



# COMMUNITY-BASED DISASTER PREPAREDNESS

## Training Manual on Disaster Preparedness



**CAMBODIAN RED CROSS SOCIETY**

**COMMUNITY-BASED DISASTER PREPAREDNESS  
TRAINING MANUAL**

**For Red Cross Volunteers**

These materials were prepared by the Disaster Management Department (DMD) of the Cambodian Red Cross (CRC) specifically for the training of Red Cross Volunteers. They were produced with financial support from the International Federation of the Red Cross and Red Crescent Societies (IFRC) and technical support from the International Institute for Disaster Risk Management (IDRM). They were developed using previous training manuals and revised according to the lessons learned from experiences in the implementation CBDP. Relevant training material from other organizations implementing similar community-based projects and programs were also used in the development of this manual.

***“A gram of prevention  
is worth a kilogram of cure”***

# TABLE OF CONTENTS

## **Session 1: Basic Concepts of Disaster**

1. Hazard
2. Vulnerability
3. Disaster
4. Profile and Disaster Situation
5. Cause and affect of disaster

## **Session 2: Overview of Disaster Management**

1. The relationship of hazard Vulnerable and disaster
2. Disaster Management
3. Reduce the impact of disaster

## **Session 3: Introduction to Disaster Preparedness**

1. Disaster Preparedness
2. Why is Disaster Preparedness Important?
3. How do we prepare for Disasters?
4. How to Prepare and Protect Your Family

## **Session 4: Community-Based Disaster Preparedness**

1. What is CBDP?
2. Why we have to implement the CBDP?
3. The CBDP Process: How to make a Community Resilient to Disasters

## CBDP Training Contents

### **Module 1: Disaster Preparedness**

- Session 1: Basic Concepts of Disaster
- Session 2: Overview of Disaster Management
- Session 3: Introduction to Disaster Preparedness
- Session 4: Community-Based Disaster Preparedness

### **Module 1: Disaster Preparedness**

- Session 1: Basic Concepts of Disaster
- Session 2: Overview of Disaster Management
- Session 3: Introduction to Disaster Preparedness
- Session 4: Community-Based Disaster Preparedness

### **Module 2: Organizing Communities for CBDP**

- Session 1: Introduction to Community Organizing
- Session 2: CBDP Facilitation
- Session 3: Conflict Resolution
- Session 4: Resource Mobilization
- Session 5: Preparing Project Proposals
- Session 6: Project Management

### **Module 3: Hazard, Vulnerability, Capacity Assessment (HVCA)**

- Session 1: Participatory Risk Assessment (PRA)
- Session 2: Overview of HVCA
- Session 3: Hazard Assessment
- Session 4: Vulnerability Assessment
- Session 5: Capacity Assessment

### **Module 4: Village Disaster Reduction Planning**

- Session 1: The village Disaster Reduction Planning Process

### **Glossary of Terms**

### **References**

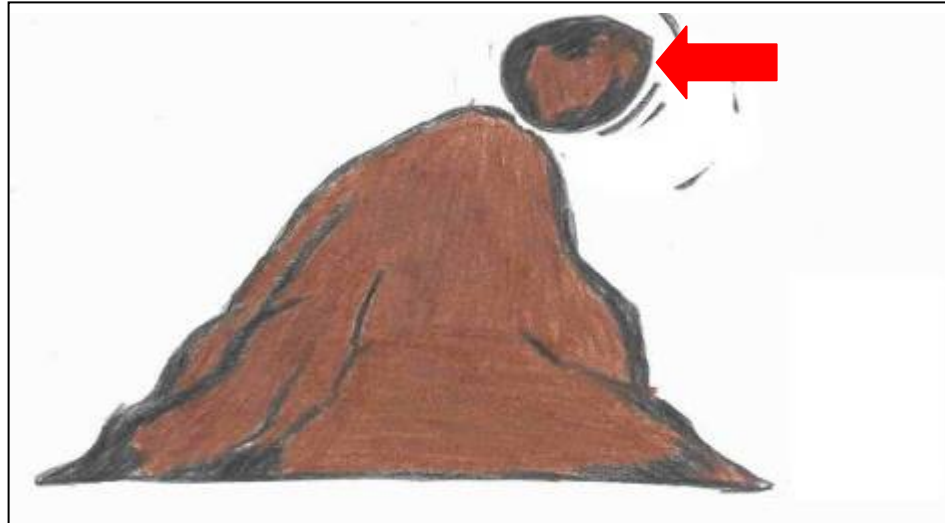
## **Module 1:**

# **DISASTER PREPAREDNESS**

## Session 1:

# Basic Concepts in Disaster

### 1. Hazard



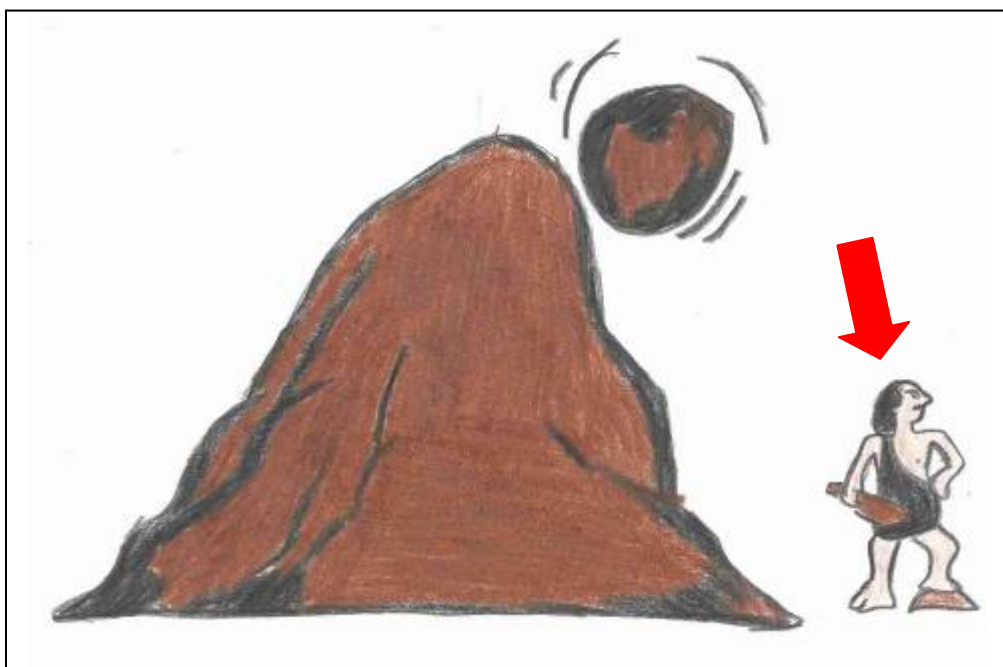
A hazard is any unusual event that has a potential to threaten people's lives, their property and livelihoods.

Some hazards occur naturally or are of natural origin, like typhoons, earthquakes and volcanic eruptions. Some hazards are caused by humans, like environmental pollution, deforestation, civil conflicts, toxic gases and chemicals.

In recent years, the distinction between natural and human-made hazards is becoming harder to distinguish. For example, the destruction of mangrove forests may worsen the damage caused by typhoons to the coastal areas. While illegal logging activities can make the effects of flooding worse and even cause landslides.

However, a hazard by itself is not necessarily a disaster. A hazard only becomes a disaster when it adversely affects people and causes damage to property and/or peoples' livelihoods.

## 2. Vulnerability



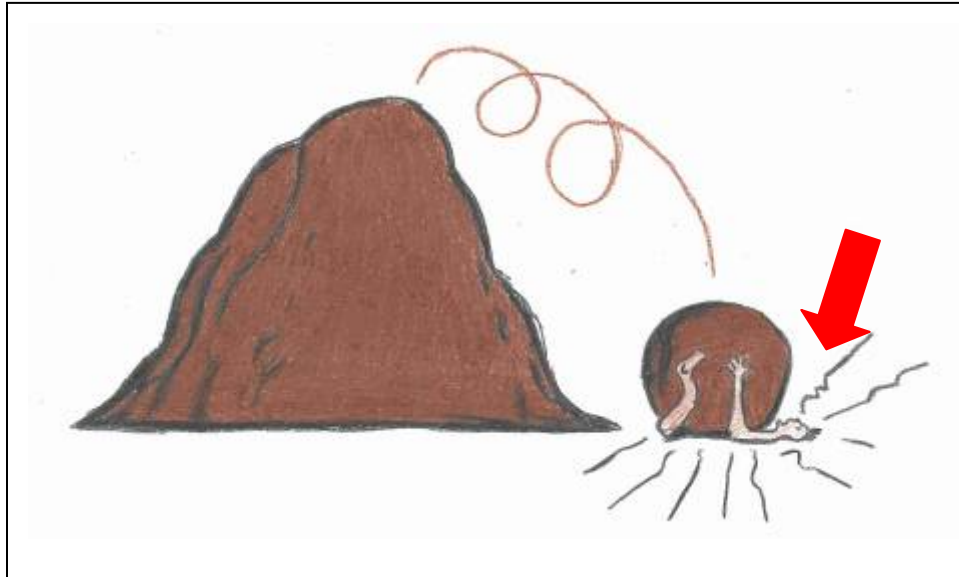
Vulnerability is the extent or degree to which an individual, community, structure, service, or geographic area is likely to be damaged or disrupted by the impact of a particular hazard.

Families and communities are said to be vulnerable when they are exposed to known hazards and are likely to be adversely affected by those hazards, if and when, they occur. But these vulnerable conditions are not the same for everyone. A family living on the riverbanks, for example, is vulnerable to a specific hazard (in this case floods) and a family whose house is located on higher ground that cannot be reached by floodwaters is not.

