



Community-Based Early Warning System

Training Manual

A training manual developed by Philippine Red Cross as part of the project "Enhancing capacities of National Red Cross Societies in Indonesia, Philippines, and Vietnam in early warning information interpretation, translation, and application for preparedness" supported by American Red Cross, and with technical assistance from the Asian Disaster Preparedness Center and the Regional Integrated Multi-Hazard Early Warning System



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Philippine Red Cross



Regional Integrated
Multi-hazard
Early Warning System



Asian Disaster Preparedness Center

The completion of this Manual was made possible through the hard work, dedication and commitment of the Disaster Management Services, Philippine Red Cross. With the leadership of Ms. Catherine Marie Martin, Disaster Management Services Director, and the support of Philippine Red Cross Headquarters Staff, and Philippine Red Cross Negros Occidental and Pangasinan Chapters, this Manual was pilot tested, refined, and finalized.

Cover Photo: Officials of Barangay Bonuan Boquig, Dagupan City, Pangasinan, Philippines participate in identifying hazard-prone areas, evacuation areas and safe evacuation routes, within the barangay, as part of capacity building activities under the project, “Enhancing capacities of National Red Cross Societies in Indonesia, Philippines and Vietnam in early warning information interpretation, translation and application for preparedness”.



MESSAGE

The Philippines was ranked as one of the most disaster-prone countries of the world by the *Center for Research on the Epidemiology of Disasters* and this is not only because of its geographic attributes but largely to the fact that majority of the population resides in hazardous areas. While hazards turning into disasters cannot be prevented, its effects can be mitigated. One way of ensuring such is having an early warning system in place that is not only well understood, but most importantly, generates required action from the communities that receive it.

The PRC approach to disaster risk management is two-pronged – disaster preparedness and mitigation, and disaster response. The Red Cross has engaged communities in preparedness activities primarily because it believes that people in the community have a very important role to play in mitigating the effects of hazards.

The strongest asset of the PRC is its volunteers in the community. Through the Red Cross 143 Volunteer Program, the organization intends to have an army of volunteers on the ground ready to prepare, respond and mitigate the impacts of hazards.

The challenge of Early Warning System is to bridge the last mile and PRC, with strong volunteer presence on the ground, can be the catalyst to ensure that the gap is bridged. To ensure that it works, the PRC has developed the Community-Based Early Warning

System Training Manual which aims to help the community better understand the hazards that they face and the actions that should be undertaken to mitigate the effects of such hazards.

May this Community-Based Early Warning System Training Manual be a way of strengthening the capacity of people in communities to prevent unnecessary suffering brought by disasters.

Thank you.

A handwritten signature in black ink, appearing to read 'Gwendolyn T. Pang', written in a cursive style.

GWENDOLYN T. PANG

Secretary General

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TRAINER'S GUIDE IN USING THIS TRAINING MANUAL

This Training Manual on Community-Based Early Warning System (CBEWS) is developed to aid trainers in facilitating and/or conducting Early Warning System (EWS) training in the Communities. As such, the module is developed from the perspective of the community, rather than the academe, without necessarily losing the technical purview of the subject.

The target audience for the training are community leaders and volunteers, with the clear objective of sensitizing communities on the importance of Early Warning and Early Action.

The process in the conduct of the training is pedagogical learning; as such, trainers should make sure that prior to the training proper, he or she must have a clear lesson plan that is tailored to the context of the trainees and the community.

Examples given in the manual can be modified, however, trainers should make sure that the examples are clearly related to the topic and must be realistic.

To facilitate a good learning process, the following tips to the trainers are hereby provided.

Trainers should:

- Get the profile of the participants no less than 2 days prior to the training schedule. This will enable the trainer to get a glimpse of the know-how and background of the participants, which is essential in processing the exercises.
- Get the profile of the community no less than 5 days prior to the training. This will provide the trainer ample time to tailor some of the exercises indicated in the manual to that which is being experienced, or recently experienced, by the community to make the learning more apt and realistic.
- Find out if the community has an existing Community Disaster Plan and EWS to be able to adjust the training process to the needs of the community
- Establish training rules, developed by the participants themselves, at the beginning of the training.
- Respect the participants. The trainer must arrive in the venue at least one hour before the start of the training. This will give the trainer time to set up the room, check the materials and equipment, and welcome the participants to establish rapport.
- Always ensure that the venue is conducive for lecture and the planned exercises or simulation.
- Make simulations and drills as realistic as possible, but mindful of the sensitivities of the participants, particularly if the community has similar experience with a scenario to be done or being done.
- Bear in mind that if communities can associate with the scenario, a different approach to processing the activity might be required.
- Always be alert to sensitivities and/or feelings of the community associated with the exercise, and include these as part of the process. One or two participants may demonstrate

anxiety after the exercise and even after the processing of the exercise. If this happens, the trainer must find time to process the feelings of the participant on a separate session.

- Conduct an evaluation after the training; do not focus only on the administrative matters, but more importantly on the areas of content, relevance, and learning.
- Share result of evaluation to HQ DMS, particularly those that has something to do with training content and relevance, so that these will be taken into account in future training manual development.

Pre-Training Climate Setting

Duration: 45 minutes

a. Opening Program: 15 minutes

b. Climate Setting: 30 minutes

- **Getting to know you exercise**

- **Presentation of Administrative and Training Rules**

Note to the trainer: Let the participants set their own ground rules but give them examples such as not being late in the sessions, putting mobile phones on silent mode, etc.

- **Leveling of Training expectations**

Instruction: Prepare meta cards of 3 different colors. Group the participants into 2 or 3 groups, depending on the class size. Instruct the group to select a rapporteur and a group leader. Tell the participants that in their group they should discuss and enumerate a minimum of 3 expectations on the following aspects:

- *from the training*
- *from their co-participants*
- *from the trainers*

Assign a specific color for each group. Give the group 10 minutes to work on the expectations.

While the participants are working on their expectations, the trainer should assign a board and/or manila paper where the group can stick their answers. The board and/or manila paper should have the heading: EXPECTATIONS FROM THE TRAINING, CO-PARTICIPANTS AND TRAINERS.

Instruct the group that as soon as they are done, or when 10 minutes is up, they are to stick the expectations that they wrote on meta cards, on the designated column on the board/manila paper. Let each group report their expectations. Trainer should process the expectations by clustering similar ideas.

- **Presentation of Training Objectives**

After processing the expectations per group, the trainer should present the objectives of the training and validate and/or cross-reference the expectations of the participants with the training objectives. Trainer should indicate which of the expectations are not likely to be met and park it, and make sure that at the end of the training, he or she checks which expectations were met and not met and validate the same from the participants. This will be the trainer's integration session.

Course Overview
COMMUNITY-BASED EARLY WARNING SYSTEM TRAINING

TARGET AUDIENCE

- Community volunteers (BDAT or 143)
- Barangay Disaster Committee Members
- Barangay Development Council Members
- Barangay Health Workers

OBJECTIVES

At the end of 8.25 hours, the participants shall be able to:

- Define the meaning of disaster
- Explain Disaster and its relationship to Vulnerability and Capacity
- Explain the Hazards in the Philippines
- Explain what is an Early Warning System
- Enumerate the types of warning system
- List down the four (4) elements of EWS
- Identify the different warning signals
- Enumerate actions needed before, during, and after hazard impact
- Integrate the CBEWS in their DP Plan

EXPECTED OUTPUT

The participants have:

- Defined disaster
- Defined and linked disasters to Vulnerability and Capacity
- Enumerated the different hazards in the country
- Understood the meaning of early warning system and its objectives.
- Enumerated the four (4) elements of EWS
- Understood the alert levels
- Identified the different warning signals
- Enumerated actions required before, during and after hazard impact
- Incorporated CBEWS in their DP Plan

PROCESS

Lectures and Discussions
Video Presentations
Role play/table top-exercises
Question and Answer
Brainstorming

LOGISTICS

Multimedia Equipment
Presentations and slides
Training Materials and Supplies

CONTENTS

- Module 1 - Disaster Concepts
- Module 2 - Philippine Hazardscape
- Module 3- Early Warning Definition, Concepts and Elements
- Module 4 - Understanding Hazards and Alert Levels
- Module 5 – Early Warning – Early Action

	Module 1 DISASTER CONCEPTS	
<p>SESSION OBJECTIVES</p> <p>At the end of 1.5 hours discussion, the participants will be able to:</p> <ul style="list-style-type: none"> • Define the meaning of Disaster • Define Hazard , Vulnerability and Capacity • Analyze the link between , Hazards, Vulnerabilities and Capacities to Disasters <p>EXPECTED OUTPUTS</p> <p>The participants have:</p> <ul style="list-style-type: none"> • Discussed the meaning of disasters and its component • Explained Hazard, Vulnerability and Capacity • Illustrated the connection between hazards, vulnerability and capacity <p>PROCESS</p> <p>Lecture and Discussions Question and Answer</p> <p>LOGISTICS</p> <p>Multi-media projector Metacards and zopp board if multi-media is not available</p> <p>CONTENTS</p> <ol style="list-style-type: none"> 1. What is a disaster? 2. Types of Disasters 3. Defining Hazard, Vulnerability and Capacity 4. Causes of Vulnerability 		

	Module 1 DISASTER CONCEPTS	
ACTIVITY	LOGISTICS & PRESENTATIONS	
<p><i>Start the session by asking the participants the following:</i></p> <p>What is a Disaster? Is it an act of God?</p> <p><i>Elicit as many answers as you can get before presenting a case study.</i></p> <p><i>Present a simple case study such as a construction of a building. Narrate to the participants that the lot was given for free but the requirement is that a building should be built for the community in that lot. The congressman donated money for the construction of the building. The Barangay Officials did not consult Mines and Geosciences Bureau (MGB) or Philippine Institute of Volcanology and Seismology (PHIVOLCS) before any construction was done. The building was completed and an inauguration was set with honoured guest invited. A day before the inauguration an earthquake took place and cracks were visible in the building, but because the inauguration is already set the following day and it would be an embarrassment for the barangay officials to cancel it last minute, they decided instead to seal the cracks with plaster and paint it to conceal the cracks. Unfortunately on the day of the inauguration an aftershock took place which is bigger than the first one and the building collapsed with the people in it.</i></p> <p><i>Ask the participants:</i></p> <p>Is there a disaster? If yes/ no, why? When did the disaster start? Could the disaster have been prevented?</p> <p><i>Gather as many responses as possible, and whenever possible let the participant's debate amongst themselves on the question.</i></p> <p><i>When they have provided ample answers, give the definition of disaster.</i></p> <p>A <u>DISASTER</u> is a serious <u>disruption</u> of the functioning of a society, causing <u>widespread</u> human, material or environmental losses which <u>exceed the ability</u> of the affected society <u>to cope</u> using only its <u>own resources</u>.</p> <p><i>Emphasize to the participants the keywords of what makes a disaster. Tell the participants that an earthquake, for example, is not considered a disaster unless it causes widespread disruption and damage, and the ability of the community to cope is not in place.</i></p> <p><i>Present to the participants the types of hazards and provide some examples</i></p> <p>Natural Hazards (rapid onset and slow onset) Rapid e.g earthquake, tsunami. Slow Onset e.g. drought</p>	<p>Multi-media projector</p> <p>Flip chart</p> <p>Lap top</p>	

