Aga Khan Agency for Habitat

Training Manual on Community-based Disaster Risk Management



List of Abbreviations

ADB	Asian Development Bank
AI	Artificial Intelligence
AKAH-P	Aga Khan Agency for Habitat-Pakistan
CBDRM	Community-Based Disaster Risk Management
CBEWS	Community-Based Early Warning System
CBOs	Community-Based Organizations
CCA	Climate Change Adaptation
CERT	Community Emergency Response Team
CHS	Core Humanitarian Standard
CNIC	Computerized National Identity Cards
CPMS	Child Protection in Humanitarian Action
CSOs	Civil Society Organizations
CVA	Cash and Voucher Assistance
DDMA	District Disaster Management Authority
DMCs	Disaster Management Committees
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
ECHO	European Civil Protection and Humanitarian Aid Operations
EOC	Emergency Operations Centre
EWS	Early Warning System
FbF	Forecast-Based Financing
FGD	Focus Group Discussion
FSP	Financial Service Provider
GBV	Gender-Based Violence
GHG	Green House Gases
GLOF	Glacial Lake Outburst Flood
GPS	Global Positioning System
IASC	Inter-Agency Standing Committee
IEC	Information, Education, and Communication
KII	Key Informant Interview
MEAL	Monitoring, Evaluation, and Learning
MEC	Multipurpose Emergency Cash

MHVRA	Multi-Hazard, Vulnerability, and Risk Assessment
MPEC	Multi-Purpose Emergency Evacuation Center
NbS	Nature-Based Solutions
NDMA	National Disaster Management Authority
NGO	Non-Government Organizations
NIDM	National Institute of Disaster Management
OCHA	Office for the Coordination of Humanitarian Affairs
PDMA	Provincial Disaster Management Authority
PFA	Psychological First Aid
PGI	Protection, Gender, and Inclusion
PLW	Pregnant and Lactating Women
PRA	Participatory Rural Appraisal
PWD	Persons with Disabilities
SADD	Sex and Age Disaggregated Data
SAR	Search and Rescue
SDGs	Sustainable Development Goals
SFDRR	Sendai Framework for Disaster Risk Reduction
SOP	Standard Operating Procedure
UC	Union Council
UCDMC	Union Council Disaster Management Committee
UCDMP	Union Council Disaster Management Plan
UNDP	United Nations Development Programme
UNDRR	United Nations Office for Disaster Risk Reduction
VC	Village Council
VDMC	Village Disaster Management Committee
VDMP	Village Disaster Management Plan
WASH	Water, Sanitation, and Hygiene
WFP	World Food Programme
WHO EMRO	World Health Organization Regional Office for the Eastern Mediterranean

General Information about the CBDRM Training Manual

Preamble

To improve and standardize its Community-Based Disaster Risk Management (CBDRM) curriculum and training manual, the Aga Khan Agency for Habitat-Pakistan (AKAH-P), together with the National Institute of Disaster Management (NIDM), a think tank of the National Disaster Management Authority (NDMA), worked on updating the CBDRM training curriculum. The objective was to incorporate emerging hazards associated with climate change, evolving risks, and key fundamental concepts to ensure that local government officials and at-risk communities receive improved and standardized CBDRM training.

This training manual serves as a standard curriculum to be used across Pakistan, promoting a consistent approach to CBDRM. While government and non-government stakeholders are encouraged to adapt the content to fit their local geographical and socio-economic conditions, NIDM strongly recommends following the core CBDRM process outlined in this training manual. Doing so will ensure uniformity in forming disaster management committees, conducting participatory risk assessments, and disaster management planning using standard templates. It will also enable NIDM to maintain a record of trained community volunteers and local government officials, helping NDMA, PDMAs, and DDMAs to effectively engage these trained individuals during emergencies.

In its capacity, CBDRM has been initiated as one of the core programmes undertaken by the AKAH-P. Through this programme, AKAH-P has trained over 50,000 volunteers across different regions by imparting a series of CBDRM and Community Emergency Response trainings, conducting mock exercises, forming committees, and equipping them with emergency response equipment. Due to these training initiatives, there are now 191 professionally trained Community Emergency Response Teams (CERTs) in mountain, coastal, rural, and urban settings of Central and Southern Pakistan. Additionally, emergency response kits were provided to CERTs, which are comprised of professionally trained disaster responders, to assist individuals in the best and most timely manner in the event of an emergency.

To further strengthen the capacities of community volunteers and disaster management committees, AKAH-P decided to revise its CBDRM curriculum. For this purpose, AKAH-P partnered with NIDM/NDMA to jointly revamp and standardize the training curriculum.

An Overview of the Training Manual

The current training curriculum was developed following a comprehensive needs assessment conducted at the national, provincial, and district levels, followed by a series of discussions at the community level with key stakeholders of the CBDRM and CERT training manuals, as well as individuals who will undertake the CBDRM training in the future. The purpose of this evaluation was to revise the existing CBDRM curriculum, identify its shortcomings, and include new concepts and recommendations, so that the learning process could be changed based on new tools and methods. As a measure to facilitate this, a schedule of Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) were carried out at the following levels:

S #	Date	Activity	Location
Consultations at the National Level			
1	30 April 2025	One-day consultation workshop at NIDM/NDMA	Islamabad
Consultations at the Provincial/State Level			
2	22 May 2025	FGD conducted at Provincial Disaster Management Authority, Khyber Pakhtunkhwa, and other key stakeholders, including Rescue1122, Civil Defence, RR&SD, and Academia	Peshawar
3	30 May 2025	FGD was conducted at the Gilgit-Baltistan Disaster Management Authority, along with participants from Rescue1122, GBDMA, and PRCS	Gilgit
4	12 June 2025	KII conducted at the Provincial Disaster Management Authority, Sindh	Karachi
5	18 June 2025	FGD conducted at the State Disaster Management Authority, Azad Jammu and Kashmir, along with participants from PRCS, Rescue1122, Civil Defence, Academia, I/NGOs, and UN.	Muzaffarabad
6	24 June 2025	FGD conducted at Provincial Disaster Management Authority, Punjab, along with participants from PDMA, Civil Defence, Rescue1122, Academia, and I/NGOs.	Lahore
Consultations at the District and Further at Community Levels			
7	23 May 2025	FGD conducted at District Peshawar with the master facilitators and AKAH-P staff	Peshawar
8	26 May 2025	FGD conducted at District Upper Chitral with the community volunteers and CERT facilitators	Garam Chashma
9	27 May 2025	FGD conducted at District Lower Chitral with the master facilitators and AKAH-P core staff	Chitral
10	27 May 2025	KIIs conducted with DDMU, Rescue 1122, and Civil Defence officials	Chitral

11	28 May 2025	FGD conducted at District Upper Chitral with the master facilitators and AKAH-P core staff	Bonni
12	28 May 2025	KIIs conducted with DDMU, Rescue 1122, and Civil Defence officials	Bonni
13	29 May 2025	FGD conducted at District Upper Chitral with the community volunteers and CERT facilitators	Brep
14	30 May 2025	FGD conducted at District Ghizer with the Community Volunteers and CERT Facilitators	Gupis
15	2 June 2025	FGD conducted at District Gilgit and Ghizer with the master facilitators and AKAH-P core staff	Gilgit
16	2 June 2025	FGD conducted at District Gilgit with the Community Volunteers and CERT Facilitators	Gilgit
17	12 June 2025	FGD conducted at the Regional Office Sindh with the master facilitators and AKAH-P core staff	Karachi
18	13 June 2025	KIIs conducted with Rescue 1122 and PRCS officials	Karachi
19	14 June 2025	FGD conducted at District Karachi with the Community volunteers and CERT facilitators	Karachi

Based on the findings and recommendations of the needs assessment, the table of contents was finalized and approved by NIDM/NDMA and AKAH-P.

The draft training manual has been finalized with the feedback from the National Disaster Management Coordination Forum, NIDM, AKAH-P, and a validation workshop that included input from a wide range of government and non-government stakeholders.

Objectives of Developing a Training Manual

The purpose of the development of the CBDRM Training Manual is associated with the following main objectives:

- Further educate the members of the disaster-affected communities, particularly local volunteers and local government officials, on how to handle emerging natural and human-induced hazards using their own available resources.
- Provide a standardized national training curriculum that can be customized to meet the specific needs of each province and district, ensuring consistency across the country, while allowing flexibility to adapt to local context and priorities.
- Integrate emerging concepts, climate-sensitive approaches to risk, and the use of modern tools and techniques into the CBDRM training to make it more dynamic,

practical, and aligned with the evolving nature of disasters and climate-related challenges.

- Promote a modular, participatory, and inclusive training approach that allows flexibility in scheduling, making it easier for both participants and master facilitators to take part without disrupting their regular responsibilities.
- Continue to roll out credit-hour certifications to train the locals and, in particular, the youth as a way of developing their competencies and employment opportunities.

Target Audience of the CBDRM Training Manual

This training manual is designed to benefit target groups working at the local level who are involved in delivering CBDRM training or implementing CBDRM-related projects within communities:

- Community Volunteers
- AKAH-P Core Staff and Master Facilitators
- Community Emergency Response Teams
- Village Emergency Response teams
- Facility Emergency Response Teams
- Village Disaster Risk Management Committees
- Union Council Disaster Risk Management Committees
- Municipal Committees
- Local Government and Rural Development
- International/Local NGOs and Civil Society Organizations
- Provinces and Districts Disaster Management Authorities

Structure of the CBDRM Training Manual

The training manual has been designed with the understanding that master trainers and community volunteers are often busy with their daily routine work and cannot attend or deliver long training courses. To make it easier, the manual is divided into 07 modules and further 39 sessions that can be completed one module at a time, rather than covering all modules in one go.

The training manual is available in both English and Urdu, enabling a broader audience to access it. The use of simple language, as well as illustrations and photographs, has been incorporated to enhance clarity and ease of comprehension.

The manual also guides lesson planning and includes references to additional materials, helping facilitators and participants understand the content of each session.

Module Overview

As mentioned above, the training manual is organized into seven separate modules, each following the standard process typically followed in the CBDRM process. Every module clearly explains its purpose and what participants are expected to learn by the end of it.

To help manage time effectively, credit hours are assigned to each module, allowing facilitators and participants to plan their sessions accordingly. Each module also includes a list of sessions it covers, giving a clear overview of the topics that will be discussed.

This structure is designed to guide both facilitators and participants, helping them stay on track and be better prepared for what they will learn in each part of the training.

Standard Session Format

Each module consists of different sessions. The sessions are arranged in a way that makes it easy for readers to follow and see how each session connects to the next session. Each session is designed in the following way:

- **Session Title**
  Clear, descriptive title aligned with session content.
- **Session Objectives**
  Specific objectives that shall be derived from the session.
- **Duration**
  Suggested time in minutes or hours.
- **Facilitation Methodology**
  Suggested activities to conduct participatory training
- **Training Aids Required**
  Material like flipcharts, markers, a projector with a screen, printed handouts, case study sheets, etc.
- **Methodology / Training Approach**
  Participatory and active learning methods such as brainstorming, group discussion, audio/video visual use, case studies, mapping exercises, web-based exercises, table-top exercises, energizing activities, Quizzez, role play, simulations, demonstrations, hands-on practice, etc.
- **Useful Tips for the Facilitator**
  Key suggestions for facilitators to enhance teaching methodologies
- **Background Material of the Session**
  Supported material required for reading by the participants that shall be covered in the given session
- **Self-Assessment / Key Questions & Answers**
  3–5 short questions (MCQs, long and scenario-based) to assess the participants' understanding.
- **References**
  Training manuals, guidelines, policies, case studies, relevant handbooks, or digital tools.