A family or community can also be vulnerable in many ways. The example of the family living on the riverbank is an example of a physical vulnerability. Communities can have high social vulnerability when there is a lack of leadership and/or no cooperation between residents such that they are unable to help each other in times of disasters. Some types of livelihood activities are more prone to be affected by disasters than others and hence have greater economic vulnerability. Attitudinal or motivational vulnerability, on the other hand, can occur for people believe who believe that there is nothing that can be done to reduce the impact of disasters.

The vulnerable individuals, families, communities, community structures, services, or activities concerned called “**elements at risk**”. It is also important to remember that vulnerabilities are dynamic and can change for good or for worse over time.

### 3. Disaster



A disaster can be defined as the serious disruption of the functioning of a community, causing widespread human, material or environmental losses, which exceed the ability of the affected people to cope using their own resources.

Disasters can be classified according to a number of criteria. They are often classified according to their speed of onset (sudden or slow), or according to their cause (natural or man-made).

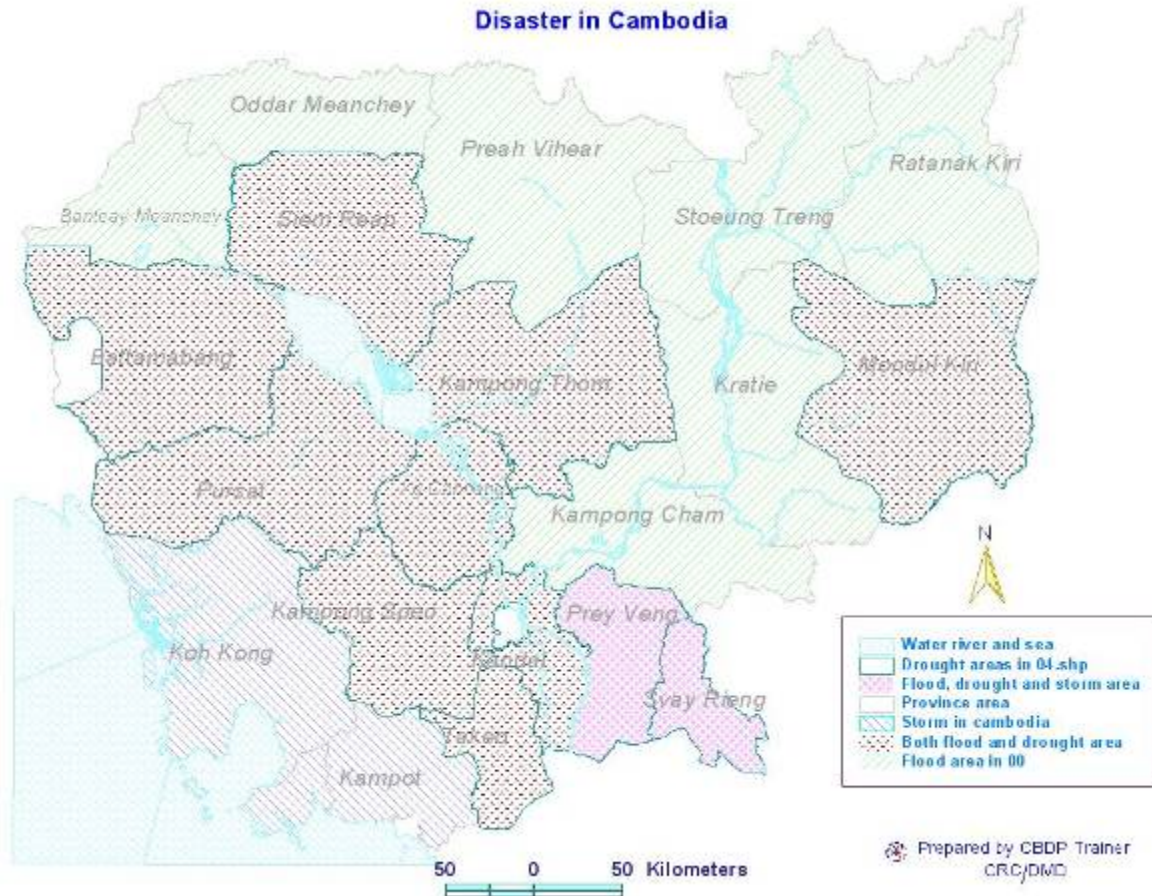


### What are the Most Common Types of Hazards in Cambodia?



#### IV. Profile of Hazards and Disasters in Cambodia

Different areas of the country are affected by different hazards. In provinces along the Mekong River and Tonle Sap Lake the most common hazards is flood. In the mountainous north and central highlands, there are flash floods and landslides during the wet season. In the central and eastern provinces drought can occur in the dry season. The southern provinces are sometimes visited by typhoons and heavy monsoon rains.



The years prior to 2003-2004 were periods when severe disasters occurred in Cambodia. The World Disaster Report published by the International Federation of Red Cross and Red Crescent Societies (IFRC) categorized Cambodia as the third (3<sup>rd</sup>) most disaster affected countries in the entire world in years 2000 and 2001. This was computed in terms of percentage of population affected by disasters in relation to the total number of population.

The flooding in Cambodia in 2000 was reportedly the worst in more than 70 years. The official report compiled by the National Committee for Disaster Management (NCDM) on 16 November 2000, put the death toll at 347 (80 percent of whom were

children). Of the 750,618 families (3,448,629 individuals) affected by flooding, about 85,000 families (387,000 individuals) had to be temporarily evacuated.

The flood of 2000 was more serious than previously recorded in Cambodia, when severe flooding in the area occurred in 1961, 1966, 1978, 1984, 1991, and 1996.

In 2001, while many of the areas affected in the previous year, 2000, were again flooded some areas in the country were also affected by drought such as the Provinces of Battambang, Pursat, Prey Veng, Kampong Speu, Kampong Cham, and Svay Rieng.

At the start of 2002, Cambodia was again affected by a long dry spell severely affecting crop production in a total of 71,600 hectares located in 8 provinces. The expected rainfall necessary for wet season rice production did not arrive in May.

<b>Disaster type</b>	<b>Year</b>	<b>Death toll</b>	<b>Displaced</b>	<b>Effected people</b>	<b>Total effected</b>
Flood	1991	100	250,000	650,000	900,000
Diseases - Malaria - Diarrhea - Dysentery - Typhoid	1992	50		380,400	
Flood	1994	506	29,000	29,000	
Drought	1996			2,500,000	2,500,000
Flood	1996	59	10000	1,300,000	1,310,000
Diseases - Diarrhea - Dysentery - Dengue fever	1998	15	15,049	15,049	
Flood	1999	7	25,805	634,574	660,379
Diseases - Diarrhea Dengue fever	1999	97		1,254	1,254
Flood	2000	347	7068	3,448,629	3,448,629
Flood	2001	62	2251	2,121,952	2,121,952
Drought	2001			300,000	300,000
Flood	2002	29		1,470,000	1,470,000
Drought	2002			650,000	650,000

In the future, the frequency of disasters in the country is expected to continue and may even be potentially more severe because of effects of climate change. Hazards of climatologically origin such as local windstorms, flood and drought have been predicted to change in patterns and behavior. Although there is no specific study in Cambodia, disaster management professionals in the region believe that Cambodia is vulnerable to climate change variability and extreme climate events.

Poverty further contributes to the vulnerability of families to disaster events. Because of conditions of poverty, millions of Cambodians do not have adequate coping capabilities necessary to absorb the impacts of floods, droughts and other natural

destructive events when they occur. Recurring disasters impact on the access of poor families to other services including water, sanitation, and education facilities.

Floods and droughts also severely impacts on the subsistence level of livelihood of women who experience poverty more acutely than men because of their multiple burdens of child rearing care, household work, and earning income. Indeed, disasters in the country are contributory to the vicious cycle of poverty affecting majority of the Cambodian people.

## V. Causes and Effects of Disasters

### Floods

Flood occurs when surface water covers land that is normally dry or when water rises above its usual levels. Floods is the most widespread of all hazards, floods can arise from abnormally high rainfall, storm surges from tropical storms, dams collapsing, snow melting rapidly. Most of the time flood is harmful to human resettlement.

However, floods can provide benefits without creating disaster and are necessary to maintain most river ecosystems. Floods replenish soil fertility, provide water for crop irrigation and fisheries, and contribute seasonal water supplies to support life in arid lands. There are three main types of floods:

#### Flash floods

- Often happen in the small rivers or streams in the mountainous areas.
- Are usually the results of very heavy rains in sloping areas where trees and plants have been destroyed and water cannot be absorbed into the soil?
- Happen quickly and consist of rapid flowing water, which can pick up and sweep along everything in its path.
- Start soon after the rain begins and it is difficult to determine where they occur.
- Can also happen when reservoirs or dams are broken.