	Module 1 DISASTER CONCEPTS	
ACTIVITY	LOGISTICS & PRESENTATIONS	
<p>Human Instigated e.g. chemical spill, nuclear reactor meltdown</p> <p>Complex Emergencies and Other Situations of Violence e.g. internal armed conflict</p> <p><i>Ask the participants WHO IS RESPONSIBLE FOR THE DISASTER? Draw as many answers as you can and generate debate whenever possible before presenting Disaster as a Process.</i></p> <p>A disaster is the outcome of a process where communities suffer destructive damage of a physical, economical, psychological, social or organizational nature because they did not have the awareness, response preparedness, capacity to prevent or mitigate and/or the capacity to respond in the face of a pre-existing risk.</p> <p><i>Present the “Crunch Diagram”</i></p> <p>D = Hazard x Vulnerability Capacity</p> <p><i>Explain to the participants that the magnitude of a disaster is defined by the hazards and the degree of vulnerability.</i></p> <p><i>Define Hazard</i></p> <p>Hazard is a dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihood and services, social and economic disruption, or environmental damage. It could be either natural or man-made.</p> <p>In relation to disaster, hazard is the phenomena that will affect the vulnerable group or elements at risk. In addition, elements at risk or vulnerable groups will be affected differently by hazards of different severity. The more severe the hazard is, the more damage will be inflicted on the element.</p> <p><i>Elucidate further what is “hazard’ by further grouping them into:</i></p> <p><i>Those based on nature, such as earthquake, floods, typhoons, drought</i> <i>Those based on violence, such as armed conflict, civil unrest and war</i> <i>Those based on deterioration, such as environmental degradation or declining health</i> <i>Those based on the failing of industrialized society such as technological failure, fires, factory explosions, chemical spills, transport collisions</i></p>		

	Module 1 DISASTER CONCEPTS	
ACTIVITY		LOGISTICS & PRESENTATIONS
<p>Ask the participants What is vulnerability then?</p> <p>Vulnerability refers to the conditions determined by physical, economic, environmental and political factors or processes that increase risk and people's susceptibility to the impact of hazards.</p> <p>Vulnerability may arise from various physical, social, economic, and environmental factors, such as poor design and construction of buildings, inadequate protection of assets, lack of public information and awareness, limited official recognition of risks and preparedness measures, disregard for wise environmental management, and fatalistic attitude.</p> <p>When the degree of vulnerability is higher, the effect of the disaster will be greater.</p> <p><i>Emphasize further that vulnerability is hazard-specific, and in the eyes of the hazard we are equally exposed if we are living in the same location; the capacity to cope or respond to the damaging effects of a hazard is another story.</i></p> <p><i>Site an example to further explain the relevance of each.</i></p> <p>One good example is the communities in Batanes. Batanes is within the path of typhoons, and one of the most common places to experience typhoon. To reduce or even eliminate disaster risks, the communities build their houses with strong foundation and grow root crops, such as onion, for their livelihood. The hazard (typhoon) could not be eliminated, but vulnerability could be reduced. Consequently, the effect of disaster is reduced.</p> <p><i>Explain to the participants the causes of vulnerability.</i></p> <p>Deep rooted (poverty, limited access, prejudice) Dynamic (education, poor systems, lack of training, rapid urbanization, environmental degradation, media freedom) Marginal conditions (overcrowding, buildings, poor environment, weak economy)</p>		

	Module 1 DISASTER CONCEPTS	
ACTIVITY		LOGISTICS & PRESENTATIONS
<p><i>Tell the participants that among the effects of disasters are:</i></p> <p>Loss of life Loss of livelihoods Damage to property Destruction of infrastructure Damage to the environment Financial loss Diversion of resources Epidemics Migration Displaced people or Refugees Food shortages Insecurity</p> <p>To mitigate the Disaster, one has to increase the capacity of the individual and the community.</p> <p>What is Capacity?</p> <p>Capacity refers to individual and collective strength and resources that can be enhanced, mobilized and accessed, to allow individuals and communities to shape their future by reducing their disaster risk.</p> <p><i>Explain to the participants that Capacities are analyzed as the interaction of the resources and access to these resources by the different groups at risk and the overarching systems and structures that decrease or increase the capacity to confront the disaster risk.</i></p> <p>There are capacities that addresses vulnerability and these are:</p> <p>Individual survivability (taking individual action) Community readiness (community having warning signals)</p> <p>There are capacities that addresses hazards and these are:</p> <p>Preventive Capacity (actions that prevent hazard impacts, e.g. soil stabilization, floodplain regulation) Mitigation Capacity (actions that reduce hazard impacts, e.g. property protection, education and awareness)</p> <p>Vulnerability is the remaining gap between the sum of all hazards a community faces minus the sum of its capacities and resources to cope with the possible effects of these hazards.</p>		

	Module 1 DISASTER CONCEPTS	
	ACTIVITY	LOGISTICS & PRESENTATIONS
<p><i>Wrap up the session by stating the following:</i></p> <p>One should always distinguish between the final trigger and the disaster itself. A disaster is not just a consequence of the trigger but of a whole process.</p> <p>While the trigger might be an act of God, the disaster is definitely not! One can't understand a disaster by just looking at the damage. Sound disaster management does not merely focus on the trigger, but focuses on the whole process that leads to a disaster.</p>		

	<p align="center">Module 2 THE PHILIPPINE HAZARDSCAPE</p>	
<p>SESSION OBJECTIVES</p> <p>By the end of 1.5 hours lecture-discussion, the participants will be able to:</p> <ul style="list-style-type: none"> • Identify the Geographic Location of the Philippines • Enumerate the different hazards in the Philippines <p>EXPECTED OUTPUTS</p> <p>The participants have:</p> <ul style="list-style-type: none"> • Illustrated the unique Geographical Location of the Philippines • Explained the reasons why Philippines' location is prone to natural disasters • Described the different hazards in the Philippines <p>PROCESS</p> <p>Lectures and Discussions Power Point Presentation (47 slides, 7 videos) Question and Answer</p> <p>LOGISTICS</p> <p>Multimedia Equipment Metacards if multimedia is not available</p> <p>CONTENTS</p> <ol style="list-style-type: none"> 1. Overview of the Philippine Hazardscape 2. Hazards in the Philippines <ol style="list-style-type: none"> 2.1 Hydro-meteorological Hazards <ol style="list-style-type: none"> a. Typhoon b. Sea Swell c. Flooding d. Flash Flood e. Rain-Induced Landslide f. Drought 2.2 Effects of Climate Change 2.3 Volcanic Hazards <ol style="list-style-type: none"> a. Pyrocastic/Ash Fall b. Lava Flow c. Lahar 2.4 Geological Hazards <ol style="list-style-type: none"> a. Ground Fissuring b. Liquefaction c. Earthquake-Induced Landslide 		

	Module 2 THE PHILIPPINE HAZARDSCAPE	
d. Tsunami 2.5 Fire Hazards 2.6 Technological Hazards <ul style="list-style-type: none"> a. Sea Tragedy b. Plane Tragedy c. Road Accident 2.7 Complex Emergencies and Other Situations of Violence		

	Module 2 The Philippine Hazardscape	
ACTIVITY	LOGISTICS & PRESENTATIONS	
<p>OVERVIEW OF THE PHILIPPINE HAZARDSCAPE</p> <p><i>Start the session by asking the participants about the geophysical attributes and location of the Philippines. Possible answers are:</i></p> <p>An archipelago Surrounded by bodies of water</p> <p><i>After recognizing their answers, you can continue the discussion by giving the following input:</i></p> <p>The Philippines is located along the typhoon belt (Western North Pacific Basin) where 66% of the tropical cyclones enter or originate. It is situated in the Pacific Ring of Fire (2 major tectonic plates meet – Eurasian and Pacific plates), thus making it vulnerable to volcanic eruptions, earthquakes and tsunamis. Its 17,000-km coastline is increasingly exposed to high risk, and more vulnerable to tidal surges.</p> <p>From the period of 1995-2003, an annual average of 8,161 fire incidents were reported, majority of which are in urban areas, where marginalized people are residing.</p> <p>Since 2000, flooding has become the most prevalent disaster. Environmental factors, such as denuded forest, aggravated flood risks. Loss of forest cover likewise increased the likelihood of drought and poor availability of water.</p> <p>Annual direct damages from previous disasters, between 1990-2006, amount to PHP 20B/year (about 0.5% of the GDP on the average, per year).</p> <p>The Strategic National Action Plan for DRR of the Philippine Government referred to a study conducted by the World Bank that the Philippines is among the countries where large percentage of population reside in disaster-prone areas. The situation is compounded further by the disparities in poverty incidence.</p> <p>Philippines is considered as one of the most disaster-prone countries in the world (CRED 2010).</p> <p><i>Emphasize to the participants that natural hazards are part and parcel of the Philippine environment, but disasters happen because human settlements, infrastructures, people, and economic activities are placed where hazards happen. (Remind participants of the mathematical formula $D = H \times V/C$).</i></p>	<p>Multi-media Lap top Meta cards or Flipchart</p>	

	Module 2 THE PHILIPPINE HAZARDSCAPE	
ACTIVITY	LOGISTICS & PRESENTATIONS	
<p>HAZARDS IN THE PHILIPPINES</p> <p>Important Reminder: <i>The Module is very technical in nature; explain the content in plain words, but in a precise and concise manner. Questions that are very scientific and far advanced may be placed in the parking lot, and the instructor or resource persons may answer them later in the training. In this regard, a smaller and separate white/ blackboard may be reserved for this concern. In doing so, both the trainers and the participants will not forget pending questions or clarifications.</i></p> <p><i>Introduce to the participants the categories of hazards that are common in the Philippines, which are:</i></p> <ol style="list-style-type: none"> 1. Hydro-meteorological Hazards 2. Effects of Climate Change 3. Volcanic Hazards 4. Geological Hazards 5. Fire Hazards 6. Technological Hazards <p>Each of the categories has underlying specific hazards and its effects. This will be discussed thoroughly with current examples.</p> <p><i>Gauge the participants to level their thinking in analyzing the hazards that could probably happen in their community.</i></p> <p>HYDRO-METEOROLOGICAL HAZARDS: TYPHOON</p> <p>Typhoon is formed through the process of water cycle, thus the country itself is vulnerable to this hazard since it is surrounded by bodies of water. Annually, an average of twenty (20) typhoons enter the country's area of responsibility. About four (4) of these are destructive.</p> <p>The typhoon season is from July to November, although occasionally typhoons are known to occur outside this period. During the early part of the season, typhoons tend to cross the northern part of the country. But during the later part (October, November and December), the South and Central Philippines are usually prone to cyclone passage.</p> <p><i>If you have enough time, it will be interesting to tell the participants the difference between typhoons, cyclones and hurricanes:</i></p>		