Duration of Training Courses

To cover all the modules and sessions, the training may take around 9 to 10 days. However, it is often challenging for master trainers, community volunteers, and local government officials

to attend the complete training at once due to their regular work responsibilities. Therefore, it is recommended to organize the training in separate modules over a period of time, allowing participants to attend based on their availability. This flexible approach will help ensure better participation and learning outcomes.

Agenda of the Training Course

As mentioned earlier, it is not possible to cover all modules in a single training. Therefore, module-wise training courses have been proposed, with separate agendas for each module to determine the appropriate course duration. The following section outlines the module-wise topics and corresponding session titles:

Module One: Understanding Disaster Risk and Climate Impacts in Pakistan's Diverse Context

Session 1.1: An Orientation of Basic Terms and Concepts Used in Disaster Management

Session 1.2: Disaster Risk Profile of Pakistan

Session 1.3: Climate Change and its Impacts on Communities

Session 1.4: Localizing Sendai Framework and SDGs in CBDRM

Module Two: A Conceptual Framework of the Community-Based Disaster Risk Management

Session 2.1: Overview of the CBDRM Approach

Session 2.2: Importance of Community Mobilization, Rapport Building, and Local Knowledge

Session 2.3: Community Sensitization and Formation of Disaster Management Committees

Module Three: Participatory Risk Assessment Process

Session 3.1: An Overview of the Participatory Risk Assessment Process

Session 3.2: Use of Participatory Rural Appraisal Techniques for Hazard, Vulnerability, Capacity, and Risk Assessment

Session 3.3: Introduction to Digital Tools, Mobile Applications, and AI Tools for Data Collection

Module Four: Participatory Disaster Management Planning

Session 4.1: An Introduction to Disaster Management Planning at the Community Level

Session 4.2: Stakeholder Analysis for Disaster Management Planning Process

Session 4.3: Resource Mobilization for Disaster Management Planning and its Implementation

Session 4.4: Developing Disaster Management Plans at the Community Level

Session 4.5: Inclusive Planning, Engaging Women, The Elderly, Children, Persons with Disabilities, and Marginalized Groups

Module Five: Strengthening Emergency Response Mechanisms at the Community Level

Session 5.1: Introduction to Emergency Response Management

Session 5.2: Hands-on Exercises on the Medical First Response

Session 5.3: Hands-on Exercises on the Fire Emergencies

Session 5.4: Hands-on Exercises on the Search and Rescue

Session 5.5: Techniques for Water Rescue

Session 5.6: Avalanche & Debris Flow Search and Rescue

Session 5.7: Psychological First Aid

Session 5.8: Camp Management

Module Six: CBDRM in Action: From Planning to Implementation

Session 6.1: Integrating Anticipatory Actions in Community DRR Planning

Session 6.2: Community-Based Climate Adaptation

Session 6.3: Community-based Early Warning Systems

Session 6.4: Digital Preparedness and Mobile-Based Early Warning

Session 6.5: Gender and Child Protection in Emergencies

Session 6.6: Promotion of the CBDRM Approach Among the Coastal Communities

Session 6.7: Disability Inclusive DRR

Session 6.8: Promotion of the CBDRM Approach Among the Drought-Prone Areas

Session 6.9: Participatory Approaches for Promoting Nature-Based Solutions

Session 6.10: Livelihood Protection and Recovery

Session 6.11: Gender and Social Inclusion in the CBDRM Process

Session 6.12: Community-Based Urban Disaster Risk Management

Module Seven: Institutionalization and Sustainability of CBDRM

Session 7.1: Enhancing Capacities of the Disaster Management Committees through Training, Drills, and Simulation Exercises

Session 7.2: Linking Local Disaster Management Committees with the Government and NGOs

Session 7.3: Participatory Monitoring and Evaluation for Implementation of the CBDRM Projects

Session 7.4: Establishing Community DRR Funds and Resource Mobilization

Knowledge Assessment

At the beginning of each training course, participants will be offered a pre-test, which will primarily consist of objective questions (mainly in the form of multiple-choice questions) and some open-ended questions to assess participants' knowledge and understanding. Likewise, a post-test in the form of an examination would also be conducted at the end of the same module to determine the extent of understanding and learning status of the participants. The tests are also formally scored to provide participants with a sense of motivation and to help them relate more closely to the training content.

References for each module have been provided at the end of each session. Besides, there is also an additional blank sheet where participants can write personal notes or remarks, allowing them to write down their thoughts, reflections, or anything they would like to add.

Module One:

Understanding Disaster Risk and Climate Impacts in Pakistan's Diverse Contexts



Module One:

Understanding Disaster Risk and Climate Impacts in Pakistan's Diverse Contexts

Objectives

By the end of this module, participants will be able to:

- ⇒ Knowing the basic concepts and terms used in disaster management.
- ⇒ Describe the disaster risk profile of Pakistan, highlighting prevalent natural and human-induced hazards and vulnerabilities that drive these risks.
- ⇒ Analyze risk factors across urban, rural, mountainous, coastal, and conflict-affected areas, recognizing the social, economic, and geographic diversities in climate and disaster exposures and available capacities.
- ⇒ Explain how climate change impacts ecosystems and communities in Pakistan, focusing on trends such as extreme weather events, glacial melt, droughts, and floods.
- ⇒ Apply the principles of the Global Commitments, demonstrating how to localize their goals and priorities through participatory CBDRM practices.

- ❖ Credit hours covered:
- ❖ Time required for this module: Five hours

Sessions to be covered in this module

Session 1.1: An Orientation of Basic Terms and Concepts Used in Disaster Management

Session 1.2: Disaster Risk Profile of Pakistan

Session 1.3: Climate Change and its Impacts on Communities

Session 1.4: Localizing the Global Commitments in the CBDRM Practices

Proposed Agenda of Module One

Time	Duration	Title of the Session	Facilitation Methodology
9:00 AM – 9:30 AM	30 minutes	• Registration and introduction • Training objectives and overview	• Formal session • Formal ceremony • Welcome by organizers • Announcement of administrative arrangements • An overview of the training
9:30 AM – 11:00 AM	01 hour 30 minutes	**Session 1.1:** An Orientation of Basic Terms and Concepts Used in Disaster Management	• Group work • Interactive lecture • Open discussion • Q/A
11:00 AM – 11:15 AM	***15 minutes***	***Working Tea***	
11:15 AM – 12:00 PM	45 minutes	**Session 1.2:** Disaster Risk Profile of Pakistan	• Group work • Interactive lecture • Video clips of various disasters occurred in Pakistan, • Open discussion • Q/A
12:00 PM – 01:00 PM	***60 minutes***	***Lunch Break***	
01:00 PM – 01:45 PM	45 minutes	**Session 1.2:** Disaster Risk Profile of Pakistan **(Session 1.2 continue)**	• Group work • Interactive lecture • Video clips of various disasters occurred in Pakistan, • Open discussion • Q/A
1:45 PM – 3:00 PM	01 hour 15 minutes	**Session 1.3:** Climate Change and its Impacts on Communities	• Group work • Interactive lecture • Video show on the climate change impact in Pakistan • Open discussion • Q/A
3:00 PM – 3:15 PM	**15 minutes**	**Tea Break**	
3:15 PM – 4:00 PM	45 minutes	**Session 1.4:** Localizing the Global Commitments in the CBDRM Practices	• Interactive lecture • Open discussion • Q/A
4:00 PM – 4:15 PM	15 minutes	Training evaluation	
4:15 PM – 4:30 PM	15 minutes	Closing ceremony Certificate distribution	



Session 1.1: An Orientation of Basic Terms and Concepts Used in Disaster Management

Session Objectives

At the end of this session, the participants will be able to:

- Define and explain the key terms and concepts in the disaster management cycle.
- Differentiate between the terms to clarify their distinct meanings.
- Collect and discuss examples from participants to illustrate the concepts.

Duration

01 hour 30 minutes

Facilitation Methodology

Group work, Interactive Lecture, Open Discussion, and Q/A

Training Aids Required

- Whiteboard
- Multi-color markers
- Flip charts
- Flip stand
- Multimedia with laptop and screen
- Masking tape
- Scissors
- Cutter
- Session handouts
- Different photos

Training Approach

Trainers are encouraged to follow the steps outlined below while they facilitate the session:

1. Give the session's introduction to participants. You may refer to the objectives identified at the beginning of the session, as mentioned above. Also, inform participants that the session will include group work in addition to an interactive lecture and a question-and-answer session.
2. Inform participants about the terms and concepts you will be discussing with them. These include. You can write these terms on flip charts and hang them either on the flip stand or on the wall.
3. Before explaining the terms identified above, it will be good to sensitize the participants through an interactive group exercise. For this purpose, divide the participants equally into four groups.

⇒ *Four sets of definitions, along with relevant photos on hard copies, should be prepared in advance. Remove the heading from each definition so that participants can discuss and give an appropriate heading to these definitions. Give them 15 minutes for discussion among the groups. Additionally, please provide them with flip charts and various colored markers, as the participants may be interested in posting on the flip charts.*

4. Ask each group to read the definitions and examine the given pictures, discuss, and provide appropriate headings for each of the photos. Use a color marker to display the headings prominently.
5. After 15 minutes of discussion, ask them to display the photocopies at a prominent place on the wall. They can also hang it on the wall with the help of masking tape.
6. Pay thanks to the participants for their active participation, and start your formal presentation by showing the slides.
7. After that, begin your presentation by displaying the slides with the same pictures and definitions, allowing participants to compare their selected versions with those shown on the screen.

Probing Question: "*While describing the hazards, disaster, and risk, ask participants what differences they could observe in these three terminologies".* Ask participants to give examples for these three terms to make differentiations. The facilitator can provide further examples to clarify these terms.

8. One by one, the facilitator should define each term with examples for more clarity.

Probing Question: "*While describing the mitigation, preparedness, and prevention terms, ask participants what differences they could observe in these three terminologies".*

9. While the facilitator is showing slides, the group members can match their definition with the Trainer's slides and should mark √ an X with the help of permanent markers to see how many correct definitions were identified by the group.
10. After completing the session, the facilitator should ask all four groups to review and compare the correct answers they marked with a "tick". Count those correct answers from each group and recognize the most accurate answers by giving them a round of applause.
11. At the end of the session, pay thanks to all participants for their active participation during the group exercise and discussions.

Note for facilitator regarding the story about community actions for risk reduction

1. Dangerous wild dog = Hazard;
2. Attacks and bites by a dog = Risk;
3. Non-existence of an alternative route = Vulnerability;
4. Death of two children and one woman = Disaster;
5. Carry a stick and stop children from passing through the forest alone = Preparedness;
6. Physically strong and equipped people = Capacity; and
7. Elimination of the dog and construction of a small bridge = Disaster Risk Reduction.

12. After closing the session, distribute a hard copy of the wild dog story given below in the reading material. Ask participants to read the story carefully and identify and write specific words and phrases that refer to any of the following terms and concepts:

    ⇒ *Risks*

    ⇒ *Vulnerability*

    ⇒ *Capacity*

    ⇒ *Disaster*

    ⇒ *Preparedness*

    ⇒ *Disaster Risk Reduction*

13. Ask each group to read the story individually, discuss among the group members, and write their answers on the flip charts. (Group work and presentations should not take more than 15 minutes.)

