

Participants' Workbook

Disaster Risk Management for District Authorities



National Disaster Management Authority

(Participants' Workbook)
Disaster Risk Management for District Authorities
April, 2007

Compiled by : Ms. Marita C. Santos
Reviewed by : Irfan Maqbool, Zubair Murshed, Usman Qazi
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Printer : Instant Print System (Pvt.) Limited, Islamabad

Address : **UNDP-Pakistan**
House No. 12, Street No. 17
Sector F-7/2, Islamabad, Pakistan
Phone: +92-51-8255600
Fax: +92-51-2655014
Web: www.undp.org.pk

National Disaster Management Authority
Prime Minister's Secretariate
Islamabad, Pakistan
Phone: +92-51-0000000
Fax: +92-51-0000000
Web: www.ndma.gov.pk

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Disaster Risk Management for District Authorities

Building Enabling Governance and Institutions for Earthquake Response
(BEGIN-ER)



Foreword

Pakistan has witnessed at least 139 major disasters over the last 80 years, including floods, drought, landslides, cyclones, river and sea erosion, and earthquakes. In fact, Pakistan is the fifth most earthquake-prone country in the world. Pakistan is also exposed to man-made hazards such as internal conflicts, environmental pollution, fires, leakage of toxic gases, and progressive environmental degradation due to industrial development and expansion across the country.

In the wake of the devastating earthquake of October, 2005, the government institutions at all levels were unable to respond in an effective and coordinated manner, largely due to the lack of technical capacities of forecasting, responding, and managing such disasters. Nonetheless, the compassionate and collective national response during the emergency phase was tremendous.

In this backdrop and as part of the joint UN earthquake response, the United Nations Development Programme (UNDP) supported the Government in restoring the operations of local government institutions for the planning and implementation of recovery activities through the Building Enabling Governance and Institutions for Earthquake Response (BEGIN-ER) project. In this project, capacities of elected local representatives, government officials and community-based organizations are to be strengthened in disaster risk management through district-level training workshops in the affected areas of North West Frontier Province (NWFP) and Pakistan Administered Kashmir (PAK).

After the establishment of the National Disaster Management Authority (NDMA) through the National Disaster Management Ordinance in December 2006, UNDP supported the NDMA in putting together its efforts in developing separate Trainer's Manuals and Participants' Workbooks both in English and Urdu languages on Disaster Risk Management for local communities and district government authorities.

I am pleased to present to you these Manuals and Workbooks with the hope that the government officials and local communities in hazard prone areas of the country would augment their technical capacities to minimize risks related to disasters and to help create a safer Pakistan.

I would like to thank our consultants Ms. Marita C. Santos, Ms. Mariser Palencia, Ms. Vidya Rana, and Mr. Abdul Hameed for developing the Manuals and Workbooks. I am indebted to Mr. Mohammad Zafar Iqbal, Assistant Resident Representative, UNDP,

for taking this much needed initiative. Special thanks are due to Mr. Zubair Murshed, Mr. Irfan Maqbool and Mr. Usman Qazi for their untiring efforts during the whole process of developing the outlines, conducting the review sessions, and doing the final editing of all the documents. Mr. Tariq Rafique Khan and Ms. Shaista Hussain deserve special applause for the support they extended to the training team. I am also grateful to Mr. Anwar ul Haq and Mr. Shahid Aziz for organizing training needs assessment sessions with government officials and civil society representatives in Abbottabad and Muzaffarabad respectively.

I am optimistic that under the new leadership of NDMA, the capacity building programme for district government officers, elected representatives, and community based organizations would bring about a significant change in the area of disaster risk management.



Mikiko Tanaka
Acting Country Director
UNDP Islamabad

Message from the Chairman National Disaster Management Authority

One of the most important lessons learnt from the response to October 2005 earthquake has been the need for formulating an appropriate policy and developing institutional arrangements for disaster risk management in order to deal with any future disaster events in a more professional, organized, and effective manner.

Realizing the significance of this requirement, the Government of Pakistan has established a number of institutions at the national, provincial and district levels. They include: National Disaster Management Commission (NDMC), National Disaster Management Authority (NDMA), Provincial Disaster Management Commissions, Provincial Disaster Management Authorities and the District Disaster Management Authorities. The National Disaster Management Ordinance, which was originally issued by the President's Office on 21st December 2006, provides justification for the establishment of above-mentioned institutions.

Another point of concern emerged during the response activities was the lack of technical capacities on the part of local-level stakeholders, which specifically include the district government institutions. It is believed that a trained human resource could have saved more lives during the search and rescue operation undertaken by the local communities and various government departments in the earthquake-hit areas.

In view of these issues, lessons and priorities the National Disaster Management Authority (NDMA) puts the premium upon the establishment of proactive and useful District Disaster Management Authorities with a substantive focus on building their technical and physical capacities. In this regard, the NDMA with support from the United Nations Development Programme (UNDP) has produced the Trainers' Manuals and Participants' Workbooks for the district government officials and other stakeholders. The idea is to promote common approaches for disaster risk management across the country.

The provincial governments, NGOs and other stakeholders can use these Manuals in order to train the district officials who are involved in the establishment and management of the District Disaster Management Authorities. The Participants' Workbook can serve as a guide for DDMA officials in understanding and implementing disaster risk management strategies at the district level.

The NDMA is circulating these manuals and workbooks to all district officials including the Nazims, District Coordination Officers (DCOs), Deputy Commissioners (in AJ&K)

and Executive District Officers (EDOs) of all line agencies. I hope you will find these publications useful for working with DDMA's in your respective regions. For broader public information, the manuals can also be downloaded from <http://www.ndma.gov.pk>

Lt. Gen. Farooq A. Khan
Chairman
National Disaster Management Authority (NDMA)

TABLE OF CONTENTS

	Page No.
Foreword	i
Message	iii
Training Design & Schedule	01
Module 1: Disaster Situation and Disaster Risk Management at the District Level	05
Session 1: Basic Concepts	07
Session 2: District Disaster Situation and Disaster Risk Management	15
Module 2: District Disaster Risk Management Framework	21
Session 1: Disaster Risk Management Structures	23
Session 2: Roles and Responsibilities of Key Stakeholders	31
Session 3: Local Government System and Opportunities for Disaster Preparedness & Mitigation	39
Module 3: Participatory Risk Assessment	45
Session 1: Introduction to Risk Assessment	47
Session 2: Hazard Assessment	51
Session 3: Vulnerability and Capacity Assessment	59
Session 4: Risk Assessment Fieldwork	69
Module 4: Risk Reduction Measures For Earthquake, Landslide, Flood, Drought and Cyclone	71
Session 1: Disaster Mitigation and Preparedness for Earthquake, Landslide, Flood, Drought and Cyclone	73
Session 2: Public Awareness	85
Session 3: Early Warning System and Evacuation	91
Session 4: Emergency Response	97
Module 5: Disaster Risk Management Plan at the District Level	105
Session 1: Disaster Risk Management Plan	107
Session 2: Actual Disaster Risk Management Planning	111

Training Design and Schedule

General Objectives:

The training aims to equip the participants with the knowledge, skills and attitudes in disaster risk management.

Specific Objectives:

At the end of the five day training, the participants would be able to:

1. Define disaster, hazard, vulnerabilities, capacities, disaster, disaster risk reduction, elements at risk;
2. Explain district disaster management system and the responsibilities of the District Disaster Management Authority;
3. Understand legal basis for national, provincial and district level disaster risk management under the National Disaster Management Framework;
4. Demonstrate skills in disaster preparedness and mitigation;
6. Demonstrate skills in emergency response; and
7. Demonstrate skills in formulating the District disaster risk management plan.

Design and Schedules

Date/Day	Topic/Activity	Methodologies	Key Persons
Day 1	Module 0 : Opening Activities Registration Welcome Remarks Expectation Check Course Overview Technical Arrangement	Game Presentation	Facilitator
	Module 1: Disaster Situation and Disaster Management at the District Level Basic Concepts (Hazard, Vulnerability, Capacity, etc) District Disaster Situation and Disaster Risk Management	Interactive Lecture Workshop/Group Work & Reporting	Facilitator Facilitator / Participants
Day 2	Module 2: District Disaster Risk Management Framework Structures for Disaster Risk Reduction Roles and Responsibilities of Key Stakeholders Local Government System and opportunities for Disaster Preparedness and Mitigation	Lecture Workshop/Group Work & Reporting Interactive Lecture	Facilitators Participants Facilitator Participants
	Module 3: Participatory Risk Assessment Introduction to Risk Assessment Hazard Assessment Vulnerability & Capacity Assessment	Interactive Lectures Lecture / Group Work	Facilitator Facilitator & Participants

Date/Day	Topic/Activity	Methodologies	Key Persons
Day 3	Continuation of Module 3 Field Work Module 4: Risk Reduction Measures for Earthquake, Landslide, Floods, Drought & Cyclone Introduction to Risk Reduction Measures Disaster Mitigation & Preparedness for: a. Earthquake b. Landslide c. Flood d. Drought e. Cyclone	Actual Data Gathering Interactive Lecture / Discussion	Participants Facilitator
Day 4	Continuation of Module 4 Public Awareness Early Warning System & Evacuation Emergency Response	Interactive Lecture Games / Interactive Lecture Interactive Lecture	Facilitator Facilitator / Participants Facilitator
Day 5	Module 5: Disaster Risk Management Plan at District Level Process Involved in Disaster Risk Management Planning Actual Planning Closing Activities Evaluation Distribution of Certificates	Interactive Lecture Group Work / Workshop	Facilitator Participants

Disaster Situation and Disaster Risk Management at the District Level

Modular Objectives:

1. Explain concepts of hazard, disaster, disaster risk, vulnerability, capacity and disaster risk reduction / management;
2. Relate disasters and disaster management experiences (individual, family, community, organization / institution) to the Pakistan disaster situation.

Number of Sessions: 2

Session 1 – Basic Concepts

Session 2 – District Disaster Situation and Disaster Risk Management

Basic Concepts



Learning Objectives:

At the end of this session the participants would be able to:

1. Understand the concepts of hazard, vulnerability, capacity, disaster, risk, disaster risk reduction;
2. Understand the importance of Community Based Disaster Risk Management (CBDRM) as an approach;
3. Identify various activities before, during and after the disaster.



Key Concepts:

- Hazard - is a phenomena, event, occurrence or human activity which has the potential for causing injury to life or damage to property and the environment. A disaster occurs when a hazard strikes a vulnerable community with low capacity resulting in damages, loss and disruption in community functioning.
- Vulnerability - is a set of prevailing factors, conditions and weaknesses which adversely affects the ability of individuals, households, organizations and the community to prepare for, respond to and recover from disaster.
- Capacity - skills, resources, abilities and strengths present in individuals, households, organizations and the community which enable them to cope with, withstand, prepare for, prevent, mitigate or recover from a disaster.
- Disaster - occurs when a hazard impacts on or strikes a vulnerable community with low capacity resulting in damages, loss and serious disruption of community functioning.
- Disaster Risk - is the likelihood or probability of individuals, households and community suffering damage or loss from a hazard.
- Disaster Management - range of activities designed to maintain control over disaster and emergency situations and to provide a framework for helping at risk persons avoid or recover from the impact of the disaster.
- CBDRM - activities, measures, projects and programmes to reduce disaster risks are primarily designed by people living in high risk communities, and are based on their urgent felt needs and capacities.



References:

1. Handouts on Training of Trainers in CBDRM, Thaubang District, Myanmar, December 16-21, 2004, Conducted by Center for Disaster Preparedness, Inc.
2. Citizenry-Based Development Oriented Disaster Response, Annelies Heijmans & Lorna P. Victoria.
3. Introduction To Disaster Preparedness: Disaster Preparedness Training Programme, International Federation of Red Cross and Red Crescent Societies.
4. Asian Disaster Preparedness Center, 2002. Community Based Disaster Management - 10 Course Hand-outs.
5. UNDP Disaster Management Training Programme, 1992.



Handouts

Basic Concepts

1. Hazard

- Phenomena, event, occurrence or human activity which has the potential for causing injury to life or damage to property and the environment.

Three types of hazards:

- Natural - typhoon, earthquake, volcanic eruption, tsunami;
- Human-made - fire, pollution, oil spill, industrial accidents like leakage of toxic waste;
- Combination of both or socio-natural hazards - flooding and drought can fall under this category if it is due to deforestation.

2. Vulnerability

- Physical, social, economic, cultural and environmental factors and conditions which increase the community's susceptibility to disasters.
- Adversely affects the ability of individuals, households and the community to prepare for and respond to hazards.

Some examples of vulnerability:

- Locations
- Houses made of light materials
- Conflict in the community
- Lack of knowledge and skills on preparedness and protective measures
- Attitude of helplessness

3. Capacity

Knowledge, skills, resources, abilities present in individuals, households and the community which enable them to prevent, prepare for, withstand, survive and recover from a disaster.

Some examples of capacity:

- Permanent houses,
- Ownership of land
- Adequate food and income sources
- Family and community support in times of crises
- Local knowledge
- Strong community leadership and organizations

4. Disaster

A Disaster occurs when a hazard impacts on or strikes a vulnerable community with low capacity resulting in damages, loss and serious disruption of community functioning.

5. Disaster Risk

- Likelihood of a hazard striking a vulnerable community, causing injury, damage

and loss.

- The bigger the vulnerability, the bigger the disaster risk (DR); the bigger the capacity, the smaller the disaster risk (dr).
- Disaster Risk = $\frac{\text{Hazard} \times \text{Vulnerability}}{\text{Capacity}}$

6. Elements at risk

Who and what can be damaged:

- People (their lives and health)
- Household and community structures (houses, community center, school)
- Community facilities and services (access roads, bridges, hospital, electricity, water supply...)
- Livelihood and economic activities (jobs, crops, livestock, equipment...)
- The environment (natural resources base)

Disaster Management: Objectives And Activities

1. Disaster Management

A collective term for all activities that contribute to increasing capacities and will lead to reducing immediate and long-term vulnerabilities. Covers activities before, during and after a disaster.

2. Objectives

- To increase capacities and resilience;
- To reduce vulnerabilities;
- To avoid or reduce human, physical and economic losses suffered by individuals, families, the community and the country;
- To speed up recovery after the disaster;
- To reduce personal sufferings;
- To provide protection to refugees or displaced persons whose lives are threatened by armed conflicts.