#### River floods

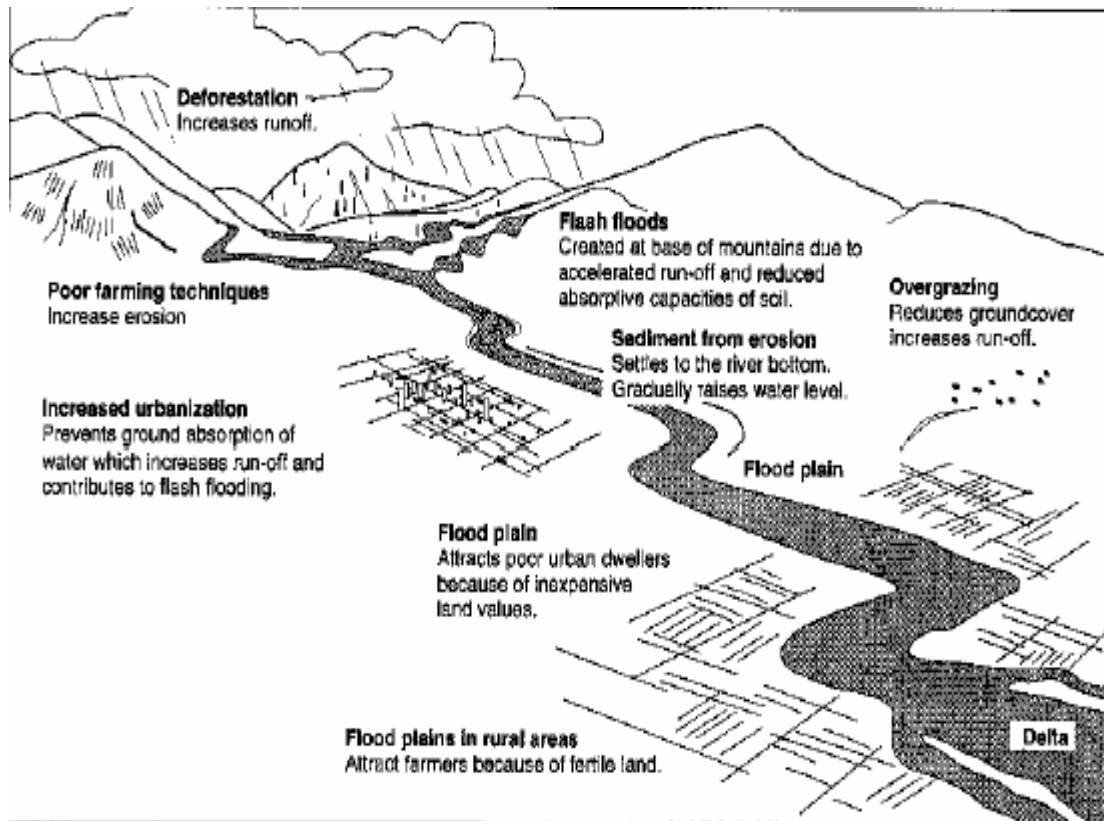
- Happens when river water flows faster and at a higher level than usual.
- Usually caused by heavy rains upstream.
- Can build up gradually, for example, in the Tonle Sap River area, or quickly as in the river systems of the centre.

### Coastal floods (sea surge)

- Occur when storm surges or sea waves arise suddenly in combination with high tides, which break or over flow the sea dyke, bringing seawater inland and preventing river water from flowing to the sea causing sudden flooding.
- Coastal floods often occur at the same time as low-pressure storms or typhoons near the shore.

### Causes

- The most important cause of floods is excessive rainfall
- Construction works such as roads, railways and irrigation systems can also cause flooding by preventing the natural flow of water to the sea.
- Floods can also happen when dykes, dams or embankments break.
- Big storms may cause the sea waves to come a long way onto the land and result in flooding and saltwater intrusion.



### Effects

- Result in injury or death to people.
- Damage houses and property and important possessions, such as: furniture, blankets, mosquito nets and documents, etc. belonging to people.

- Affect people's livelihoods because they destroy crops, kill livestock, wash away fish and shrimp or crab ponds and can cause food shortages.
- Long lasting floods can delay the planting of new crops.
- Can cause soil erosion or cover the land with sand or stones, which reduces farming area.
- Can damage facilities such as hospitals, clinics, schools, roads, railways, telephone, and electricity lines.
- Can disrupt clean water supplies and can contaminate water sources, which could cause diseases.
- Floods sometimes are beneficial; for example, they replenish the nutrients in the soil.
- Restore underground and safer water

## **Drought**



Droughts occur whenever there is a serious lack of rain over a long period of time, which affects either, or both, the surface or underground water supplies. Droughts threaten people's livelihoods especially if they occur in a populated area.

Of all the natural disasters, droughts can have the greatest potential impact and affect the largest number of people. They invariably have a direct and significant impact on food production and the overall economy. Droughts, however, differ from other natural hazards. Because of their slow onset, their effects may accumulate over time and may linger for many years.

Their impacts are less obvious than for events such as earthquakes or cyclones but may be spread over a larger geographic area. Because of the pervasive effects of

droughts, assessing their impact and planning assistance becomes more difficult than with other natural hazards.

Sometimes, droughts can happen even when there is no shortage of rain. For example, if forest has been cut down and the ground cannot absorb water, the water will run away. Also if there has been a shortage of rain during the wet season, or the onset of the wet season is late, a drought may occur.

### Causes

- Lack of rain for a long time.
- Natural environment is destroyed and the soil can not absorb water due, for example, to deforestation and cut and burn cultivation.
- People exploit and use water sources inappropriately.
- Evaporation of water from lakes and rivers which is not replaced by rainfall.
- Changing world weather patterns.

### Effects

- Difficulty in getting enough water for drinking, cooking and daily use.
- Increased sickness, especially to children and old people.
- Reduced productivity of crops and trees, which may die or cannot be replanted, may lead to food shortage.
- Fish and shrimp die as water in ponds and lakes disappears.
- Farm animals like pigs, cows and buffalo may either have to be sold or, if the drought lasts for a long time, may die due to thirst or sickness.
- As rivers stop flowing, so the areas near the sea can be effected by saltwater.

### Typhoon



Typhoons are characterized by rapid circulating winds accompanied by heavy rain. Those that affect our country are formed over the South China Sea or at the

Western Pacific Ocean. When the wind speed rises to Force 8 or above (62km/h and above) then it is called a typhoon.

Tropical low-depressions and typhoons may affect an area of 200-500km in diameter. Tropical low-depressions and typhoons can move at 10 to 30km/hour over the sea and may move towards land. They can cause heavy rains, strong winds and storm surge. Once they reach land they quickly lose their strength.

It is difficult to predict the path of tropical low-depression or typhoon, or if, when and where they will strike land, as they can change their direction suddenly. However, we can use modern equipment, e.g. satellites and radar to track their position and can warn people from 6 to 12 hours before they strike.

### Causes

The causes of tropical low-depression and typhoons are complicated. To date, scientists have not discovered all the causes of tropical low-depressions and typhoons. However, they came to some conclusions that such storms are easily formed over the tropical sea, especially in the area between the latitudes from 5° to 20° degrees, where the sea water temperature is over 26° Centigrade.

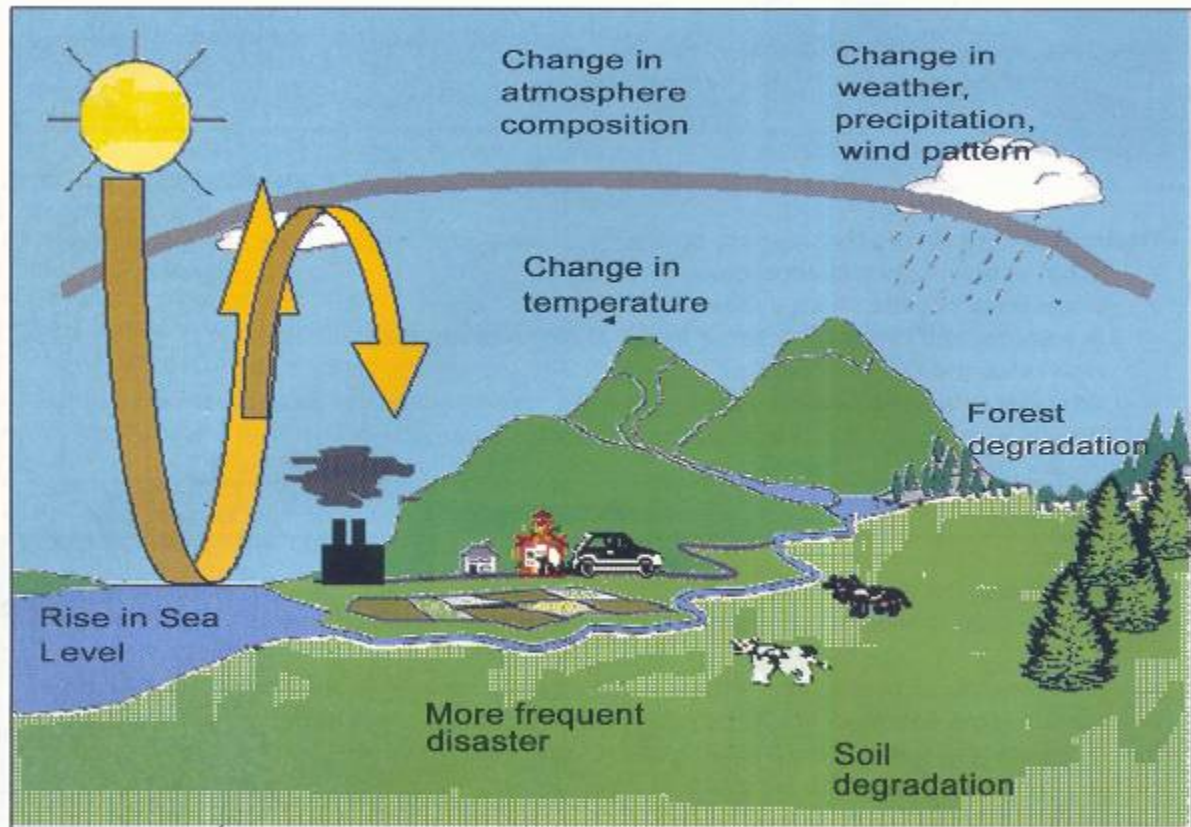
The circulating winds of a tropical low-depression or typhoon blow towards the centre and circulate. In a strong typhoon, at the centre, the wind is weakest, the sky clear and there is no rain. This area often has a diameter of a few tens to hundreds of kilometers, and is called the “eye of the storm”.