14. Compare the correct answers and announce them for participants' knowledge and understanding.

Useful Tips for the Facilitator

- Make sure that your presentation includes relevant photographs/sketches for each term and concept.
- While explaining the definitions, share local and straightforward examples so that participants can understand and relate the information easily.
- Encourage participants to share relevant examples concerning any specific definition of terms and concepts.
- Try to stick to the allocated time. Politely remind participants if they are exceeding the allocated time during group discussion.

Background Material of the Session

1.1.1. Introduction

To facilitate course participants' familiarity with the basic concepts and terminology used in the disaster management cycle, some definitions have been incorporated into this session. These concepts will help participants become familiar with the process of managing disasters

and will be applied during the subsequent sessions. More specific definitions can be found at the end of this manual in Annexure I, which has a more elaborate list.

For this purpose, the standard terminologies of the United Nations Office for Disaster Risk Reduction (UNDRR) have been provided to develop a common understanding and further standardize these concepts and terms, thereby avoiding confusion and disagreement. Furthermore, these definitions have been simplified and condensed to be easily understood, retaining their essence.

The course participants are encouraged to carefully read and comprehend these concepts at the beginning of the course, so they can establish a strong conceptual foundation that is expected to maximize their understanding of the different sessions and modules.

1.1.2. Basic terms used in the disaster management cycle

Capacity

Definition: The combination of all the strengths, attributes, and resources available within a community, society, or organization that can be used to achieve agreed goals.



Notes: Capacity can include infrastructure, institutions, human skills, and social networks. It can be individual, collective, or systemic.

Example: A union council equipped with trained volunteers and a contingency plan demonstrates higher response capacity.

Disaster

Definition: Serious disruption of the functioning of a community or a society involving widespread human, material, economic, or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.



Notes: Disasters are not "natural"—they result from unsustainable and unregulated development and unaddressed vulnerabilities.

Example: The 2022 floods in Pakistan were not solely due to rainfall, but also to poor land-use planning and deforestation.

Disaster Management Cycle



Definition: The continuous process of disaster management encompasses three phases: before, during, and after the disaster.

Notes: Due to the harmful effects of climate change, greater emphasis is now placed on taking actions before disasters occur to help communities prepare for emergency response.

Example: Pakistan's National Disaster Management Plan integrates the full disaster management cycle across sectors.

Disaster Risk



Definition: The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society, or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability, and capacity. It can be expressed as:

Risk = Hazard × Vulnerability/Capacity

Notes: Disaster risk includes both direct and indirect losses and is a basis for decision-making in DRR.

Example: Coastal towns face a high disaster risk due to exposure to storm surges and weak infrastructure.

Hazard

Definition: A process, phenomenon, or human activity that may cause loss of life, injury, or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Notes: Includes natural (e.g., earthquake), technological (e.g., chemical spill), and biological (e.g., epidemics) hazards.

Example: Earthquakes, floods, droughts, and GLOFs are significant hazards in Pakistan.



Mitigation

Definition: The lessening or limitation of the adverse impacts of hazards and related disasters.

Notes: Mitigation includes undertaking the structural and nonstructural measures aimed at reducing the risk from disasters.

Examples: Applying building codes, retrofitting, repairing, and elevating homes in flood-prone areas are examples of structural measures. Non-structural measures include enforcing building codes and land use planning, training communities, conducting simulation exercises, and forming disaster management committees.





Preparedness



Definition: The knowledge and capacities developed by governments, response and recovery organizations, communities, and individuals to effectively anticipate, respond to, and recover from the impacts of likely, imminent, or current disasters.

Notes: Includes contingency planning, simulation exercises, training, and the dissemination of early warnings.

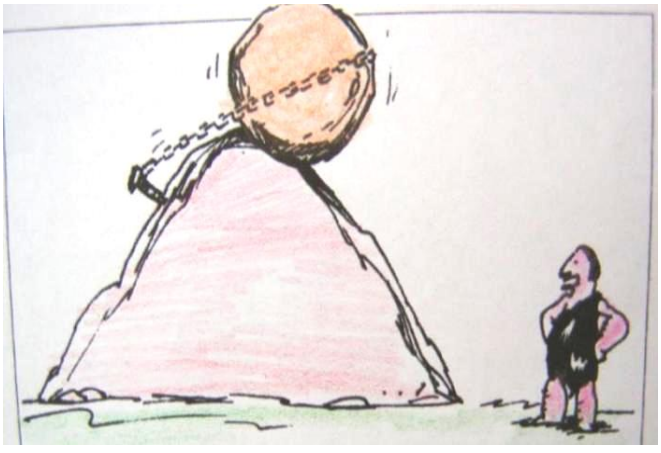
Example: Pre-monsoon stockpiling of tents and hygiene kits in Rajanpur by humanitarian actors.

Prevention



Definition: The outright avoidance of adverse impacts of hazards and related disasters.

Notes: It aims to avoid the occurrence of disasters altogether. However, in reality, this is not always possible—for example, we cannot prevent natural events like earthquakes, floods, or landslides from happening. Still, in certain areas, such as health, the term "prevention" is more applicable—for instance, using vaccinations to control the spread of diseases.



Example: Restricting settlements in hazard-prone areas – e.g., no housing in flood routes, coastal erosion zones, or active fault lines.

Maintaining natural barriers – preserving mangroves, forests, and wetlands to prevent coastal flooding and landslides.

Banning activities that trigger hazards – stopping deforestation, unregulated mining, or sand

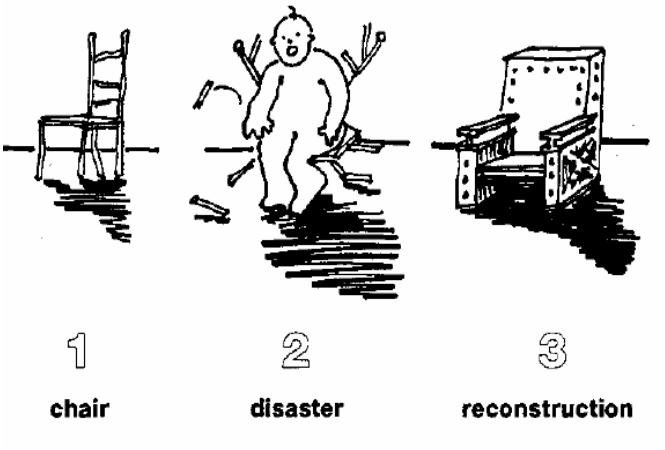
extraction that can lead to floods and landslides.

Reconstruction

Definition: The process of rebuilding and restoring after a disaster to make things better and safer than before.

Notes: The repair, retrofitting, and even rebuilding of infrastructure and housing after the disasters.

Example: This includes repairing or replacing damaged buildings, roads, and services, while also mitigating future risks and enhancing the quality of life for people.



Recovery

Definition: The restoration and improvement, where appropriate, of facilities, livelihoods, and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors.

Notes: Recovery includes early recovery, rehabilitation, and reconstruction, and overlaps with development.

Example: Rebuilding houses, livelihoods, roads, and other essential infrastructure in post-flood districts in Sindh province

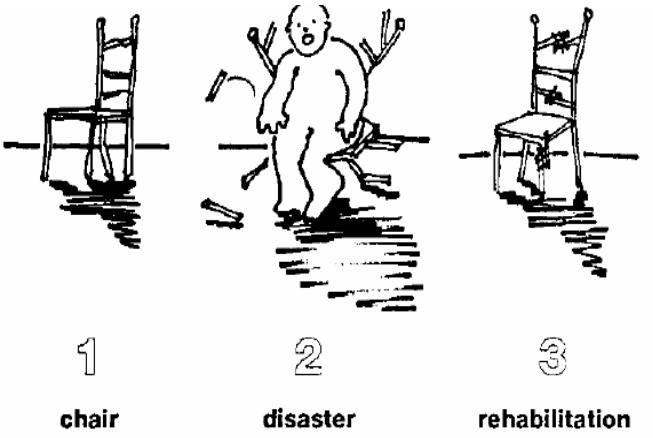


Rehabilitation

Definition: The restoration of basic services and facilities for the functioning of a community or a society affected by a disaster.

Notes: Usually, the medium-term phase is before full recovery and reconstruction.

Example: Restoring irrigation canals and damaged clinics in post-earthquake Balakot.



Relief

Definition: Relief means giving immediate help to people affected by a disaster to meet their basic needs, like food, water, shelter, and medical care.

Notes: Relief can be individual or collective, depending upon the severity of the disaster.

Example: After a flood, government and non-government organizations distribute food, clean water, tents, and medicines to the affected families.



Response

Definition: Response means taking action during or right after a disaster to save lives, protect people, and reduce damage.

Notes: The response can be either individual or collective, depending on the severity of the disaster.

Example: When an earthquake strikes, emergency teams rescue people from collapsed buildings, provide first aid, and assist in evacuating them to safe locations.



Vulnerability

Definition: The conditions determined by physical, social, economic, and environmental factors that increase the susceptibility of people or assets to hazards.

Notes: Vulnerability is dynamic and can be reduced through development, awareness, and infrastructure.

Example: Elderly women in remote villages without road access are highly vulnerable during flash floods.



Self-Assessment / Key Questions & Answers

Q1. Which of the following best defines Disaster Risk?

a). The occurrence of earthquakes, floods, or droughts in a region

b). The potential loss of life, injury, or damage to assets as a result of hazard, exposure,

c). vulnerability, and capacity

d). The process of rebuilding and restoring after a disaster

Correct Answer: B

Q2. Which of the following is an example of Mitigation?

a). Distribution of tents and food after a flood

b). Conducting search and rescue operations during an earthquake

c). Enforcing building codes and retrofitting houses in flood-prone areas

d). Vaccination campaigns to stop the spread of diseases

Correct Answer: C

Q3. In disaster management, Preparedness refers to:

a). Rebuilding houses and roads after a disaster

b). Anticipating and planning actions to effectively respond to likely or imminent disasters

c). Avoiding the occurrence of disasters altogether

d). Providing immediate relief, such as food and water, to affected families

Correct Answer: B

Q4. Which of the following is the correct formula for Disaster Risk?

a). Risk = Hazard + Exposure + Capacity

b). Risk = Hazard × Vulnerability ÷ Capacity

c). Risk = Hazard – Exposure – Vulnerability

d). Risk = Hazard ÷ Preparedness × Mitigation

Correct Answer: B

Q5: Give at least one practical example from day-to-day life to differentiate between a disaster and a hazard?

……

……

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……

Q6: Give at least one practical example from day-to-day life to differentiate between risk and hazard.

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Q7: Define the term disaster management in your own words.

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Q8. Community Actions for Risk Reduction

A dangerous wild dog lived in a forest near the village. People from a nearby village would cross the forest to reach the main town, where they earned their living, received medical treatment, and performed other daily activities. Whenever the villagers crossed the forest, the dangerous dog would attack and bite them. The dog injured too many people, especially elderly people and children. People who were physically strong and equipped with a stick, etc., while walking through the forest would usually remain safe, as the dog would not attack

them. One day, when the children were going to school, the dog attacked and severely injured two of the students. One died on the way to the hospital as he was very seriously injured. Similarly, one day, the dog attacked three women who were going to the nearby BHU for medical treatment, as one of them was pregnant. The dog attacked and seriously wounded the pregnant woman, as she could not run. She could not survive and lost her life as well as lost her baby, who was yet to come to this World. It was an unfortunate event, but there was no alternative route because the poor villagers had very little influence within the political and administrative circles of the main town. Some elders got together and convinced fellow villagers to carry a stick while passing through the forest, and also not to let children and females go alone, especially at night. However, the village youths were not convinced about the temporary arrangements. They discussed various options with the village elders to eliminate the dog. Finally, a unanimous decision was made, and a group of male village members eliminated the dangerous dog. After a few days, they realized that killing the dog was not a permanent solution to the problem, as more stray dogs could arrive and create further issues for them. The local community gathered again and discussed ways to ensure their safety. One of the village elders suggested that constructing a small bridge over a stream could provide an alternative route, bypassing the forest. The village community met their elected representative and requested the construction of the bridge. After a few months, the bridge was constructed, and life became safer for local people.