3. Activities

a. Before the disaster - prevention, mitigation and preparedness

● Some examples of Prevention and Mitigation Measures:

- ✓ **Structural measures:** dikes, dams, drains, sea walls, raising of roads and houses, earthquake resistant construction, permanent houses
- ✓ **Non-structural measures:**
 - Safety measures
 - Community health and sanitation (improving nutrition, keeping the community clean, immunization, herbal gardens, training of community health workers)
 - Strengthening livelihood and economic activities (sustainable agriculture, income generating projects, handicrafts, marketing cooperatives)
 - Planting coastal shelter belts like coconut trees
 - Building codes
 - Legislation supporting community based disaster management and environmental protection
 - Savings
 - Insurance
 - Policy study and advocacy

● Some Examples of Preparedness Measures:

- ✓ Individual, family and community preparedness measures: knowing what to do before, during and after a disaster for cyclone, earthquake, tsunami, volcanic eruption, drought
- ✓ Disaster preparedness training
- ✓ Community early warning system
- ✓ Public awareness activities - public awareness campaigns such as community meetings and house-to-house information dissemination, posters and pamphlets, poster making contest among school children, disaster consciousness day/week/month
- ✓ Formulation of community counter disaster plan or disaster management plan
- ✓ Formation and strengthening of community disaster management organization
- ✓ Evacuation drills and disaster simulation exercises
- ✓ Strengthening coordination, networking and institutional arrangements
- ✓ Ensuring availability of relief supplies (stockpile) and logistics
- ✓ Evacuation

b. During the disaster - emergency responses

● Some Examples of Emergency Responses:

- ✓ Evacuation and evacuation center management
- ✓ Search and rescue
- ✓ First Aid and Medical Assistance
- ✓ Damage Needs Capacity Assessment (DNCA)
- ✓ Relief delivery (food and drinking water, non-food such as clothing blankets, kitchen utensils, etc.)
- ✓ Psycho-social counseling (comforting, critical stress debriefing)

- ✓ Repair of critical facilities and services
- ✓ Emergency Operations Center (for major disaster)

c. After the disaster - recovery, rehabilitation and reconstruction

- **Some examples of recovery activities**
 - ✓ Cleaning up the debris
 - ✓ Rebuilding and strengthening of damaged structures
 - ✓ Relocation to safe places
 - ✓ Income generating projects



Learning and Reflections:

1. What are the hazards in your district?

2. What is your idea about Vulnerability?

3. Can you differentiate hazard from disaster? What is a disaster?

4. Can disasters be prevented? How?

5. What is disaster risk management?

District Disaster Situation and Disaster Risk Management



Learning Objectives:

At the end of this session the participants would be able to:

1. Share the experiences and lessons learned from the past disaster experiences in their respective districts;
2. Relate disasters and disaster management experiences (individual, family, community, organization / institution) to Pakistan disaster situation.



Key Concepts:

- District Disaster Situation – all the disasters that the district has experienced in the past.
- Disaster Experiences – Refer to the different experiences of the people about the past disasters.



References:

1. Evaluation of Disaster Response Agencies of Pakistan by OCHA, National Disaster Response Advisor, Islamabad, December 2006.
2. "EM-DAT: The OFDA/CRED International Database, www.em-dat.net
3. Library of Congress – Federal Research Division Country Profile: Pakistan, February 2005.



Handouts

Top 10 Natural Disasters in Pakistan

(Sorted by numbers of people killed, total affected and economic damage cost)

DISASTER	DATE	KILLED
Earthquake	8 October 2005	73,338
Earthquake	31 May 1935	60,000
Windstorm	15 December 1965	10,000
Earthquake	28 December 1974	4,700
Earthquake	27 November 1945	4,000
Flood	1950	2,900
Flood	8 September 1992	1,334
Flood	2 March 1998	1,000
Flood	June 1977	848
Wind Storm	14 November 1993	609

DISASTER	DATE	TOTAL AFFECTED
Flood	8 September	12,324,024
Flood	9 February 2005	7,000,450
Flood	30 July 1992	6,184,418
Flood	2 August 1976	5,566,000
Flood	August 1973	4,800,000
Earthquake	8 October 2005	2,869,142
Flood	July 1978	2,246,000
Drought	November 1999	2,200,000
Flood	19 August 1996	1,300,000
Flood	22 July 2003	1,266,223

DISASTER	DATE	DAMAGES US \$
Earthquake	8 October 2005	5,000,000
Flood	8 September 1992	1,000,000
Flood	August 1973	661,500
Flood	2 August 1976	505,000
Drought	November 1999	247,000
Flood	22 July 2001	246,000
Flood	11 July 1994	92,000
Earthquake	31 January 1991	10,000
Windstorm	12 June 1964	4,100
Earthquake	28 December 1974	3,255

Source: EM-DAT: The OFDA/CRED International Database, www.em-dat.net

Summarized Table of Natural Disasters in Pakistan
1926 - 2006

	# of Events	Killed	Injured	Homeless	Affected	Total Affected	Damage US (000's)
Drought	1	143	0	0	2,200,000	2,200,000	247,000
<i>ave. per event</i>		143	0	0	2,200,000	2,200,000	247,000
Earthquake	22	142,812	88,096	2,853,585	1,294,429	4,236,110	5,019,255
<i>ave. per event</i>		6,492	4,004	129,708	58,838	192,551	228,148
Epidemic	10	283	211	0	16,275	16,486	0
<i>ave. per event</i>		28	21	0	1,628	1,649	0
Extreme Temperature	15	1,406	324	0	250	574	0
<i>ave. per event</i>		94	22	0	17	38	0
Flood	56	11,807	1,562	8,927,685	38,671,447	47,600,694	2,508,030
<i>ave. per event</i>		211	28	159,423	690,562	850,012	44,786
Insect Infestation	1	0	0	0	0	0	0
<i>ave. per event</i>		0	0	0	0	0	0
Slides	13	413	119	3,100	200	3,419	0
<i>ave. per event</i>		32	9	239	15	263	0
Wind Storm	21	11,654	1,183	234,090	715,040	950,313	4,100
<i>ave. per event</i>		555	56	11,147	34,050	45,253	195

Source: EM-DAT: The OFDA/CRED International Database, www.em-dat.net

- Pakistan is vulnerable to a wide array of natural and human induced hazards. Natural events like floods, earthquakes, landslides, cyclones and drought threatening peoples' lives and livelihoods, as well as human instigated hazards such as fires, civil unrest and terrorism, health epidemics, transport accidents, industrial accidents and war.
- Pakistan is one of the five South Asian countries with the highest annual average number of people affected by floods. Floods which occurred in 1950, 1992 and 1998 caused many deaths and huge losses to the national economy. During the decade 1991 to 2001, the estimated damage caused by floods is over Pak. Rs. 78 million.
- Flash floods and landslide frequently occur in the mountainous north along watersheds. Flash floods also occur in upper plains adjacent to river catchment areas.
- Earthquakes occur along the Himalayas, Karakorums and partly Hindu Kush ranges in the north, Koh-e-Solaiman range in the west with Chaman fault along Quetta, and Mekran fault line along the sea coast. The October 2005 earthquake is the worst national disaster that the country has ever experienced. It left more than 73,000 people killed.
- Drought has become an intermittent problem. It has reported to have brought extensive damages to Balochistan, Sind and Southern Punjab. Prolonged incidences of droughts

occur in the poverty ridden arid regions.

- History also shows vulnerability to Tsunami and cyclones and other sea based hazards along its coastline.
- Disasters occur not only as a result of natural events. Viral diseases like avian flu or dengue virus have widespread occurrence in the country, with Karachi and some cities of Punjab being mostly affected by dengue. A rising incidence of fire, traffic and industrial accidents has also occurred. These hazards have caused harm to the population, with little corrective measures in public awareness and legislative support. Socio-economic and environmental factors such as poverty, rising population, poor state of environment, unplanned development and a poor awareness of hazard prevention further increase the vulnerabilities of the population.



Learning and Reflections

1. What disasters have you experienced?

2. What are the hazards your area is prone to?

3. What are the elements at risk in your area? Why?

4. Cite some examples of socio-economic & environmental factors that further increase vulnerability of the people: Why?

District Disaster Risk Management Framework

Modular Objectives:

1. Discuss the structure of disaster risk management as provided by the National Disaster Risk Management Framework;
2. Discuss the roles and responsibilities of key stakeholders in the district administrative system for disaster risk management;
3. Discuss the local government system and identify the opportunities for disaster preparedness and mitigation.

Number of Sessions: 3

Session 1 – Disaster Risk Management Structures

Session 2 – Roles and Responsibilities of Key Stakeholders

Session 3 – Local Government System & Opportunities for Disaster Preparedness & Mitigation

Disaster Risk Management Structures



Learning Objectives:

At the end of this session the participants would be able to:

1. Discuss the structure of disaster risk reduction as provided by the National Disaster Risk Management Framework;
2. Discuss an overview of the national, provincial, district, tehsil and municipal disaster management structure/authorities. (NDMC, NDMA, PDMC, PDMA, DDMA as laid down in the National Disaster Management Ordinance 2006).



Key Concepts:

- National Disaster Management Commission (NDMC)
- National Disaster Management Authority (NDMA)
- Provincial Disaster Management Commission (PDMC)
- Provincial Disaster Management Authority (PDMA)
- District Disaster Management Authority (DDMA)



References:

1. Disaster Situation in Pakistan (National Disaster Risk Management Framework).
2. National Disaster Management Ordinance 2006.



Handout

National Disaster Risk Management Framework

Vision:

To achieve sustainable social, economic and environmental development in Pakistan through reducing risks and vulnerabilities, particularly those of the poor and marginalized groups, and by effectively responding to and recovering from disaster impact.

This vision would be achieved by “Materializing a paradigm shift in Pakistan through moving away from response and relief oriented approaches and adopting a disaster risk management perspective”.

Key principles:

- Promoting multi-stake holder, multi-sectoral and multi-disciplinary approaches;
- Strengthening community based and local level risk reduction;
- Developing culturally, economically and environmentally relevant technologies etc.;
- Combining scientific and people's knowledge;
- Strengthening sustainable livelihood practices.

Priority areas:

- Hazard and vulnerability assessment for disaster;
- Multi hazard early warning system;
- Institutional arrangements for disaster risk management;
- Promotion of disaster preparedness planning;
- Local level risk reduction programming;
- Awareness, education and training;
- Integration of disaster risk reduction into development planning;
- Emergency response system and capacity development for post disaster recovery.

Scope:

Implementation of policies, strategies, programs and activities for all the three phases of disaster risk management; including pre-disaster (risk reduction and preparedness), during disaster (response and relief) and post-disaster (rehabilitation, recovery and risk reduction).

A. National Disaster Management Commission (NDMC)

Composition:

- The Prime Minister as its Chairperson
- Leader of Opposition in the Senate
- Leader of Opposition in the National Assembly
- Minister for Defense
- Minister for Health
- Minister for Foreign Affairs

- Minister for Social Welfare and Special Education
- Minister for Communication
- Minister for Interior
- Minister for Finance
- Governor of NWFP (for FATA)
- Chief Ministers of all the provinces
- Prime Minister of AJ&K
- Chief Executive of Northern Areas
- Chairman, JCSC or his nominees
- Representative of civil society or any of the person appointed by the Prime Minister

Powers and functions:

- Shall have the responsibility for laying down policies, plans and guidelines for disaster management;
- Approve the National Plan;
- Approve plans prepared by the Ministries or Divisions of Federal Governments;
- Lay down guidelines for Federal Government and Provincial Authorities;
- Arrange for and oversee, the provision of funds for the purpose of mitigation measures, preparedness and response;
- Provide such support to other countries affected by major disasters as the Federal Government may determine; and
- Take such other measures for the prevention of disaster, or the mitigation, or for preparedness and capacity building for dealing with disaster situation as it may consider necessary.

B. National Disaster Management Authority (NDMA)

Composition:

- The NDMA shall consist of such number of members as may be prescribed and shall include Director General as its Chair person. The Chairperson shall be appointed by the Federal Government.

Powers and Functions:

- Act as coordinating, implementing and monitoring body;
- Prepare national plan to be approved by the national commission;
- Implement, coordinate and monitor the implementation of the national policy;
- Provide guidelines for preparing disaster management plans by different ministries, departments and provincial authorities;
- Provide necessary technical assistance to the provincial government and provincial authorities for preparing their disaster management plans in accordance with the guidelines laid down by the National Commission;
- Coordinate response in the event of any threatening disaster situation or disasters;
- Lay down guidelines for / or give directions to the concern ministries of Provincial Governments and the Provincial Authority regarding measures to be taken by them in response to any threatening disaster situations or disasters;
- For any specific purpose or for general assistance requisition of services of any person and

such person shall be a co opted member and exercise such power as conferred upon him by the Authority in writing;

- Promote general education and awareness in relation to disaster management;
- Perform such other functions as the National Commission may require it to perform.

C. Provincial Disaster Management Commission (PDMC)

Composition:

- The Provincial Commission will comprise of Chief Minister who will be the Chairperson
- Leader of Opposition and one member nominated by him
- Other members to be nominated by the Chief Minister
- The Chairperson will also appoint a Vice Chairperson

Powers and Functions:

- Lay down provincial disaster management policy;
- Lay down the provincial plan;
- Approve disaster management plans prepared by the provincial departments;
- Review the implementation of the plan;
- Oversee the provision of funds for mitigation and preparedness measures;
- Review the development plans of different departments of the provinces and ensure that prevention and mitigation measures are integrated therein;
- Review measures being taken for mitigation, capacity building and preparedness by the departments of the provincial government and issue necessary guidelines.

D. Provincial Disaster Management Authority (PDMA)

Composition:

The PDMA shall consist of such number of members as may be prescribed. The Chairperson would be either the Provincial Director General or Provincial Relief Commissioner.

Powers and Functions:

- Formulate the provincial disaster management policy by obtaining the approval of the Provincial Commission;
- Coordinate and monitor the implementation of the National Policy, National Plan and Provincial Plan;
- Examine the vulnerability of different parts of the Province to different disasters and specify prevention or mitigation measures;
- Lay down guidelines to be followed for preparation of disaster management plans by the Provincial Departments and District Authorities;
- Evaluate preparedness at all government or non-governmental levels to respond to disaster and to enhance preparedness;
- Coordinate response in the event of disaster;
- Give directions to any Provincial Department or Authority regarding the actions to be taken in response to disaster;
- Promote general education, awareness and community training in this regard;
- Provide necessary technical assistance or give advice to the District Authority and local

- authority for conveying out their functions effectively;
- Advise the Provincial Government regarding all financial matters in relation to disaster management;
- Examine the constructions in the area and if it is of the opinion that the standards laid down have not been followed it may direct the same to secure compliance of that standards;
- Ensure that communication systems are in order and disaster management drills are being carried out regularly;
- Perform such other functions as may be assigned to it by the National or Provincial Authority.