### Effects

- Ships and boats out at sea maybe sunk.
- Storm surges push seawater onto the land causing saltwater intrusion that affects agriculture, fish, shrimp and crab production
- Saltwater may contaminate wells and other water sources.
- Houses and assets maybe damaged or destroyed.
- Schools, clinics and markets may be damaged or destroyed.
- People can be injured or killed.
- Livestock maybe killed.
- Crops can be damaged or destroyed and food stocks lost.
- Trees can be damaged, uprooted and may block roads.
- Power lines can be damaged and may cause fire or electrical accidents.
- Communication lines can be cut.
- Heavy rainfall may cause floods and landslides.



## Climate Change



Fifty (50) years ago the layer of greenhouse gases was thin, so the sun's rays were reaching the earth and were reflected back into space.

Human activity has led to an increase in the levels of carbon monoxide and methane in the atmosphere, while at the same time reducing natural carbon sinks such as forests. Overtime, the layer of gases in the atmosphere slowly became thicker, preventing gases from escaping.

Today, there are many more gases trapped in our atmosphere than there used to be. These gases retain heat, so more of these gases contribute to the warming of the air around the earth. This warming of the earth is referred to as "global warming" and "climate change".

**Climate Change** is the change in the "average weather" that a given region experiences. Average weather includes temperatures, wind patterns and precipitation. Climate Change Phenomena include:

- The *El Nino* Phenomenon, which is evidenced by unusually warm ocean temperatures in the Equatorial Pacific, causes drought

- The *La Nina* Phenomenon, which is evidenced by unusually cold sea surface temperatures in the Equatorial Pacific, causes flooding.

### Causes

Climate change is directly and indirectly caused by human activity. Human activities can lead to:

- ◆ An increased level of carbon dioxide in the atmosphere resulting from the burning of fossil fuels, coal, natural gas and from industry
- ◆ An increased level of methane from flooded rice paddies, cattle herds
- ◆ Changes in land use patterns (deforestation, forestation, farming patterns, etc..)

### Effects from the expected changes in extreme climate phenomena:

Increasing temperatures lead to:

- An increased risk of crop loss
- An increased incidence of death and serious illness for the elderly
- An increased risk of diseases for cattle and wildlife
- More damage to building foundations resulting from ground shrinkage, which is a result of soil drying
- A decreased level of water resources and quality
- An increased risk of fires, including forest fires

More intense and long lasting rains lead to:

- Increased floods
- Increased mudslides
- Increased landslides and soil erosion

Increased number of cyclones and tornados lead to:

- An increased risk to human life and livelihood
- An increased risk of disease
- An increase in coastal erosion and damage to coastal buildings and infrastructure
- Damage to coastal ecosystems

Serious droughts caused by the *El Nino* phenomenon can lead to:

- Decreased agricultural productivity
- Decreased hydraulic power potential in drought-prone areas

Changes in the quality of the water can lead to:

- An increased in salinity of water in the lagoons and rivers

Soil Erosion can lead to:

- Erosion along riverbanks

- Sand dune erosion
- A shift in and extension of sandy areas
- Sedimentation and gradual rise of riverbeds causing floods

Impacts of climate change on communities include:

- Injury and loss of life
- Property damage and loss
- Salination of cultivable land
- Changes in income generation and aquaculture products

## **Fire**



Fires are uncontrollable flames. Fires may occur in populated areas, in cultivated land (at the end of a harvest) or in forests.

### **Causes**

Fires may be caused by people who are careless with flammable materials, such as petrol, kerosene, rice straw, firewood and unsafe electric appliances. They occur more in very hot weather, in the dry season or in a period of drought or in forests.

### **Effects**

- Fires burn houses, crops, trees and property.
- Fires may cause death or severe burns to people and cause disfigurement.
- Fires burn different items and produce deadly toxic gases into the atmosphere. These gases can quickly suffocate people. Fire also generates smoke that blocks vision and stings the eyes.

## Bird Flu

### Causes of infection:

- Virus H5N1 can spread from birds to human which causes more illness and high fatality rate.
- Emigration of watering birds especially ducks.
- Direct or indirect touch to local or birds which contained or affection by H5N1 that can be related to human.
  - ✚ Direct-touch means the people who work closed to the birds such as chicken farmers, chicken-duck sellers and cock-fighters.
  - ✚ Indirect-touch, some kind like the children who wish to play in the water where normally the birds go.

### Impact:

- Fatality comes during Day 9<sup>th</sup> to 10<sup>th</sup> after starting ill (between day 6<sup>th</sup> to day 17<sup>th</sup> )
- Difficulty for medical treatment.

	Name	Sex	Age Year	Date of starting sick	Date of die	Identify	Province
1	Tid Sokhorn	F	25	21 / 01 / 05	30 / 01 / 05	VN	Kampot
2	Meas Rin	M	28	12 / 03 / 05	22 / 03 / 05	PIC	Kampot
3	En Sosach	F	8	29 / 03 / 05	07 / 04 / 05	PIC	Kampot
4	Sun Chan Bopha	F	20	15 / 04 / 05	19 / 04 / 05	VN	Kampot
5	Pon Puthi	F	3	15 / 03 / 06	22 / 03 / 06	PIC	Kg Speu
6	En Bonterm	M	12	28 / 03 / 06	5 / 04 / 06	PIC	Prey Veng

### Symptoms:

Patients are similarly to a normal cold but noticeably:

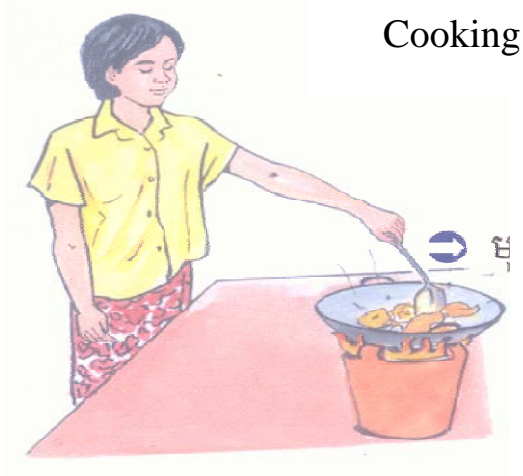
- ✚ Got fever (Temperature is over 38 Celsius)
- ✚ There some clues in inspiration such as: cough, get stuck or difficult when breathing and
- ✚ Touching with local/wide bird sick or dead birds in 7 days before or bird flu-affected people.

### Prevention:

Cooking the sick or dead birds for food is big dangerous.

- Must not keep fresh meat together with other foods
- Must wear mask while reaching out or near those sick or dead birds

✚ Wash your hands with soap



✚ Make sure that the meat is cooked in the long time, the meat must not be in rare or bloody.

✚ Must cover your mouth with handkerchief or tissue when you cough or sneeze and throw it in the waste basket. Must not spit out everywhere because it can spread to others.



## Session 2:

# Introduction to Disaster Management

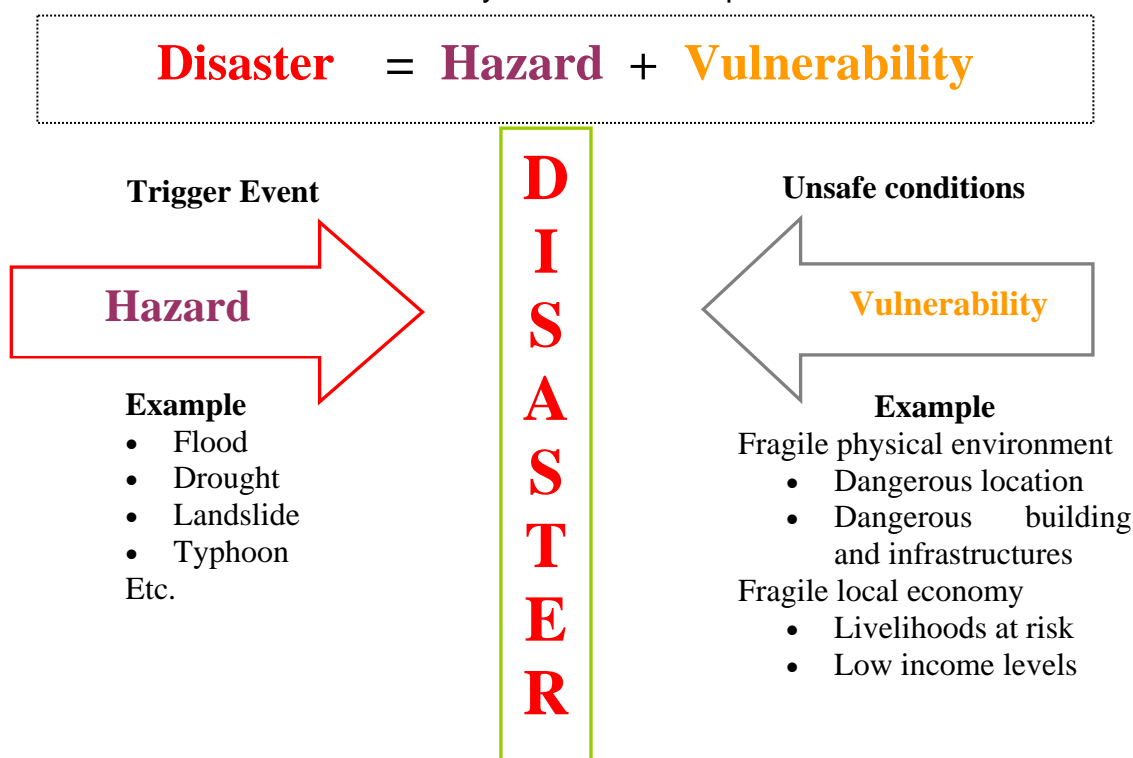
## I. Relationship between Hazard, Vulnerability and Disasters

The probability of a disaster occurring, or what is sometimes called as disaster risk, is a function of the possibility of a hazard occurring at a particular time and place and the level of vulnerability of the people or community that can potentially be affected. A disaster occurs only when the hazard actually causes human and material losses for families and communities.