Task for participants: Read the above story carefully and identify and write specific words and phrases that refer to any of the following terms and concepts:

- ⇒ *Risk*
- ⇒ *Vulnerability*
- ⇒ *Capacity*
- ⇒ *Disaster*
- ⇒ *Preparedness*
- ⇒ *Disaster Risk Reduction*

References

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- National Disaster Management Authority, Government of Pakistan (2012), "Community-Based Disaster Risk Management."
- Provincial Disaster Management Authority, Government of Khyber Pakhtunkhwa (2014), *"Participant's Workbook on Disaster Risk Management."*
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Session 1.2: Disaster Risk Profile of Pakistan

Session objectives

At the end of this session, the participants will be able to:

- Describe the range of natural and human-induced hazards prevalent in the country
- Identify geographic regions most vulnerable to specific types of hazards
- Analyse the socio-economic impacts of major disasters and justify the need for improved disaster risk reduction strategies.

Duration

01 hour 30 minutes

Facilitation Methodology

Group work, Interactive Lecture, Video Clips of Various Disasters Occurred in Pakistan, Open Discussion, and Q/A

Training Aids Required

- Video Clips
- Whiteboard
- Multi-color markers
- Flip charts
- Flip stand
- Multimedia with laptop and screen
- Masking tape
- Scissors
- Cutter
- Session handouts

Training Approach

1. Start the session by welcoming all people and stating the objectives of the session. Inform them about the purpose of the session, that will assist them in learning more about the disaster risk profile in Pakistan, determine which hazards are the most frequent, and discuss why Pakistan is particularly prone to both natural and disasters made with human hands.

   Probing Question: Before starting the session, it is better to ask the following question from the participants to provoke discussion: *"Which of the major hazards do you think pose the greatest risks to your community, and what are the reasons?"*

2. Write down the reflections on the whiteboard and summarize with key points.
3. After the discussion, divide the participants into six small groups by assigning the following hazards.

- Group 1: Earthquake and Landslides
- Group 2: Riverine and Flash Floods
- Group 3: Drought
- Group 4: Landslides
- Group 5: Cyclones
- Group 6: Glacial Lake Outbursts Floods

4. Put the following questions to all groups and give them 30 minutes for discussion, 5 minutes for each group's presentation. The questions are:
    a. What are the key factors contributing to the occurrence of these hazards?
    b. What is the nature and impact of these disasters when they occur?
    c. Which secondary hazards are linked with the primary hazards?
    d. List down the districts that are most vulnerable to these specified hazards?
5. Ask every group to make their notes on flip charts and create a short presentation. Please also encourage them to share local-level learnings and examples from their home communities.
6. Following group presentations, engage participants in a brief discussion by comparing what they have found with the national disaster risk profile. Summarize the key points by videotaping the developed slides to reinforce learning. Reiterate that it is not always possible to avert hazards, but that vulnerability reduction and enhanced preparedness are ways of slashing down disaster risks.
7. Present the Pakistan disaster risk profile by using the PowerPoint presentation. Highlight the country's geographic diversity—mountains, plains, deserts, coastal areas—and explain how this diversity exposes different regions to multiple hazards. Highlight that Pakistan is one of the most vulnerable nations to disasters due to a combination of physical, social, and economic vulnerabilities.
8. The facilitator can also use video clips recorded by various areas to illustrate how these hazards turn into disasters and the impacts on human lives and properties during the PowerPoint slide show.
9. Explain that, only because of hazards, there are no disasters. Instead, disasters are the product of hazards when hazards combine with exposure and vulnerability. Among the drivers that place Pakistan at high risk are a high rate of population growth, uncontrolled urbanization, deforestation, poor infrastructure, climate change, and constrained coping abilities. Give some practical scenarios: the 2005 earthquake, the 2010 super floods, the frequent droughts in Sindh and Balochistan, and the repeated Glacial Lake Outburst Floods in Gilgit-Baltistan.
10. After discussing the natural hazards, discuss further on the human-induced hazards and start with the following question for discussion.

Probing Question: "*In your opinion, what are the main reasons why human-induced hazards are becoming more frequent in Pakistan?"*

11. After a fruitful discussion, share the remaining slides on human-induced hazards and explain with examples from the country.
12. Close the session with a vote of thanks for active participation.

Useful Tips for the Facilitator

- Download video clips from Google or YouTube in advance so that you can show them to participants during the session.
- Include recent disaster photos in your presentations to make them more engaging and to generate discussions around the pictures.
- Try to stick to the allocated time. Politely remind participants if they are exceeding the allocated time during group discussion.

Background Material of the Session

1.2.1. Introduction

Pakistan is vulnerable to a wide range of natural hazards, such as earthquakes, floods, droughts, landslides, tsunamis, cyclones, snow avalanches, and glacial lake outburst floods. In addition, the country also faces human-made hazards, including urban and forest fires, industrial and transport accidents, air crashes, and civil unrest. More than 50 million people have been affected by disasters and damages totaling more than US$24 billion over the last 10 years. This has affected the socio-economic systems and human development to a great extent. Some of the prominent hazards that exist in different parts of the country will be noted in the following sections.

1.2.2. Natural hazards

1.2.2.1. Floods



Urban flooding is growing threats during recent years

The flood hazard occurrence in Pakistan has significantly increased in the last few years, primarily as a result of the effects of climate change and global warming. Because of these, Pakistan has been recently affected by different floods, which occurred in 2010, 2011, 2015, and 2022, thus indicating that floods are turning into repetitive and routine occurrences within the country. Besides riverine flooding, which is a major disaster, other floods that mostly occur in other regions of the country are cloud bursts, flash floods, urban floods, thunderstorms, hailstorms, and coastal floods. Heavy monsoon rain usually leads to floods, and sometimes high volumes of floodwaters in large and other smaller rivers as a result of rapid snowmelt caused by an enhanced temperature. Pakistan has suffered a cumulative financial loss of more than US$38.165 billion

during the past 68 years. Around 12,177 people lost their lives, some 197,230 villages were damaged/ destroyed, and an area of more than 616,598 Sq.km was affected due to 23 major flood events. The floods of 2010, 2011, 2013, 2014, 2015, and 2022 are recognized as the century's most devastating floods, resulting in significant loss of lives and property.

Year	Affected Area (Acre)	Affected Crop Area (Acre)	Villages Affected	People Affected	Animals Perished	Damaged Houses	Persons Died
1992	4,767,523	—	7,108	5,658,498	—	450,000	1,171
1993	798,315	164,340	1,328	261,295	—	1,080 (413 demolished + 667 damaged)	15
1996	—	—	2024	—	—	Many collapsed (exact number not reported)	25–30
1998	—	43,000	100+	200,000	Hundreds of livestock	12,000 (4,000 destroyed + 8,000 damaged)	300
2010	46 districts affected	14 Million	—	~20,000,000	5,584	~1,700,000 homes damaged/destroyed	1700-1985
2011	16 districts of Sindh are affected	Over one million	—	9.6 Million		1.5 Million affected	520
2022	84-90 districts affected	9.4 Million		33 Million	1,164,270	897,000	1739-1760
2024	13 districts affected	58,800		551m100	2,000	78,600	368
2025	08 districts affected (still continue)				6,509	8,481	956

Some of the major districts exposed to flood risk include.

- **Khyber Pukhtunkhwa Province:** Charsadda, Nowshera, Tank, D.I. Khan, Swat, Mansehra, Upper /Lower Dir, and Chitral.
- **Punjab Province:** Multan, Rawalpindi, Jhelum, Gujrat, Rajanpur, Mianwali, Laiyya, and D.G. Khan.
- **Balochistan Province:** Sohbat Pur, Jaffarabad, Naseerabad, Jhall Magsi, Sibi, Harnai, Bolan, Kech, Gwadar, Kharan, Kalat, Khuzdar, Lasbela, Quetta, Pashin, Chaman, Qila Abdullah, Qila Saifullah, and Zhob.
- **Sindh Province:** Jacobabad, Kashmore, Ghotki, Sukkur, Khair Pur, Dadu, Larkana, Qamber Shehdadkot, Karachi, Hyderabad, Sanghar, Shaheed Benazirabad, Umar Kot, Mirpur Khas, Sujawal, Thatta, and Badin.
- **Gilgit Baltistan Province:** Diamir, Hunza, Ghizar, Astore, Gilgit, and Skardu.
- **Azad Jammu & Kashmir Region:** Muzzafarabad, Neelum, Bagh, Kotli & Bhimber.

1.2.2.2. Droughts



Drought hazard is becoming more frequent and unpredictable in Pakistan

Drought in Pakistan is becoming a more frequent and unpredictable phenomenon, mainly because of an increase in lack of rain and changes in temperature, which have significant implications on food security, the environment, livestock production, and natural resources. About 68 percent of the land is considered arid or semi-arid and tends to get less than 200 mm of rain each year. The risk of drought is intermittently imposed on Balochistan, southern Punjab, and some of the regions in Sindh since portions in these regions experience less than 200 mm of precipitation per year.

The Cholistan, Thal, Thar, and Kharan Deserts are considered to be drought-prone in the Pakistani territories. Certain areas in every season are extremely dry and are always prone to drought. The negative deviation in the low mean of rainfall, even to a small magnitude, causes a serious shortage of water and food. The most severe drought in Pakistan occurred between 2000 and 2001. It severely affected around 3.3 million people in Balochistan and Sindh, forced thousands to migrate, and resulted in the death of 1.5 million livestock.

1.2.2.3. Earthquakes

Earthquakes are frequent, particularly in the Himalaya as well as the Karakoram, the portion of the Hindu Kush range, the Koh-i-Sulaiman range in north and west, and also within the Chaman fault line in the city of Quetta and the network of the Makran fault line along the coast. The city is a victim of the Quetta Earthquake of 6.5 on the Richter scale that wiped it out by devouring close to 35,000 precious lives in the wink of an eye. Similarly, in Gilgit-Baltistan, Khyber Pakhtunkhwa, and Balochistan Province 5, 669 precious lives were snatched away between 1974 and 1999. However, what made the biggest sensation concerning the earthquake was the 8th October 2005 mega earthquake, which took the lives of 73,338 people.



Earthquake devastation in urban areas

Areas of Northern Pakistan, particularly Gilgit-Baltistan, Chitral, Mansehra, Battagram, Kohistan, and Upper Dir in the Khyber Pakhtunkhwa Province, are highly at risk of earthquake hazards. Further, large sections of the Azad Jammu and Kashmir Region and districts of Gwadar, Kech, Dalbandin, Turbat, Ziarat, and Quetta in Balochistan are also under significant earthquake threats.