E. District Disaster Management Authority (DDMA)

Composition:

- The DDMA shall consist of District Nazim as its Chairperson
- The District Coordination Officer
- The District Police Officer
- Executive Officer, Health
- Such other district level officers to be appointed by the District Government

Powers and Functions:

- Formulate district/municipal disaster risk reduction and preparedness plans, based upon hazard and vulnerability analysis of the district/municipality;
- Coordinate and monitor implementation of district/municipal plan in accordance with the National Framework and Provincial plan;
- Continuously monitor hazards, risks, and disaster threats and the conditions of vulnerable population within the district or municipality;
- Prepare guidelines for risk reduction, preparedness and response;
- Identify training needs and conduct education, training and public awareness programs;
- Conduct training in disaster risk reduction and relief administration for local government officials, public and civil society representatives, and at-risk communities;
- Set up, maintain, review and upgrade district level early warning and communication systems for effective dissemination of warning messages;
- Coordinate with local authorities to ensure that post disaster activities are carried out promptly and effectively;
- Implement disaster risk management as decided in the district /municipal disaster risk management plans;
- Review development plans of government departments at the district/municipal level and provide guidance on mainstreaming disaster risk reduction measures in these plans;
- Encourage the involvement of non-governmental organizations and community groups in disaster risk reduction and response;
- Identify buildings and places in the district/municipality that could be used as evacuation sites or relief centres in case of a disaster, and make arrangements for water supply and sanitation in such buildings or places;
- Establish stockpiles of relief and rescue materials or ensure preparedness to make such materials available at a short notice;

- Identify alternative means for emergency communications;
- In the event of a disaster/ emergency, the DDMAs / MDMAs in the affected District/Municipality will take operational control of the situation to ensure that support is delivered promptly to the affected communities;
- Keep linkages with the Provincial Disaster Management Authority and the Relief Department;
- Mobilize and coordinate all interventions from other agencies at the time of emergencies;
- Mobilize needed financial and material resources for disaster risk management;
- Perform such other functions as the Provincial government or Provincial Authority may assign to it or as it seems necessary for disaster management in the district.

Tehsil Structures:

Composition:

Tehsil Nazim would lead the disaster mitigation and relief operations with the assistance of Tehsil Municipal Officer and would work in consultation of District Disaster Management Authority. Key players like, CBOs, traditional local leaders, religious organizations, NGOs and volunteers would also assist the Tehsil Nazim.

Roles and Responsibilities:

- Preparation of plans and procedures for disaster management programs in their areas;
- Would be responsible for operational control in the event of disaster or emergencies;
- Mobilization of needed financial and material resources for disaster management;
- Identification and mapping of all hazards in their areas;
- Conduct risks and vulnerability analysis;
- Establishment of civic groups for disaster reduction and relief operations.



New Learning and Reflections:

1. What is vision of the national disaster risk management framework?

2. As an individual, what can you contribute in achieving this vision?

3. What principles should guide us in disaster risk management?

4. Being part of the system, what are your specific tasks in disaster risk management?

Roles and Responsibilities of Key Stakeholders



Learning Objectives:

At the end of this session the participants would be able to:

1. Identify roles and responsibilities of stakeholders at the District level in relation to disaster risk management;
2. Have a clear picture of their respective roles and responsibilities before, during and after a disaster.



Key Concepts:

- Stakeholders in a district
- Roles and responsibilities in the advent of any disaster



References:

1. National Disaster Risk Management Framework 2006.



Handouts

Roles and Responsibilities of District Authorities, Local Government and Line Departments

1. Education

BEFORE	DURING	AFTER
<ul style="list-style-type: none"> * School as training center for disaster risk management * Teach disaster risk management to students and villagers * Take actions to reduce the vulnerability of the built infrastructure of the education sector * Conduct orientation programs on disaster risk management to raise awareness of the education authorities, professors and teachers * Develop curriculum for schools, colleges and universities on disaster risk management, particularly in hazard-prone areas. 	<ul style="list-style-type: none"> * Use of schools as shelter * The school building can be used as relief center 	

2. Health

BEFORE	DURING	AFTER
<ul style="list-style-type: none"> * Keep all hospitals prepared for any kind of disaster * Stockpile medicines * Keep ambulances in good working conditions * Vaccination of the population before flood season * Enhance disaster capacities of women 	<ul style="list-style-type: none"> * Emergency treatment to the victims/injured 	<ul style="list-style-type: none"> * Prevent spread of epidemics after the disaster

3. Police

BEFORE	DURING	AFTER
<ul style="list-style-type: none"> * Assist local administration in maintaining law and order * Provide human and logistic support * Keep people peaceful and stop anti social activities 	<ul style="list-style-type: none"> * Assist in evacuation and rehabilitation * Protect relief items from looting and stealing 	<ul style="list-style-type: none"> * Prevent spread of epidemics after the disaster

4. Local Government and Rural Development

BEFORE	DURING	AFTER
<ul style="list-style-type: none"> * Responsible for Disaster Risk Management * Arrangements of logistic support * Stockpiling of food and other items 	<ul style="list-style-type: none"> * Collection of data and reporting * Evacuation * Relief distribution 	<ul style="list-style-type: none"> * Debris removal in case of landslides and demolition of residential building * Rehabilitation of rural access roads (link roads) * Rehabilitation of water supplies * Provision of shelters

5. Civil Defense

BEFORE	DURING	AFTER
<ul style="list-style-type: none"> * Training on search and rescue and first aid * Mobility and organization of volunteers 	<ul style="list-style-type: none"> * Relief operation * Rescue and evacuation in case of disasters like flood, landslides and earthquakes * Provide first aid to injured persons and transport them to nearest hospital; * Coordinate transport of relief goods to affected communities; 	<ul style="list-style-type: none"> * Assist communities in clearing of debris brought about by the disaster

6. Public Works Department

BEFORE	DURING	AFTER
<ul style="list-style-type: none"> * Maintain all telephone, mobile and internet communication * Collection and dissemination of information * Supervise the protection of roads and structures in the community 	<ul style="list-style-type: none"> * Provision of communication facilities to the victims and their relatives in other parts of the country 	<ul style="list-style-type: none"> * Repair of damaged telephone lines * Repairs of roads, bridges and other infra-structure * Coordinate assessment of the extent of damage to roads and structures in the community. * Organize emergency repairs to restore public transport routes.

7. Forestry

BEFORE	DURING	AFTER
<ul style="list-style-type: none"> * Stop deforestation * Plant new saplings * Provision of seeds and pesticides * Advocacy and awareness on environmental protection * Undertake vulnerability assessment of natural resources (forest, lakes, streams, mangroves, coral reefs, protected areas, coastal areas) to natural and human induced hazards * Implement programmes for conservation and rehabilitation of natural resources in order to reduce risks of natural hazards 		<ul style="list-style-type: none"> * Develop mechanisms for assessment of environmental losses and damages in the aftermath of disasters and their rehabilitation

8. Agriculture and livestock

BEFORE	DURING	AFTER
<ul style="list-style-type: none"> * Protection of agriculture land from floods * Maintaining and repairing water channels * Promote flood and drought resistant crops * Provision of seeds and fertilizers * Training of farmers in cultivation of drought and flood resistant crops * Breeding and vaccination of livestock * Research and education * Advocacy and awareness * Ensure sustainable livelihoods in areas of recurring climate risks (e.g., arid and semi arid zones, flood and drought prone areas) by promoting supplementary income generation from off-farm and non-farm activities (e.g., animal husbandry, etc.) 	<ul style="list-style-type: none"> * Assist in saving crops, agricultural land and livestock in disaster situation 	<ul style="list-style-type: none"> * Assess the extent of damage and loss to crops and livestock; * Provide inputs like seeds, fertilizers and agriculture equipment to those affected by disasters

9. Role of Local Media:

BEFORE	DURING	AFTER
<ul style="list-style-type: none"> * Provide information on the sources and processes of risk generation and patterns of risk * Provide information on potential dangers, risks to communities as well as to the policy makers * Disseminate warning messages through multiple channels * Information provision about precautionary measures to avoid human and material loss 	<ul style="list-style-type: none"> * To inform the public with factual information about the extent, losses and current disaster situation * Information on safe shelters places, evacuation and routes * Efforts of local government to facilitate people * Information on rescue and recovery and evacuation * Facilitate communication between affected people, their relatives and friends in other parts of the country * Highlight needs of the survivors so that all survivors receive appropriate aid, irrespective of their social, economic, ethnic, religious or political status 	<ul style="list-style-type: none"> * Appeal for assistance * Communicate about rehabilitation and reconstruction plans of district authorities * Encourage survivors' participation in recovery and rehabilitation



Learning and Reflections:

1. Who are the stakeholders in disaster risk management?

2. What are the roles and activities each stakeholder can perform to improve the disaster risk management?

Local Government System and Opportunities for Disaster Preparedness & Mitigation



Learning Objective:

At the end of this session the participants would be able to:

1. Discuss and identify opportunities for disaster risk management under the Local Government Ordinance.



Key Concepts:

- Local Government System
- Opportunities for Disaster Risk Management



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Local Government System

District Government:

Structure:

The District Administration shall comprise the district offices, including sub-offices of the departments of the Government decentralized to the District Government and other offices set up by the Government and grouped under the Executive District Officers and coordinated by the District Coordination Officer.

District Coordination Officer:

Prepare a report on the implementation of development plans of the District Government for presentation to the Zila Council in its annual budget session.

Executive District Officer (EDO):

- Prepare development plans and propose budgetary allocations for their execution;
- Implement approved plans and policies;
- Prepare proposals for expenditures necessary for the proper conduct of programs, projects, services, and other activities.

Tehsil and Municipal Administration:

Functions and powers:

- Prepare spatial plans for the tehsil in collaboration with Union Councils, including plans for land use, zoning and functions for which the Tehsil Municipal Administration is responsible;
- Exercise control over land-use, land-subdivision, land development and zoning by public and private sectors for any purpose, including agriculture, industry, commerce, markets, shopping and other employment centers; residential, recreation, parks, entertainment; passenger and freight transport and transit stations;
- Storm water drainage;
- Fire fighting.

Town Municipal Administration:

Powers and Functions:

- Prepare spatial plans for the Town in collaboration with Zila Council for land use, zoning and functions for which the Town Municipal Administration is responsible;
- Within the framework of the spatial and Master plan for the City District, exercise control over land use, land sub-division, land development and zoning by public and private sectors for any purpose, including for agriculture, industry, commerce markets, shopping and other employment centers, residential, recreation, parks, entertainment, passenger and transport freight and transit stations;
- To inform the most vulnerable groups;
- Prevent and remove encroachments in hazards prone areas;

- City District Government and Union Administrations;
- Provide, manage, operate, maintain and improve the municipal infrastructure and services.

Tehsil Nazim:

- To integrate disaster risk assessment with disaster risk management;
- To oversee formulation and implementation of long term and annual municipal development programs;
- To oversee the delivery of services by the Tehsil Municipal Administration and implementation of the laws governing the municipal services;
- To present the budget proposal to the Tehsil Council for approval.

Tehsil and Town Councils:

- To approve long and short term development plans;
- To approve land use, zoning and master plan of the tehsil's development and maintenance programs or projects proposed by the Tehsil Municipal Administration.

Union Council:

- To collect and maintain statistical information for socio-economic surveys and to collect data regarding the most vulnerable groups in the district;
- To consolidate village and neighborhood development needs, disaster risk management needs and prioritize them into union-wide development proposals with the approval of the Union Council and make recommendations thereof to the District Government or Tehsil Municipal Administration, as the case may be;
- To disseminate information on matters of hazards and disaster risk management;
- To provide and maintain sources of clean drinking water supply system before, during and after disaster, including wells, water pumps, tanks, ponds and other works for the supply of water;
- To assist the relevant authorities in disasters and natural calamities, and assist in relief activities, including de-silting of canals;
- To co-operate with the public, private or voluntary disaster risk management organizations, engaged in activities similar to those of the Union in disaster risk management.

Union Nazim:

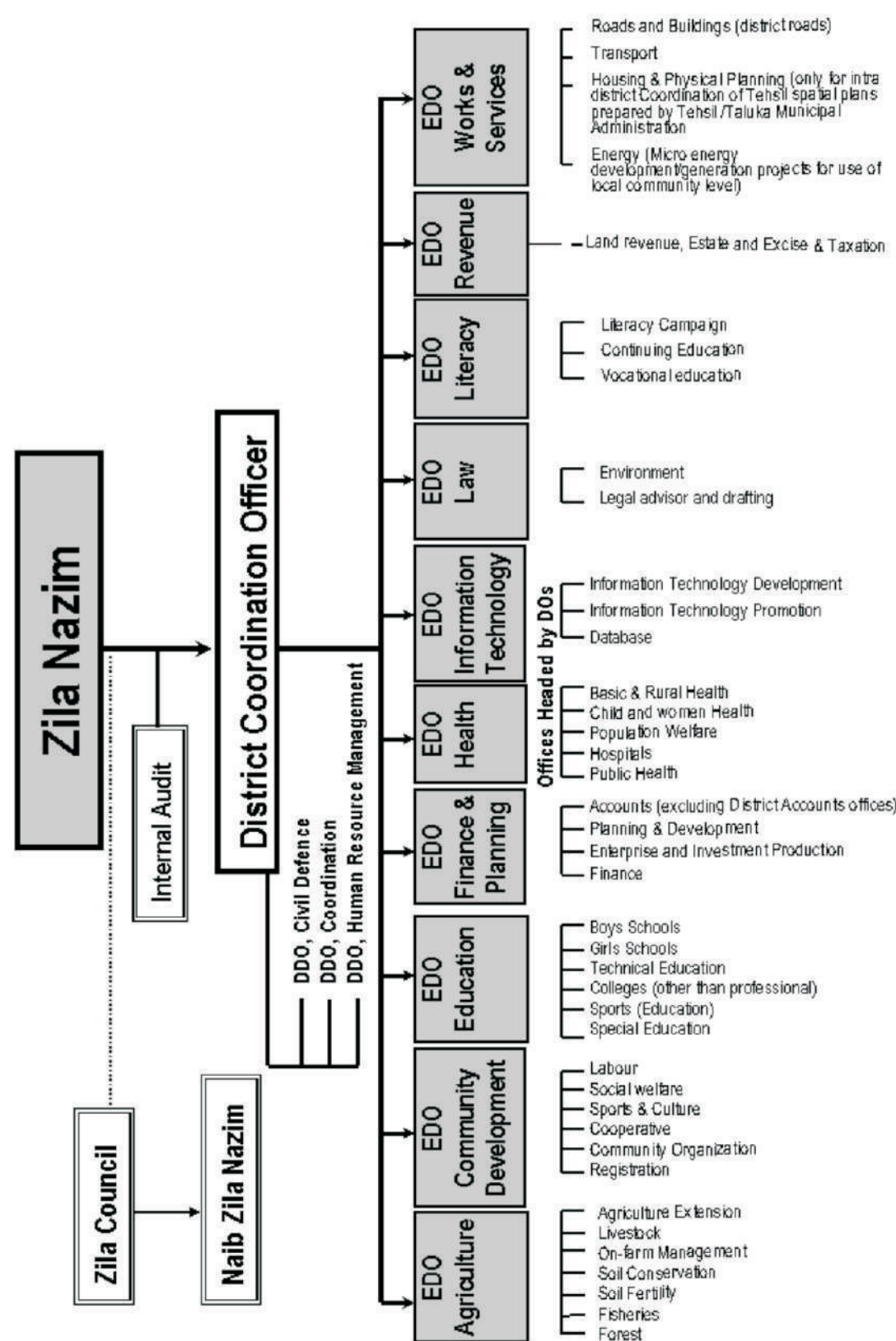
- Organise the management of inter-villages municipal infrastructure;
- Assist the Tehsil Municipal Administration in spatial planning process;
- Encroachment on State and local government property and violation of land use and building laws, rules and bye-laws;
- Environmental and health hazards.