The occurrence of a hazard or natural phenomenon, by itself, is not a disaster, only a flood, or a drought, or wind, etc. A hazard is the “**trigger event**”, which sets off the disaster. For example, it could be a typhoon, landslide or industrial accident. Without the “trigger event” there is no disaster.

Similarly, a population maybe vulnerable to a disaster for many years without a disaster occurring. Many people, for example, live in unsafe conditions near a river estuary, they are unable to construct safe houses, they engage in dangerous livelihoods (e.g. sea fishing) and have low incomes.

A disaster happens when these two come together. The “**unsafe conditions**” or vulnerability are the context where people and property are exposed to the risk of disaster. These make the community vulnerable to a particular hazard.



Unsafe conditions or Vulnerability is a combination of interrelated and dynamic factors. One way to help you understand vulnerabilities is by grouping or classifying them into the following three basic categories:

Physical / Material Vulnerability – for example, poor people who have little physical or material resources suffer more from disasters than rich people. People who are poor often live on marginal land; they do not have any savings or insurance; they are in poor health. These factors make them more vulnerable to disasters and mean that they have a harder time surviving and recovering from a calamity than people who are better off economically.

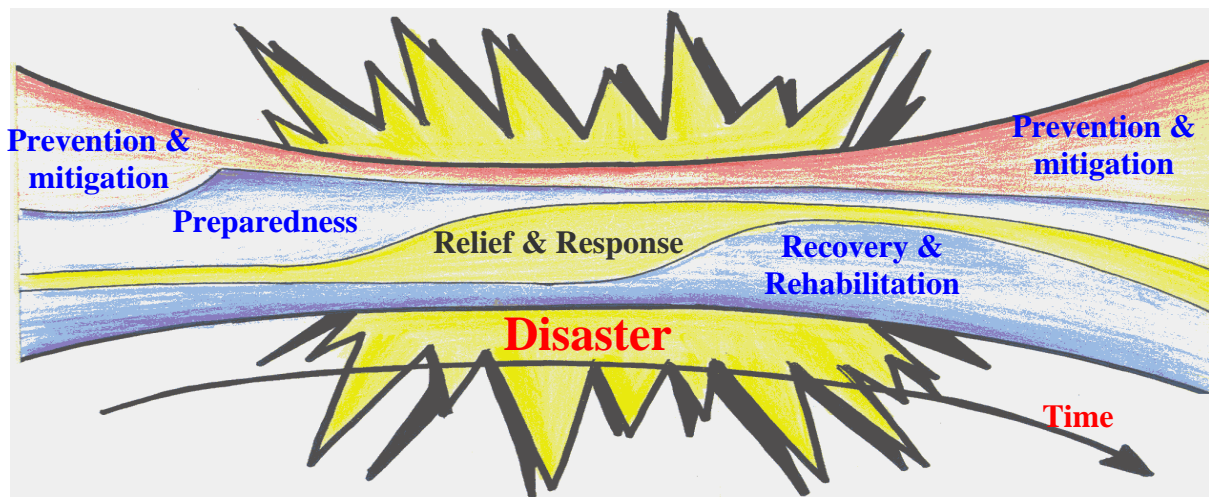
Social / Organizational Vulnerability - People that have been marginalized in social or economic terms are vulnerable to suffering from disasters whereas people who belong to groups which are well organized and in which there is a high commitment to each other suffer less when a disaster strikes.

Attitudinal / Motivational Vulnerability - people that have low confidence in their ability to affect change or who have “lost heart” and feel defeated by events they cannot control are harder hit by disasters than those who have a sense of their ability to bring about changes they desire.



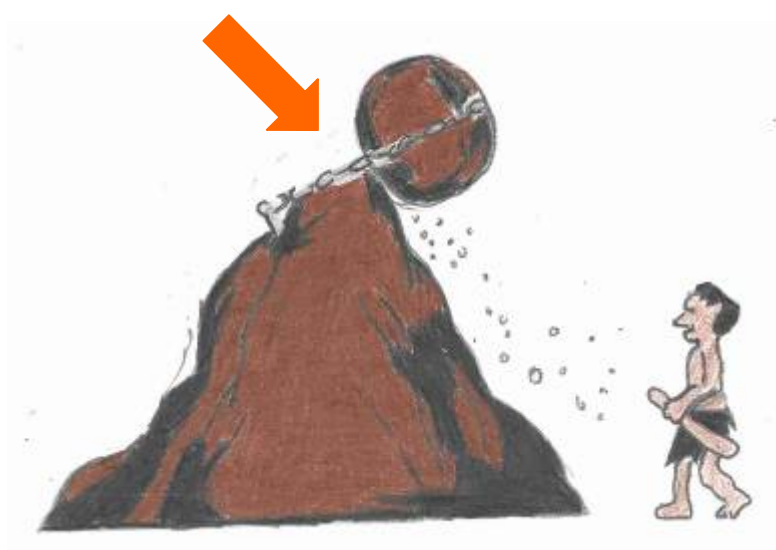
## II. Disaster Management

Disaster management is the collective term used to describe all the encompassing aspects of planning and responding to disasters, including post-disaster activities. In other words, disaster management refers to the entire range of activities and interventions that can, and should be, undertaken before, during and after a disaster to minimize loss of life, property and human suffering and to hasten recovery.



<u>PRE-DISASTER</u>	<u>DURING</u>	<u>POST-DISASTER</u>
Prevention Mitigation Preparedness	Relief & Response	Rehabilitation Reconstruction

### Prevention





Activities designed to provide permanent protection from the threat of disasters or reduce the intensity or frequency of a hazardous event so that it does not become a disaster. These include activities designed to impede the occurrence of a disaster event and/or prevent such an occurrence from having harmful effects on communities and infrastructure.

For example, flood control measures; land use regulations; poverty alleviation programs; provision of basic needs; preventative health care and education. Prevention and mitigation activities are directly linked to development activities.

### Mitigation



Measure taken in advance of a disaster aimed at reducing its impact on society and the environment. These include all measures that can be taken to minimize the destructive and disruptive effects of hazards and thus lessen the magnitude of a disaster.

For example, structural measures like building dikes and safer houses, to legislation (i.e. restricting people building houses on the seaward side of a dyke) to non-structural measures such as training, organizing disaster-brigade volunteers, public awareness, food security programs and advocacy on development issues.

### Preparedness



Preparedness involves measures taken in anticipation of a disaster to ensure that appropriate and effective actions are taken in the aftermath. Preparedness activities attempt to minimize the impact of a disaster by structuring the response and effecting a quick and orderly reaction to the disaster.

Examples include, capacity building to better undertake early warning, search and rescue, evacuation and relief operations; the development of and implementation of disaster preparedness plans; stockpiling equipment and supplies for immediate mobilization; emergency communications; shock-brigade training; simulation exercises; public awareness programs.

### Disaster Relief & Response



Applies to those extraordinary measures required in search and rescue of survivors, as well as to meet the basic need for shelter, water, food and health care. This includes essential services and activities that are undertaken in the aftermath of a disaster to assist affected people.

Examples include: search for and rescue of survivors; provision of food and non-food relief; emergency health; psychosocial interventions, repairing critical facilities (e.g. bridges, power/communication lines).

### Rehabilitation & Reconstruction

Reconstruction is the term used to describe involves taking permanent measures undertaken to repair, or replace, damaged houses and infrastructure and to get the economy going. Actions include construction of permanent housing and full restoration of all services.

Rehabilitation and recovery refers to the process undertaken by a disaster-affected community to fully restore itself to a pre-disaster level of functioning. Rehabilitation covers interventions to restore basic services to facilitate recovery of the affected people.

Examples are: assistance to people to repair their houses; the re-establishment of essential services, such as community facilities and the revival of key social and economic activities.



### III. Reducing the Impact of Disasters

In the previous section, we illustrated the relationship between hazards, vulnerability and disasters as follows:

$$\text{Disaster Risk} = \text{Hazard} \times \text{Vulnerability}$$

Hazards are the source of threats. Hazards create disasters by exposing pre-existing vulnerabilities. If the scale of hazard is too big, if vulnerabilities are too great and the capacity of people is insufficient then emergencies may not be managed locally, the communities may not be able to cope, and disaster will occur.

While all people and communities will have certain levels of vulnerability, all people and communities will, likewise, have varying degrees of capacity or ability to cope with disaster events, if and when they occur. Even in emergency situations disaster survivors have capacities. They are not entirely helpless victims but have coping mechanisms on which to build on for emergency response and recovery.

**Capacities** are the resources, means and strengths that exist in any household and community that can enable them to respond, cope with, withstand, prepare for, mitigate or quickly recover from a disaster. These qualities increase the ability of an individual or community to cope with a threatening event or process. Coping means managing “resources” in adverse situations. Coping can include active ways of solving problems. “Coping mechanisms” are employed when poor individuals or communities face difficulties in recovering from a disaster.

Capacities can be analyzed using the same classification as the one used for vulnerabilities, above. Acknowledging the capacities of the affected population is essential for designing and implementing disaster responses that have developmental impacts.

Physical / Material Capacity - People have resources which can be harnessed to protect themselves, their property and their environment. People with economic and material resources can survive better. Some family members have skills, which enable them to find employment if they migrate, either temporarily or permanently. For many, coping with everyday risks is a permanent activity and an integral part of their survival strategy.

