger zone to the designated safe evacuation centers
- Use of fire truck and ambulance siren to forewarn people about the impending threat of flood and debris flow
- Mobilization of ambulance vehicles to evacuate sick, disabled or aged persons

The response capacity of the community members threatened by the potential hazards will ultimately be tested and evaluated to determine how fast they react to an emergency situation.

### ORGANIZING THE EVACUATION PILOT PROJECT

The pilot project for the emergency evacuation drill has been planned as part of the regular activities of the province. The duration of the exercise including the debriefing would be one (1) day. Half day for the actual emergency evacuation drill and at least 2 hours for the evaluation and debriefing. The concerned PDCC and MDCC officials will facilitate the conduct of the activity in coordination with other national offices and local government units who will render technical support.

### PARTICIPANTS IN THE ACTIVITY

- Members of the MDCC-Camalig, approximately \_\_\_ persons.
- Members of the BDCC and resident of Barangay \_\_\_, approximately 20 families or 140 persons.
- Support staffs from:
  - PDCC and PAGASA to work on warning and advisory, \_\_\_ persons
  - DPWH, PEO, and other organizations to provide evacuation vehicles, \_\_\_ persons
  - PNP who will provide security assistance, \_\_\_ persons
  - DSWD and PSWDO to provide relief support, \_\_\_ persons
  - DOH, PHO, MHO to make available ambulance vehicle and medical personnel, \_\_\_ persons,
  - DepEd to provide emergency evacuation center, \_\_\_ persons
  - PNP to provide security, \_\_\_ persons
  - MAO to monitor rainfall data, \_\_\_ persons
- VIPs, \_\_\_ persons.
- Invited observers from selected agencies and other local government units.
- Others, \_\_\_ persons.

### THE SETTING

1. Camalig Disaster Operation Center/Conference Hall. The venue will be set-up for the purpose of orientation to all guests and observers, re: scenario, actors, etc.
2. Elementary School: \_\_\_\_\_. Venue of actual evacuation as well as the debriefing and activity evaluation right after the emergency evacuation drill.
3. Field Level
  - a. Scene 1: BDCC Activation (Brgy. Chairman)
  - b. Scene 2: Releasing of barangay warning information for the residents to prepare for evacuation, with evacuation kit.

- c. Scene 3: Transport of evacuees (pick-up/triage area).
- d. Scene 4: Receiving of evacuees at the evacuation center: DepEd.-Registration; MSWDO-master listing of evacuees; PNP-security; CHO-health and sanitation; Municipal Information, Officer-Information and media coverage.

TIME	LOCATION	SCENARIO
8:00 A.M.	PAGASA-Manila	The PAGASA staff in Manila will release a special advisory informing the PDCC-Albay regarding a major weather disturbance that might result to mud and debris flow coming from the slope of Mayon Volcano due to heavy rainfall.
8:15 A.M.	PDCC- Albay	To convene PDCC, call for an emergency meeting and relay the special warning to MDCCs concerned. Instruct the MDCC to convene, monitor the rainfall and submit hourly rainfall data to PDCC
8:30 A.M.	MDCC-Camalig	<ul style="list-style-type: none"> <li>• The MDCC immediately convenes to prepare for emergency response. Evacuation plan reviewed.</li> <li>• Concerned MDCC members are instructed to assess the hazard and evaluate capabilities for immediate evacuation.</li> <li>• MAO is instructed to report the hourly rain gauge monitoring observation to MDCC.</li> <li>• MDCC to forward the rainfall data report to PDCC.</li> <li>• MDCC relays the warning information to BDCCs and instructs the Brgy. Capt to convene and prepare the threatened community for evacuation.</li> <li>• Maintains coordination with PDCC.</li> </ul>
8:45 A.M.	MDCC member agencies	<ul style="list-style-type: none"> <li>• DepEd. suspends classes</li> <li>• Transport groups are pre-positioning vehicles for evacuation.</li> <li>• PNP dispatched security personnel</li> <li>• MHO activated medical team with ambulance vehicle to support in evacuation.</li> <li>• Radio communication system activated for a 24-hour operation.</li> </ul>
8:45 A.M.	Barangay X	<p>BDCC is convened for an emergency meeting and prepare to execute evacuation plan within 2 hours.</p> <p>Warning and Advisory are relayed to community for preparedness on evacuation using megaphone and siren of fire truck/ambulance car.</p>
9:00 A.M.	Community	Threatened population prepares for evacuation.

TIME	LOCATION	SCENARIO
9:30 A.M.	Community  MDCC/BDCC  MHO  DepEd.	Threatened population is advised to evacuate and proceeds to the designated pick-up area for evacuation triage.  Evacuation vehicles are pre-positioned at the designated pick-up area. Drivers are well instructed where to bring the evacuees.  There are medical staff dispatched to the designated evacuation site to assist evacuate sick persons, disabled or aged.  Evacuation Centers are open and ready to accept evacuees.
10:00 A.M.	Baylao Evacuation Center	Actual execution of evacuation plan takes place. BDCC is supported by the MDCC in terms of: communication, transportation, medical ambulance, security, etc.
11:30 A.M.	Relief distribution and Decampment	Evacuees returned back to respective houses after the Local DCCs declared that the residential area is safe already.
1:30 P.M.	Debriefing and Evaluation	Debriefing
3:00 P.M.	End of the Activity	

**NOTE**

If an actual emergency occurs during the conduct of the drill, locate the emergency personnel from the MHO with first aid supplies and equipment on standby. In such event, immediately report the nature of the emergency and assistance needed using the code "Triple Break, Emergency" using VHF radio set to MDCC operation center.