Village Council:

- Develop and improve water supply sources;
- Make arrangements for sanitation, cleanliness and disposal of garbage and carcasses;
- Develop sites for drinking and bathing of cattle;
- Take measures to prevent contamination of water;

- Mobilise voluntary resources, including physical labor, property and cash contributions for municipal activities in the Village and Neighborhood;
- Facilitate the formation of co-operatives for improving economic returns;
- Promote plantation of trees, landscaping and beautification of the Village and Neighborhood.
- Conducting surveys in the Village and Neighborhood and collecting socio-economic data.

District Government Structure :



Participatory Risk Assessment

Modular Objectives:

1. Explain the importance of risk assessment and people's perception of risks;
2. Describe the process of risk assessment including hazard, vulnerability and capacity assessment ;
3. Describe and practice various tools in assessing disaster risks in the community.

Number of Sessions: 4

Session 1 – Introduction to Risk Assessment

Session 2 – Hazard Assessment

Session 3 – Vulnerability and Capacity Assessment

Session 4 – Risk Assessment Fieldwork

Introduction to Risk Assessment



Learning Objectives:

At the end of this session the participants would be able to:

1. Explain the purpose of community risk assessment;
2. Identify the components of risk assessment;
3. Understand the differences in people's perceptions of risks.



Key Concepts:

- Risk - refers to the probability of something happening in the future, which has a negative consequence.
- Assessment - is a participatory process undertaken in phases, and involves on-the-spot collection of information from various sources, its interpretation and analysis.
- Community risk assessment - is a participatory and systematic process carried out by members of the community to identify and analyze disaster risks.
- Hazard assessment - is an analysis of past patterns of hazards and threats at the community level combined with an understanding of the underlying causes of why hazards become disasters.
- Vulnerability assessment - identifies elements-at-risk and also that why they will be damaged.
- Capacity assessment - available resources an affected community uses to reduce risks.
- People's perceptions of risk - how different people perceive and measure risks (perception of risks).



References:

1. Thabaung Rural Community Capacity Development Project Training of Trainers in Community Based Disaster Management, 16-21 December 2004, Thabaung Township, Ayeyarwady Division, conducted by World Vision Myanmar & Center for Disaster Preparedness Foundation, Inc., Philippines.
2. CBDRM Field Practitioner's Handbook, ADPC, Abarquez, I. & Murshed Z., 2004.
3. Good Practice Review: Disaster Risk Reduction, John Twigg, Good Practice Review 9, Humanitarian Practice Network, Overseas Development Institute.



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Participatory Risk Assessment

Disaster Risk:

Likelihood or probability of a hazard striking a vulnerable community, causing injury, damage and loss.

$$\text{Disaster risk} = \frac{\text{hazard} \times \text{vulnerability}}{\text{capacity}}$$

Assessment:

A participatory process involving on-the spot collection, interpretation and analysis of information from various sources.

Community Risk Assessment:

- A participatory process to identify and assess the hazards and the community's vulnerabilities and capacities.
- Involves an understanding of how people in the community perceive and measure disaster risk.
- Involves analysis of past patterns of hazards and present threats at the community level (hazard assessment), combined with an understanding of the underlying causes of why hazards become disasters (vulnerability assessment) and of the available resources an affected community uses to reduce risk (capacity assessment), and how different people perceive and measure risk (perception of risk).

Purpose of Community Risk Assessment:

- Unites the community in a common understanding of their disaster risk – hazards, vulnerabilities and capacities.
- Basis for identifying appropriate and adequate risk reduction measures.
- Baseline data on the community situation -- its vulnerabilities and capacities.
- Data generated can be used in situational analysis.

Components of Community Risk Assessment:

Community Risk Assessment has 4 inter-related components:

1. People's Perception of Risk - understanding the perception of risk of different groups and sectors of the community.
2. Hazard Assessment - assessing the nature and behavior of hazards.
3. Vulnerability Assessment - identifies the particular elements at risk and why they can be damaged
4. Capacity Assessment - identifying how people's survival or coping strategies and what resources can be used in disaster management activities (before, during and after a disaster).

People's Perception of Risk:

- by socio-economic status.
- Aside from income levels, age, gender, educational background, livelihood and employment, and culture are important considerations in assessing why people have different ways of looking at the community disaster situation.
 - People's perception of disaster risk is also influenced by previous experiences and knowledge of their exposure to hazards and the specific preparedness and mitigation measures to be undertaken before, during and after the disaster.
 - Insiders (community members) and outsiders (NGOs, local and national government agencies) may also have differing perceptions of the disaster risk.
 - The community risk assessment process provides the venue to share these different views or perceptions. Community risk assessment results in a common understanding of the community's disaster situation which becomes the basis for common actions to be taken in disaster risk reduction process.
 - The community risk assessment process combines local knowledge with scientific and technical information.



New Learning and Reflections:

1. What is risk assessment?

2. Describe the participatory community risk assessment process?

3. Why is it important to get the people's perception during risk assessment process?

Hazard Assessment



Learning Objectives:

At the end of this session the participants would be able to:

1. Describe the nature and behavior of hazard;
2. Identify and rank the hazards in the district;
3. Explain the process of conducting the hazard assessment;
4. Discuss the participatory tools which can be used in hazard assessment.



Key Concepts:

- ⊙ Hazard assessment - assessing the nature and behavior of hazards
- ⊙ Nature and behavior of hazards – analysis of the intensity of hazard, its nature and behavior, its frequency, rapidity of arrival, its warning signs and signals, its force and origin.
- ⊙ Participatory tools in hazard assessment – these are the appropriate tools to be used in conducting the hazard assessment.



References:

1. Living With Risk, UN ISDR, 2002.
2. Major Hazards, Family and Community Disaster Preparedness: Guide for Training Families and Communities, Department of Social Welfare and Development, Philippines.
3. Guidelines for Producing A Community Risk Map, UNISDR Latin America & the Caribbean, Disaster Risk Reduction 1994 – 2004, UN ISDR.



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Hazard Assessment

A. What is Hazard Assessment?

1. Hazard assessment involves the identification of hazards or threats which may damage the community or infrastructure, facilities or environment.
2. Hazard assessment looks into the disaster history of the area – what disasters have been experienced in the past, as well as other hazards.
3. Hazard assessment also involves the study of the nature and behavior of the hazards or threats taking into consideration the following:
 - Origin: the factor or factors which create/result in a hazard;
 - Warning signs & signals: scientific and indigenous/local signs that hazard is likely to happen;
 - Forewarning: time between warning and impact;
 - Forces: factors which can damage: wind (for typhoon and tornado); water (heavy rain, flood, river overflow, giant waves, dirty water causing epidemic); land (slide, erosion, mudflow), seismic (ground shaking, ground rupture, tsunami), conflicts (war, terrorism); industrial/technological (pollution, radioactive leaks);
 - Speed of onset: rapidity of arrival of hazard and its impact (very slow such in 3-4 months in the case of drought; 3-4 days in the case of cyclone; very rapid for earthquake);
 - Frequency: does the hazard occur seasonally, yearly, once every 10 years, once in a lifetime, etc.;
 - Seasonality: does the hazard occur at a particular time of the year (wet or dry season; in November to April);
 - Duration: how long the hazard is felt (earthquake and after shocks; days/weeks/months).
4. In hazard assessment, the following have also to be considered:
 - Secondary hazards: earthquake can cause landslides; cyclone can cause flooding and landslide; flood can cause epidemics;
 - Intensities of hazards: earthquake and cyclone;
 - Hazards or threats which the community or area has not experienced yet;
 - Combining scientific and technical information with local knowledge;
 - Use of hazard assessment results for public awareness, designing early warning, and evacuation plans.

B. Tools for Hazard Assessment

1. Time line / Historical Profile

What:

Gathering information about what happened in the past

Why:

- (1) To get insight in past hazards, changes in their nature, intensity and behavior
- (2) Understand present situation in the area (causal link between hazards and vulnerabilities)
- (3) To make people aware of changes

When:

At initial phases

How:

- (1) Plan a group discussion and ensure that key-informants (old people, leaders, teachers) are present. Invite as much people as possible, especially the young ones, for them to hear the history of their community or area.
- (2) Ask people if they can recall major events in the community, area, such as:
 - major hazards and their effects
 - changes in land use (crops, forest cover, etc.)
 - changes in land tenure
 - changes in food security and nutrition
 - changes in administration and organization
 - major political events

- (3) The facilitator can write the stories down on a blackboard or craft paper in chronological order.

Life histories: another method is to ask individual informants to give a detailed account of their life or regarding a specific issue from a historical perspective.

History tracing: ask individuals or group to begin with current experiences and to go back in time. Purpose is to find reasons / causes which contributed to the occurrence of a certain incident.

2. Hazard Mapping

What:

Making a spatial overview of the area's main features

Why:

Maps facilitate communication and stimulate discussions on important issues in the community. Maps can be drawn for many topics:

- spatial arrangement of houses, fields, roads, rivers, and other land uses
- hazard map, elements at risk, safe areas, etc.

When:

In initial phase when you enter community, and during community risk assessment.

Who:

Community members

How:

- (1) Decide what kind of map should be drawn
 - (2) Find men and women who know the area and are willing to share their experiences
 - (3) Choose a suitable place (ground, floor, paper) and medium (sticks, stones, seeds, pencils, chalk) for the map
 - (4) Help the people get started but let them draw the map by themselves
3. Hazard Assessment Matrix for nature and behavior of hazard

Sample of Hazard Assessment Using Hazard Matrix

Hazard Assessment Table – DROUGHT						
Hazard Threats	Force	Warning and Signals	Speed	Frequency	Occurrence	Duration
Drought Famine Hunger Civil war Mass migration	Low/no rainfall Dry climate Water table level decrease Deforestation	Hydro meteorology Institutional/Communal memory Migration of birds	Slow onset	Once in ten years	November to April	Upto 5 years

Guidelines for Elaborating a Community Risk Map

René Martorell, Rocio Sáenz

These guidelines are meant as a tool to help local communities and organizations to produce a risk map that can serve as didactic material to prepare and train community members on how to deal with the hazards and risks to which they are exposed.

Its simplified format makes it easy to be used by local organizations as well as by the facilitators and local staff of the institutions entrusted with disaster reduction in a variety of sectors.

What is a Risk Map?

A Risk Map is a drawing or even a scale model that identifies the location of high-risk areas in the community as well as the chief settlements and works of infrastructure that might be affected in the event of a disaster.

The Risk Map employs symbols to identify certain places that serve as points of reference, such as the Red Cross, the Health Center, the Police, the Firefighting Brigade, churches, the Municipal Building, the school, the football field, rivers that flow through the area, and so on. Certain colors are used to indicate the level of risk—for instance, red for high-risk areas, yellow for medium-risk

areas, and green for relatively risk-free areas.

What is the Value of Risk Maps?

- They make it possible for all of us to participate. It is the result of how we all perceive our situation.
- By producing a Risk Map, we get to know and identify the risks we face, helping us to find solutions or take precautions.
- A Risk Map also helps us to locate the major hazards that, combined with human activity, generate risks.
- The Map provides the authorities and local organizations with shared, and joint criteria for decision-making on the actions and resources needed to mitigate the impact of disasters.
- The Map also helps us to record historical events that have had a negative impact on the community and the population, enabling us to prevent similar occurrences in the future.

Who Can Participate?

All of us can participate in the production of a Risk Map. No particular group should monopolize the effort. Therefore, it is important to have enough time to do the job properly, as well as the right place or places in which the largest possible number of people can collaborate in a methodical manner.

Key stakeholders that must take part in the process include the local authorities, members of community organizations, community leaders, NGOs that provide services in the area, professional and technical staff from public and private institutions, local health personnel, teachers and students, and representatives of the various groups in the community, whether formally organized or not.

How Do We Elaborate a Risk Map for the Community?

To elaborate a community risk map, you need to take certain steps. Each step involves very specific activities.

But bear this in mind: The steps to be taken depend on the community and how organized it is, as well as on the nature of the risks and hazards present in the area. It is the community itself that must decide which procedures best fit its own conditions, and which steps it should take to produce the map.

These, then, are the steps or stages needed:

1) Organizing the Work

The first thing is to organize the work so as to find the needed information and produce the community risk map.

- Convene a work meeting. Invite the community, institutional representatives, local authorities and the population in general to participate in the meeting.
- Explain the objectives of the meeting. The essential thing is to accentuate the importance of community preparedness and planning to confront emergencies.
- Analyze previous experiences. The purpose is to allow participants to recall and voice their memories of previous emergencies. This helps to motivate participants by making them aware of the importance of working together to prevent emergencies and respond to them.

2) Discussing Community Risks and Hazards

It is vital to spend some time explaining what risk is, what is a hazard, what is vulnerability, and so on, so that all participants understand and share the basic concepts. This will be useful later on, when a tour of the community is undertaken to identify risks and hazards.

- Present the concepts of risk, hazard, and vulnerability. This presentation must be carried out by people who are technically qualified to do so.
- Identify, in general, what the major hazards are. The idea is for participants to answer questions such as, "What are the major hazards affecting the community?" "Of these, which is the most significant hazard we should bear in mind?"

3) Preparing Guidelines for Observation and Data Collection

It is important to produce guidelines to let stakeholders know what to look for during their tour. Certain questions may be asked, such as the following:

- If a flood hit this community as a result of an intense tropical storm or hurricane, which community areas would be most at risk of suffering an adverse impact? Which kind of infrastructure? Which settlements and groups? Why?