We should recognize that even the weakest in the community have some skills, resources and strengths to help themselves and perhaps others. Even those who were affected by a hazard can salvage things from their homes and from their farms. Sometimes they have food in storage or crops that can be recovered from the fields or farm implements for planting again.

Social / Organizational Capacity - People have family, community organizations and social networks, be they formal or informal, weak or strong so even when everything physical is destroyed, they can still rely on some members of their families and communities. They have leaders and systems for making decisions. They have tribal loyalties or church affiliations. They have capacities in the social and organizational realm. People have social resources that help them cope with, resist and handle the threats they may face.

Attitudinal / Motivational Capacity - People have attitudinal or motivational capacities when they have positive attitudes and strong motivations such as the will to survive, love, and concern for others. These are important capacities and form the basis for development, just as much as the physical resources that people have. People, who are aware of their abilities and have confidence in themselves, are better able to cope with a crisis. When they have a sense of control over events and the power to change their condition, they are less vulnerable to threats. Coping mechanisms are considered capacities for survival as well.

Hence the previous illustration of the relationship between hazards, vulnerability and disasters can be more appropriately re-formulated to include local capacities.

$$\text{Disaster} = \frac{\text{Hazard} \times \text{Vulnerability}}{\text{Capacity}}$$

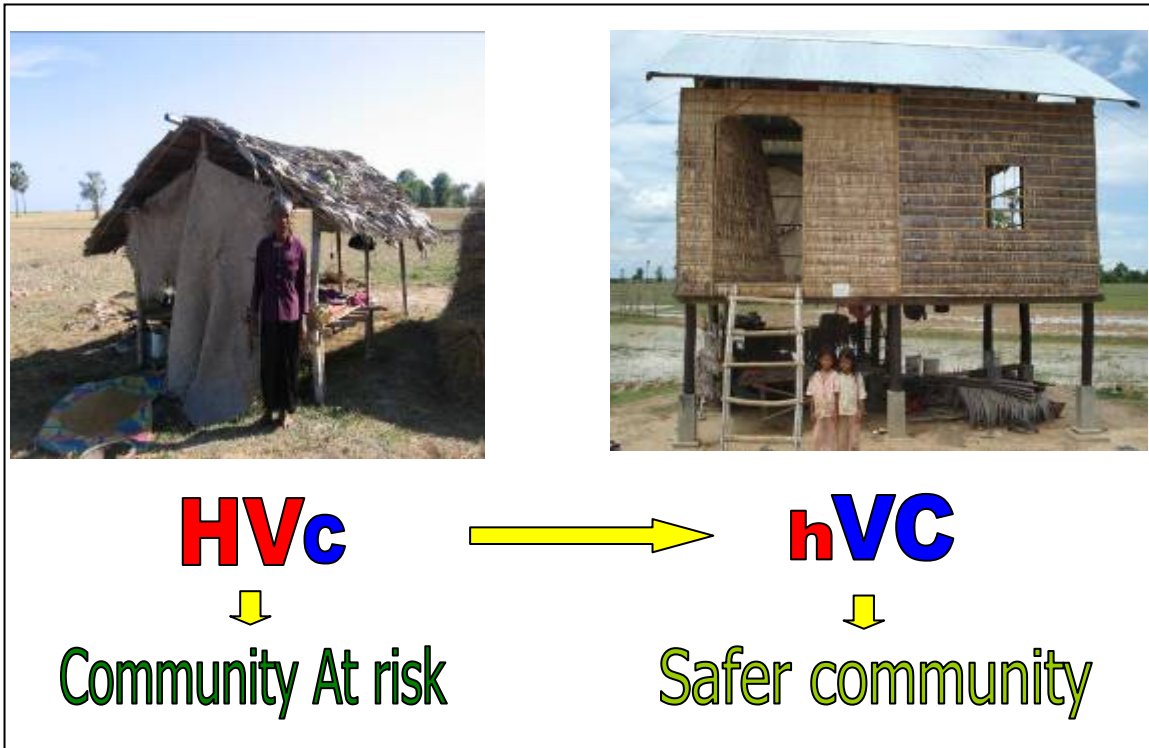
Disasters occur when a hazard strikes a vulnerable community whose capacity is limited. The impact of a disaster event usually decreases in severity as capacities are increased. From this equation we can better understand the underlying factors which make disasters happen. It gives us an explanation of why some groups of people or communities are more affected by disasters than others and why.

Equally significant, it provides us with specific and concrete directions on where we should concentrate our efforts and activities so that the adverse impact of disasters can be minimized. From our analysis of the factors contributing to disasters we can see that the adverse impact of disasters can be best minimized by using three main strategies:

- Reduce the potential adverse effects of hazards through the design and implementation of structural and non-structural mitigation measures
- Decreasing vulnerabilities of people at risk by identifying and addressing the root cause of their vulnerability

- increasing the capacities of people and their organizations to plan for and respond to future disaster events

These strategies are collectively called **Disaster Reduction or Disaster Risk Reduction** measures. The objective of disaster risk reduction is to decrease the community's vulnerabilities and increase their capacities to better cope with and withstand hazards.



## Session 3:

# Introduction to Disaster Preparedness

***“A gram of prevention  
is worth a kilogram of cure”***

### 1. What is Disaster Preparedness?

Despite our best efforts to deal with disasters, conditions are often seen to be worsening. This is because our efforts and activities have always been focused on responding to disasters rather than to prevent or lessen its adverse effects. The situation is similar to the situation where we only go out and buy medicine – the “cure” - once we are already sick.

Taking the necessary action to prevent the illness to occur is not only more effective but is also the less costly thing to do. This situation is similar to a disaster event. We react and mobilise to solve the problem; we look for a cure only once something has already happened instead of asking why the disaster happened in the first place.

As mentioned in the previous session, Disaster Preparedness involves measures taken in anticipation of a disaster to ensure that appropriate and effective actions are taken when a disaster occurs and in the aftermath of a disaster. Preparedness activities attempt to minimize the impact of a disaster by structuring the response and effecting a quick and orderly reaction to the disaster.

It is important to realize that disaster preparedness is a long-term goal rather than a specialized one-time program. It is a result of a wide range of activities conducted continuously and consistently over time rather than a distinct set of activities conducted only once. For CRC, pre-disaster activities are one of the most important activities within the larger field of disaster management.

### 2. Why is Disaster Preparedness Important?

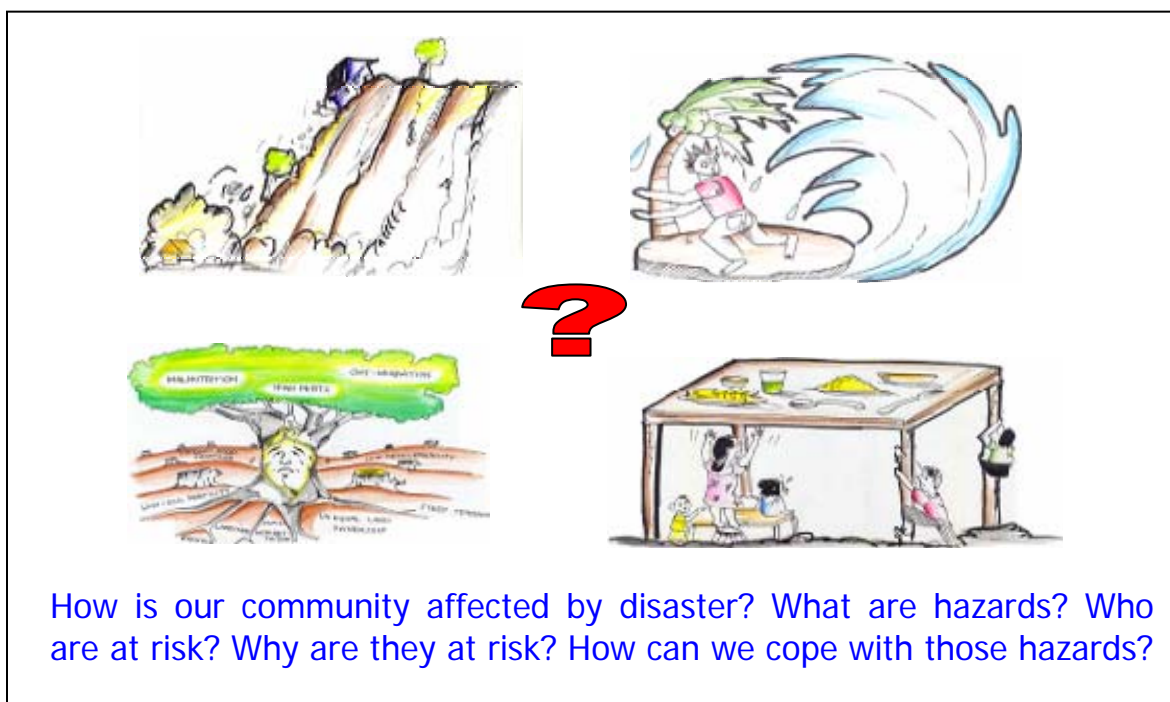
- Obviously, without any preparation for the occurrence of disasters, the adverse impacts of these disasters on the population will be more severe. Effective design and implementation of disaster preparedness plans and activities will minimize the adverse effects of a disaster, both on people and in productive physical assets and property.
- Experience in many countries have shown that the cost of pre-disaster interventions (i.e., prevention, mitigation and preparedness activities and

projects) is far less compared to the cost of rehabilitating and reconstruction of actual damages caused by a disaster.

- The funds and resources that the government, including international and local organizations, spend on costly rehabilitation and reconstruction efforts after a disaster are funds and resources that could have been used or are taken away from other development programs, like agricultural projects for farmers, irrigation systems, school buildings, healthcare, social services, and other much needed development projects.
- The occurrence of a single disaster can wipe out the gains and activities undertaken under previous and on-going developmental programs and projects. Infrastructure, agricultural and social development projects already undertaken or on-going can come to a complete stop if no measures are taken to address the risks it faces as a result of the potential disasters.
- Since the worst disaster-affected segments of the population are always the poor, almost all disaster preparedness measures and activities tend to benefit the poorer groups in a community. These are the very same most vulnerable groups that CRC has sworn to serve.