Year	Magnitude	Area affected	Deaths	Injured	Remarks
1935	7.7	Quetta (Balochistan)	30,000	60,000	Quetta city was badly damaged
1974	6.2	Pattan (Khyber Pakhtunkhwa)	5,300	17,000	Pattan, northern Pakistan, including Hunza, Hazara, and the Swat region
2005	7.6	Near Muzaffarabad, Pakistan-administered Kashmir.	86,000	138,000	Massive landslides occurred. People were displaced
2008	6.4	Ziarat (Balochistan)	200		Thousands of mud houses collapsed, and several aftershocks were recorded for weeks.
2011	7.2	Dalbandin (Balochistan)			Moderate damage due to deep focus
2013	7.7	Awaran (Balochistan)	800	855	• Entire villages flattened in Awaran and Kech districts. • Moreover, a small island was created near the Gwadar coast due to mud volcano activity triggered by the earthquake.
2015	7.5	Hindukush	300		Severe tremors were felt across KP, Punjab, and Islamabad.
2019	5.6	Mirpur (AJK)	40		Heavy damage in Mirpur district

1.2.2.4. Landslides

The Azad Jammu and Kashmir, Gilgit-Baltistan, and the northern areas of the Khyber Pakhtunkhwa province are very vulnerable to landslide-related hazards. The deepening incidence of landslides is also caused by the acceleration of deforestation, cultivation, and construction, which is another form of mountain range formation, in addition to the young geology and weak soil type of mountain range formation. Localized small-scale landslides occur frequently in these areas. A massive landslide overwhelmed the village of Attabad, destroying 26 homes, killing 20 people, and damming up the Hunza River in the far-flung Hunza River Valley of Gilgit-Baltistan Province, on the 4th of January, 2010. With the developing lake, authorities made a mad rush to evacuate and provide relief to the landslide area as well as upstream. The lake is currently more than 300 feet deep and about 16km long, and it covers miles of highway, farmlands, and households.

Year	Disaster Type	Key Provinces Affected	Deaths	Injured	Displaced / Affected	Houses & Infrastructure Damage
2010	Landslides & Floods (Hunza Valley)	Gilgit-Baltistan (Hunza, Attabad)	~20	Several	1,600 displaced	43 houses destroyed; 4 km KKH blocked
2011	Monsoon Floods	Sindh, parts of Balochistan	400+	750+	5.8 million (3m highly affected)	1.6m houses destroyed; 2.1m acres of crops lost
2012	Monsoon Floods	Sindh, Punjab, KP,	–	–	5 million people affected	–

		Balochistan, GB				
2015	Floods, Landslides, Flash Floods, GLOFs	KP (Chitral), GB, Punjab, Sindh, Balochistan	238	232	1.57m people	835 camps; 43,000 houses damaged
2016	Heavy Rain, Floods & Landslides	Punjab, KP, Balochistan, FATA, AJK, GB	262	223+	–	2,700 houses
2016	Monsoon Floods & Landslides	KP, Punjab, Sindh	226+	–	–	Thousands of houses
2019	Floods & Landslides	AJK (Neelum, Poonch), KP, Punjab, Sindh, Balochistan	337 (NDMA)	604	Thousands displaced	670+ houses, 18 bridges damaged
2020	Monsoon Floods & Landslides	Sindh, Balochistan, KP, Punjab, GB	409	402	2.27 million people in Sindh; 23,600 in camps	305,000+ homes destroyed; 50,000 acres of crops lost
2024	Monsoon Floods, Landslides, GLOFs	Sindh, Balochistan, KP, Punjab, GB, AJK	368+	700+	551,000 affected; 143,000 displaced	78,600 homes, 1,600 schools, 500 km roads, 40 bridges

1.2.2.5. Tsunami

Historically, the Makran coast has experienced tsunamis, with one of the most notable events occurring in 1945, when a magnitude 8.1 earthquake struck off the coast of Balochistan. The resulting tsunami caused widespread destruction along the coastal areas, including Gwadar, Pasni, and Karachi, claiming over 4,000 lives. This tragic event underscores the severe vulnerability of Pakistan's coastal communities to tsunamis.

The growing population density and infrastructure development in coastal cities like Karachi, Gwadar, and Pasni heighten the risk of catastrophic impacts should another tsunami occur. Many communities remain unaware of the tsunami threat, and early warning systems and preparedness measures are still developing.

1.2.2.6. *Tropical cyclones*

The coastal areas of Sindh and Balochistan Provinces are particularly vulnerable to tropical cyclones and their subsequent storm surges. The number of cyclones recorded from 1971 to 2024 exceeded sixteen. Recent climatic shifts have shown an improvement in the level of storms nationwide. Such examples are the 2008 Yemen and Phet Cyclones.



Cyclones are becoming more frequent in Pakistan due to climate change

Districts in Balochistan, such as Gwadar, Kech, and Lasbela, as well as districts in Sindh, including Karachi, Badin, Sujawal, and Thatta, are vulnerable to tropical cyclones.

Year	Month	Cyclone	Affected Areas	Deaths	Evacuated / Displaced
1999	May	Cyclone 02A	Sindh (Badin, Thatta, Indus Delta)	191–200+ (hundreds missing)	600,000 affected, 50,000 houses destroyed
2007	June	Cyclone Yemyin	Sindh & Balochistan (Karachi, Gwadar, Turbat)	380+	250,000+ displaced, 2.5m affected
2010	June	Cyclone Phet	Sindh (Thatta, Bhanbor, Badin)	10	7,000 evacuated
2019	June	Cyclone Vayu (indirect)	Sindh Coast	–	–
2021	May	Cyclone Tauktae (indirect)	Sindh, Karachi coast	–	–
2023	June	Cyclone Biparjoy	Sindh (Badin, Thatta, Sujawal, Karachi)	6+	82,000 evacuated

1.2.2.7. *Glacial lake outbursts flood*

A recent research identified that of 2,420 glacial lakes in the Indus basin, 52 lakes are potentially dangerous and may cause a large GLOF and cause serious threats to lives and properties. The study has also indicated that global warming can increase the potential of GLOF in the future.



GLOF carry massive debris, boulders, devastating everything in their path

Historical records indicate that GLOF events have been experienced in the Ghizer Valley and Ishkoman region in

1960, and in the Hunza region in 1992-93. The Karakoram Range is usually with higher altitude and can be said to have been on the outside of the climate changes but that the number of GLOF events that took place in this area of Gojal Tehsil within the Hunza River Basin in a very short period (2007-2008) was five in number is a really worrying thing as it put the lives of downstream communities in danger.

1.2.2.8. Snow avalanches

A snow avalanche is a sudden, rapid flow of snow, ice, and debris down a mountain slope, often triggered by heavy snowfall, rapid temperature changes, deforestation, or human activity such as construction and movement in high-altitude areas. Avalanches are one of the most devastating winter hazards in the north and hilly areas of Pakistan, which often result in loss of life, destruction of infrastructure, and livelihoods.



Snow avalanches occur frequently in the Northern regions of the country

In Chitral, the area is affected periodically in severe winter conditions, when avalanches are a reality, especially in the upper valleys. During winter storms, several villages have been isolated, and avalanches have killed people, blocked the roads, and caused many casualties. Climate change, based on the change of snowfall patterns and snowpack instability, puts communities in such high-altitude areas at a greater risk.

Avalanching disaster has also left a tragic testimony of devastation when, in 2012, a large snow avalanche engulfed a complete Pakistan army camp in the Gayari sector near Siachen. More than 140 people have died, including soldiers and civilians, in one of the deadliest avalanche disasters in the country in recent times. The Gayari tragedy revealed the high vulnerability of high-altitude regions to avalanches and the enormous difficulties in rescue efforts in harsh climatic conditions.

1.2.2.9. Snowstorms



In January 2022, a snowstorm in Murree claimed the lives of approximately 23 people.

In Murree, snowstorms/blizzards and excessive snowfall have often trapped tourists and residents. The Murree incident of January 2022, which was mainly due to never-before-seen snowfall and insufficient preparedness, showed how snow collectively in the steep areas can lead to road blockages,

vehicle stalling, and a capacity crunch, claiming scores of lives.

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1.2.2.10. Locust

The Locust is one of about a dozen species of short-horned grasshoppers that are known to change their behavior and form swarms of adults or bands of hoppers. The swarms that form can be dense and highly mobile. The arid areas of Balochistan and Punjab are becoming ideal breeding habitats for locusts due to which these provinces always remained under threat of Locust attack. It is a transboundary pest that traveled freely in large parts of Africa and Asian countries where it attacks nearly all crops and rangeland vegetation.

In Pakistan, the history of Locust attack revealed that during the last ≈100 years, the country remained under the grip of desert Locust invasions in 1926, 1952, 1962, and 1992. These swarms injured to all crops and rangeland vegetation with compounded adverse effects in the form of 2 to 3 years of drought and an overall longer-term condition of dwindling water availability.

In the most recent desert locust episode, which originated in Saudi Arabia's remote interior in June 2018, and swarms entered Pakistan in March 2019, devastating important crops, such as cotton, wheat, and maize in more than 60 districts of Baluchistan, Punjab, Khyber Pakhtunkhwa, and Sindh provinces. As a result, a national emergency was declared on 1st February 2020 and the Department of Plant Protection responded by conducting surveillance and control operations with the assistance of other Pakistani organizations, and multilateral and bilateral international aid agencies. The Pakistan government also established a detailed multi-phased locust control policy and a National Locust Control Center with rapid response units deployed to vulnerable districts.

1.2.3. Human-Induced Hazards

1.2.3.1. Industrial, nuclear, and transport accidents



Smog in Lahore is very severe during December month

Transport accidents are a common occurrence across Pakistan. Especially, train accidents are becoming common. Such accidents have cost the lives of hundreds of people. Likewise, accidents on the roads and in airplanes are not unusual occurrences. Additionally, the rising industrialization, especially among the urban dwellers in the cities of Gujranwala, Faisalabad, Karachi, Lahore, Sialkot, and so on, can constitute a major source of industrial disasters. Moreover, due to the presence of numerous nuclear plants and nuclear power units, there is also a potential threat of nuclear disasters in Pakistan.

Pakistan is already operating two ports, one at Karachi and the other at Gwadar, located on the Makran coast. Such regions are prone to sea incidents. The abandoned skeleton of the Tasman Spirit, an ancient Greek freighter, was discovered in Karachi on 27 July 2003, resulting in massive ecological losses and environmental risks to the surrounding businesses, port staff members, and local neighborhoods. About 27,000 metric tons of oil leaked across the harbour region, which caused a significant impact on the life of the sea. During the subsequent weeks, after the accident, the residents of the area had reported headaches, nausea, and breathing difficulties. The areas affected by the oil spill took months to be cleared by the authorities.

1.2.3.2. Smog



Train accidents are becoming common during recent years

Every December, thick fog covers major cities and blocks the winter sunlight, especially during the morning hours. Lahore is one of the top 10 cities most badly affected by smog.

Currently, the issue of air pollution is acknowledged to be one of the major contributors to the smog threat. This is a grave matter of concern, particularly in the second-largest city of the country, Lahore. The most likely causes of this smog include the heavy volume of road traffic vehicles, rubbish burning, and dust turbocharged by the adjacent

areas. It was only increasingly worse in the past few years, primarily due to high pollution levels and rates of bad air quality within the cities, which is only compounding as more cars and industries release smoke. It leads to minor air infections that increase the state of breathing or even lead to severe disruptors of all human activities that can appear in highway and road accidents, delays of flights, and health issues. It compels people to stay at home, especially in the morning. Besides the major city of Lahore, Multan, Rawalpindi, and Peshawar are also major cities prone to smog-related dangers.

1.2.3.3. Dengue

Dengue fever is more commonly occurring in larger urban center especially in Lahore, Rawalpindi, Peshawar and some other districts throughout the country. It is a mosquito-borne viral infection that is becoming very common during summer in the urban areas. Infection is caused by any one of four closely related dengue viruses called serotypes and these can lead to a wide spectrum of symptoms, including some of which are extremely mild (unnoticeable) to those that may require medical intervention and hospitalization. The virus is transmitted person to person through the bites of infected female mosquitoes. After virus incubation for 4–10 days, an infected mosquito is capable of transmitting the virus for the rest of its life. In severe cases, fatalities can occur. There is no treatment for the infection itself but the symptoms that a patient experience can be managed. The symptoms may include severe epigastric pain, tender hepatomegaly, persistent vomiting with inability to tolerate oral fluids, moderate bleeding, excessive lethargy and severe breathlessness when lying flat etc.