4) Touring the Community

Now, at last, everyone should be ready for a tour of the community to gather information on the local risks and hazards, and on which places might be used as shelters or security zones in the event of a disaster, to care for the injured and the most vulnerable.

These are the steps to be taken:

- Establish groups and distribute the areas to be surveyed. Groups should be made up of five individuals or so.
- Define how long the tour will take. Arrange for a specific time when all the groups can come together and discuss their findings.
- Make sure each group has a copy of the observation guidelines. This will ensure that there is agreement about which hazards to pay attention to.
- Engage in intra-group discussions. Each group may agree to meet by itself after the tour to discuss the findings and consolidate them before meeting with the others.

5) Discussing and Analyzing the Preliminary Results

When the groups have completed their tour of the community and collected all the information, a Plenary Session must be held at a previously agreed-upon time and place. There, the results must be discussed and analyzed, and priorities must be assigned.

The steps to be taken may include the following:

- Present the information collected by each group. Each group should explain what hazards they found and what the risks are.
- Discuss the findings. Have all participants discuss the findings, perhaps enriching them with their own memories or observations of the places inspected by the other groups, until there is at least preliminary agreement on what the major risks are.

6) Producing the Risk Map

There are two possible ways of producing the Risk Map.

- Someone who is skilled at drawing prepares beforehand a general map of the community, showing the various settlements and landmarks. On this, the various hazards would be drawn and, once there is agreement that all the significant threats have been included, a final draft would be produced.
- Each group can draw the portion of the community that they surveyed, identifying the most significant risks. Then the plenary assembles, puts the maps together, discusses what is contained in each one, and a final, consolidated general map is produced including the observations of all the groups.

As already noted, these procedures are not ironclad. They can and should be adapted to the way every community has traditionally organized itself. What is important is that participation be high and include as many of the different groups of stakeholders as possible, since the purpose of the exercise is not only to produce a risk map—essential though this may be—but also to raise awareness of the importance of disaster reduction through prevention, mitigation and preparedness.



New Learning and Reflections:

1. What are the hazards in your district?

2. How do we assess hazards?

3. Can you describe the Hazard Assessment process?

Vulnerability and Capacity Assessment



Learning Objectives:

At the end of this session the participants would be able to:

1. Explain the process and tools of conducting vulnerability and capacity assessment;
2. Identify the elements-at-risk which can be damaged by hazards;
3. Discuss how the community prepared for hazards, what is their coping mechanism;
4. Identify capacities and resources available / present in the district which can be used for disaster risk management.



Key Concepts:

- Vulnerability assessment – a participatory process to identify what elements are at risk per hazard type, and to analyze the causes why these elements are at risk.
- Elements-at-risk – what can be damaged and why they can be damaged.
- Tools for vulnerability assessment - these are the appropriate tools to be used in conducting the vulnerability assessment.
- Tools for capacity assessment - these are the appropriate tools to be used in conducting the capacity assessment.
- Capacity Assessment - participatory analysis to determine the resources, abilities, knowledge, skills, means and strengths of families and the community which have been used in the past and those that can be used in community based disaster management (before, during and after disaster).
- Coping - refers to managing resources or survival strategies in adverse or crisis situations. Coping may include defense mechanisms, active ways of solving problems, and methods of handling stress.



References:

1. Living With Risk, UN ISDR, 2002.
2. Major Hazards, Family and Community Disaster Preparedness: Guide for Training Families and Communities, Department of Social Welfare and Development, Philippines.
3. Citizenry-Based & Development-Oriented Disaster Response: Experiences

and Practices in Disaster Management, Response Network in the Philippines, Heijmans, Annelies & Victoria, Lorna P.

4. Guidelines for Producing A Community Risk Map, UNISDR Latin America & the Caribbean, Disaster Risk Reduction 1994 – 2004, UN ISDR.



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Vulnerability Assessment

What is Vulnerability?

Vulnerability is a complex set of interrelated factors and conditions which affects the ability of community and local government to mitigate and prepare for or respond to hazard events. These are also weaknesses present in individuals, households and the community.

Some examples of vulnerable conditions and factors:

1. Disaster-prone locations
2. Houses made of light materials
3. Conflict in the community
4. Lack of knowledge and skills on preparedness and protective measures
5. Attitude of helplessness and dependency

What is Vulnerability Assessment?

A participatory process to identify what elements are at risk per hazard type, and to analyze the causes why these elements are at risk.

Elements at risk

- People
- Houses
- Property
- Crops
- Livelihood
- Community facilities
- Environment

Basically, vulnerability assessment answers the questions such as:

- Who are at risk or can incur damage and loss?
- What are other elements at risk?
- What damage or loss can these people or elements at risk suffer/incur?
- Why will these people or elements at risk suffer or incur loss/damage?

There are several possible answers, such as:

- because of inappropriate land development
- because of deforestation
- because houses are on dangerous location, etc.

Analysis is important to determine what preparedness and mitigation measures can be most effective in the short and long term.

Categories of Vulnerability:

- physical/material
- social/organizational
- attitudinal/motivational

Categories and Factors for Vulnerability Analysis

Physical/Material	Social /Organizational	Motivational/Attitudinal
<ul style="list-style-type: none"> ▪ disaster-prone location ▪ insecure sources of livelihood ▪ lack of access and control over means of production (land, farm inputs, animals, capital, etc.) ▪ lack of adequate skills and educational background ▪ lack of basic services: education, health, safe drinking water, shelter, sanitation, roads, electricity, communication, etc. ▪ malnutrition, ▪ diseases, ▪ overexploited natural resources 	<ul style="list-style-type: none"> ▪ weak family/kinship structures ▪ lack of leadership, initiative to solve problems or conflicts ▪ unequal participation in community affairs ▪ divisions, conflicts ▪ unjust practices, lack of access to political processes ▪ absence or weak community organizations ▪ no or weak relationship with government, administrative structures ▪ isolated from outside world 	<ul style="list-style-type: none"> ▪ negative attitude towards change ▪ fatalism, ▪ lack of 'fighting spirit' ▪ unawareness about hazards and consequences ▪ dependence on external support

Capacity Assessment

What is Capacity?

Capacities are the strengths which individuals, households, community and local government possess.

Capacities relate to resources, skills, knowledge, organizations and institutions, practices, attitudes and values. Coping refers to managing resources or survival strategies in adverse situations.

Mostly, notion of coping is positive (and is therefore a capacity), but it can also come to a point when it leads to increasing of vulnerabilities, as in selling of productive assets or engagement in anti-social or destructive activities (prostitution, crime).

What is Capacity Assessment?

- Participatory analysis to determine the resources, abilities, knowledge, skills, means and strengths of families, community and local government departments which have been used in the past.
- Involves an understanding of how the community has survived disasters and coped with hazards in the past. What were actions of households and the community to reduce damaging effects and protect and secure their livelihood and community services?
- Involves identification of resources, abilities, knowledge, skills, means and strengths which can enable the community or government to prevent, prepare for, withstand, survive and recover from a disaster. How can these resources be made available for disaster risk management (before, during and after a disaster)?

Basically, capacity assessment answers the questions:

- What are existing coping strategies and mechanisms during times of crisis?
- How have individuals, households and the community survived and responded to disasters in the past?
- What are resources, strengths, local knowledge and government resources that can be used for disaster preparedness, mitigation and prevention?

Categories for capacity assessment are the same as with vulnerability assessment:

- Physical/material: economic and natural resources such as funds, machinery equipment, trained manpower.
- Organizational: good leadership, volunteers, and clear roles and functions of disaster risk management.
- Attitudinal/motivational: people are aware of their abilities and have confidence in themselves, people have a sense of control over events and power to change their conditions.

Tools for Vulnerability & Capacity Assessment

1. Transect Walk

What:

Systematic walk with key-informants through the community to explore spatial differences or land use zones by observing, asking, listening and producing a transect diagram.

Why:

- (1) Visualizes interactions between physical environment and human activities over space and time.
- (2) Identifies danger zones, evacuation sites, local resources used during emergency periods, land use zones, etc.
- (3) Seeks problems and opportunities.

When:

In initial phase when you enter community, and during community risk assessment.

Who:

Team with six to ten community members representing the cross-section of the area.

How:

- (1) Based on map, select a transect line (can be more than one).
- (2) Select a group of six to ten people who represent the cross-section, and explain purpose.
- (3) During walk, take time for brief and informal interviews at different places in the transect.
- (4) Focus on issues like land use, proneness to particular hazards, land tenure, and even changes in the environment to draw a historical transect.

2. Seasonal Calendar

What:

Making a calendar showing different events, experiences, activities, conditions throughout the annual cycle.

Why:

- (1) To identify periods of stress, hazards, diseases, hunger, debt, vulnerability, etc.
- (2) To identify what people do in these periods, how they diversify sources of livelihood, when do they have savings, when do they have time for community activities, what are their coping strategies.
- (3) To identify gender specific division of work, in times of disasters and in normal times.

Who:

Team and community members; have separate sessions for men and women.

How:

- (1) Use 'blackboard' or craft paper. Mark off the months of the year on the horizontal axis. Ask people to list sources of livelihood, events, conditions, etc., and arrange these along the vertical axis.
- (2) Ask people to enumerate all the work they do (e.g. planting, weeding, etc.) for each source of livelihood / income by marking months and duration, adding gender and age.
- (3) Facilitate analysis by linking the different aspects of the calendar: how do disasters affect sources of livelihood? When is workload heaviest? Ask for seasonal food intake; period of food shortage, out-migration, etc.
- (4) You can continue the discussion on coping strategies, change in gender roles and responsibilities during times of disasters, or other issues you think are relevant.

3. Resource Mapping

What:

Making a map showing local resources and capacities, and gender differences in access to and control over resources.

Why:

- (1) Identify available local capacities and resources people rely on in times of disasters
- (2) Identify which resources are easily affected by disasters
- (3) Identify resources available with community and government

Who:

Team and selected individual households belonging to different income groups.

How:

- (1) Ask persons to draw a map of their household and resources / capacities on which they depend for their livelihood / survival (remember material/physical, social/organizational, motivational / attitudinal capacities).
- (2) Ask household how they contribute to / support other households, community, larger economic/ social environment.
- (3) Ask people to use arrows to indicate flow of resources to and from household.
- (4) Ask household member(s) who uses and controls resources (consider gender, class, ethnicity, religion, age).
- (5) Ask questions to accompany the making of the maps, and put answer on the map.

4. Institutional & Social Network Analysis

What:

Making a diagram that shows key-organizations, groups and individuals in a community, nature of relationship and level of importance.

Why:

- (1) To identify organizations (local & outside), their role/importance, and perceptions that people have about them.
- (2) To identify individuals, groups, organizations that play a role in disaster response and can support community.

Who:

Team and community members.

How:

- (1) Become familiar in advance with the names of the organizations.
- (2) Ask people to determine criteria for the importance of an organization and to rank them according to these criteria.
- (3) Ask people to what extent organizations are linked to each other; note kind of relationship.
- (4) Draw circles to represent each organization or group; size of circle indicates importance.
- (5) Continue focus group discussion on history of organizations; activities undertaken in community; how well do they function; how is coordination; which organizations, groups, individuals are important in times of disasters; community level decision making

5. Livelihood / Coping Strategies Analysis

What:

Combination of individual household interview and making diagrams presenting different income or food sources.

Why:

To understand livelihood strategies, behavior, decisions and perceptions, capacities and vulnerabilities of households from different socio-economic background.

Who:

Team can split up in smaller teams to conduct individual household interview simultaneously.

How:

- (1) Review hazard map, seasonal calendar, and resource map, and determine criteria to select households belonging to different socio-economic groups (sample should not be at random).
- (2) Decide which households you will interview and how many
- (3) Conduct the interview (1 hour).
- (4) Start with getting to know household members, composition, age, gender, followed by questions about livelihood and coping strategies.
- (5) Draw block or pie diagrams to facilitate discussion on livelihood sources.
- (6) Continue discussion on how household cope in times of stress.

6. Problem Tree

What:

Flow diagram showing relations between different aspects.

Why:

Identify local major problems / vulnerabilities as well as root causes and effects.

When:

During later part of situational analysis or community risk assessment.

Who:

Team facilitates community members' meeting (optional to have separate meeting for men and women).

How:

- (1) From other tools and interviews, various concerns and problems are identified.
- (2) Give all people small pieces of paper and ask them to write one major problem on each card, and to put these on the wall (people can draw problems in case they do not know how to write and read).
- (3) Ask two or three volunteers to group the problems according to similarity or interrelationship.
- (4) Now the making of the 'problem tree' can start: the trunk represents the problems; the roots are the causes; the leaves are the effects.

- arrive at the root causes
- To arrive at the effects, ask for the consequences of each problem

7. **Semi-Structured Interviews**

What:

Semi-structured interviews are discussions in an informal and conversational way. They do not use a formal questionnaire but at the most a checklist of questions as a flexible guide. There are different types of semi-structured interviews:

- (1) group interview
- (2) focus group discussion
- (3) individual interview
- (4) key-informant interview

Why:

To get information (general and specific), to analyze problems, vulnerabilities, capacities and perceptions, to discuss plans, etc.

Who:

Team of 2 - 4 people.

How:

- (1) Prepare key issues in advance.
- (2) Select one person to lead the interview
- (3) Ask questions in an open-ended way (what, why, who, when, how, how do you mean, anything else).
- (4) Ask for concrete information and examples.
- (5) Try to involve different people (if present).
- (6) Pay attention to group dynamics.

8. **Hazard Mapping** (Please see Hazard Assessment Session)

9. **Timeline / Historical Profile** (Please see Hazard Assessment Session)



New Learning and Reflections:

1. Can you describe the capacity assessment process?

2. Can you describe the vulnerability assessment process?

3. Enumerate and describe some participatory tools you can use for capacity and vulnerability assessment?

Risk Assessment Fieldwork



Learning Objectives:

At the end of this session the participants would be able to:

1. Conduct hazard, vulnerability and capacity assessment at the community level;
2. Validate with the members of the community the results of the HVCA undertaken inside the training venue and revise it accordingly;
3. Raise awareness of the community members on the disaster risks in the community and on the need to implement disaster risk reduction measures.



References:

1. Handouts on Training of Trainers in CBDRM, Thaubang District, Myanmar December 16-21, 2004. Conducted by Center for Disaster Preparedness, Inc.