	Module 2 THE PHILIPPINE HAZARDSCAPE	
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	<p>Hurricanes, typhoons and tropical cyclones are different names for the same type of storm. A tropical cyclone is called a hurricane in the North Atlantic Ocean, South Pacific Ocean, or the Northeast Pacific Ocean on the eastern side of the dateline. It is called a typhoon if such occurs in the Northwest Pacific Ocean, west of the dateline. In other parts of the world, these storms are called severe tropical cyclones.</p> <p><i>In the Philippine scenario, emphasize only the Region-Typhoon Prone Areas where the participants are situated to accentuate the importance of preparedness and early warning of typhoons to the community.</i></p> <p>Example: Typhoons Ondoy and Pepeng visited the country in 2009 that caused devastating effects on agriculture and industry.</p> <p>SEA SWELL (MONSOON WAVES)</p> <p>Sea Swell is an offshore rise of water caused primarily by powerful winds pushing on the ocean’s surface. The wind causes the water to pile up higher than the ordinary sea level. It only happens in coastal areas.</p> <p><i>Emphasize the damage caused by the hazard on agriculture, infrastructure and other vulnerabilities.</i></p> <p>Monsoon waves must be differentiated from storm surges. Monsoon waves are triggered by strong wind, whereas storm surges are brought by storms or typhoons.</p> <p>FLOODING</p> <p>An overflow or accumulation of an expanse of water that submerges land. Flooding is a result of water overflowing from bodies of water such as rivers, lakes, dikes or dams, and torrential rains combined with saturated soil and or undeveloped drainage systems.</p> <p>FLOOD PRONE AREAS IN THE PHILIPPINES</p> <p><i>To deliver the impacts of flooding, introduce to the participants the flood prone areas in the Philippines.</i></p> <p>Metro Manila Region 1: Ilocos Norte, Ilocos Sur, Pangasinan, La Union Region 2: Batanes, Cagayan, Isabela, Nueva Vizcaya, Quirino Region 3: Bataan, Bulacan, Nueva Ecija, Pampanga, Tarlac , Zambales Region 4: Quezon, Cavite, Batangas, Marinduque</p>	

	Module 2 THE PHILIPPINE HAZARDSCAPE	
ACTIVITY	LOGISTICS & PRESENTATIONS	
<p>Region 5: Albay, Camarines Sur, Camarines Norte, Catanduanes, Masbate, Sorsogon</p> <p>Region 6: Antique, Negros Occidental, Iloilo, Aklan, Capiz</p> <p>Region 7: Cebu, Bohol, Negros Oriental</p> <p>Region 8: Biliran, Eastern Samar, Southern Leyte, Western Samar</p> <p>Region 10: Misamis Oriental</p> <p>CARAGA: Agusan Del Norte, Agusan Del Sur, Surigao Del Norte</p> <p>Cordillera: Benguet, Kalinga, Apayao, Mt. Province, Abra, Ifugao</p> <p><i>Emphasize only if the location of the participants are listed on the table. If not, highlight the possible occurrence of the hazard in their community.</i></p> <p><i>Enable the participants to know if their community is a flood-prone area, then introduce the classification of flooding in the next slide.</i></p> <p>TYPES OF FLOODING</p> <p><i>To impart fully what flooding is to the participants, stress that it is classified according to location and duration.</i></p> <p>According to location:</p> <ol style="list-style-type: none"> 1. River Flooding – flood caused by overflowing of the river 2. Coastal Flooding – flood caused by increase of sea level in coastal areas 3. Urban Flooding – human-induced flooding caused by poor drainage system, obstruction of waterways, etc. <p>According to duration:</p> <ol style="list-style-type: none"> 1. Sheet Flooding – covers a large area and does not easily subside 2. Flash Flooding – the stream water becomes muddy <p>FLASH FLOOD</p> <p>Flash floods are caused by very high intensity rainfall, collapse of dams, or inundation due to storm surges or tsunamis. Flash floods are extremely dangerous because they leave very little time for warning.</p> <p>RAIN-INDUCED LANDSLIDE</p> <p>Rain-induced landslides are slope failure that occur along mountain or hill slopes during heavy rainfall.</p>		

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ACTIVITY		LOGISTICS & PRESENTATIONS
<p>Occurrence of slope failures is common along major highways traversing the mountain regions of the country, especially at the onset of the rainy season. These are mostly triggered by heavy rains, but some of the major causes are drainage problems and wrong cutting of slopes.</p> <p>Other road sections with slope protection/stabilization works repeatedly fail because these structures are founded on old landslide materials.</p> <p>DROUGHT</p> <p>Drought is an extended period of months or years when a region notes a deficiency in water supply. This event is recurring or follows patterns of long period of intense effects.</p> <p><i>Present the drought prone areas in the Philippines. Assess whether the community where the participants live is included in the list.</i></p> <p>EFFECTS OF CLIMATE CHANGE</p> <p>Climate Change is a long-term alteration in global weather patterns, especially increases temperature and storm activity, and is regarded as a consequence of the greenhouse effect.</p> <p>Effects of Climate Change:</p> <ul style="list-style-type: none">a. Increased frequency of weather/climate-related hazardsb. Increased severity of weather/climate-related hazardsc. Mosquitoes and diseases <p><i>Relate the effects of climate change to the current situation of the Philippines specifically to their community.</i></p> <p>Important: <i>It is recommended that the instructors ask the participant’s current observations and experiences regarding drastic changes of environment.</i></p> <p><i>To emphasize the point, link drought to the current situation of climate change in the world.</i></p> <p>Drought follows a certain pattern, like every seven years. But due to climate change, the pattern has changed, as there is now an increasing occurrence of drought.</p>		

	Module 2 THE PHILIPPINE HAZARDSCAPE	
ACTIVITY		LOGISTICS & PRESENTATIONS
VOLCANIC HAZARDS A volcano is an opening or rupture in the earth’s surface or crust, which allow pyroclastic materials and gases to escape from below the surface, and generally found where tectonic plates are diverging or converging. Classification of Volcanoes: <div><div>1. Active – Eruption in historic times</div><div>2. Potentially Active – Characterized by uncommon eruption or potentiality to erupt considering a long period of time</div><div>3. Inactive – No recorded eruption</div></div> Examples of Volcanic Activity: Mt. Pinatubo Eruption (Zambales, 1991), Mt. Mayon Eruption (Albay, 2009) VOLCANIC HAZARDS: PYROCLASTIC FLOW (ASH FLOW) Volcanic ash consists of tiny jagged pieces of rock and glass. Ash is hard, abrasive, mildly corrosive, conducts electricity when wet, and does not dissolve in water. Ash is spread over broad areas by wind. Falling ash can turn daylight into complete darkness. Accompanied by rain and lightning, the gritty ash can lead to power outages, prevent communications, and disorient people. VOLCANIC HAZARDS: LAVA FLOW Lava flows are the least hazardous of all processes in volcanic eruptions. How far a lava flow travels depends on the flow temperature, silica content, extrusion rate, and slope of the land. Lava flows don't move very fast, so people rarely get killed by them. However, lava flows are very hot (between 550 and 1400 degrees Celsius) and can therefore cause injuries. People have burnt their skin, charred their eyebrows, and melted the soles of their boots from being near or on a hot lava flow. Lava flows don't cool instantaneously. It can take days to years for a lava flow to completely cool. VOLCANIC HAZARDS: LAHAR Lahar is a type of mudslide or landslide with flowing mixtures of volcanic materials and water, and is also referred to as volcanic mudflow, the movement of mud originating from existing volcanic ash deposit.		

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<p>EARTHQUAKE HAZARDS</p> <p>Earthquake/Ground Shaking - the result of a sudden release of energy in the earth’s crust that creates seismic waves and manifested by shaking and sometimes ground displacement.</p> <p>Aftershock – an earthquake that occurs after the main earthquake or the main shock.</p> <p>Earthquake generator - a condition or event that causes an earthquake. These are as follows:</p> <p>Ground Rupture and Fissuring – is a visible breaking and displacement of the earth’s surface along the trace of the fault.</p> <p>Liquefaction – a process that transforms the behavior of a body of sediments from that of a solid to that of a liquid and usually happens on reclaimed land. Because of the shaking, water-saturated granular material temporarily loosens that lessens its strength and transforms its property from that of a solid’s to that of a liquid’s. This may cause structures to sink or tilt.</p> <p>There are three (3) S’s that characterize liquefaction:</p> <p>Shaking, Sandy Soil, and Saturation.</p> <p><i>Review the geophysical location of the country and emphasize that the red dots signify recognized volcanoes and black dots signify recorded ground shaking.</i></p> <p>Faults are breaks on Earth’s land surface. As shown in the map, the red lines indicate the faults in the Philippines and the violet lines indicate the trenches in the Philippines.</p> <p><i>Emphasize that the Philippines is surrounded by trenches and faults which generate ground shaking, making it highly vulnerable to earthquake. Identify major faults and trenches that surround the Philippines.</i></p> <p>EARTHQUAKE HAZARDS: EARTHQUAKE-INDUCED LANDSLIDE</p> <p>Occurrence of slope failures that is influenced by ground shaking is common along fault lines and/or communities that are near the vicinity of high land mountains.</p> <p><i>Exemplify the current incident of Guinsaogon, Leyte where: the entire school building was engulfed by land coming from the nearby mountain.</i></p>		

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EARTHQUAKE HAZARDS: TSUNAMI A tsunami is a series of sea waves commonly generated by under-the-sea earthquakes and whose heights could be greater than 5 meters. It is erroneously called tidal waves and sometimes mistakenly associated with storm surges. Tsunamis can occur when the earthquake is shallow-seated and strong enough to displace parts of the seabed and disturb the mass of water over it (official definition of PHIVOLCS). Natural signs of an approaching tsunami: 1. A felt ground shaking; 2. Unusual sea level change; sudden sea water retreat or rise; 3. Rumbling sound of approaching waves. <i>Show the pictures of tsunami in Japan and help the participants realize that when a tsunami occurs, the best thing to do is to run or go to higher ground.</i> <i>Show the video of tsunami in Banda Aceh, Indonesia which reached the downtown area of the city. Emphasize the large amount of debris carried by the tsunami.</i> FIRE HAZARDS Fire is the rapid oxidation of a material in the chemical process of combustion, releasing heat, light, and various reaction products. <i>Emphasize that:</i> fire will worsen when water is thrown over the burning oil on the cooking pan because the oil is denser than the water. In the Ozone Disco Incident where only one door is utilized for both entrance and exit, the door was in a swing-in orientation. This is why in building structures today, door construction are ideally swing-out or double swing doors. <i>Exemplify that:</i> fire is an indirect or secondary hazard of earthquake. One classic example of this is the Kobe, Japan earthquake, which caused devastating fire in the community. TECHNOLOGICAL HAZARDS Technological hazards are danger originating from technological or industrial conditions including accidents, dangerous procedures, infrastructure failures or certain human activities, which may cause the loss of life or injury, illness or other health impacts, property damage, loss of livelihoods and services, social and economic disruption or environmental damage.		