The first confirmed outbreak of dengue fever in the country was recorded in 1994, since then it arises time to time especially at the start or end of the summer season in different part of the country. During 2010, Pakistan has experienced an epidemic of dengue fever that has caused 16,580 confirmed cases and 257 deaths in Lahore and nearly 5000 cases and 60 deaths reported from the rest of the country.

According to the WHO, dengue is endemic to Pakistan, with annual outbreaks peaking in the post-monsoon season. The country experienced a surge in cases in 2022 due to flooding, and all four dengue serotypes are circulating, increasing the risk of severe illness. For example, the WHO reported 25,932 confirmed cases and 62 deaths between January and September 2022.

1.2.3.4. COVID-19

During 2019, the entire world including Pakistan have been remained in the grip of Coronavirus Disease (COVID-19). The effects of COVID have already been visibly felt in the form of four waves in Pakistan whereas the entire provinces witnessed serious impact on lives and seriously shattered the economic activities of the country. COVID-19 was first reported in Wuhan, China in December 2019, and soon became serious public health threat for more than 213 countries across the globe. As of 24th April 2022, the National toll of confirmed COVID-19 cases surpassed 1,527,751 including 30,369 deaths.

1.2.3.5. *Urban fires*



Domestic fires are very common in urban slum areas

There is a growing urban fire incidence occasioned mainly by population growth and industrialization. The installation of Compressed Natural Gas (CNG) stations is widespread in urban centers, while the sale of gas in cylinders for household use is prevalent in cities. Due to this, the number of fires in urban areas is rising day by day.

Moreover, the incidents at the Baldia Town garment factory in Karachi, Imamia colony, Shahda in Lahore, and Ghakar Plaza in Rawalpindi are examples where not only lives were lost but significant damage was also caused to urban infrastructure.

1.2.3.6. *Domestic Fires*



Tragic incidence of Baldia Town garment factory in Karachi

Domestic fires are one of the most common hazards affecting households in Pakistan, often resulting in loss of lives, property, and livelihoods. They are usually caused by ignorance, careless handling, and ineptness of electric and heating systems.

Among the top causes are defective or poor electrical wiring that could overheat or spark, mainly when constructed or crowded poorly. Gas cookers and heaters are also fire hazards, and they become more dangerous when they are not attended to and used in rooms that have poor ventilation. Vulnerability is further enhanced in many homes because of the failure to maintain regular maintenance of the appliances and electrical systems. The danger is compounded by using candles or kerosene lamps or over-dressed power outlets.

House fires in such thickly populated areas and houses built of highly flammable materials spread so rapidly that they can be very devastating. The risk can be reduced significantly using preventive measures like safe wiring, using designated appliances, ensuring good maintenance of heating equipment, and raising awareness of the safety measures. It must also be kept in mind that at the community level, awareness and easy training in fire extinguishing skills are also important to reduce the effects of such incidents.

1.2.3.7. Complex emergencies

This issue is more common in the newly merged districts of Khyber Pakhtunkhwa and the border areas of Balochistan that share a boundary with Afghanistan. Similarly, regions in Azad Kashmir, Punjab, and Sindh near the Indian border are also vulnerable to complex emergencies, where people are sometimes forced to migrate due to tense or unstable conditions in these border areas.



Complex emergencies often lead to the use of unauthorized weapons, which are frequently exploited to escalate violence and terrorism.

Self-Assessment / Key Questions & Answers

Q1. What is a Glacial Lake Outburst Flood (GLOF)?

a). A flood caused by sea level rise

b). A flood from a broken water pipeline

c). A flood caused by melting glaciers

d). A flood caused by heavy rainfall in cities

Correct answer: C

Q2. Which of the following provinces in Pakistan frequently experiences prolonged droughts?

a). Northern Punjab

b). Balochistan

c). Khyber Pakhtunkhwa

d). Azad Jammu & Kashmir

Correct answer: B

Q3. Given Scenario: Imagine your district is struck by a flash flood similar to those experienced in Charsadda or D.I. Khan. Roads are blocked, villages are submerged, and electricity has failed.

- *What immediate steps should your community take to ensure safety and minimize losses?*

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Q4. Given Scenario: A severe earthquake has struck your area, damaging homes, schools, and health facilities. Many people are injured, and communication lines are disrupted.

- *How would you organize a community-level response in the first 24 hours after the earthquake?*

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Session 1.3: Climate Change and Its Impacts on Communities

Session objectives

By the end of the session, participants will be able to:

- Explain the science of climate change.
- Examine how different communities in Pakistan—including urban, rural, arid, mountainous, coastal, and slum communities—experience climate change.
- Identify the causes and human activities that contribute to climate change.

Duration

01 hour 15 minutes

Facilitation Methodology

Group work, Interactive Lecture, Video show on the climate change impact in Pakistan, Open Discussion, and Q/A

Training Aids Required

- Video Clips
- Whiteboard
- Multi-color markers
- Flip charts
- Flip stand
- Multimedia with laptop and screen
- Masking tape
- Scissors
- Cutter
- Session handouts

Training Approach

1. Following the introduction and discussion of the session objectives, it is better to ask the participants to share their experience about their own district.

   Probing Question: "*How do you think climate change affects urban and rural communities differently in Pakistan? Can you share examples from your own district or community?*"

2. After sharing the experience from the participants, it is advisable to demonstrate an Urdu-language video on climate change and its effects. As the video plays, pause briefly to ask the participants questions along the way, prompting them to share their own thoughts and insights. This will make the session interactive and will help keep participants engaged.

3. After discussing the video clips, split participants up into four groups and hand them the following discussion topics:
    a. *What observable effects of climate change have been experienced in your community?*
    b. *Which groups are most vulnerable to the effects of climate change and why?*
    c. *What are the social, economic, or environmental impacts in your community?*
    d. *Which adaptive responses to climate change has your community implemented?*
    e. *What are the intensified hazards caused by climate change, and how do these hazards destroy lives in your community?*
4. The participants should be given approximately 30 minutes during which they can discuss in their groups, and then each group should make their presentation at the plenary session. Stimulate involvement by inviting active participation through questions and answers after every presentation in the groups.
5. Following the group work, move on to your presentation on the slides. Go through each slide slowly, mentioning the details contained therein. As you present your information, keep asking your participants probing questions to elicit further dialogue and make the session more participative than monologue-based.

    Conclude the session by asking the following question. Recent climate-induced disasters have repeatedly affected millions of people and destroyed livelihoods across the country. *"Considering the recent example of flood 2025, what long-term measures should be adopted to reduce their vulnerability to such climate-related disasters?"*
6. Take input from those who do not participate for any reason. Encourage them to speak to remove hesitation and shyness.
7. End the session by appreciating participants for their resourceful contributions and active participation. Strengthen their role in recognizing climate change impacts and promoting adaptation actions in their communities.

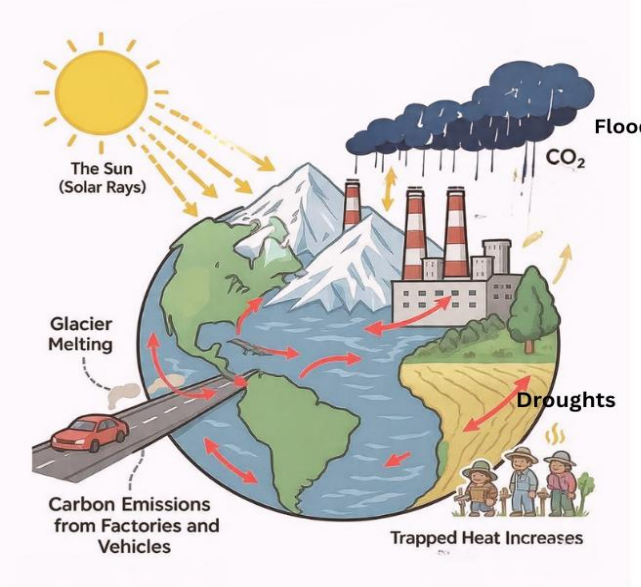
Useful Tips for the Facilitator

- Search and download relevant videos from Google or YouTube to share with participants during the session for better understanding and engagement.
- Regroup participants by simple counting methods (e.g., 1–2–3) to refresh the dynamics and break monotony.
- Actively encourage quieter participants to share their views and contribute to the discussion.
- Provide opportunities for new participants to take the lead in group work and presentations.

Background Material of the Session

1.3.1. Impact of Climate Change in Pakistan

Climate change refers to long-term shifts in temperatures and weather patterns, primarily caused by human activities such as burning fossil fuels, deforestation, and industrial processes.



Impact of climate change

Climate change occurs when the Earth is becoming warmer due to an increase in the amount of heat energy from the sun being trapped in our atmosphere, rather than being transferred into space. Sometimes, clouds, gases, and the Earth would reflect part of the sun's energy, and this part would be absorbed to make the planet warm. But since humans started using large amounts of coal, oil, and gas over 200 years ago, we have released a lot of gases into the atmosphere called greenhouse gases (like carbon dioxide, methane, and others). These gases perform the role of a blanket that captures heat around the Earth. When excess heat is confined, this makes the planet warmer than it is supposed to be. Such heating is referred to as the greenhouse effect. The more greenhouse gases we release, the warmer it will be, and that can lead to such issues as intense heatwaves, dangerously melting ice, and a sea level. This has been estimated by scientists by putting research tools into space and measuring it; they discovered that gases such as carbon dioxide and methane contribute to this heating.

The following sub-sections show how climate change affects various physical landscapes and climate zones.

1.3.2. Climate Change Impact on Urban Communities

The urban population in Pakistan, i.e., in Karachi, Lahore, Peshawar, Multan, Faisalabad, and Rawalpindi, is largely affected by climate change because of numerous anthropogenic factors. The transport, industries, and energy production raise the amount of greenhouse gases that create a burden on global warming. Urban temperatures are aggravated by the heat island effect that occurs due to the overuse of concrete, loss of green cover, excessive air conditioning, etc. Lack of proper systems of waste disposal is another cause of the problem, and a good deal of methane, a powerfully emitted greenhouse gas, can be produced by landfills. Also, urbanization reduces the natural ability of the urban areas to absorb carbon due to deforestation.

They result in important climate effects, among which there has been the rise in frequency and magnitude of floods in the cities, and the tragedy of the Rawalpindi floods in July 2025, which was a result of excessive rainwater and blocked drains. Heatwaves are on the rise, and a recent example was the 2015 Karachi heatwave that killed more than 1,200 people.

Industrial waste and poor sanitation lead to air and water pollution that causes the prevalence of respiratory and water-borne diseases.

1.3.3. Climate Change Impact on Rural Communities

Rural communities in Pakistan are extremely exposed to the negative impacts of climate change as they rely so much on farming, lack the capacity to adapt, and have access to social protection systems. The increasing irregularity of rainfall, with rainfall becoming extreme with random rainfall and droughts, has made agriculture very unproductive and has led to food insecurity, plunging most farming households into debt traps. Chronic flooding and droughts also ravage crops, animals, and livelihoods, and drive the families to the urban centers, where they face novel vulnerabilities. Further weakening rural support capacities and services exacerbates rural poverty and inequality.