### 3. How do we prepare for Disasters?

The following are some of the key components and activities that have to be undertaken to ensure readiness and ability of a community to respond to disasters. To be most effective, these should be undertaken at all levels starting from national, provincial, district and up to the village or community level





## Disaster Risk Assessment

The first step to take in order to be prepared for disasters is to get a good picture of the existing situation or condition in the community. This is achieved by gathering data and information about the hazards, vulnerability and capacities present in the area. The analysis of this will then form the basis in the determination of any and all future activities and projects. In addition, it will be necessary to know who and where the most vulnerable are and what how people cope with disasters.



## Developing Community Action Plan

Of the disaster preparedness activities, one of the most critical is to have disaster preparedness plans in place that are agreed upon, implement able and for which commitment and resources have been relatively assured. The emphasis of a disaster preparedness plan should be to anticipate the resources and logistics necessary to implement these components and the most effective ways of meeting those requirements. Hence, an effective disaster preparedness plan gives practical guidelines on its various components, including a specific focus on the following:

Early Warning System

For most types of rapid onset disasters, a warning system can save many lives by giving a vulnerable population adequate notice of an impending disaster they can either escape the event or take precautions to reduce the dangers. The most appropriate means of obtaining and disseminating forecast and early warning information must be defined within the disaster preparedness plan. It is imperative that early warning messages must reach and be understood by the people that will potentially be affected. An effective early warning system should also identify how we provide information to people and who is responsible at different levels for this.



Evacuation

People should be aware of the historical places for evacuation in their communities, the local authority plan for evacuation and alternative routes to the evacuation place. The roles and responsibilities of the different disaster management officials at the different levels should then be clearly outlined in the planning process. Provision for other equally important aspects of water and sanitation, shelter and food provisions in evacuation or safe areas should also be considered within the context of preparedness activities for evacuation.



### Search and Rescue

Activities should be undertaken to organize disaster response teams or brigades. These teams should be trained and be present at provincial, district, commune and village levels to undertake search and rescue both on land and water. Team members should know the principles of search and rescue as well as basic life-saving techniques and First Aid.





### Mitigation Measures

Gathering and analyzing hazard and vulnerability data and information should lead to the identification of all the relevant non-structural and structural activities and projects that should be implemented in order to reduce the impact of disaster events in the community. Assessing capacities, on the other hand, will show which of the activities and projects the community can already be done (because they require little or no-cost), those they can do with some technical or financial assistance from outside sources and those which only government and/or external organizations and institutions can implement due to the extensive financial and/or technical requirements needed.

## Public Awareness Campaigns

There are several waves of awareness campaigns that will be required. The disaster risk reduction process will only be effective if those who are the ultimate beneficiaries know what to do in times of disasters and know what to expect. For this reason, an essential part of disaster preparedness is the education of those who may be threatened by disasters. Preparedness measures that should be taken by families and communities to reduce the impact of the disaster should also be disseminated. People, especially those in high-risk areas, should also know about disaster plans and activities so that they are able to participate.



## Capacity Building and Training

Training of all community leaders and members involved in the implementation, in whole or in part, of the disaster preparedness plan is essential. Those responsible for issuing warnings must be trained as well as those who will have direct relief functions. Training cannot be a one-time event. Refresher courses are essential. Training should be active in every way possible. Training courses should be conducted specifically for all those involved.



### Damage and Needs Assessment (DANA)

There should be a prepared and agreed upon system and procedure set for the conduct of damage and needs assessment among community stakeholders. This is very important because it would be very difficult to decide what form of response or assistance will be effective without accurate knowledge of the extent of damage. The primary purpose of this assessment is to provide a clear, concise picture of the post-disaster situation, to identify relief needs and to develop strategies for recovery. This will determine the options for humanitarian assistance, how best to utilize existing resources, or to develop requests for further assistance.



### Rehearsal and Simulation Exercises

Rehearsals, drills or simulation exercises must be conducted system-wide and taken seriously. System-wide means that all the components which would be involved in a real disaster situation, from central to local authorities, should be rehearsed. Cynicism and half-heartedness will probably affect the rehearsal but this should nevertheless be seriously pursued because it is the nearest anyone will get, until disaster strikes, to seeing if the plan is effective.



#### 4. How to Prepare and Protect Your Family?



### Flood

#### Before floods

- Attend community meeting with the RCVs and local authority to be able to access to information about flood preparedness or warning.
- Listen to the TV, radio or public loudspeakers for flood warnings and follow up the local flood situation and level.
- Move all farm animals and movable goods to the high ground or raised platform.
- Reserve food, for example the rice straw, for the such animals.
- Protect your valuables and important documents by putting them into a waterproof bag and store in a dry and high place.
- Reserve enough food and water for at least one week in a high and safe place.
- If possible, reinforce your house and make it more flood-proof. Help protect your house by filling sandbags and putting them around the house.
- If your family has a boat, make sure that it is well maintained and can be used when necessary.
- Prepare bamboo and ropes to make a mezzanine in your house to stay in. Make sure that you can escape through a window, or through the roof, should the water level become too high.
- Identify where to evacuate to if necessary and how to get there.
- Protect your water supply by covering your well and water containers, etc.
- Know where you can get help if someone in your family is injured. For example, you should know where the houses of local Red Cross members and health workers are.

### During floods

- Keep your farm animal away from flood water and give appropriate fodder and water.
- Check water sources for contamination. Refrain from eating fish or other food from collected from this area.
- Switch off all electricity supply to your house at the main source.
- Move up to a high and safe place, for example, a two-storey building or a hill. Watch out for snakes or other dangerous animals as these will also move to the higher ground.
- Don't walk into water if you see that an electricity wire or post has fallen into the water or touch any electrical socket to prevent electrocution.
- Don't walk, wade, swim, ride a motor bike or bicycle, play or work in flooded areas as you could be swept away and drown. Even if the water is calm you could fall into a hole, as you can not see it.
- Wear a life jacket if you have one. If not, you can use other things that float to hold onto. For example, inner tubes, big empty, plastic containers, or banana trees can be used as life buoys if you have to move into a flooded area.
- Keep away from riverbanks or springs in the flooded areas as these may be undermined and may collapse.
- Don't drink floodwater. Instead collect and use rainwater to drink and cook with. Try always to boil the water. If you have no alternative, use filtered or purified water (using chemicals).
- Don't eat spoiled food or food that was soaked in floodwater. Such food is not clean (as there are a lot of bacteria in it) and you could be infected and become ill.





### After the floods

- Use mosquito nets when you sleep during the day and at night to prevent mosquito and insect bites.
- Don't go to areas near to riverbanks, or where there was landslide or to where there are no people living.
- Don't enter any house/buildings that have been flooded unless they are checked by adult.
- Don't touch any damp electrical sockets or turn on the electricity until everything is dry or has been checked-
- Don't use any food that soaked in floodwater.
- Ask the Red Cross staff or Health Workers to check the water quality and to clean your well before using it again.
- Repair your latrine.
- Seek medical help if you or any of your family members become ill.
- Participate in cleaning up the environment in your area.
- Plant bamboo or appropriate trees around your house to protect it against floods.
- Participate in community meeting to be able to access to information about flood.



## Drought

### Before drought



- Regularly listen to the TV, radio, and loudspeakers for weather forecasts and warnings of drought, especially when there has been little or no rain.
- Don't waste water. Protect all your water sources carefully.
- Repair broken pipes and taps.
- Store water in any possible container.
- Store seed crops in a safe place for use after the drought.
- Collect grass to feed the animals.
- Planting tree and refrain from cutting them down in the mountainous and watershed conservation area.
- Diversify crops. Obtain information on the types of crop suitable to you land and those that are more tolerant to short periods of water shortage.
- Plant early maturing varieties of rice and other crops.
- Adjust the planting period for crops to mature when water is still adequate.
- Practice sustainable agricultural procedures. Deep sloughing of soil allows deep rooting while use of organic fertilizer retains moisture that is needed during the dry season.
- Build pond next to your house that will be filled with water during floods or rains that can be used during the dry season.

### During drought



- Listen to the radio, TV and loudspeakers regularly for advice about what to do during the drought period.
- Don't waste water. Use household water, for example, to water the plants or in the latrine.
- Collect water from the nearest safe drinking supply.

### After drought:

- Help your family to check and repair the water systems.
- Help your parents to sow seed crops.



## **Typhoon**

### **Before a tropical low-depression or typhoon:**

- Help plant trees around your house and school to act as a windbreak to stop the soil being washed away.
- Help to trim dead branches and cut down dead trees to reduce the danger of these falling on your house during a storm.
- Help put important documents in a waterproof plastic bag.
- Store food, fuel, potable water, medicine and other necessary items in a safe, high place during the storm season.
- Listen for storm warnings on your radio, your TV or the public loudspeaker system.
- Buy spare batteries for your radio and torch (to use if there is a power cut).
- Help your parents reinforce your house to make it more resistant to high winds.
- Bring inside anything that might be picked up and blown away by a strong wind.
- Protect water sources from contamination by covering wells and water containers.
- Identify a safe place to take shelter if you have to leave your house.
- Move your animals to a safe place.
- If your family has a boat, help to put it in a safe place.
- Protect your fishing equipment and fish, shrimp and crab ponds.