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<p>Examples of technological hazards include industrial pollution, nuclear radiation, toxic wastes, dam failures, transport accidents, factory explosions, fires, and chemical spills. Technological hazards also may arise directly as a result of the impacts of a natural hazard event.</p> <p>Examples of Technological Hazards:</p> <p>1. Transport Accidents</p> <p>a. Sea Tragedy Super Ferry 14 (February 27, 2004) M/V Doña Paz (December 1987) M/V Carmela (April 11, 2002)</p> <p>b. Plane Crash Air Philippines Flight 541 Tragedy (Davao, 2000)</p> <p>c. Road/ Vehicular Accidents</p> <p>2. Toxic Waste Marcopper Mine Tailings Incident (Marinduque, 1996)</p> <p>3. Chemical Spill Rapu-rapu Cyanide Spill (Albay, 2005) Guimaras Oil Spill (2006)</p> <p>4. Nuclear radiation Fukushima Power Plant Meltdown (Japan, March 2011, resulted from the impact of the 11 March 2011 tsunami)</p> <p>Technological hazards occur not only because of human behavior, such as violation of protocols and other forms of negligence. It is also due to the presence of residual risk. Even if safety is ensured, technology itself will fail.</p> <p>COMPLEX EMERGENCIES AND OTHER SITUATIONS OF VIOLENCE</p> <p>Complex emergency is extensive violence and loss of life, massive displacements of people, widespread damage to societies and economies, resulting from internal or external conflict.</p> <p>Other situations of violence refers to situations which does not fall under complex emergencies or armed conflict, such as rioting, rido or gang wars.</p> <p><i>Emphasize the extreme loss of life and need for public vigilance. Tolerable suspicion is encouraged in public places.</i></p>		

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<p>Examples of Complex Emergencies:</p> <ol style="list-style-type: none"> 1. Terrorism <ul style="list-style-type: none"> • World Trade Center Attack (New York, USA, 2001) • Davao International Airport and Sasa Wharf Bombings (Davao City, 2003) 2. Insurgencies 3. Bombing Incidents <p><i>Important: Before presenting the slides of Davao International Airport and Sasa Wharf Bombings, warn the participants that the slides contain sensitive pictures. Advise them to close their eyes if they don't want to see it.</i></p>		

	Module 2 THE PHILIPPINE HAZARDSCAPE	
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<p>Summary of the Disaster Landscape of the Philippines</p> <p>Hazards are phenomena that pose a threat to people, structures, or economic assets, which may cause a disaster. They could be either man-made or naturally occurring in our community.</p> <p>A review of different hazards in the Philippines:</p> <p>2.1 Hydro-meteorological Hazards</p> <ol style="list-style-type: none"> Typhoon Sea Swell Flooding Flash Flood Rain-Induced Landslide Drought <p>2.2 Effects of Climate Change</p> <p>2.3 Volcanic Hazards</p> <ol style="list-style-type: none"> Pyroclastic/Ash Fall Lava Flow Lahar Ground Fissuring <p>2.4 Earthquake Hazards</p> <ol style="list-style-type: none"> Ground Fissuring Liquefaction Earthquake-Induced Landslide Tsunami <p>2.5 Fire Hazards</p> <p>2.6 Technological Hazards</p> <ol style="list-style-type: none"> Sea Tragedy Plane Tragedy Road Accident <p>2.7 Complex Emergencies and Other Situations of Violence</p> <p><i>Emphasize in the presentation the different types of hazards in the Philippines. Instruct the participants to enumerate the common hazards in the Philippines.</i></p> <p>Important: <i>Conclude by emphasizing the high probability of occurrence of hazards stated above by stressing the geophysical location and the vulnerabilities that could potentially cause disasters.</i></p>		

	Module 3 EARLY WARNING SYSTEM DEFINITION, CONCEPTS AND ELEMENTS	
ACTIVITY		LOGISTICS & PRESENTATIONS
SESSION OBJECTIVES At the end of the 1.5 hours session, the participants are able to: <ul style="list-style-type: none"> • Define what is an early warning system (EWS) • Understand the objective of EWS • Enumerate the four (4) elements in EWS EXPECTED OUTPUTS The participants have: <ul style="list-style-type: none"> • Processed and assimilated the simulation exercise on EWS • Understood the objectives of EWS • Identified the four (4) elements of EWS PROCESS Surprise simulation Group dynamics Lecture Question and Answer LOGISTICS Metacards Manila paper Pentel pen Multimedia equipment Presentation and slides CONTENTS <ol style="list-style-type: none"> 1. Definition of Early Warning System 2. Objective of Early Warning System 3. Different Early Warnings 4. Four (4) Elements of Early Warning System 		

	Module 3 EARLY WARNING SYSTEM DEFINITION, CONCEPTS AND ELEMENTS	
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SIMULATION EXERCISE: TSUNAMI <i>Simulation Direction:</i> <ol style="list-style-type: none"> 1. Announce to the participants that a tsunami alert level 3 has been issued and the venue is likely to be affected. 2. Instruct participants to group themselves into two (2) quickly and they select a team leader 3. Instruct them further to proceed to the nearest exit and move as a group to higher ground 4. Tell the participants that we have only 10 minutes to move to safety 5. Instruct the team leaders to guide their team members to evacuate to the safest evacuation route and place 6. Request all participants to go back to the room 7. Instruct the group to process what they have done for 10 minutes between the group members 8. Process the simulation as one group DEVIATION: <i>Facilitator can likewise use an event that is identified as the most common hazard identified in the BDAP, wherein the capacity of the community to cope is low.</i> IMPORTANT: <ul style="list-style-type: none"> ✓ Make sure that participants are caught by surprise of the event ✓ Prepare first aid kit just in case SYNTHESIS: <i>Ask the participants:</i> <ul style="list-style-type: none"> • How do they feel about the simulation? • What did they observe from their co-participants? • Did the group work as a team? • How did they select the site? • Did all the participants know what the alert level means and what is expected of them? • If they are to do the simulation again, would they change how they reacted? • How would they relate the simulation to real events situation? <i>Encourage the participants to express what they feel, not what they think about the drill.</i>		Multi-media/Laptop/pentel pens/ flip charts/meta cards

	<p align="center">Module 3</p> <p align="center">EARLY WARNING SYSTEM DEFINITION, CONCEPTS AND ELEMENTS</p>	
	ACTIVITY	LOGISTICS & PRESENTATIONS
	<p>KEY LEARNING POINTS OF THE SIMULATION:</p> <ul style="list-style-type: none"> • Importance of understanding the warning and taking action when warning is received • Knowing what to do prior to the event is primordial in lessening risk • Cooperation in executing the plan is a key to successful implementation • Value of early warning-early action <p>INPUT: EARLY WARNING DEFINED</p> <p>A warning system is any system of biological or technical nature deployed by individual or group to inform of a future danger. The purpose is to enable recipient of the warning system to prepare for the danger accordingly and act accordingly to mitigate against or avoid it.</p> <p>Early Warning is about provision of information to individuals, households, groups or a community about the existence of a hazard or danger with ample expectancy on what can be done to prevent or minimize the danger.</p> <p><i>Emphasize the key terms:</i></p> <ol style="list-style-type: none"> 1. <i>System – it means it interacts with other components to make it work</i> 2. <i>Inform of future danger – means the event can be forecasted and warning is given before the impact</i> 3. <i>Prepare – identify courses of action i.e. what is the sign? Where to go? How to get there? What to bring?</i> 4. <i>Act accordingly – execute plan</i> <p>The ultimate goal of hazard forecasting and early warning systems is to protect lives and property.</p> <p><i>Emphasize the importance of taking action by all stakeholders in the EWS - early warning institutions [MGB, National Disaster Risk Reduction and Management Council/Office of the Civil Defense (NDRRMC/OCD) Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA), PHIVOLCS, Department of Health (DOH)], Local Government Units, Communities including RC143</i></p> <p>Warnings are given with the following purpose:</p> <ul style="list-style-type: none"> • Inform community about hazards: What is the risk? Who are at risk? Issue guidance on means to protect or prepare for the event: mitigation activities or education • And direct community on who will do what in order to deal with the impending hazard 	

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GROUP WORK: <ul style="list-style-type: none">• <i>Group the participants into two (2). Ask each group to select a rapporteur.</i>• <i>Distribute a manila paper and pentel pen to each group</i>• <i>Instruct the group to identify an early warning in their community. Let them discuss amongst themselves and let them list down ways on how the warning is communicated? Who communicates the warning? What are the actions expected of them. Let them write down the answers in the Manila paper.</i>• <i>Give the group 20 minutes to discuss and work on their answers</i>• <i>Let each group present their answers giving them 5 minutes each</i> PROCESS: <p><i>After the groups have presented, ask the group the following questions:</i></p> <ul style="list-style-type: none">✓ <i>Is the exercise of identifying existing early warning system in their community easy?</i>✓ <i>Is the warning system known to all? Understood by all?</i>✓ <i>Does the early warning, when given, generate action from the people?</i> <p><i>After going through the exercise, ask the participants if they feel that the early warning that they have is sufficient and well understood in the community?</i></p> <p>Note:</p> <p><i>If the group will come up empty handed, meaning they cannot recall any early warning at all; facilitator should ask the group, how does the community know if there is an impending disaster such as flooding? From whom are they getting the information? Do they think that it is important to have early warning?</i></p> INPUT: <p><i>Define the two different EWS.</i></p> <p>Local or Indigenous – existing or present in the community that is passed on from generation to generation and usually generated as a result of beliefs and culture.</p> <p>This is usually transferred in the community through long time of observation, practices or habits that came out after a disaster, i.e. seasonal calendar- community knows when to plant; or when not to go to sea.</p>		

	<p align="center">Module 3 EARLY WARNING SYSTEM DEFINITION, CONCEPTS AND ELEMENTS</p>	
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	<p>Scientific – based on research and studies and developed by early warning institutions, such as PHIVOLCS, PAGASA, MGB, DOH</p> <p>Information are shared with the LGU or communities, i.e. hazard maps, typhoon signals</p> <p><u>Elements of Early Warning System</u></p> <p>INPUT: FOUR ELEMENTS OF EARLY WARNING SYSTEM</p> <p>For an early warning system to be effective, it should comprise four (4) elements:</p> <ul style="list-style-type: none"> a. Knowledge of the Risk b. Monitoring and Warning Services c. Dissemination and Communication and d. Response Capabilities <p><i>Emphasize to the participants that the 4 elements are interlinked/ interconnected, and that if one element is missing or weak, then the EWS will not succeed.</i></p> <p><i>Elucidate further each of the elements to the participants.</i></p> <p><u>RISK KNOWLEDGE</u></p> <p>BRAINSTORMING:</p> <p><i>Start the session by asking the participants to reflect on the VCA and Risk and Resource mapping that they have done earlier. As a group, let them come up with the hazards that they faced in the community and let them rank it by show of hands. Validate results by show of hands; ask those who oppose why they think it should not be ranked as such. End the brainstorming by posing the question, does the community really know the hazards that they face and how vulnerable they are to the hazards?</i></p> <p>INPUT:</p> <p>Individuals, families and community members should have prior knowledge of the risks they face.</p> <p>Risks are the result of hazards and the vulnerabilities that are present in the community. However, the degree of vulnerability is determined by the existing capacity in the community.</p>	