Heavy raining and riverine floods caused heavy damages to local communities in Sindh

The 2022 Pakistani floods gave a graphic depiction of how climate change is heavily impacting people at the rural levels. In June to August of the same year, the monsoon rains broke all records, and due to climate change, glacial melting, and flash flooding, a third of the nation was covered in water. The devastation was most acute in rural Sindh, Balochistan, and southern Punjab, where agriculture and livestock form the backbone of livelihoods. The number of people impacted by the emergency was approximately 33 million, of whom 20.6 million needed lifesaving assistance, with children constituting half of those who were in danger. In addition, whole communities were displaced when 7.9 million people were forced to leave their homes, with hundreds of thousands taking refuge in improvised relief shelters.

The amount of damage was devastating: 2.3 million housing units were ruined or destroyed, and 1.7 million hectares of standing crops were destroyed, as well as more than 800,000 livestock. In Sindh alone, almost 70 percent of the loss consisted of countless small farmers whose small patches of fields were the only means of income they had. The destruction also went beyond means of livelihoods- 30,000 schools and 2,000 health facilities were ruined, leaving a population of millions without access to education, healthcare, clean water, or safe sanitation. These spillover effects displaced over 8 million people into poverty, revealing how populations in rural areas are frontiers to climate-related catastrophes.

1.3.4. Climate Change Causes in Arid Regions and Drought-Prone Areas

Climate change is also an issue that is caused mainly by environmental degradation in arid zones in Pakistan. Vegetation cover gets affected by overgrazing of the livestock and accelerates desertification. Due to overextraction of groundwater sources, natural hydrological cycles are broken by grid-type groundwater withdrawal in the conduct of irrigation and household activities. The investments in drought-resistant infrastructure and early warning systems are still not enough. Trees are also cut down to provide firewood and increase arable areas, thus lowering the binding capacity of carbon. Effects of Climate change among the mountainous people.

1.3.5. Climate Change Impact on Arid and Drought-Prone Areas

Climate change is evident in arid and drought-stricken areas of Pakistan, such as Southern Punjab, interior Sindh, Southern Khyber Pakhtunkhwa, and Baluchistan. Global warming causes a decrease in rainfall and an ever-increasing uncertainty of rainfall in these areas. The outcome is a constant water shortage in both the drinking and agricultural sectors. The events of the countrywide drought 1999-2001 and the 2014 Thar drought revealed the critical result of climate inaction in the country, where hundreds of children died because of malnutrition and the unavailability of healthcare. Loss to livestock is a serious loss to the income of pastoralists, and poor crop yields result in hunger and malnutrition.

1.3.6. Climate Change Impact on Mountainous Communities

The mountainous populations of areas like Gilgit-Baltistan, Chitral, Swat, Dir, and AJK are becoming more prone to the influences of climate-related risks. Higher temperatures in the world are increasing the rate of melting of glaciers, hence the creation and explosion of glacial lakes that are increasing in regions such as Gilgit-Baltistan and Chitral. Increased drought periods, strong force of snowstorms, and excess rainfalls are also other weather extremes and uncertainties resulting in climatic changes. The effects are catastrophic; landslides and avalanches frequently affect transportation routes and stranded communities, as occurred in 2010 in the Attabad landslides.

1.3.7. Climate Change Impact on Coastal Communities

Climate change is becoming an imminent threat to the coastal populations of Pakistan, especially the people living in the Sindh and Balochistan coasts. The fishing communities that mainly feed on marine ecosystems are being affected by a depleting fish stock owing to warming waters and a varying sea current. The salinity of freshwater reservoirs and farmlands is degrading the soil and accelerating food shortages. In coastal areas, erosion and tidal flooding are forcing families to move out, destroy houses, and affect local infrastructure.

1.3.8. Climate Change Impact on Slum Communities

The population at risk in Pakistan is the slum communities in cities such as Karachi, Lahore, and Rawalpindi. The effects of climate change are particularly severe in such localities: in Karachi during a monsoon in 2020, most slums were flooded, creating displacement, disease, and property damage. Flammable building materials and unlicensed electrical wiring also contribute to the frequent fires, as seen in the 2017 fire in the Islamabad slums. Women and children in slum areas bear the brunt of climate impacts due to poor access to reproductive health, water, and safety infrastructure, increasing their vulnerability during heatwaves, floods, and disease outbreaks. Stagnant water and poor hygiene conditions are prevalent, leading to outbreaks of diseases.



Impact of disaster in slum communities of the urban areas

Self-Assessment / Key Questions & Answers

Q1. What is the main reason for climate change?

a). Deforestation

b). Increased emissions of greenhouse gases

c). Increased use of energy

d). All of the above

Correct answer: D

Q2. How does deforestation lead to climate change?

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Q3. Discuss the unsustainable practices in your community that lead to climate change.

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Q4: Given Scenario: If another 2015-like heatwave occurs due to the urban heat island effect, how would you protect vulnerable communities from high mortality risks?

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Q5: Given Scenario: If prolonged drought strikes arid regions like Tharparkar again, leading to child malnutrition and livestock deaths, what immediate and long-term measures would you implement to build resilience?

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Q6. According to the Global Climate Risk Index 2021, Pakistan was among the top countries most affected by climate-related events from 2000 to 2019.

a). Top 5

b). Top 10

c). Top 20

d). Top 50

Correct answer: B

Q7. Which of the following disasters caused the highest recorded loss of human life in Pakistan's history?

a). 1945 Makran Tsunami

b). 2000-2001 Drought

c). 2005 Earthquake

d). 2010 Floods

Correct Answer: C

Q8. What is the difference between weather and climate?

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Session 1.4: Localizing the Global Commitments in the CBDRM Practices

Session objectives

At the end of the session, the participants of the course will be able to:

- Raise awareness about the global framework relevant to climate change and its impact, with a focus on SDGs, SFDRR, UNFCCC, Paris Agreement and Kyoto Protocol.
- Strengthen community participation in disaster risk management by localizing the global commitments through CBDRM practices.
- Educate communities on disaster risks and build their capacity to conduct participatory risk assessments, hazard identification, and resource management.

Duration

45 minutes

Facilitation Methodology

Interactive Lecture, Open Discussion, and Q/A

Training Aids Required

- Multimedia with a laptop and a screen
- Session handouts

Training Approach

1. This is a brief presentation emphasizing the importance of integrating the CBDRM approach with the SFDRR and SDGs; therefore, no group work is included in this session.
2. The facilitator should begin by asking participants whether they are familiar with the Sendai Framework and the Sustainable Development Goals, and how Pakistan is contributing to the global agenda through the CBDRM approach.
3. After a short brainstorming discussion, proceed with the presentation using PowerPoint slides for support.
4. Conclude the session by thanking the participants for their engagement.

Background Material of the Session

1.4.1. Global Commitments on DRR and Climate Change

1.4.1.1. Sustainable Development Goals

The Sustainable Development Goals (SDGs) are a set of 17 global goals adopted by the United Nations General Assembly in September 2015 at the UN Summit in New York as part of the 2030 Agenda for Sustainable Development. They provide a shared framework to address urgent challenges such as poverty, inequality, climate change, environmental degradation,

peace, and justice, aiming to build a more sustainable, inclusive, and prosperous world by 2030.

Out of the 17 goals, SDG 13: Climate Action stands out as a key priority, serving as a clear call to address climate change and its growing impacts. The main interventions under SDG 13 include:

1. Increasing community resilience and adaptive capacity to climate-related risks and natural hazards.
2. Incorporating climate change policies/actions into national policies/strategies/planning.
3. Enrollment in climate change mitigation, adaptation, and early warning education, and enhancing awareness and institutional capacity.
4. Engaging financial resources to assist climate action in the developing nations.
5. Creating mechanisms that lead to capacity building and encouraging local efforts to minimize vulnerabilities.

1.4.1.2. Sendai Framework for Disaster Risk Reduction

The Sendai Framework for Disaster Risk Reduction (SFDRR) is a global agreement adopted in March 2015 at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan. It provides a 15-year framework (2015–2030) to reduce disaster risks and losses in lives, livelihoods, and assets through resilience-building and risk-informed development. It prioritizes four areas of concern

1. Disaster risk understanding
2. Enhancing disaster risk governance
3. Investing in disaster risk reduction to build resilience,
4. Improving disaster preparedness to deal with disaster response and recovery.

In combination, the SDGs and the SFDRR are mutually reinforcing aspects — sustainable development cannot be achieved without mitigating disaster risks, and effective management of disaster risks will help in meeting most of the SDGs.

1.4.1.3. United Nations Framework Convention on Climate Change

The United Nations Framework Convention on Climate Change (UNFCCC) provides the overarching global framework that guides countries in reducing greenhouse gas emissions and building climate resilience. It establishes common principles, responsibilities, and reporting mechanisms through which nations coordinate their climate actions, including adaptation, mitigation, and technology transfer.

1.4.1.4. Kyoto Protocol

The Kyoto Protocol operationalizes the UNFCCC by setting legally binding emission-reduction targets specifically for developed countries, ensuring accountability and measurable progress in combating climate change. It introduced market-based mechanisms such as carbon trading

and the Clean Development Mechanism, which opened opportunities for climate-resilient projects globally.

1.4.1.5. Paris Agreement

The Paris Agreement marks a universal climate commitment where all countries, regardless of development status, pledge to limit global warming and enhance their resilience through Nationally Determined Contributions (NDCs). It emphasizes adaptation, climate finance, transparency, and locally driven action, creating strong linkages between national climate policies and grassroots initiatives.

1.4.2. Localizing the SFDRR through CBDRM

The SFDRR emphasizes the importance of engaging communities in disaster risk management and adopting inclusive approaches that involve everyone. The CBDRM approach holds the key to making the global agenda a reality at the grassroots level, since there will be practical outcomes by localizing the framework.

CBDRM can be an appropriate way to actualize the priority areas and targets of SFDRR through action and community-based. The SFDRR focuses on four priorities, which include being educated about disaster risk, strengthening governance of disaster risk, investing in risk reduction, and improving preparedness to ensure response and recovery.

CBDRM is much more consistent with these priorities, since it puts communities in a better position to self-assess their risks, develop and act upon local mitigation strategies, and participate in preparedness exercises based on their own relative needs. The implementation of localization of the SFDRR will be efficient when community members actively engage in the process of hazards identification, local resources management, and the decision-making process regarding disaster preparedness and resilience-building efforts, especially vulnerable groups of the population, including women, youth, differently abled people, and the elderly. By using such tools as village disaster management committees, participatory risk assessment and planning, and anticipatory measures, communities are able to resolve situations with site-specific responses based on individual needs. The implementation of CBDRM transforms many of the SFDRR targets; thus, it is a conceptual basis through which the goals of the framework can be accomplished:

SFDRR Target	Relevant CBDRM Action
Target (a): Substantially reduce global disaster mortality.	Community drills, first aid training, and evacuation plans.
Target (b): Substantially reduce the number of affected people.	Local risk mapping and tailored mitigation strategies.
Target (c): Reduce direct economic loss.	Risk-proofing livelihoods and climate-resilient agriculture.
Target (d): Reduce damage to critical infrastructure.	Community action to strengthen homes, schools, and clinics.
Target (e): Increase national and local DRR strategies.	Village-level DRR plans and integration with local government.
Target (g): Increase early warning systems and information access.	Community-based EWS and risk communication campaigns.