Handouts

Characteristics of A Participatory Risk Assessment Facilitator

Some characteristics of a good participatory community risk assessment facilitator:

- Build rapport with men and women, rich and poor, young and old, and people with different ethnic or social group background;
- Friendly, interested, culturally sensitive, relaxed and open, avoiding making people feel uncomfortable;
- Listening and probing, and leaving time in conversation for additional comments;
- Selecting PRA tools that suit local conditions and recognizing that not all PRA tools are suited to all situations and social groups;
- Engaging in conversations that have a two-way exchange of information;
- Patient but proceeding at a moderate pace;
- Seeking views of the weaker, less influential people or groups;
- Sharing information;
- Giving people enough time to communicate and consider ideas;
- Checking and rechecking the validity of information using different sources;
- Frequently reflecting on what information has been gained and where the gaps are;
- Identifying and testing assumptions;
- Admitting errors and learning from mistakes;
- Trying to ensure that villagers' expectations are not raised too early, and avoiding making promises that cannot be fulfilled;
- Asking questions that invite explanations or viewpoints rather than yes or no;
- Scheduling PRA activities so that they fit in as much as possible with seasonal and daily routines of villagers.



Learning and Reflections:

1. What are the activities you did during the field work?

2. What were the difficulties encountered during the field work?

3. What are your insights on community risk assessment?

Risk Reduction Measures For Earthquake, Landslide, Flood, Drought & Cyclone

Modular Objectives:

1. Identify adequate and appropriate disaster risk reduction measures and activities for earthquake, landslide, flood, drought, and cyclone;
2. Enhance capacities in emergency response among various line departments.

Number of Sessions: 4

- Session 1** – Disaster Mitigation and Preparedness for Earthquake, Landslide, Flood, Drought and Cyclone
Session 2 – Public Awareness
Session 3 – Early Warning System and Evacuation
Session 4 – Emergency Response

Disaster Mitigation & Preparedness for Earthquake, Landslide, Flood, Drought & Cyclone



Learning Objective:

At the end of this session the participants would be able to:

1. Discuss mitigation and preparedness strategies for earthquake, landslide, flood, drought, and cyclone.



Key Concepts:

Mitigation applies to a wide range of activities and protection measures that might be instigated from physical /structural like building of dikes and dams to the procedural / non-structural like advocacy for environmental protection and strengthening livelihood.

- Preparedness measures refer to strategies for timely and appropriate response in emergency situation.
- Earthquakes are earth vibrations produced when the stability of rock masses under the surface of the earth is disturbed. These disturbances usually occur along existing fault lines or zones of structural weaknesses.
- Landslide is a general term used to describe the down-slope movement of soil, rock and organic materials under the influence of gravity.
- Flood is the condition that occurs when water overflows the natural or artificial confines of a stream or body of water.
- Drought is a period or condition of unusually dry weather within a geographic area where rainfall is normally present. During a drought there is a lack of precipitation. Droughts occur in all climatic zones. However, its characteristics vary significantly from one region to another.
- Cyclone is an intense weather disturbance such as typhoon and storm composed of a big whirling mass of wind and rains, similar to whirlwind, tornado or waterspout but having immense dimensions. It has violent winds which flow around and towards the center and is associated with torrential rains often accompanied by thunderstorms.



References:

1. <http://www.em.gov.bc.ca/Mining/Geosurv/Surficial/landslid/default.htm>
2. UN Strategy for Disaster Risk Reduction: Living with Risk.

3. http://ndcc.gov.ph/ndcc/index.php?module=pagemaster&PAGE_user_op=view_page&PAGE_id=17&MMN_position=47:47
4. <http://library.thinkquest.org/16132/html/drought.html>
5. http://www.nssl.noaa.gov/primer/flood/fld_predicting.html
6. <http://www.niwascience.co.nz/edu/students/faq/drought>
7. <http://www.oas.org/cdmp/document/forecast/forecast.htm>



Handouts

Earthquake

What is an earthquake?

Earthquakes are earth vibrations produced when the stability of rock masses under the surface of the earth is disturbed. These disturbances usually occur along existing fault lines or zones of structural weaknesses.

Why earthquakes occur?

Most earthquakes happen near the boundaries of tectonic plates, both where the plates spread apart and where they crunch or grind together (although large temblors also strike from time to time in the normally stable interior of continents). Along plate boundaries, the brittle outer part of the earth fractures along faults. As plates move, blocks of crust shift along the faults.

Can earthquake be predicted?

Many seismologists would probably answer, "Not yet, but eventually." But to date, nobody has been able to predict earthquakes reliably enough and over short enough time scales to allow the evacuation of threatened cities. Some scientists have entirely lost faith in earthquake prediction. They say that so many factors decide whether a fault will rupture that earthquakes could well be inherently unpredictable in a practical sense.

What are the possible risk reduction measures for earthquake?

- Hazard mapping
- Public awareness programme and training
- Assess and reduce structural vulnerability
- Land use control or zoning, building codes, insurance

BEFORE

The key to effective disaster prevention is planning.

Determine whether the site is along an active fault and/or prone to liquefaction or landslide which may cause damage to your house or building.

Be sure that proper structural design and engineering practice is followed when constructing a house or building.

Evaluate the structural soundness of buildings and important infrastructures; strengthen or retrofit if found necessary.



Prepare your place of work and residence for the event.

Strap heavy furniture/cabinets to the wall to prevent sliding or toppling.

Breakable items, harmful chemicals and flammable materials should be stored in the lowermost shelves and secured firmly.

Make it a habit to turn off gas tanks when not in use.



Familiarize yourself with your place of work and residence.

Identify relatively strong parts of the building like door jambs, near elevator shafts, sturdy tables, where you can take refuge during an earthquake.

Learn to use fire extinguishers, first aid kits, alarms and emergency exits. These should be accessible conveniently located, and prominently marked.



Most causes of injuries during earthquakes are from falling objects.

Heavy materials should be kept in lower shelves.

Check the stability of hanging objects which may break loose and fall during earthquakes.

Prepare and maintain an earthquake survival kit consisting of a battery powered radio, flashlight, first aid kit, potable water, candles, ready-to-eat food, whistle and dust mask.



DURING

If you are inside a structurally sound building, stay there!

Protect your body from falling debris by bracing yourself in a doorway or by getting under a sturdy desk or table.



If you are outside, move to an open area.

Get away from power lines, posts, walls and other structures that may fall or collapse.



Stay away from buildings with glass panes.



When driving a vehicle, pull to the side of the road and stop.
Do not attempt to cross bridges or overpasses which may have been damaged.



If you are on a mountain or near a steep hillside, move away from steep escarpments that may be affected by landslides.



If you are along the shore and you feel a very strong earthquake, strong enough to make standing difficult, it is always safest to assume that a tsunami (great sea waves) has been triggered. Run away from the shore toward higher ground.



Landslide

What is a Landslide?

Landslide is a general term used to describe the down-slope movement of soil, rock and organic materials under the influence of gravity.

What causes landslide?

Some slopes are susceptible to landslides whereas others are more stable. Many factors contribute to the instability of slopes, but the main controlling factors are the nature of the underlying bedrock and soil, the configuration of the slope, the geometry of the slope, and ground-water condition.

What are the possible risk reduction measures for landslide?

- a. Hazard mapping
- b. Legislation and land use regulation
- c. Insurance
- d. Community education
- e. Monitoring, warning and evacuation systems
- f. Reforestation

What to Do Before, During and After Landslide

Before a Landslide

- Do not build near steep slopes, close to mountain edges, near drainage ways, or natural erosion valleys.
- Get a ground assessment of your property.
- Contact local officials, state geological surveys or departments of natural resources, and university departments of geology. Ask for information on landslides in your area, specific information on areas vulnerable to landslides, and request a professional referral for a very detailed site analysis of your property, and corrective measures you can take, if necessary.
- Minimize home hazards:
 - Have flexible pipe fittings installed to avoid gas or water leaks, as flexible fittings are more resistant to breakage (only the gas company or professionals should install gas fittings).
 - Plant ground cover on slopes and build retaining walls.
 - In mudflow areas, build channels or deflection walls to direct the flow around buildings.

Recognize Landslide Warning Signs

- Changes occur in your landscape such as patterns of storm-water drainage on slopes (especially the places where runoff water converges) land movement, small slides, flows, or progressively leaning trees.
- Doors or windows stick or jam for the first time.
- New cracks appear in plaster, tile, brick, or foundations.
- Outside walls, walks, or stairs begin pulling away from the building.
- Slowly developing, widening cracks appear on the ground or on paved areas such as streets or driveways.
- Underground utility lines break.

- Water breaks through the ground surface in new locations.
- Fences, retaining walls, utility poles, or trees tilt or move.
- A faint rumbling sound that increases in volume is noticeable as the landslide nears.
- The ground slopes downward in one direction and may begin shifting in that direction under your feet.
- Unusual sounds, such as trees cracking or boulders knocking together, might indicate moving debris.
- Collapsed pavement, mud, fallen rocks, and other indications of possible debris flow can be seen when driving (embankments along roadsides are particularly susceptible to landslides).

During a Landslide

- Stay alert and awake. Be aware that intense, short bursts of rain may be particularly dangerous, especially after longer periods of heavy rainfall and damp weather.
- If you are in areas susceptible to landslides and debris flows, consider leaving if it is safe to do so. Remember that driving during an intense storm can be hazardous. If you remain at home, move to a second story if possible. Staying out of the path of a landslide or debris flow saves lives.
- Listen for any unusual sounds that might indicate moving debris, such as trees cracking or boulders knocking together. A trickle of flowing or falling mud or debris may precede larger landslides. Moving debris can flow quickly and sometimes without warning.
- If you are near a stream or channel, be alert for any sudden increase or decrease in water flow and for a change from clear to muddy water. Such changes may indicate landslide activity upstream, so be prepared to move quickly. Don't delay! Save yourself, not your belongings.
- Be especially alert when driving. Embankments along roadsides are particularly susceptible to landslides. Watch the road for collapsed pavement, mud, fallen rocks, and other indications of possible debris flows.

What to do if you suspect imminent landslide danger?

- Contact your local fire, police, or public works department. Local officials are the best persons able to assess potential danger.
- Inform affected neighbors. Your neighbors may not be aware of potential hazards. Advising them of a potential threat may help save lives. Help neighbors who may need assistance to evacuate.
- Evacuate. Getting out of the path of a landslide or debris flow is your best protection.

After a Landslide?

- Stay away from the slide area. There may be danger of additional slides.
- Listen to local radio or television stations for the latest emergency information.
- Watch for flooding, which may occur after a landslide or debris flow. Floods sometimes follow landslides and debris flows because they may both be started by the same event.
- Check for injured and trapped persons near the slide, without entering the direct slide area.
- Direct rescuers to their locations.
- Help a neighbor who may require special assistance - infants, elderly people, and people with disabilities. Elderly people and people with disabilities may require additional assistance. People who care for them or who have large families may need additional assistance in emergency situations.

- Seek advice from a geotechnical expert for evaluating landslide hazards or designing corrective techniques to reduce landslide risk. A professional will be able to advise you of the best ways to prevent or reduce landslide risk, without creating further hazard.

Flood

What is a flood?

Flood - the condition that occurs when water overflows the natural or artificial confines of a stream or body of water.

Can a flash flood be predicted?

Flash floods represent different forecast and detection challenges because they are not always caused by meteorological phenomena.

Flash floods result when favorable meteorological and hydrological conditions exist together. Although heavy rainfall is necessary, a given amount and duration of rainfall may or may not result in a flash flood, depending on the hydrologic characteristics of the watershed where it is raining.

Variables include knowing how much water runs off (as well as where it runs to), how strong the stream is flowing, how wide an area is getting rain, how hard and fast it is raining, how long it has been raining in a particular drainage basin, where the storm is located and how fast or slow it is moving, how porous the soil is and how much water it already holds, how much surface is paved, whether there are storm drains or closely space buildings, etc.

What are the possible risk reduction measures for flood?

1. Flood control (channels, dikes, dams, flood-proofing, erosion control)
2. Flood detection and warning systems
3. Community participation and education
4. Development of master plan for floodplain management

Flood Safety Rules

Before the Flood:

- Find out how often your location is likely to be flooded.
- Know the flood warning system in your community and be sure your family knows it.
- Keep informed of daily weather condition.
- Designate an evacuation area for the family and livestock.
- Assign family members instructions and responsibilities according to an evacuation plan.
- Keep a stock of food which requires little cooking and refrigeration; electric power may be interrupted.
- Keep a transistorized radio and flashlight with spare batteries, emergency cooking equipment, candles, matches and first aid kit.
- Store supplies and other household effects above expected flood water level.

When Warned of Flood:

- Watch for rapidly rising flood waters.
- Listen to your radio for emergency instructions.
- If you find it necessary to evacuate, move to a safe area before the access is cut off by flood waters.
- Store drinking water in containers, water service may be interrupted.
- Move household belongings to upper levels.

- Get livestock to higher ground.
- Turn off electricity at the main switch in the building before evacuating and also lock your house.

During the Flood:

- Avoid areas subject to sudden flooding.
- Beware of water-covered roads and bridges.
- Do not go swimming or boating in swollen rivers.
- Eat only well-cooked food. Protect leftovers against contamination.
- Drink clean or preferably boiled water only.

After the Flood:

- Re-enter the dwellings with caution using flashlights
- Be alert for fire hazards like broken wires.
- Do not eat food and drink water until they have been checked for flood water contamination.
- Report broken utility lines (electricity, water, gas and telephone) to appropriate agencies / authorities.
- Do not turn on the main switch or use appliances and other equipment until they have been checked by a competent electrician.
- Consult health authorities for immunization requirements.
- Do not go in disaster - hit areas. Your presence might hamper rescue and other emergency operations.

Things One Can Do to Mitigate Floods:

Regulate cutting of trees.
Report illegal construction of fishponds and other establishments in waterways.
Help clean the neighborhood.
Support community activities intended to lessen the occurrence of floods.
Avoid throwing anything like plastic wrappers anywhere which may clog or block the drainage system.

Drought

What is a Drought?

Drought is a period or condition of unusually dry weather within a geographic area where rainfall is normally present. During a drought there is a lack of precipitation. Droughts occur in all climatic zones. However, its characteristics vary significantly from one region to another.

Drought usually results in a water shortage that seriously interferes with human activity. Its seriousness depends on the degree of the water shortage, size of area affected, and the duration and warmth of the dry period. In many underdeveloped countries, such as India, people place a great demand on water supply. During a drought period there is a lack of water, and thus many of the poor die.

Most precipitation depends on water vapor carried by winds from an ocean or other source of moisture. If these moisture-carrying winds are replaced by winds from a dry region, or if they are modified by downward motion, as in the center of an anticyclone, the weather is abnormally dry and often persistently cloudless. If the drought period is short, it is known as a dry spell. A dry spell is usually more than 14 days without precipitation, whereas a severe drought may last for years.

Can drought be predicted?

Scientists can predict the likelihood of a drought by careful monitoring of rainfall, river flow and soil moisture.