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	<p><i>Show the mathematical formula</i></p> <p>Hazards –Capacities and Resources = Risk.</p> <p>Vulnerability is the remaining gap between the sum of all hazards a community faces minus the sum of its capacities and resources to cope with the possible effects of these hazards</p> <p><u>MONITORING AND WARNING</u></p> <p>This is often considered as the core of EWS. This component involves hazard detection and requires:</p> <ul style="list-style-type: none">• Sound and updated base of information and resources• Constant monitoring of hazard parameters for forecasting activities <p><i>Emphasize the need to consider local practices for monitoring local hazards.</i></p> <p><i>Explain to the participants that it is very important to monitor the right hazards in the community.</i></p> <p>Monitoring and warning should be able to monitor the right parameters. It should make sure that there is a sound scientific basis for making the forecast.</p> <p><i>You can highlight here the distrust that people have sometimes when warning turns out inaccurate or without basis. Emphasize the need for reliable and timely warning and give examples i.e. earthquake-no warning can be generated but if it will generate tsunami- warning can be generated depending on timescales of impact</i></p> <p><u>DISSEMINATION AND COMMUNICATION</u></p> <p>The element of dissemination and communication require:</p> <ul style="list-style-type: none">• Effective transmission of information on risk• A continued review to know if warnings are:<ol style="list-style-type: none">1. Reaching relevant people and communities2. Understood – i.e. communities know what to do depending on what information they receive	

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	<p><i>Ask the participants how do they receive warning? Who issues the warning? Are there expected actions from them?</i></p> <p><i>Enumerate to the participants the different ways of giving warning and/or receiving warning, and give concrete examples:</i></p> <ul style="list-style-type: none"> • Village/Community meetings e.g. result of HVCA • Posters/Billboards/Notices e.g. what to do before, during and after posters • Quad-media i.e. TV, print, radio and social networking sites • SMS • Pictorial messages e.g. nakakamatay tumawid dito • Mascots • Other indigenous forms and channels, e.g. bamboo clapper, siren, amateur radio <p><u>RESPONSE CAPABILITY</u></p> <p>Response capability refers to the knowledge and preparedness to act by the community on the threats in the community. <i>Give examples such as trained BDAT, first aid kits, rescue equipment.</i></p> <p><i>Reiterate to the participants if the most vulnerable people in their community understand the risk that they face. Do these people heed the warning and take action? Is there a community plan and does the community conduct drills and simulations?</i></p>	

	Module 4 HAZARDS AND ALERT LEVELS	
<p>SESSION OBJECTIVES</p> <p>At the end of the 1.5 hours session, the participants are able to:</p> <ul style="list-style-type: none"> • Identify different ways of giving warning and/or receiving warning • Enumerate the considerations in giving out warning • Describe the hazards common in the community and identify community warning system • Enumerate the different alert levels and identify the actions required for each level • List down what to do before, during, and after hazard impact <p>EXPECTED OUTPUTS</p> <ul style="list-style-type: none"> • Ways of giving and receiving alert/signals are identified • Considerations in giving out warning is understood • Hazards specific to the community are identified and meaning of alert levels for each specific hazards understood • Action required for each alert level are appreciated • Actions needed before, during and after hazard impact are defined and understood <p>PROCESS</p> <p>Case studies Lecture and Discussions Question and Answer</p> <p>LOGISTICS</p> <p>Manila paper Pentel pen Multimedia equipment Presentation and slides</p> <p>CONTENTS</p> <ol style="list-style-type: none"> 1. Modalities of giving and receiving warnings 2. Consideration in giving warning 3. Common hazards with established alert levels and their specific meanings 4. Family and community preparedness: Hazard specific to dos: Before, During and After 		

	Module 4 HAZARDS AND ALERT LEVELS	
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<p>PLENARY:</p> <p><i>Before starting the discussion, ask the participants what are the means and ways of communicating and receiving warnings/alert that they know of. List down all what the participants said. Validate what they said by doing a lecture.</i></p> <p>INPUT:</p> <p>METHODS/CHANNELS USED IN GIVING OUT WARNING</p> <p><i>Reflect on the input on what an early warning is, which is about provision of information to individuals, family, community or organizations on the existence of an impending danger, in order to generate action from them to prevent or avoid the danger; it is important that we identify the medium to which the information is either transmitted or received which includes:</i></p> <ul style="list-style-type: none"> ✓ Barangay Assemblies (announcements i.e. VCA or Risk and resource mapping result) ✓ Billboards or posters (Tsunami evacuation route/prevention of diseases) ✓ Quad-media (Radio, TV, Print and Social Networking sites) ✓ SMS i.e. powertexting ✓ Amateur radio i.e. REACT, RECON, Kabalikat ✓ Films i.e. film showing distributed in school ✓ Other indigenous channels i.e. tribal chieftain in meetings <p>CONSIDERATIONS IN GIVING OUT WARNING</p> <p><i>Emphasize to the participants that when an early warning is given, a corresponding action is required. An early warning that does not generate action is an exercise in futility as it will not achieve the ultimate goal of EW which is taking action to avoid and or minimize the danger of the impending hazard. Thus the following must be given due attention and consideration at all times:</i></p> <ul style="list-style-type: none"> ✓ Are the people informed? Do they understand the different phases of warning? What does it mean? What actions are expected from them? <p>Example:</p> <p><u>From Early Warning Institutions</u></p> <p>Typhoon Signal # 1, 2, 3 and 4</p> <p>Tsunami Alert level 0, 1, 2 and 3</p> <p>Volcano Alert Level 0, 1, 2, 3, 4 and 5</p>		

	Module 4 HAZARDS AND ALERT LEVELS	
	ACTIVITY	LOGISTICS & PRESENTATIONS
	<p><u>Community Established EWS</u></p> <p>Flood warning #1 floodwater is 2 feet deep in Purok 1</p> <p>Flood warning #2 floodwater is 5 feet deep in Purok 1 and 3 feet deep in Purok 2</p> <p>✓ Are the residents updated of the forecast from early warning agencies, or community monitoring team such as the RC143/BDAT, using symbols or sounds that is understood, seen, or heard by all?</p> <p>Example:</p> <p>Flood warning #1 1 short whistle or green flag raised</p> <p>Flood warning # 2 2 short whistles or yellow flag is raised</p> <p>Flood warning # 3 continuous whistle or red flag is raised</p> <p>✓ Is the information generated consistent all throughout?</p> <p>It is important that consistent and uniform messages of what the signals mean and what is expected from the residents are disseminated.</p> <p>Example:</p> <p>Flood warning #3 - continuous whistle or red flag - residents of Purok 1, 2, 3 evacuate to Brgy. Buhay</p> <p>To ensure consistency of information, it is important that community officials link with early warning institutions, and a local communications community is organized whose primary task is to package information for the community and disseminate them widely</p> <p>✓ Are information boards placed in conspicuous public places?</p> <p>Information board is one of the media in giving out warning or information.</p> <p>Example:</p> <p>Dengue prevention</p> <p>Tsunami evacuation route</p> <p>Thus it is important that these information boards should be placed in public or conspicuous places in the community such as churches, community boards, school, municipal hall (civil registrar/tax offices etc), high places.</p>	

	Module 4 HAZARDS AND ALERT LEVELS	
	ACTIVITY	LOGISTICS & PRESENTATIONS
✓	<p>Are roles and responsibilities of barangay officials, RC143, or organizations well defined and clearly understood by all concerned?</p> <p>It is important that organizations involved in response are identified and given tasks or roles. The task or role should be based on their mandate and capacity to address the specific type of hazard</p> <p>Example:</p> <p>PRC Chapter – Search and Rescue and First Aid MSWD – Food Provision Police/Army/ OCD - Evacuation MHO – Health</p> <p>✓ Is the warning specific to the hazard and gives advice on what to do? Does the community understand what specific action is required of them at each level?</p> <p>Warning should always be based on the result of the HVCA and Risk and Resource Mapping.</p> <p>It should always be hazard specific and gives a clear idea of what is expected of people when they get the signal.</p> <p>Example:</p> <p>Flood – Alert Level #1 – 1 whistle- ready Flood – Alert Level #2 – 2 whistles – prepare to evacuate Flood – Alert Level # 3 – continuous whistle – evacuate to designated evacuation site</p> <p><i>After the presentation, ask the participants in plenary if they are aware of the meaning of alert levels/signals. Give an example of Typhoon. Ask them what does Typhoon Signal # 1 mean? Signal #2? Signal # 3?</i></p> <p><i>Emphasize to the participants that these signals mean something, and requires action from the recipient of the signals. Tell them that majority of deaths and injury happen during disasters because people either do not receive the alert; or if they receive it, they do not understand what it means; or if they understand what it means, they do not heed the warning or take action. Give Typhoon Ondoy as an example wherein people, despite warning to evacuate because of flooding, refused to leave their houses. You may also give a specific example of a recent disaster in your area that resulted to such.</i></p>	

	<div>Module 4</div> <div>HAZARDS AND ALERT LEVELS</div>							
ACTIVITY		LOGISTICS & PRESENTATIONS						
<p>Given these examples, it is very important that families, communities or organizations understand what the alert/signals of each specific hazards are and what they mean:</p> <p>HAZARDS AND ALERT LEVELS ESTABLISHED BY EARLY WARNING INSTITUTIONS</p> <p>TYPHOONS</p> <p>Locally known as “Bagyo”, typhoons are tropical cyclones that enter the Philippine Area of Responsibility (PAR). Around 20-22 tropical cyclones enter the PAR annually, and usually 6 to 9 make a landfall. The Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) is the institution that raises public storm signal warnings as deemed necessary.</p> <p>PUBLIC STORM WARNING SIGNAL (PSWS) #1</p> <table><tr><td>Meteorological Condition</td><td>Impact of Winds</td><td>Precautionary Measures</td></tr><tr><td>Winds of 30-60 kph may be expected in at least 36 hours, or intermittent rains may be expected within 36 hours</td><td><ul style="list-style-type: none">- twigs and branches of small trees may be broken- some banana plants may be tilted or downed- some houses of very light materials (nipa and cogon) may be partially unroofed- very light or no damage at all may be sustained by the exposed communities- rice crop, however, may suffer significant damage when it is in its flowering stage</td><td><ul style="list-style-type: none">- waves on coastal waters may gradually develop and become bigger or higher- people should listen to the latest severe weather bulletin issued by PAGASA every 6 hours- Disaster Preparedness is activated to alert status</td></tr></table>		Meteorological Condition	Impact of Winds	Precautionary Measures	Winds of 30-60 kph may be expected in at least 36 hours, or intermittent rains may be expected within 36 hours	<ul style="list-style-type: none">- twigs and branches of small trees may be broken- some banana plants may be tilted or downed- some houses of very light materials (nipa and cogon) may be partially unroofed- very light or no damage at all may be sustained by the exposed communities- rice crop, however, may suffer significant damage when it is in its flowering stage	<ul style="list-style-type: none">- waves on coastal waters may gradually develop and become bigger or higher- people should listen to the latest severe weather bulletin issued by PAGASA every 6 hours- Disaster Preparedness is activated to alert status	
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	Module 4 HAZARDS AND ALERT LEVELS		
ACTIVITY			LOGISTICS & PRESENTATIONS
<i>PUBLIC STORM WARNING SIGNAL (PSWS) #2</i>			
Meteorological Condition	Impact of Winds	Precautionary Measures	
Winds of greater than 60 kph and up to 100 kph may be expected in at least 24 hours	<ul style="list-style-type: none">- Some coconut trees may be tilted with few others broken- Few big trees may be uprooted- Many banana plants may be downed- Rice and corn may be adversely affected- Large number of nipa and cogon houses may be partially or totally unroofed- Some old galvanized iron roofing may be peeled off- In general, the winds may bring light to moderate damage to exposed communities	<ul style="list-style-type: none">- sea and coastal waters are dangerous- special attention should be given to the latest position, the direction and speed movement and the intensity of the storm as it may intensify and move towards the locality- the general public, especially people travelling by sea and air, are cautioned to avoid unnecessary risks- outdoor activities of children should be postponed- secure properties before the signal is upgraded- DP organizations/ agencies are in action to alert their communities	