### **During a tropical low-depression or a typhoon:**

- Never go out to sea when there is a tropical low-depression or typhoon.
- Stay away from any broken electric wires or wet electric sockets.
- Stay inside a strong house or building and don't go out.
- Take care of smaller children and always stay close to your parents.
- Never take shelter under a tree, or stand near electric poles as they could fall on you and cause injury.

### **After a tropical low-depression or a typhoon:**

- Continue to listen to storm warnings on TV, radio or loudspeaker system.
- Remind your parents to check that the electrical sources in the house are safe before using.
- Check any damaged parts of your house to and carry out repairs.
- Check the water source, to ensure it is not polluted by dead animals, or dirty, or contains salt water.
- Check the dykes and the trees surrounding your house for damage.
- Help to check whether your family members and neighbors are affected.
- Help to check the animals are all right.

## **Fire**

### Things that should be done to protect against fire:

- Don't play with fire, matches or lighters.
- Keep lighter and matches out of reach of children (sometime from the monkey)
- Don't place flammable material near cooking area.
- Don't burn rice-straw or waste near your house.
- Keep fire distinguisher or basket of water handy at home, school or place of work.
- Keep candle and lamps away from bed and place them in a stable platform before going to bed.
- Don't smoke on the bed especially when drunk.
- Make sure that the gas hose is properly connected to the gas pipe. Repair it if there is unusual problem.
- Put your valuable paper (ID card, birth certificate, married certificate) in one bag that you can easily carry to the safety if ever fire happen.
- Don't leave your kitchen when you are cooking.
- Check electric wires and household appliances regularly and make any necessary repairs.
- Talk about fire with your family and agree on what each one of you should do in case of fire.
- In case of fire, shout "*Fire!*" and get out of the house as quickly as possible. Once you are outside, stay out and call for help. You should never go back into a burning building.
- If you are caught in a smoke filled room, crawl on your knees to get under the smoke and escape as quickly as possible.
- If your clothes catch fire, drop to the ground, cover your face and roll back and forth until the flames go out. Don't run, as it will make the fire burn faster.
- If you or someone in your family has been injured by fire, immediately cool the burnt area with clean water.
- Do not cover or apply anything to a burn. Ask for help from the nearest Red Cross member or health worker.

## Session 4:

# Community-Based Disaster Preparedness

The purpose of the International Red Cross and Red Crescent Movement, as embodied in its Constitution and the principle of humanity, is to prevent and alleviate human suffering wherever it may be found, to protect life and health and ensure respect for the human being. Hence, disaster preparedness fits within this overarching purpose and has been identified in IFRC's "*Strategy 2010*", as one of the "core areas" that National Societies should prioritize and integrate into their overall programming efforts. The design and implementation of the CBDP Program in disaster-prone areas of Cambodia is CRC's response to this mandate.

## I. What is CBDP?

We described Disaster Preparedness as the measures taken in anticipation of the occurrence of a disaster and to ensure that appropriate and effective actions are taken in the aftermath. CBDP occurs when this concept of Disaster Preparedness, discussed in the previous section, is initiated and undertaken by community stakeholders themselves in their own community or village.

The ultimate goal of CBDP is to improve the quality of life of the people in the community especially those who are most vulnerable. This is to be accomplished by the CRC's initiation of a process of community participation and problem solving resulting to the community stakeholders themselves planning for and implementing preparedness and mitigation measures to respond to the natural disasters that may affect them.

In our CBDP Program we expand the meaning of Disaster Preparedness to include all the activities and measures that can and should be done before the occurrence of a disaster event. These include the forecasting and, to the extent possible, prevention and mitigation of adverse impact of disasters on vulnerable populations and respond to and effectively cope with their consequences. In other words, mitigation and prevention measures are part of the core strategies in the overall CBDP process.

CBDP emphasizes collective community action and the internal mobilization of resources to support the community's efforts to be self-reliant to the extent possible and for a more systematic and effective mobilization and use of external resources needed to implement plans and projects identified by the community members to be the most relevant.

## II. Why should we do CBDP?

- It is at the community level where effects of disasters are felt the most and also where the physical, social and economic risks can be most adequately assessed and managed.
- Nobody is more interested in understanding and improving local affairs and conditions than the community residents themselves
- Nobody can understand local opportunities and constraints better than the local residents themselves
- The first and quickest response to a disaster in any community will always come from the community members themselves
- For disaster risk reduction initiatives to be more effective the generation and analysis of hazard and disaster related data and information should be in a manner and language that is understood by the community
- Because the community is involved in the whole process, their felt and real needs as well as inherent resources are considered. There is more likelihood that problems will be addressed with appropriate interventions.
- People are the country's most abundant and valuable development resource, which should be harnessed and developed



### III. The CBDP Process: How to make a Community Resilient to Disasters

For the past several years our country has been experiencing one disaster after another. After the flood of 2000, for example, the government spent millions repairing and replacing lost infrastructure and providing for relief. Families were left anxious, uprooted, out of homes for long periods of time or relocated to other facilities -disrupting their livelihoods and increasing their stress. And no province, district, commune or village is invulnerable.

Despite this gloomy picture, there is much that can be done by community officials and residents to plan for disaster, to mitigate the risk, to protect the safety of a community and those that live there. The key, though, is timing. While the CRC stands ready to mobilize resources when necessary to help communities pick up the pieces and recover after the occurrence of a disaster event, it's preferable to expend energy **BEFORE** a disaster occurs.

We cannot undo the damage of a flooding event on an unprepared community or push back the clock after a flood has swept away a farmers harvest. Under the CBDP initiative, CRC is strongly encouraging commune and village officials, businesses, schools, residents and all others in the communities to work together before disaster strikes. Prevention is always the best disaster action.

In support of the growing awareness of the need for disaster preparedness in the country, CRC has been strongly advocating for the implementation of CBDP in communities throughout the country, beginning with seven of the most disaster prone provinces in the country.

Under the CBDP program, taking the following actions will go a long way towards making your community disaster resilient:

1. Establish the mandate for undertaking CBDP by coordinating and coming to agreement with provincial to village level government officials and agencies including other key community stakeholders, organizations and individuals.
2. Facilitate the formation of community team, committees or task forces consisting of community stakeholders that will be responsible for designing and implementing the identified priority activities and projects
3. Strengthen local capacities by provide initial CBDP training to Red Cross staff, local government officials and other key community organizations and individuals
4. Conduct awareness raising to all community stakeholders in order to sensitize them to disaster preparedness and disaster risk reduction
5. Facilitate community stakeholder gathering of disaster-related data and information using Participatory Rural Appraisal (PRA) tools and methodologies
6. Identify and assess hazards likely to occur in the community



7. Gather information on the vulnerabilities and capacities of the community
8. From the analysis of data and information gathered, determine the whole range of preparedness and mitigation activities and projects that should be undertaken to make the community disaster prepared
9. Develop a community disaster risk reduction action plan
10. Prioritize the identified activities and projects into what is most important and doable
11. Advocate for the integration of plan into the official commune development plan
12. Coordinate and link with all stakeholders including external stakeholders to mobilize resources needed to implement the community DP action plan
13. Monitor implementation of all activities and projects
14. Conduct annual evaluation and review of all activities and projects conducted and revise community plan to make it current.

## **Critical Activities in CBDP**

### Stakeholder Involvement

Responsibility for change rests with those living in the local community, hence, enlisting the active support and participation of the entire community and mobilizing its members to deal with disaster-related issues and problems is one of the most critical factors necessary for an effective and sustainable CBDP Program. The primary requirement is effective social mobilization and acceptance of local responsibility. If this is not present, it would be very difficult to initiate and sustain the activities begun under a CBDP Program.

Bringing together various stakeholders - from national to local level – is also important to expand the community's resource base. This involves establishing linkages with local government agencies, the private sector, POs and NGOs. Both local and foreign donor agencies have much to contribute beyond providing funds, in terms of expertise, ideas and suggestions.

The receptivity and willingness of local commune and village government officials to the CBDP Program is also equally critical. The CRC recognizes that the primary responsibility for disaster management rests with government. The CBDP program does not intend to take over the responsibilities of the government but rather cooperates with them in generating information, planning for and implementing DP activities and projects.

**Remarks:** Under the CBDP program, stakeholder refers to PRC, CRC, PCDM, DCDM, Provincial and District authority/agencies, Commune Council, CCDMC, Village authority, police, school, RCVs group, other Local NGOs, association, group who is currently working in CBDP target village or commune.

### Action Planning

Of all the disaster preparedness activities, one of the most critical is to have disaster preparedness and mitigation plans in place that are agreed upon with all community stakeholders, are implementable and for which commitment and resources have been relatively assured. In addition, the plan should also include the community identified and prioritized mitigation activities and projects. As discussed in the previous session, the critical activities under a CBDP should include:

- Early Warning
- Public Awareness
- Planning
- Emergency Health Care
- Training
- Emergency Response
- Search Rescue
- Damage and Needs Assessment
- Relief Preparation
- Evacuation Preparedness
- Structural and non-structural Mitigation Measures

Planning is the theme of the whole disaster preparedness exercise. Planning for readiness includes working out agreements between people or agencies as to who will provide services in an emergency to ensure an effective, coordinated response. The ultimate objective is not to write a plan but to stimulate on-going interactions between community stakeholders. The written plan is a product, but not the main goal, of the planning process.

### Integration into Government Development Plans

Local government officials have a very critical leadership role to play in disaster preparedness and mitigation. They establish the regulatory framework that supports all CBDP efforts. They are in a good position to bring all stakeholders to the table and to help mobilize the community's resources to support its development efforts.

Since a number of disaster preparedness and mitigation measures will surely require large amounts of resources it is imperative that community or village level disaster risk reduction plans are incorporated into the official development plans and activities of the local government. The long-term effectiveness and sustainability of CBDP will be greatly enhanced by this integration.