What are the possible risk reduction measures for drought?

- Construction of reservoirs to hold emergency water supplies,
- Education to avoid over cropping and overgrazing,
- Programs to limit settlement in drought-prone areas.
- Drought and famine early warning systems
- Development of inter-institutional plan

What to Do Before, During and After Drought

Before a Drought:

- Establishment of seed banks and nurseries to ensure a stable supply of seedlings, seeds, cuttings and other plant materials
- Public awareness / education to prevent over cropping and overgrazing
- Community legislation to limit settlements in drought-prone areas
- Construction of reservoirs to hold emergency water supplies
- Harvest / impound rain water for use in agriculture

During a Drought:

Propagation of drought resistant crops (e.g, crops that require less water such as root crops – sweet potato, cassava, and indigenous vegetables and legumes).

Education and information drive to generate community appreciation of water management and crop life-saving techniques.

Optimum use of all available surface and ground water for irrigation (e.g., minimum wetting of crops by rotation to extend available irrigation to a larger area)

After a Drought:

Close coordination between agricultural scientists, meteorologists, irrigation engineers and agricultural field staff to inform and assist farmers to adapt agricultural practices

Increase production in favorable areas to make up for losses in seriously affected areas.

Cyclone

What is a Cyclone?

Cyclone is an intense weather disturbance such as typhoon and storm composed of a big whirling mass of wind and rains, similar to whirlwind, tornado or waterspout but having immense dimensions. It has violent winds which flow around and towards the center and is associated with torrential rains often accompanied by thunderstorms.

Can a cyclone be predicted?

Over the years forecast methods have moved from simple subjective deductions based on observations of specific parameters such as cloud types and motions, sea swells, and pressure, to more sophisticated techniques which use complex computer models of the atmosphere. Until recently, predictions were centred around the motion of the cyclone, but both motion and intensity are now being routinely predicted.

A tropical cyclone forecast involves the prediction of several interrelated features, including the track, winds, rainfall, storm surge and, of course, the areas threatened.

What are the possible risk reduction measures for cyclone?

1. Risk assessment and hazard mapping.
2. Land use control and flood management.
3. Reduction of structural vulnerability.
4. Improvement of vegetation cover.
5. Public warning systems.
6. Evacuation plans.
7. Training and community participation.



New Learning and Reflections:

1. Enumerate 5 flood mitigation measures?

2. Enumerate 5 drought mitigation measures?

3. Enumerate 5 earthquake preparedness measures?

Public Awareness



Learning Objectives:

At the end of this session the participants would be able to:

1. Discuss importance of public awareness;
2. Enumerate medium to be used for public awareness;
3. Discuss District's awareness strategy as laid down in the National Disaster Management Framework.



Key Concepts:

- Public Awareness - process through which people living in hazard-prone areas come to realize and understand that they live in areas of risks, know the specific dangers that they are exposed to and the warnings that are issued, and know the appropriate actions to be taken to protect their lives and minimize property damage. (ADPC)
- Mediums – the ways and means of conveying the awareness to the public. It can be in the forms of comics, posters, calendars, brochures, etc.



References:

1. Handouts on Training of Trainers in CBDRM, Thaubang District, Myanmar December 16-21, 2004, Conducted by Center for Disaster Preparedness, Inc.
2. Asian Disaster preparedness Center, 4th Regional Course on CBDM, 2000.
3. Pakistan National Disaster Management Framework, 2006.



Handouts

Public Awareness

What is Public Awareness?

- A systematic distribution of information about potential hazards and threats and what people can do about them, in order to encourage people to act to protect their lives and property (CDRC).
- The process through which people living in hazard-prone areas come to realize and understand that they live in areas of risks, know the specific dangers that they are exposed to and the warnings that are issued, and know the appropriate actions to be taken to protect their lives and minimize property damage (ADPC).

Objectives of Public Awareness

1. To increase the public knowledge about hazards, their nature and the consequences of their impact;
2. To increase knowledge about practical preparedness measures;
3. To inform the public about the warning system that will be employed and what they should do when they receive it;
4. To increase knowledge on how to respond to an emergency situation;
5. To mobilize support for disaster risk management plans or response activities.

Elements of Public Awareness

- Message
- Means (posters, radio, calendars)
- Audience
- Intended result

Features of an Effective Public Awareness Programme

- Ongoing Process - Public Awareness is an on-going process, not simply a set of products such as posters, brochures, etc.
- Participatory - Target populations are active participants in programme design and implementation phases, in partnership with individuals having necessary technical skills.
- Community specific - Culture and disaster history of the community should be considered.
- Hazard specific - An assessment of specific hazards is the essential basis for developing public awareness program.
- Target population specific - Must be based on need of specific group for information essential for them.
- Integral part of local warning and response system.

Some Channels and Forms

- Community meetings, house-to-house campaign
- Posters, poster making contest among school children
- Plays, drama/skits, songs

- Leaflets, brochures, comics, calendar, manuals, books
- Radio program, television features, tapes, CD
- Earthquake safety day, disaster consciousness day/week/month
- Photo exhibit, forum, public speeches
- Press releases, letters to the editor, articles in print media
- Disaster management orientation, disaster preparedness training

District Strategy in awareness raising of vulnerable communities and stakeholders:

(Based on NDRMF, 2006)

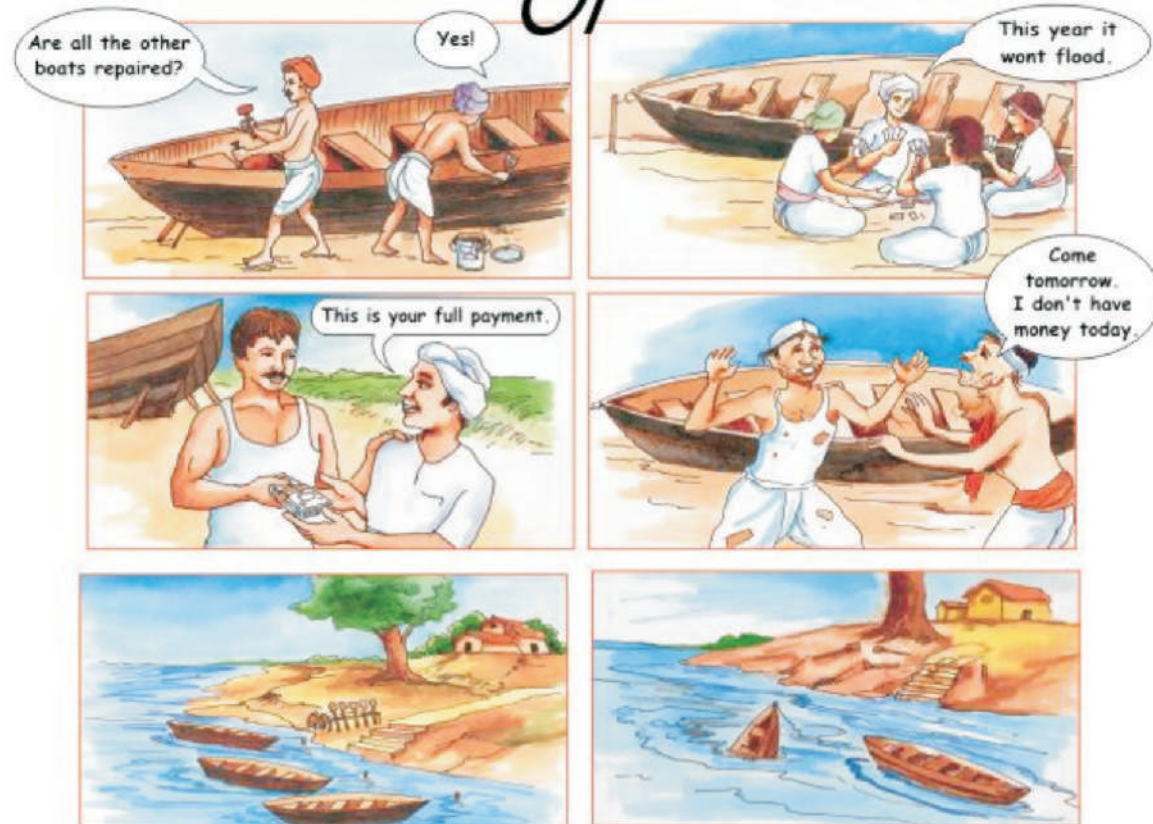
1. Identify key social groups that should be targeted for awareness raising about disaster risk management;
2. Identify information needs of the selected target groups on disaster, risk and risk reduction;
3. Identify the appropriate channels of communication for awareness raising of local groups;
4. Produce printed, and audio-visual materials or develop activities for face to face communication;
5. Implement awareness raising campaigns with the selected stakeholders.

Samples of Public Awareness Materials

Poster

**During monsoon, floods can strike anytime.
Are the boats ready?**

**Is your village
like this *OR* like this**



When the floods came



Comics



The photograph shows a group of children sitting on the ground in an outdoor setting, possibly a schoolyard. They are holding and reading comic books. The comic books have a blue cover with the word 'TSUNAMI' written in large, bold letters. The children are dressed in casual clothing like t-shirts and jeans. In the background, there is a brick wall and a blue water container.

ISDR
International Strategy for
Disaster Reduction

Bandah Aceh, Indonesia: Children read educational books about tsunami that were developed by the Asian Disaster Reduction Center (ADRC) and the Asian Disaster Reduction and Response Network (ADRRN). The booklets are based on a true story of "tsunami no hit", a man who led village inhabitants to a high ground by burning harvested rice sheaves when the Aceh-Nanka tsunami struck Western Japan in 1854. AERCT, Malaysia co-produces and distributes the booklets throughout Indonesia.

INDONESIA



New Learning and Reflections:

1. Describe what is Public Awareness?

2. How is the Public Awareness process done?

3. Can you list some Public Awareness activities?

Early Warning System & Evacuation



Learning Objectives:

At the end of this session the participants would be able to:

1. Understand the importance of warning system;
2. Explain the process of evacuation.



Key Concepts:

- Early Warning System - is the relay to individuals, groups or populations of messages, which provide them with information about the existence of danger and that what can be done to prevent, avoid or minimize the danger.
- Evacuation - is an organized movement of people from an area of risk to a safer location.



References:

1. Asian Disaster Preparedness Center, Community Based Disaster Management – 10 Course Hand-outs, July 8 – 19, 2002.
2. Natural Disasters Organization, 1992, Australian Emergency Manual, Community Emergency Planning Guide 2nd edition.
3. UNDRO, 1987, Disaster Prevention & Mitigation, A compendium of current knowledge, vol. 10, public information aspects.
4. Bagyo, Lindol, Bulkan Atbp., A Disaster Management Handbook, CDRC.
5. CDRC Disaster Preparedness Training Proceedings.



Handouts

Early Warning

What is Early Warning?

Early warning is the relay of messages about the existence of danger and what they need to do to prevent, avoid or minimize the danger.

Why do we give warning?

1. To inform about:
 - hazards
 - elements at risk (who and what might be affected)
 - risks
 - the environment
 - potential needs

2. To advise on:
 - means of protection
Example:
Warning on contamination of water sources either from natural or human made activities (contamination due to parasites/bacteria etc., contamination due to mining)

 - means of preparedness
Example:
Preventive evacuation due to severe weather forecast/warning,

 - means of mitigation
Example:
Sandbagging to reinforce the dikes

 - means of response to threat
Example:
Warning that floodwater is about to breach dike that there is need to reinforce dike (sandbag)

3. To instruct:
 - what
 - when
 - how
 - who
 - where

Different forms of giving warning and/or receiving warning

- Village/community meetings

- Verbal or pictorial messages
- Cartoon series
- Radio
- Television
- Newspaper
- Films
- Announcements
- Sirens
- Other indigenous forms and channels

Things to consider when giving warning

1. Inform the people of the different phases of warning and its meanings.
2. Inform or update the evacuees/community of the forecast and the warning using symbols or sounds that everybody can understand.
3. "Information Boards" can be placed in strategic or conspicuous areas/places like:
 - mosque, schools or government buildings, mountains or high places
 - stores / transportation facilities
 - other places where people frequently pass or gather
4. Organize a committee on information. The task of this committee will be to monitor and prepare all paraphernalia for the dissemination of information regarding the warning/forecast or the monitoring of all hazards (natural or human-made).

The flow of information from the "field" until it is processed and packaged for information dissemination to the community should be clear.

5. Identify roles and responsibilities. Two methods of describing these roles and responsibilities can be used by the information committee:
 1. List organizations involved and describe their roles for each hazard
 2. List hazards and identify the lead/support organizations for each hazard
6. The warning should be:
 - Area /target sector/people specific
 - Hazard specific
 - Based on the Hazard, Capacity and Vulnerability Assessment
 - Able to give advise on what to do
 - Able to inform community of the possible effects / risks that may cause them if they don't follow or do what is advised
7. Community should know the meanings of actions to be taken or recommended action should be specific like: pack-up things, proceed to pick-up point or proceed to evacuation site.
8. Warning is given in simple form and in the local dialect.

Evacuation

What is Evacuation?

Evacuation is an organized movement of people from an area of risk to a safer location.

When is the Time to Evacuate?

- Inundation of living areas by flood, storm surge or tsunami
- Volcanic eruption
- Serious damage to construction of homes (typhoon, earthquake, etc)
- Fire
- Situation of armed conflicts/civil war

Phases of Evacuation

1. Warning
2. Order to Move
3. Actual Evacuation
4. Evacuation Center Management
5. Return to former or new place

Plan for Actual Evacuation

1. Identify a safe place for evacuation
2. Identify shortest and safest route
3. Identify and prepare alternative routes
4. Identify pick up points or assembly points for people
5. Place "road signs" along evacuation routes
6. Prepare master list of evacuees and check at each pick-up point if the group is complete
7. Prepare evacuation schedules and groupings in case transportation will be used
8. Set provisions and plan evacuation of animals and other properties of evacuees
9. Organize an Evacuation Committee among community members
10. Identify and prepare requirements during evacuation (transport, gasoline, food, water, medicine, road signs, communication systems, etc.)

Task of Evacuation Committee

Pre-evacuation:

- Prepare evacuation plan including warning system
- Training and education of community members
- Identify and prepare logistical needs for evacuation
- Networking, coordination and resource generation for the purpose of evacuation

During evacuation:

- Give order to move
- Manage logistical needs for the evacuation
- Ensure orderly evacuation
- Act as marshals/guides during evacuation
- Search and rescue

In Evacuation Center:

- Coordinate with health, food, sanitation, security, information committee
- Manage relief operations while in evacuation center
- Networking, public information, advocacy, resource generation

Evacuation Center Management by District

Before

- Criteria for evacuation center selection:
 - Availability of water
 - Accessibility
 - Topography and drainage
 - Available space (people, animals, communal services, etc.)
 - Safety
 - Soil type (drainage/farming)
 - Land rights
 - Site assessment
 - Site planning (latrines, cooking, animals, etc.)