	Module 4 HAZARDS AND ALERT LEVELS		
ACTIVITY			LOGISTICS & PRESENTATIONS
PUBLIC STORM WARNING SIGNAL (PSWS) #3			
Meteorological Condition	Impact of Winds	Precautionary Measures	
Winds greater than 100kph up to 185 kph may be expected in at least 18 hours	<ul style="list-style-type: none">- many coconut trees may be broken or destroyed- almost all banana plants may be downed and a large number of trees may be uprooted- rice and corn crops may suffer heavy losses- majority of all nipa and cogon houses may be unroofed or destroyed, and there may be considerable damage to structures of light to medium construction- there may be widespread disruption of electrical power and communication services including internet-in general, moderate to heavy damage may be expected, practically in the agricultural and industrial sectors	<ul style="list-style-type: none">- the disturbance is dangerous to communities threatened/affected- sea and coastal waters will be very dangerous to all types of sea crafts- travel is risky, especially by sea and air- people are advised to seek shelter in strong buildings, evacuate low-lying areas, and stay away from the coast and river banks- watch out for the passage of the “eye” of the typhoon indicated by sudden occurrence of fair weather immediately after a very bad weather, with very strong winds coming generally from the north- when the eye of the typhoon hits the community, do not venture away from the safe shelter because, after 1 or 2 hours, the worst weather will resume with very strong winds coming from the south- classes in all levels and work are suspended, and children should stay in safety of strong buildings and evacuation centers- disaster preparedness or response agencies/ organizations are in action with appropriate response to actual emergency	

	Module 4 HAZARDS AND ALERT LEVELS		
ACTIVITY			LOGISTICS & PRESENTATIONS
PUBLIC STORM WARNING SIGNAL (PSWS) #4			
Meteorological Condition	Impact of Winds	Precautionary Measures	
A very intense typhoon will affect the locality, with very strong winds of more than 185 kph expected in at least 12 hours	<ul style="list-style-type: none">- coconut plantation will suffer extensive damage- many large trees may be uprooted- rice and corn plantation may suffer severe losses- most residential and institutional buildings of mixed construction may be severely damaged- electric power distribution and communication services including internet may be severely disrupted- Overall damage to affected communities can be very heavy	<ul style="list-style-type: none">- situation is potentially destructive to the community- all travels and outdoor activities should be canceled- evacuation to much safer shelters should have been completed since it may be too late under this situation- with PSWS4, the locality is very likely to be hit directly by the “eye” of the typhoon.- the DRRMC, PRC and other response organizations are now fully responding to emergencies, in full readiness to immediately respond to possible calamity	
Hazards associated with Typhoons are:			
STORM SURGE <i>Refers to the sudden and rapid rise in sea-level that occurs as the typhoon approaches the coastline. Surges cause the most havoc when they recede, as receding sea water can wipe out everything from its path</i>			
STRONG WINDS <i>Typhoons can produced a wind speed of more than 185kph, and such wind speeds can generate considerable structural damage and pose risk to people’s lives from flying debris.</i>			
HEAVY RAINFALL <i>Torrential rains accompany typhoons, like Typhoon Ondoy and Pepeng, where heavy rains can generate the rapid swelling of rivers or rapid flow in coastal stream catchments and water reservoirs that leads to inland flooding or flashfloods.</i>			

	Module 4 HAZARDS AND ALERT LEVELS		
ACTIVITY			LOGISTICS & PRESENTATIONS
LANDSLIDES <i>Heavy rains, as a result of a typhoon, may likewise generate landslides that can bury communities or parcel of land.</i>			
<u>VOLCANO ALERT LEVELS</u> There are 22 active volcanoes in the Philippines. The volcano authority in the Philippines is PHIVOLCS. The alert level system used by PHIVOLCS runs from Alert Level 0 (lowest) to Alert Level 5 (highest) as follows:			
Alert Level	Criteria	Interpretation	
0	Background quiet	No eruption in foreseeable future	
1	Low level unrest	No eruption imminent	
2	Moderate unrest. Persistence of local, but unfelt earthquakes	Unrest probably of magmatic origin, could eventually lead to eruption	
3	Relatively high unrest manifested by increasing occurrence of low frequency earthquakes.	Magma is closer to the crater. Eruption is possible within days to weeks	
4	Intense unrest. Harmonic tremor and or “low frequency earthquakes” which are usually felt.	Hazardous explosive eruption is possible within days	
5	Hazardous eruption ongoing		
<p>Note: Volcanic alert level system used in the Philippines. The system as shown is used for Mayon, but (with slight variations in wording) is applied to other Philippines volcanoes as well.</p> <p>Hazards associated with volcanic eruptions include:</p> <ol style="list-style-type: none">1. Base surge2. Ashfalls3. Ballistic projectiles4. Lava flows5. Toxic volcanic gases and acid rain6. If it is situated in a lake or sea it may cause seiche or tsunami7. Fissuring and ground subsidence8. Earthquakes			

	<div>Module 4</div> <div>HAZARDS AND ALERT LEVELS</div>																
ACTIVITY		LOGISTICS & PRESENTATIONS															
<div><div>TSUNAMI ALERT LEVELS</div><div>A tsunami is a series of sea waves commonly generated by under-the-sea earthquakes and whose heights could be greater than 5 meters. It is erroneously called tidal waves and sometimes mistakenly associated with storm surges. Tsunamis can occur when the earthquake is shallow-seated and strong enough to displace parts of the seabed and disturb the mass of water over it. If it occurs in the lake it is called seiche.</div><div>SOME NATURAL SIGNS OF AN APPROACHING LOCAL TSUNAMI</div><div><div>1) A felt earthquake</div><div>2) Unusual sea level change: sudden sea water retreat or rise</div><div>3) Rumbling sound of approaching waves</div></div><table><tr><th>Alert Level</th><th>What it means</th><th>Action Required</th></tr><tr><td>0</td><td>No tsunami threat</td><td></td></tr><tr><td>1</td><td>Waiting for confirmation of tsunami</td><td>Be ready, wait for further information No evacuation Information released to general public</td></tr><tr><td>2</td><td>Confirmed tsunami near epicentral area, wave heights non threatening</td><td>Tsunami watch in effect No evacuation Observe precautionary measures near coastline-stay away from coastline</td></tr><tr><td>3</td><td>Life threatening tsunami generated near epicenter</td><td>IMMEDIATE EVACUATION of areas projected to be affected EVACUATION ORDER (go to highest ground) NDRRMC flow of info community based alarms and media</td></tr></table></div>		Alert Level	What it means	Action Required	0	No tsunami threat		1	Waiting for confirmation of tsunami	Be ready, wait for further information No evacuation Information released to general public	2	Confirmed tsunami near epicentral area, wave heights non threatening	Tsunami watch in effect No evacuation Observe precautionary measures near coastline-stay away from coastline	3	Life threatening tsunami generated near epicenter	IMMEDIATE EVACUATION of areas projected to be affected EVACUATION ORDER (go to highest ground) NDRRMC flow of info community based alarms and media	
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	Module 4 HAZARDS AND ALERT LEVELS		
ACTIVITY			LOGISTICS & PRESENTATIONS
EARTHQUAKES			
Intensity	Description		
I	SCARCELY PERCEPTIBLE <ul style="list-style-type: none">○ Perceptible to people only under favorable circumstances○ Delicately-balanced objects are disturbed slightly○ Still water in containers oscillates slightly		
II	SLIGHTLY FELT <ul style="list-style-type: none">○ Felt by few individuals at rest indoors○ Hanging objects swing slightly○ Still water in containers oscillates noticeably		
III	WEAK <ul style="list-style-type: none">○ Felt by many people indoors especially in upper floors of buildings. Vibration is felt like the passing of a light truck. Dizziness and nausea are experienced by some people○ Hanging objects swing moderately○ Still water in containers oscillates moderately		
IV	MODERATELY STRONG <ul style="list-style-type: none">○ Felt generally by people indoors and some people outdoors. Light sleepers are awakened. Vibration is felt like the passing of a heavy truck○ Hanging objects swing considerably. Dinner plates, glasses, windows and doors rattle. Floor and walls of wood-framed buildings creak. Standing motor cars may rock slightly○ Water in containers oscillates strongly○ Rumbling sounds may sometimes be heard		
V	STRONG <ul style="list-style-type: none">○ Generally felt by most people indoors and outdoors. Many sleeping people awakened. Strong shaking and rocking are felt throughout the building○ Hanging objects swing violently. Dining utensils clatter and clink; some are broken. Small light and unstable objects may fall or overturn. Liquids spill from filled open containers. Standing vehicles rock noticeably○ Shaking of leaves and twigs of trees is noticeable		
VI	VERY STRONG <ul style="list-style-type: none">○ Many people are frightened and run outdoors. Some people lose their balance. Motorists feel like driving with flat tires○ Heavy objects and furniture move or may be shifted. Small church bells may ring. Wall plaster may crack. Very old or poorly built houses and man-made structures are slightly damaged, though well-built structures are not affected○ Limited rockfalls and rolling boulders occur in hilly to mountainous areas and escarpments. Trees are noticeably shaken		

Module 4 HAZARDS AND ALERT LEVELS		
ACTIVITY		LOGISTICS & PRESENTATIONS
Intensity	Description	
VII	DESTRUCTIVE <ul style="list-style-type: none"> Most people are frightened and run outdoors. People find it difficult to stand in upper floors Heavy objects and furniture overturn or topple. Big church bells may ring. Old or poorly built structures suffer considerable damage. Some well-built structures are slightly damaged. Some cracks may appear on dikes, fish ponds, road surfaces or concrete hollow block walls. Limited liquefaction, lateral spreading and landslides are observed. Trees are shaken strongly (Liquefaction is a process by which loose saturated sand loses strength during an earthquake, and behaves like liquid) 	
VIII	VERY DESTRUCTIVE <ul style="list-style-type: none"> People are panicky. People find it difficult to stand even outdoors Many well-built buildings are considerably damaged. Concrete dikes and foundations of bridges are destroyed by ground settling or toppling. Railway tracks are bent or broken. Tombstones may be displaced, twisted or overturned. Utility posts, towers and monuments may tilt or topple. Water and sewer pipes may be bent, twisted or broken Liquefaction and lateral spreading cause man-made structures to sink, tilt, or topple. Numerous landslides and rockfalls occur in mountainous and hilly areas. Boulders are thrown out from their positions particularly near the epicenter. Fissures and fault rupture may be observed. Trees are violently shaken. Water splashes or slops over dikes or banks of rivers. 	
IX	DEVASTATING <ul style="list-style-type: none"> People are forcibly thrown to the ground. Many cry and shake in fear. Most buildings are totally damaged. Bridges and elevated concrete structures are toppled or destroyed. Numerous utility posts, towers and monuments are tilted, toppled or broken. Water and sewer pipes are bent , twisted or broken. Landslides and liquefaction with lateral spreading and sandboils are widespread. The ground is distorted into undulations. Trees are shaken very violently with some toppled or broken. Boulders are commonly thrown out. River water splashes violently or slops over dikes and banks. 	