Prepared for comments and recommendations:

CEDRIC D. DAEP

## POINTS TO PONDER

### Community-based Early Warning System

1. Which of the following hazards have early warning information ahead of its impact?

Type of Hazard	With Warning	Without Warning	Source
Typhoon			
Volcanic Eruption			
Flood			
Landslide			
Mud flow			
Tsunami			
Earthquake			

2. For those hazards without prior warning, what is your plan to make them available?
3. What are the significant uses of rain gauge in terms of flood? Landslide? Mudflow?
4. Should you find interest in learning the use of rain gauge, interpret rainfall data, and translate them into warning information, to whom are you going to ask for assistance? Why?

### Communication Protocol

1. What agencies are your official source of :
  - i. Warning information? \_\_\_\_\_
  - ii. Official advisories? \_\_\_\_\_
2. What are your means of accessing official warning information and advisories?
3. What two-way or one-way communication equipment is available?

4. How do you relay early warning information and advisories to and from the municipality and the community? Between the municipality and province? Between the community and the province?
5. What official report format do you follow(own format, OCD format, DSWD format, PNR format)?

#### Evacuation Procedures

1. What criteria do you use in identifying at-risk areas?
2. What are these hazards?
3. How do you select the vulnerable population recommended for evacuation? Who or how many are they?
4. Where are they going to evacuate?
5. How do you select a safe evacuation center or safe temporary holding area?
6. What indicators do you use as basis for saying that the evacuation route is safe?
7. What are these evacuation centers and where are they located?
8. How will the people be evacuated (walking, running, use of vehicle, etc.)?
9. Is the safe evacuation route clearly identified and known to every one?
10. Do you have safe pick-up points? Where are they located?
11. How many transportation vehicles will support emergency evacuation movement? Where are they stationed?
12. How fast (in minutes) can these vehicles travel from their station to the designated safe pick up areas?
13. Are fuel supports immediately available?

14. Who are the designated drivers? Where are they?

**Suggested Group Workshop:**

- Identify the hazard that threatens your barangay.
- Specify the purok or part of the barangay affected.
- Specify the number of persons and families affected.
- Identify the kind of warning system/ instruments used and warning information developed
- How many of the population are able to access such warning information?
- Of the existing warning system, which one is effective in informing the vulnerable population?
- Considering the major hazards in your area, try to establish warning criteria on mud and debris flow.







Partnerships for Disaster Reduction - South East Asia (PDR-SEA) is a multi-phased project implemented by UNESCAP and ADPC with funding support from the European Commission Humanitarian Aid department (ECHO) since 2001. The Phase 4 of PDR-SEA aims to institutionalise the effectiveness of CBDRM into socio-economic development process through strengthening of national and local capacity for the implementation of the Hyogo Framework for Action in order to build up community resilience in the project countries of Cambodia, Indonesia, the Philippines, and Viet Nam. The project activities involve in strengthening and institutionalising CBDRM through local-level pilot activities, facilitating information dissemination through existing regional and national disaster risk management networks, enhancing ownership of CBDRM programs by developing the capacities of local authorities and promoting CBDRM through Disaster Management Practitioners' Forum.



The European Commission Humanitarian Aid department (ECHO) was set up in 1992 to provide rapid and effective support to the victims of crises outside the European Union. Recognising the importance of preventive measures, ECHO launched its disaster preparedness programme, DIPECHO, in 1996. Disaster Preparedness ECHO targets vulnerable communities living in the main disaster-prone regions of the world and aims to reduce the vulnerability of the population. Between 1996 and 2004, ECHO provided more than 78 million Euro for 319 projects worldwide. These demonstrate that simple and inexpensive preparatory measures, particularly those implemented by communities themselves, are extremely effective in limiting damage and saving lives when disaster strikes. ECHO funds support training, capacity building, awareness-raising and early-warning projects as well the organisation of relief services. The programme has shown that even simple precautions can help save lives and property when disaster strikes. The funds are directed through ECHO and implemented by aid agencies working in the regions concerned. For more details, please visit [http://ec.europa.eu/echo/index\\_en.htm](http://ec.europa.eu/echo/index_en.htm)



The United Nations Economic and Social Commission for Asia and Pacific (UNESCAP) is the regional arm of the United Nations Secretariat for the Asian and Pacific regions, located in Bangkok, Thailand. UNESCAP is committed to materialise the visions of the United Nations Millennium Declaration, which was adopted by the UN General Assembly in September 2000. The PDR-SEA project is being implemented jointly by UNESCAP and ADPC at the regional level. For more details, please visit <http://www.unescap.org>



The Asian Disaster Preparedness Center (ADPC), established in 1986 is a regional, inter-governmental, non-profit organisation and resource center based in Bangkok, Thailand. ADPC is mandated to promote safer communities and sustainable development through the reduction of the impact of disasters in response to the needs of countries and communities in Asia and the Pacific by raising awareness, helping to establish and strengthen sustainable institutional mechanisms, enhancing knowledge and skills, and facilitating the exchange of information, experience and expertise. For more details, please visit <http://www.adpc.net>

Partnerships for Disaster Reduction  
South East Asia  
Phase 4

Disaster Management Systems  
ASIAN DISASTER PREPAREDNESS CENTER

5M Tower, 24th floor  
929/69 Pahlolyothin Road, Samsoet Bai  
Phayathai, Bangkok 10400  
Thailand

Tel (662) 298 0682 - 92  
Fax (662) 298 0012 - 13

[www.adpc.net](http://www.adpc.net)