During

- Registration and monitoring of evacuees
- Space assignments to evacuees
- EC management orientation
- Maintain order (people, health, sanitation, garbage disposal, etc.)
- Coordinate delivery of services (relief, medical missions, etc.)
- Provision of information
- Training and education
- Networking and resource generation

After

- Ensure that return is safe or find alternative place
- Repair damages in community
- Clean evacuation site
- Return to community
- If this is not possible, networking, negotiation, advocacy will be necessary to find alternative



New Learning and Reflections:

1. Why do we need to warn people?

2. Can you list examples of a warning system?

3. Can you describe an evacuation process?

Emergency Response



Learning Objectives:

At the end of this session the participants would be able to:

1. Present different activities in emergency response;
2. Explain relief management system;
3. Explain the importance and management of emergency operation center.



Key Concepts:

- Emergency – a situation where there is an immediate threat to life or to the survival of victims (Randolph Kent, Anatomy of Disaster Relief).
- Emergency Operation Center - is a facility for control of operations and coordination of resources. It is the focus of community emergency response and recovery structure. Operational and administrative procedures for the EOC are usually covered in Standing Operating Procedures (SOPs) that lay down prescribed routine actions to be followed by staff during operations. (Australian Emergency Manual, National Disasters Organization).
- Damage Needs Capacity Assessment - DNCA involves a participatory analysis of the disaster event, of the damages it caused, of the immediate needs and priorities of the affected community, and of the remaining capacities people use to cope with the adverse effects.
- Relief - provision of temporary shelter, medical treatment, food and clothing; without these assistance, conditions will deteriorate (Kent).



References:

1. Asian Disaster Preparedness Center, Disaster Management Course Handout.
2. Citizens' Disaster Response Center, Emergency Response Workshop.



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Emergency Response

What is an Emergency?

- A situation where there is immediate threat to life or to the survival of victims (Randolph Kent, Anatomy of Disaster Relief).

Objective

To control further deterioration of the victims' situation.

Activities / Components

- Evacuation
- Evacuation Center Management
- Search and Rescue
- Emergency Health Services
 - ✓ First Aid
 - ✓ Managing mass casualties
 - ✓ Managing severe nutritional deficiencies
 - ✓ Sanitation
 - ✓ Water supply
 - ✓ Personal hygiene
 - ✓ Control of communicable diseases
- Psychological first-aid
 - ✓ Diagnosis
 - ✓ Counseling
 - ✓ Therapy (play, music, movement, etc.)
- Provision of food and non-food items
- Temporary shelter (plastic sheet)
- Emergency repair of critical facilities
- Security measures/tracing/family reunification for cases of displacements
- Legal measures

Requirements

- Logistics
- Damage Needs Capacities Assessment (DNCA)
- Monitoring and reporting
- Coordination and communication between and among victims and service agencies
- Resource mobilization
- Emergency Operation Center/Committee Formation

When should emergency response commence?

When there is enough monitoring and gathering of relevant and valid data necessary to

serve as basis for interventions.

Damage Needs Capacity Assessment

What is Damage Needs & Capacity Assessment?

DNCA involves a participatory analysis of the disaster event, of the damages it causes, of the immediate needs and priorities of the affected community, and of the remaining capacities people can use to cope with the adverse effects.

Purpose

1. To identify appropriate emergency assistance
2. To receive timely reports from the community level
3. To generate resources: financial, material and human
4. To adequately inform the public on the disaster situation, needs and responses
5. To update the information gathered through the HVCA

DNCA Contains the following data:

1. Disaster Event
 - What happened?
 - When?
 - Where?
 - How?
 - What are other immediate threats? Who will be affected?
2. Damages and Loss
 - Who suffered losses and damages to life and property?
 - What and where are the damages?
 - What facilities and services are disrupted and non-functional?
3. Responses of families and the community
 - What emergency responses have been undertaken by the affected families and community?
 - What services have been given by the government and NGOs?
 - Emergency responses - evacuation, evacuation center management, search and rescue, monitoring of the disaster situation, relief assistance, assessment of damages, needs and capacity.
4. Plans of the affected families and community
 - What are plans to respond to the emergency situation?
 - Who are involved?
5. Needs in the emergency period
 - What emergency services and responses are needed?
 - How many? How much? When?

Relief

What is Relief Delivery?

- Provision of temporary shelter, medical treatment, food and clothing, without these assistance, conditions will deteriorate (Kent).
- Meeting immediate needs for food, clothing, shelter and medical care of disaster victims.
- Assistance given to save lives and alleviate sufferings in the days and weeks following a disaster.
- For creeping or slow-onset disasters, the relief period may be months or even years after (Asian Disaster Preparedness Center).
- Emergency responses whose aim is to ensure the immediate survival of the threatened population (CDRC).

Components of Relief

1. Emergency Health Services
2. First Aid:
 - Managing mass casualties
 - Managing severe nutritional deficiencies
 - Sanitation
 - Water supply
 - Personal hygiene
 - Control of communicable diseases
 - Psychological first-aid
 - Diagnosis
 - Counseling
 - Therapy (play, music, movement, etc.)
3. Provision of food and non-food items
4. Temporary shelter (plastic sheet)
5. Emergency repair of critical facilities

Requirements:

- Logistics
- Damage Needs Capacities Assessment (DNCA)
- Monitoring and reporting
- Coordination and communication between and among victims and service agencies
- Resource mobilization
- Emergency Operations Center/Committee Formation

D. Relief Delivery Operations Process

1. DNCA
2. Planning
3. Resource generation
4. Purchasing
5. Warehousing
6. Repacking

7. Distribution
8. Assessment
9. Reporting

Timely, Appropriate, and Adequate Relief Assistance

Relief assistance is **timely** if it is provided at the critical time, when it is most needed. It can be hours after the onset, or days or weeks or months depending on the situation of victims. For cases of displacement, food assistance is timely when delivered at a time when their food supply is already depleted, not necessarily on their first day at the evacuation center or at the house of relatives. Depletion of food supplies will come a week or two weeks after.

Relief is **appropriate** if it is based on actual needs of disaster victims, the needs determined by reliable and valid information.

Adequacy is also considered in assessing relief assistance. It refers to the quantitative relationship of inputs to actual requirements.

Emergency Operation Center (EOC)

What is an EOC?

An Emergency Operation Center (EOC) is a facility for control of operations and coordination of resources. It is the focus of community emergency response and recovery structure. Operational and administrative procedures for the EOC are usually covered in Standing Operating Procedures (SOPs) that lay down prescribed routine actions to be followed by staff during operations. (Australian Emergency Manual, National Disasters Organization)

Tasks of an EOC

1. Collection and analysis of data for public information and warning
2. Emergencies Assessment or Damage Needs Capacities Assessment (DNCA)
3. Identification of risks and problems
4. Identification of services needed
5. Delivery of relief goods and other services
6. Networking and Management of media and other concerned groups and individuals

Criteria in Locating an EOC:

- 1) Located in a safe site
 - from physical damage
 - from public/press
 - from unauthorized visit and burglars
- 2) Accessible
- 3) In a known location
- 4) Prepared
- 5) Open plan
- 6) An alternative physical center should be identified

Factors / Items to consider in operating an EOC

1. Personnel trained in emergency response
2. A Manager or Coordinator who heads the operation. If not, a committee or group of people assigned to manage the operation Centre
3. Arrangements for receiving, collating and assessing information and for facilitating decision-making
4. Work space and office equipment (desk, seats, tables, etc.)
5. Other logistical requirements (food, sleeping quarters, rest area etc.)
6. Emergency equipment related to:
 - First aid
 - Search and rescue
 - Emergency foods

Additional considerations are:

- Storage space
- Vehicle access

- Parking arrangements
- Emergency power supply
- Arrangements for official visitors to be briefed and nearby facilities for briefing media

It is also important that arrangements are maintained for the emergency operation center to be activated on short notice and for designated staff to be alerted accordingly. The building to be used as an emergency operation center must be clearly identified and made ready as well as periodically checked, to ensure that all is ready to be mobilized.



New Learning and Reflections:

1. Describe the Damage Needs and Capacity Assessment process?

2. What are the functions of an Emergency Operation Center?

3. Describe the relief delivery operations process?

Disaster Risk Management Plan at the District Level

Modular Objectives:

1. Explain the component and process in formulating the disaster risk management plan;
2. Come up with a district disaster risk management plan.

Number of Sessions: 2

Session 1 – Disaster Risk Management Plan

Session 2 – Actual Disaster Risk Management Planning

If you Fail to plan - You Plan to fail

Disaster Risk Management Plan



Learning Objective:

At the end of this session the participants would be able to:

1. Explain the component and process in formulating the disaster risk management plan.



Key Concepts:

- Disaster Risk Management Planning



References:

1. Handouts on Community Based Disaster Management Training for Ceylon Chamber of Commerce & Public Sectors by UNDP Sri Lanka & South South Unit – Regional Center, Bangkok.



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Disaster Risk Management Plan

A. Why Plan?

If participatory risk assessment unites the district in understanding their risks (hazards, vulnerabilities, capacities), elements at risk and why these are at risk, local coping strategies and resources, the disaster risk management plan unites the district in commitment and actions to reduce these risks.

Disaster Risk Management Plan is a blueprint or guide in charting the district / community's progression to safety, disaster resilience and community development (sustainable and equitable).

B. What to plan?

Using the results of the risk assessment, the plan contains measures, activities to reduce vulnerabilities and increase capacities to reduce disaster risks.

The plan contains the mix of do-able structural and non-structural measures or interventions necessary for the community's safety, protecting and strengthening well being and development at the individual, household and community levels.

Immediate, short-term, medium-term and long-term activities and measures are identified together with the supporting mechanisms to make the plan a reality.

How to plan?

Key steps in formulating the Disaster Risk Management Plan:

1. Participatory Risk Assessment
2. Identify objectives and targets (aims and goals)
3. Identify risk reduction measures (strategies in the pre-, during emergency, post-disaster phase)
4. Determine resources needed
5. Assign responsibilities for activities
6. Determine schedules and deadlines
7. Lay down operational policies and procedures
8. Identify and address critical elements and barriers to plan implementation
9. Discuss with and gather commitment and support of district line agencies and other stakeholders
10. Implementation, period review and plan improvement

Parts of Disaster Risk Management Plan

- Brief description of the Community (Location, population, livelihood, etc.);
- Community disaster situation (summary of the disaster history, risk assessment results, elements at risk and reasons of vulnerability);
- Objectives and targets (target of number of population to cover, decrease in loss/damage);
- Strategies and activities for risk reduction: (pre, during and post disaster activities, early warning system, evacuation sites, routes and procedures for human and livestock evacuation, structural and non-structural mitigation measures);
- Roles and responsibilities; (fixation of roles and responsibilities of district authorities and line departments);
- Schedules and timetables: (when will the activities initiate and completed);
- Maps, tables and matrices from community risk assessments and planning;
- List of addresses and contact numbers of residents, media organizations, district authorities and line departments;
- Inventory of vital resources for preparedness activities;
- Operational procedures and policies;
- Evacuation procedures and Emergency Operations Center.

Guidelines for Disaster Risk Management Plan:

- Aims and objectives of plan
- Assessment of districts / community (what are the weaknesses and strengths and what are the available resources and vulnerabilities)
- Relationship of the plan with national disaster management and other agencies
- Warning systems (what kind of early warning systems are used for various disasters and how do they operate and who does what when warnings are received)
- Evacuation Procedures (who authorizes evacuation and when, what are the routes to be followed and who will look after the most vulnerable people in the community)
- Emergency Shelters (where will they be, what kinds of buildings will be used, what equipments are available and who is responsible, who will manage the shelters and how)

- Search and Rescue (who is responsible, what equipment is available and where it is)
- Damage/needs assessment (who is responsible and how will it be done)
- Road/Debris Cleaning (who is responsible, what equipment is available and where it is)
- Communication (how will the community be in contact with outside world after the disaster, what other means are available)
- Law and Order/Security (who is responsible)
- Transport (who is responsible for arranging transport, what kinds of vehicles are available and where they are, what arrangements can be made with the owners of the vehicles before disaster)
- Repair of community services (electricity, water, telephone)
- Health (who will coordinate first aid assistance, what clinics, medicines and equipments are available)
- Welfare (what will be done to provide shelter, food and clothing for those who need it)
- Relief supplies (who will identify the most needy and how it will be done, how relief supplies can be obtained, who is responsible for obtaining and distribution)
- Outside Assistance (what is available, how are requests made, who is responsible for making requests)
- Testing the Plan (how will this be done)
- Revision and Updating the Plan (how often this will be done, how it will be done and who will be involved)
- Publicizing the plan (how will this be done, how will community give their inputs)
- Risk reduction activities (how will these be identified, who will carry out these activities and how would these activities be funded)

Actual Disaster Risk Management Planning



Learning Objective:

At the end of this session the participants would be able to:

1. Come up with the district disaster risk reduction plan.



Key Concepts:

- Actual Disaster Risk Management Planning

LAST WORD ON PLANNING

A Plan must therefore
be written,
so that it will be remembered;
Simple,
so that it can easily be followed;
Communicated,
so that everyone will know about it;
Tested,
so that its theory can be proved;
Revised Regularly,
So that it will be up-to-date;
and
easily Accessible to those who need it.

Planning does not achieve worthwhile results
Results are achieved through action

*Source: ADPC/MDRN Planning Concepts and Disaster PMP
Management Framework*



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Sample Format

Disaster Risk Management Plan

Objectives:

Hazard:

Elements At Risk	Activities	Schedule/ Timetable	Responsible	Resources		Support Agency
				Existing	To Look For	
	Before Disaster					
	During Disaster					
	After Disaster					

Instructions:

1. Using the format above, what are the hazard present in the area? (Earthquake, landslide, flood, drought or cyclone)
2. What is the objective of the plan? What is the goal?
3. What are the elements at risk? (Lives, health, crops? Houses? Etc)
4. What will be the activities before, during and after each disaster
5. Timetable – when will this plan be implemented?
6. Who will be responsible?
7. What resources are available and what are the resources to look for?
8. Who will be the supporting agency ?



New Learning and Reflections:

1. Can you describe the Disaster Risk Management Planning Process?

2. What do you think should be the contents of your Disaster Risk Management Plan?



United Nations Development Programme - Pakistan

House No. 12, Street No. 17, Sector F-7/2, Islamabad, Pakistan.

Phone: +92-51-8255600 Fax: +92-51-2655014

Web: www.undp.org.pk