	Module 4 HAZARDS AND ALERT LEVELS		
ACTIVITY			LOGISTICS & PRESENTATIONS
Intensity	Description		
X	COMPLETELY DEVASTATING <ul style="list-style-type: none">○ Practically all man-made structures are destroyed○ Massive landslides and liquefaction, large scale subsidence and uplifting of landforms, and many ground fissures are observed. Changes in river courses and destructive seiches in lakes occur. Many trees are toppled, broken or uprooted.		
Hazards associated with earthquakes:			
<ul style="list-style-type: none">1. Liquefaction2. Landslides3. Tsunami/seiche4. Flooding			
IDENTIFYING OTHER COMMON COMMUNITY HAZARDS			
<p><i>In plenary session, ask the participants to identify other hazards that are present in their community. List down the hazards in the white board and ask-the participants if they have early warning signals existing for these types of hazards. If the response is none, group the participants into two. Assign a specific community hazard that were identified by them to each group, and instruct the groups to come up with an early warning signal for the type of hazard assigned to them. Instruct them further to act it out as a form of reporting or feedback in plenary.</i></p>			
<p><i>After the presentation of each group ask them:</i></p> <ul style="list-style-type: none">✓ How do they feel in the exercise?✓ Was it easy for the group to come up with the early warning signals for the hazard they are assigned to?✓ In coming up with the signal, did the group encounter difficulty?✓ Is having signal for specific hazards helpful?			
<p><i>Synthesize the session by asking the participants if they knew what they are supposed to do before, during, and after a hazard strikes. This will be an entry for the next discussion on what to do.</i></p>			

	<p style="text-align: center;">Module 5 EARLY WARNING, EARLY ACTION <i>(What to do before, during, and after hazard impact)</i></p>	
<p>SESSION OBJECTIVES</p> <p>At the end of 1.5 hours session, the participants are able to:</p> <ul style="list-style-type: none"> • Enumerate what actions are required prior, during, and after the impact of a specific hazard event • Associate actions to the warning issued <p>EXPECTED OUTPUTS</p> <ul style="list-style-type: none"> • Actions required for each alert level are appreciated • Actions needed before, during, and after hazard impact are defined and understood <p>PROCESS</p> <p>Lecture and Discussions Question and Answer</p> <p>LOGISTICS</p> <p>Manila paper Pentel pen Multimedia equipment Presentation and slides</p> <p>CONTENTS</p> <ol style="list-style-type: none"> 1. Family and community preparedness: Hazard specific to dos: Before, During, and After 2. Standard content of a survival kit 		

	<p align="center">Module 5 EARLY WARNING, EARLY ACTION <i>(What to do before, during and after hazard impact)</i></p>	
	ACTIVITY	LOGISTICS & PRESENTATIONS
	<p>LIST OF WHAT TO DO BEFORE, DURING, AND AFTER HAZARD IMPACT</p> <p><i>Following the group presentation and the synthesis, ask the group to once again discuss amongst themselves what they think they should do before, during, and after the impact of a hazard, for each hazard assigned to them. Give them 5-10 minutes to come up with the list. Let each group appoint a rapporteur to report the output of the group.</i></p> <p><i>After presentation of the output of each group, highlight to them the purpose of an early warning. Once a person or the community receives a warning, they are required to take action to minimize the impact of the upcoming hazard. Reinforce the principle of early warning, early action. Emphasize that no amount of warning will reduce a risk if the individual, family, or community will not take action.</i></p> <p><i>Present to the participants the list of what to do before, during, and after hazard impact.</i></p> <p>a. TYPHOON</p> <p>a.1 What to do Before the Typhoon arrives</p> <ul style="list-style-type: none"> ✓ Store food and clean potable water. Prepare food that does not require cooking or heating such as canned goods and power bars ✓ Make sure that you have emergency battery operated lights and transistor radio ready and handy ✓ Monitor TV and radio stations for weather updates ✓ Check your house for structures that needs retrofitting or repair, and retrofit or strengthen it when necessary to withstand the wind speed ✓ Herd domesticated animals to safe grounds. If you have agricultural crops that can already be harvested, harvest them before the typhoon strikes ✓ Small fishing boats or vessels should be well anchored on safer areas ✓ If you are living in an area that is frequently flooded, or near mountain slopes or near riverbanks or near the sea, you must have your ready-to-grab survival kit should an evacuation be required <p>a.2 When Typhoon is already brewing</p> <ul style="list-style-type: none"> ✓ Stay indoors all the time unless you are told to evacuate to the nearest evacuation center ✓ Monitor the news and weather forecast on radio and TV to get the latest information 	

	<p align="center">Module 5 EARLY WARNING, EARLY ACTION <i>(What to do before, during and after hazard impact)</i></p>	
	ACTIVITY	LOGISTICS & PRESENTATIONS
	<ul style="list-style-type: none"> ✓ Boil tap water especially if some areas are flooded ✓ Ensure that candles or lanterns are kept away from flammable objects or materials when using them ✓ Never walk or expose yourself unnecessarily in flood waters ✓ If you need to evacuate, be calm and move in an orderly and safe manner. Close all windows and doors before leaving your house. If you have time, make sure that appliances or equipment are moved to higher parts of the house. Avoid roads or routes that are near the river. Never cross rivers or streams at the height of the typhoon. <p>a.3 After the Typhoon</p> <ul style="list-style-type: none"> ✓ Return home only when local authorities have declared that your area is safe ✓ Stay away from power lines and electrical wires. Immediately report downed power lines to the power company. If power lines are down outside your home, do not step on puddles or stand on water. ✓ Before entering your homes, look for loose power lines and other damage. Structures that have been damaged by flooding may not be safe to enter. ✓ Look out for wild animals especially snakes. Small animals may have come into your home. Use a pole or stick to poke and turn things over and scare away the small animals. ✓ Throw away or empty containers that have accumulated water as this is a breeding ground for mosquitoes. <p>b. FIRE</p> <p>b.1. Fireproofing your home</p> <ul style="list-style-type: none"> ✓ Eliminate fire hazards through good housekeeping: dispose waster paper, trash and other flammable materials regularly. ✓ Keep matches OUT of children's reach. ✓ Oil or gas lamps and candles should be placed away from curtains or flammable materials. Do not place them near windows, fans or where children or pets may fall over them. PUT OUT THE FLAME before going to bed. ✓ NEVER leave a lighted cigarette/cigar/pipe unattended. ✓ Do not keep FLAMMABLE materials like gasoline, kerosene, alcohol and paint inside the house. ✓ Regularly CHECK your electrical installations and have all threadbare wirings and electrical equipment changed or repaired by licensed electrician. ✓ Do not overload electrical circuits by putting additional lights and appliances. 	

	<p align="center">Module 5 EARLY WARNING, EARLY ACTION <i>(What to do before, during and after hazard impact)</i></p>	
	ACTIVITY	LOGISTICS & PRESENTATIONS
	<ul style="list-style-type: none"> ✓ Make sure that there is no gas leak inside your house. If you smell gas, do not light a candle or matchsticks. Immediately open all doors and window to allow gas air to escape. ✓ Make a FIRE ESCAPE PLAN. The plan needs to include at least two escape routes for every room in the home and a convenient meeting place at a safe distance. <p>b.2 IN CASE OF FIRE or WHEN FIRE IS ON PROGRESS</p> <ul style="list-style-type: none"> ✓ If you see a smoke or fire, immediately find the nearest fire exit nearest you. ✓ Before fire goes out of control, extinguish fire if you are standing or have close access to a fire extinguisher or a bucket full of sand. ✓ If the source or cause of fire is faulty electrical wiring, gasoline, or petrol, never douse water over the flame. Cover it with very wet blanket or cloth or throw a bucketful of sand ✓ If the cause or source of fire is electrical in nature, immediately turn off the main switch ✓ If you must exit through smoke, crawl low under the smoke to your exit. ✓ If the door is warm DO NOT open it. A backdraft might occur. Find another fire exit nearest you. Call the fire department immediately as soon as you are in a safe place/area. ✓ If smoke, heat, or flames block your exit routes, STAY IN THE ROOM with door closed. Signal for help using a brightly colored cloth at the window. If there is a telephone in the room, call the fire department and tell them where you are. <p>b.3 AFTER THE FIRE</p> <ul style="list-style-type: none"> ✓ Immediately go to the nearest clinic or hospital if you have burn injuries or have inhaled smoke. However small the injury or burn is, it should be checked by a physician. ✓ Even if the building or house did not totally burn down, never enter the premises until you are sure that the structure is still sound and it is safe from falling debris. <p>c. EARTHQUAKE (Source: PHIVOLCS)</p> <p>c.1 Before (Prepare your homes, workplace or schools)</p> <ul style="list-style-type: none"> ✓ Strap or bolt heavy furniture/cabinets to the walls ✓ Check the stability of hanging objects like ceiling fans and chandeliers ✓ Breakable items, harmful chemicals and flammable materials should be stored properly in the lowermost secured shelves ✓ Familiarize yourself with the exit routes 	

	<p align="center">Module 5 Early Warning, Early Action <i>(What to do before, during and after hazard impact)</i></p>	
	ACTIVITY	LOGISTICS & PRESENTATIONS
	<ul style="list-style-type: none"> ✓ Know where fire extinguishers, first aid kits, survival kits, alarms and communication facilities are located and learn to use them beforehand. ✓ Minimum materials included in your survival kit should be water, canned or ready to eat food and can opener, first aid kit, flashlight and extra batteries, battery-operated radio, blanket and clothing ✓ Conduct and participate in regular earthquake drills <p>c.2 During</p> <ul style="list-style-type: none"> ✓ Stay CALM ✓ <u>When you are inside a structurally sound building or home..STAY THERE!</u> ✓ If possible, quickly open the door for exit. <i>(Emphasize here that the movement/shaking might cause some damage that will prevent you from opening a door)</i> ✓ Duck under a sturdy desk or table and hold on to it, or protect your head with your arms. <i>(Anticipate that some participants might ask you about the triangle of life. Emphasize that PRC, PHIVOLCS and American Red Cross advocates the duck, cover and hold as the best action).</i> ✓ Stay away from glass windows, shelves, cabinets and other heavy objects ✓ Beware of falling objects. Be alert and keep your eyes open ✓ <u>If you are outside...MOVE TO AN OPEN AREA!</u> ✓ Stay away from trees, power lines, posts and concrete structures ✓ Move away from steep slopes which may be affected by landslides ✓ If you are near the shore and feel an earthquake, especially if it is strong, move quickly to higher grounds. Tsunamis might follow ✓ <u>If you are in a moving vehicle, STOP and get out!</u> ✓ Do not attempt to cross bridges, overpasses or flyovers which may have been damaged <p>d. TSUNAMI</p> <p>d.1 Things that you can do or prepare for before a Tsunami</p> <ul style="list-style-type: none"> ✓ Find out if your community or place is prone to tsunamis ✓ Plan evacuation routes from your home, school, workplace or any other place you could be where tsunami presents a risk ✓ If your area is tsunami prone, always practice your evacuation route and participate in community drills ✓ Know the tsunami warning signal in your community ✓ Monitor radio or TV stations to keep informed of warnings ✓ Discuss tsunamis with your family. All members of the family should know and understand what they are supposed to do if a tsunami occurs ✓ Survival kit should come handy 	

	<p align="center">Module 5 EARLY WARNING, EARLY ACTION <i>(What to do before, during and after hazard impact)</i></p>	
	ACTIVITY	LOGISTICS & PRESENTATIONS
	<p>d.2 What to do if You Feel a Strong Coastal Earthquake (Source: UNDP Training Manual EW:Use and Practices)</p> <p>If you feel an earthquake that lasts 20 seconds or longer when you are in the coastal area, you should:</p> <ul style="list-style-type: none"> ✓ Duck, cover and hold ✓ Protect yourself first from earthquake damages ✓ Immediately after the shaking stops, gather members of your household and move quickly to higher ground away from the coast. A tsunami might be coming within minutes ✓ Avoid downed power lines and stay away from buildings and bridges from which heavy objects might fall during an aftershock. <p>If you are on land:</p> <ul style="list-style-type: none"> ✓ If you are in school and you hear there is a tsunami warning, you should follow the advice of your teachers and other school personnel ✓ If you are at home and hear the tsunami warning, make sure that the entire members of the family is aware of the warning. If you are in a tsunami evacuation zone, move in an orderly, calm and safe manner to the designated evacuation center. Follow the advice of the disaster local authorities in your area. ✓ If you are in the beach or near an ocean, and you feel a strong shake, move immediately to higher ground. DO NOT wait for tsunami warning to be announced. Stay away from rivers and streams that lead to the ocean, as you would stay away from the beach and ocean if there is a tsunami. Tsunamis generated in distant locations will generally give people enough time to move to higher ground. For locally-generated tsunamis, where you might feel the ground shake, you may only have a few minutes to move to higher ground. ✓ Staying away from all low-lying areas is the safest advice when there is a tsunami warning <p>e. FLOOD</p> <p>e.1 Before</p> <ul style="list-style-type: none"> ✓ Know your area's flood risk. (Emphasize that low lying areas and areas near riverbanks, streams and coastal areas are prone to flooding) ✓ Make it a habit to monitor the weather forecast everyday ✓ If your area is usually affected by the high tide, make sure that you have a calendar that indicates the "high tide" and "low tide". 	

	<p align="center">Module 5 EARLY WARNING, EARLY ACTION <i>(What to do before, during and after hazard impact)</i></p>	
	ACTIVITY	LOGISTICS & PRESENTATIONS
	<ul style="list-style-type: none"> ✓ Be prepared to evacuate at a moment's notice. Make sure that you have your survival kit ready (<i>emphasize the minimum or basic content of the kit</i>). ✓ Critical appliances and equipment at home should be placed in an elevated area and if possible electric sockets are covered (<i>emphasize that electric socket with cover will likewise prevent accidental electrocution when child is playing</i>). ✓ Know the highest ground or elevation or building in your area and make sure that you have access to it ✓ Clean canals and drainage that may possibly be the cause of flooding in your area <p>e.2.During</p> <ul style="list-style-type: none"> ✓ When flood or flashflood warning is issued by authorities, take heed of the warning. Immediately evacuate and head for higher ground and stay there. Before leaving the house, make sure that all windows and doors are closed and secured, and place a notice in your door indicating where you are headed to. ✓ Stay away at all times from floodwaters. If you come upon flowing stream, turn around and go another way. ✓ If you are stuck at home and can no longer move out, immediately turn off the main switch of the power supply. ✓ Keep children out of water- do not allow them to play and take a bath in the flooded waters. ✓ Be cautious and, whenever possible, avoid crossing bridges or roads that are flooded. ✓ Avoid exposing yourself to the elements. If it is not necessary for you to wade on flooded waters, stay dry in a safe and secure area. ✓ Be especially cautious at night when it is harder to recognize flood water. ✓ When you are in a vehicle, never attempt to cross a raging floodwater. Immediately turn around and seek higher or elevated ground. ✓ If your vehicle stalls in rapidly rising waters, abandon it immediately and climb to higher ground. ✓ Listen to local radio for information and advice. 	

	<p align="center">Module 5 EARLY WARNING, EARLY ACTION <i>(What to do before, during and after hazard impact)</i></p>	
	ACTIVITY	LOGISTICS & PRESENTATIONS
e.3 After	<p>A lot of injuries happen immediately after the flood. Thus it is important to be mindful of the following tips:</p> <ul style="list-style-type: none"> ✓ Return home only when local authorities have declared that your area is safe. ✓ Stay away from power lines and electrical wires. Immediately report downed power lines to the power company. If power lines are down outside your home, do not step on puddles or stand on water. ✓ Before entering your homes, look for loose power lines and other damage. Structures that have been damaged by flooding may not be safe to enter. ✓ Do not use appliances or motors that have gotten wet until they have been cleaned and dried. ✓ Be wary that some appliances keep electrical charges even after they have been unplugged. ✓ Look out for wild animals especially snakes. Small animals may have come into your home with the floodwater. Use a pole or stick to poke and turn things over and scare away the small animals. ✓ Be alert for gas leaks. Do not smoke or use candles, lanterns or open flames unless you are sure that the gas has been turned off and the area is well ventilated. ✓ During cleanup, wear protective clothing including rubber gloves and rubber boots. Never walk bare foot after the floods. Always use sensible shoes as debris can cause injury. Be cautious that muddy floors and stairs can be very slippery. ✓ Make sure that your food and water are safe. Discard items that have come in contact with floodwater. <p><i>Introduce the standard content of a family kit:</i></p> <p>Water – it should not be that heavy that it will impede their evacuation. At least to sustain the family for 1-2 days</p> <p>Canned goods</p> <p>Can opener</p> <p>Transistor radio with extra batteries</p> <p>Flash light</p> <p>Blanket (this is a must as they are likely to sleep on the floor)</p> <p>Maintenance medicines</p> <p>Clothes for at least 1-2 days</p>	

	<p align="center">Module 5 EARLY WARNING, EARLY ACTION <i>(What to do before, during and after hazard impact)</i></p>	
	ACTIVITY	LOGISTICS & PRESENTATIONS
	<p><i>Emphasize that as part of their preparedness, they should discuss and come up with a family evacuation plan first and foremost, and link it with that of the community plan. Members of the family should know the family evacuation plan and how they communicate with each other if the disaster occurs while they are not at home.</i></p> <p><i>Wrap up the session with an emphasis of the importance of preparedness, highlighting that each individual and family has a responsibility for their own safety. Further emphasize that people should always take heed of warnings and must take corresponding action that is required. You can end the session by telling a story on actual events wherein people took heed of the warning and the positive impact it generated or the reverse.</i></p> <p><i>Enunciate to the participants that they need to keep the early warning system in mind when they do their Barangay Disaster Action Plan. Early Warning System should be integrated into the plan.</i></p> <p>Note to the facilitator/trainer:</p> <p>This module can be a stand-alone training module or integrated in the Standard DM Training. If used as a part of the standard DM training, it should be done prior to DM Planning Session.</p> <p>This session can be done as a separate training module for the RC 143 after their orientation course.</p>	

Annex 1
COMMUNITY BASED EARLY WARNING SYSTEM TRAINING
Training Outline

OBJECTIVES

At the end of 8.25 hours the participants shall be able to:

- Define the meaning of disaster
- Explain Disaster and its relationship to Vulnerability and Capacity
- Explain the Hazards in the Philippines
- Explain what is an Early Warning System
- Enumerate the types of warning system
- List down the four (4) elements of EWS
- Identify the different warning signals
- Enumerate actions needed before, during and after a specific disaster
- Integrate the CBEWS in their DP Plan

EXPECTED OUTPUT

The participants have:

- Defined disaster
- Defined and linked disasters to Vulnerability and Capacity
- Enumerated the different hazards in the country
- Understood the meaning of early warning system and its objectives.
- Enumerated the four (4) elements of EWS
- Understood the alert levels
- Identified the different warning signals
- Enumerated actions required before, during and after a disaster
- Incorporated CBEWS in their DP Plan

TARGET AUDIENCE

- Community volunteers (BDAT or 143)
- Barangay Disaster Committee Members
- Barangay Development Council Members
- Barangay Health Workers

Module	Topics	Activities/Process/Methodology	Logistics	Time
00	Opening Program			15 minutes
	Getting to know you Levelling of expectations Objective settings Administrative detail	Introduction should be interactive and creative SLE methodology	Metacards Pentel pen Flip chart LCD/laptop if available	30 minutes
01	Disaster Concepts <ul style="list-style-type: none"> • Definition • HVC Concepts • Causes of Vulnerabilities 	Lecture Discussions Q and A Case study presentation	LCD and laptop if available otherwise make use of meta cards and flip charts	1.5 hours
02	The Philippine Hazardscape <ul style="list-style-type: none"> • Overview • Hazards in the Philippines <ol style="list-style-type: none"> 1. Hydro-meteorological 2. Effects of Climate Change 3. Volcanic 4. Earthquake 5. Fire 6. Technological 7. Complex Emergencies and Other Situations of Violence 	Lecture Discussions Q and A	LCD and laptop if available otherwise make use of meta cards and flip charts Pentel pens	1.5 hours
03	Early Warning System Definition, Concepts and Elements	Simulation exercise Processing using SLE methodology	LCD and laptop if available otherwise make use of meta cards	1.5 hours

	<ul style="list-style-type: none"> • Definition • Objective of EWS • Different EWS • Four Elements of EWS 	Lecture Group work		and flip charts Pentel pens	
04	Hazards and Alert Levels <ul style="list-style-type: none"> • Modalities of giving and receiving warnings • Considerations in giving warnings • Common hazards with established alert levels 	Lecture Plenary discussion Group work		Metacards Pentel pen Flip chart LCD/laptop if available	1.5 hours
05	Early Warning, Early Action <ul style="list-style-type: none"> • Family and community preparedness • Standard content of survival kit 	Lecture Demonstration Q and A		Metacards Pentel pen Flip chart LCD/laptop if available	1.5 hours

For more information, please contact:

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