1.4.3. Localizing the Sustainable Development Goals Through CBDRM

It is also a strategic way of making sure that the global development agenda is put into context and entails meaningful actions on the ground. CBDRM empowers communities to evaluate their own risks, prepare for disaster prevention, and come up with resilience that is tailored to the local needs and realities. The localized character of such a strategy is not only able to empower the population against threats to natural hazards and natural disasters but is also actively involved in reducing global poverty and measures against climate change, as well as in sustainable communities. CBDRM is a realization of various SDGs and their targets, thus being the cornerstone towards the realization of the following goals.

SDG	Target	CBDRM Contribution / Community-Led Action	Impact / Relevance
SDG 1: No Poverty	**1.5** Build the resilience of the poor and those in vulnerable situations...	Rainwater harvesting, climate-resilient agriculture, early warning systems, and community evacuation planning	Reduces vulnerability and socioeconomic impact of disasters on poor and at-risk communities
SDG 3: Good Health and Well-being	No specific target mentioned	Community health services integrated into DRR	Improves access to healthcare during emergencies and disaster recovery
SDG 5: Gender Equality	No specific target mentioned	Inclusive participation of women in disaster committees and planning	Promotes gender equity in local disaster governance
SDG 6: Clean Water and Sanitation	No specific target mentioned	Improved local water management in disaster contexts	Ensures clean water access and sanitation during and after disasters
SDG 11: Sustainable Cities and Communities	**11.5** Reduce the number of people affected by disasters...	Slum upgrading, improved drainage, and community-designed resilient shelters	Creates safer, more sustainable urban environments for vulnerable populations
SDG 13: Climate Action	**13.1** Strengthen resilience and adaptive capacity to climate-related hazards...	Local reforestation, solar-powered water systems, and disaster education	Enhances grassroots-level climate resilience and adaptation

1.4.4. Localizing the UNFCCC, Kyoto Protocol, and Paris Agreement through CBDRM

The UNFCCC, Kyoto Protocol, and Paris Agreement emphasize mitigation, adaptation, and resilience—principles that can be operationalized through community hazard mapping, climate-smart livelihoods, and nature-based solutions. By aligning CBDRM processes with the outcomes of COPs, communities can adopt locally appropriate adaptation technologies, strengthen early warning systems, and promote low-carbon practices such as renewable energy and efficient water management. This localization helps communities understand their role in global climate action while empowering them to design solutions rooted in indigenous knowledge, local priorities, and participatory decision-making. It also supports provincial and

national authorities in meeting their international climate obligations through bottom-up, evidence-based community initiatives.

Self-Assessment / Key Questions & Answers

Q1. Given Scenario: If a flood-prone community wants to localize the SFDRR, how would you ensure inclusive community participation (women, the elderly, and differently abled people) in creating a village disaster management plan?

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Q2. Given Scenario: If a GLOF-prone community seeks to align with SDG 13 on climate action, what community-led CBDRM measures would you introduce to strengthen resilience and adaptive capacity?

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Q3. How is SFDRR helpful in reducing disaster risks at the local level?

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Q4. What is the abbreviation of SFDRR?

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Q5. Which of the following SDGs is most directly aligned with building climate resilience through CBDRM?

A. SDG 4-Quality Education

B. SDG 8-Decent Work and Economic Growth

C. SDG 13-Climate Action

D. SDG 17-Partnerships for the Goals

Correct Answer: C

Q6. How does CBDRM contribute to achieving SFDRR Target G?

A. By constructing new roads in rural communities

B. By promoting urban commercial investments

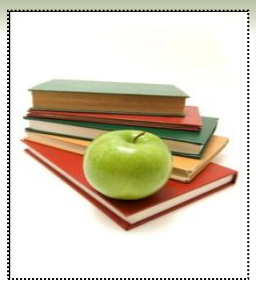
C. By increasing availability and access to early warning systems

D. By strengthening international trade relations

Correct Answer: C

References

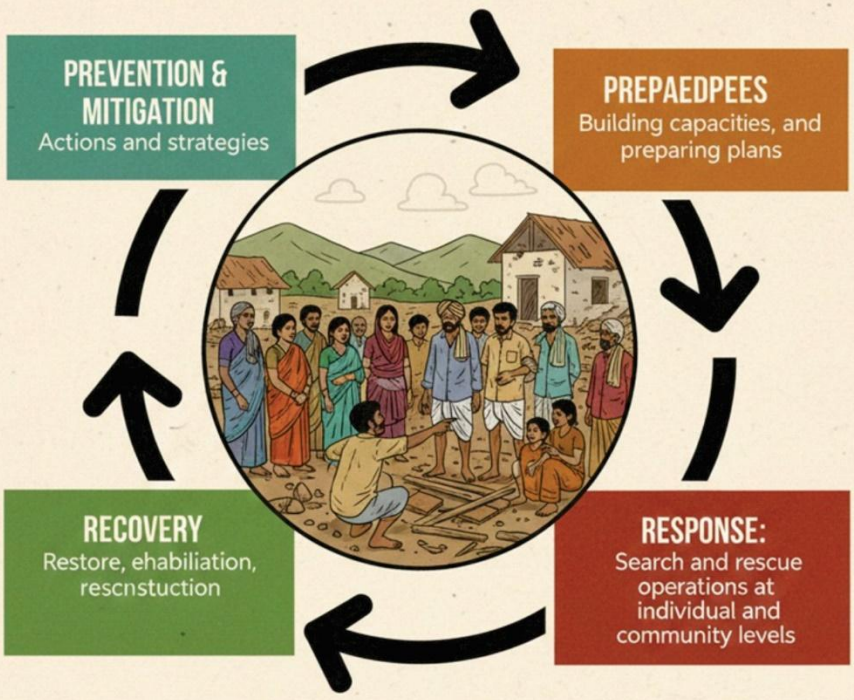
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Notes

Module Two:

A Conceptual Framework of the Community-Based Disaster Risk Management



Module Two:

A Conceptual Framework of the Community-Based Disaster Risk Management

Objectives

By the end of this module, participants will be able to:

- ⇒ Knowing the basic concepts and terms used in disaster management.
- ⇒ Describe the disaster risk profile of Pakistan, highlighting prevalent natural and human-induced hazards and vulnerabilities that drive these risks.
- ⇒ Analyze risk factors across urban, rural, mountainous, coastal, and conflict-affected areas, recognizing the social, economic, and geographic diversities in climate and disaster exposures and available capacities.
- ⇒ Explain how climate change impacts ecosystems and communities in Pakistan, focusing on trends such as extreme weather events, glacial melt, droughts, and floods.

- ❖ Credit hours covered:
- ❖ Time required for this module: Four hours

Sessions to be covered in this module

Session 2.1: Overview of the CBDRM Approach

Session 2.2: Importance of Community Mobilization, Rapport Building, and Local Knowledge

Session 2.3: Community Sensitization and Formation of Disaster Management Committees

Proposed Agenda of Module Two

Time	Duration	Title of the Session	Facilitation Methodology
9:00 AM – 9:30 AM	30 minutes	• Registration and introduction • Training objectives and overview	• Formal session • Formal ceremony • Welcome by organizers • Announcement of administrative arrangements • An overview of the training
9:30 AM – 11:00 AM	1 hour 30 minutes	**Session 2.1:** Overview of the CBDRM Approach	• Group work • Interactive lecture • Group debate • Q/A
11:00 AM – 11:15 AM	***15 minutes***	***Tea Break***	
11:15 AM – 12:15 PM	1 hour	**Session 2.2:** Importance of Community Mobilization, Rapport Building, and Local Knowledge	• Interactive lecture • Open discussion • Q/A
12:15 PM – 1:15 PM	***60 minutes***	***Lunch Break***	
1:15 PM – 2:45 PM	1 hour 30 minutes	**Session 2.3:** Community Sensitization and Formation of Disaster Management Committees	• Group work • Interactive lecture • Open discussion • Q/A
2:45 PM – 3:00 PM	15 minutes	Training evaluation	
3:00 PM – 3:15 PM	15 minutes	Closing ceremony Certificate distribution	



Session 2.1: Overview of the CBDRM Approach

Session Objectives

By the end of the session, participants will be able to:

- Recognize the importance of a community-based disaster risk management approach.
- Outline the key stages of the CBDRM process, from community selection to planning and implementation of risk reduction actions.
- Demonstrate how communities design, plan, and implement disaster risk reduction initiatives, including actions for emergency response preparedness.

Duration

01 hour 30 minutes

Facilitation Methodology

Group Work, Interactive Lecture, Group Debate, and Q/A

Training Aids Required

- Whiteboard
- Multi-color markers
- Flip charts
- Flip stand
- Multimedia with laptop and screen
- Masking tape
- Scissors
- Cutter
- Session handouts

Training Approach

Trainers are encouraged to follow the steps outlined below while they facilitate the session:

1. Give the session's introduction to participants. Inform the participants that the session will include a brainstorming exercise, a group debate, an interactive lecture, and a question-and-answer session.
2. To engage participants, probe a question at the start of the session to take their point of view, and ask different participants to ensure participation of all.

Probing Question: *"In what capacity can the communities become the first line defender during disasters, and why is their participation in MHVRA and DRR planning required rather than becoming disaster victims and relying solely on external support?".*

3. Before going to the PPT slides, ask participants about their understanding of the definition of "community". Participants are likely to come up with different responses.
4. Write their responses on a flip chart. You may ask one of the participants to volunteer for writing key points on a flip chart. Try to keep the discussion to 5-7 minutes. Participants can also use color meta cards and write the definition on the cards.
5. Your following slides will discuss the importance of CBDRM. Ask participants about the key essential factors that make CBDRM a helpful approach.
6. Discuss the two predominant prevailing approaches.
    - *Top-Down Approach: Traditional approach that is commonly observed in practice*
    - *Bottom-up Approach: CBDRM approach*
7. At this stage, the trainer can form two discussion groups of five to seven persons each. Each group will be required to make a case in support of one of the following two statements.
    - *The best disaster risk management results will be obtained when the government is in charge of both the decision-making process and the implementation of disaster risk management arrangements.*
    - *The best disaster risk management results will be obtained when communities are in charge of both the decision-making process and the implementation of disaster risk management arrangements.*
8. The facilitator can form a judges group consisting of 5 course participants, and will be asked to decide which of the cases prepared by the groups is the most effective. Judges should be asked to provide detailed reasons for their decision.
9. Each discussion group will operate as a team. The team will present a comprehensive set of arguments to support the statement they have been allocated. Team members will collaborate to present their arguments.
10. After the group work, the facilitator should summarize the discussion and justify the comments of both groups.
11. After finishing the activity, ask participants to give back and sit in their respective seats.
12. In the next slide, explain the steps involved in the CBDRM process and explain the eight steps one by one, as mentioned below in the supported material.
13. Followed by describing the CBDRM process with eight steps, discuss the importance of gender and social inclusion in the CBDRM process, and try to give different examples from day-to-day life; otherwise, you can also ask participants for their reflection and experience at the community level.
14. At the end of your session and closing, it is better to ask a closing question as below and take their input. Summarize once the participants debate the question.

Probing Question: *"How can the specific needs of vulnerable and marginalized groups be effectively addressed at each stage of the CBDRM process?"*

15. Wrap up the session by emphasizing that CBDRM is one of the most effective frameworks for making communities resilient to natural and human-induced disasters.

Useful Tips for the Facilitator

- For the group debate, both groups will be given time to prepare their arguments. During this time, the judges' group will be asked to prepare judging criteria to use during the presentation of arguments.
- The group debate may take more time than allocated; therefore, the facilitator should strictly follow the timing to complete the session. In this regard, the facilitator can gently remind the participants if the debate or discussion is prolonging.
- It will be beneficial to encourage participants to share examples of CBDRM projects that they might have witnessed.

Background Material of the Session

2.1.1. What do we mean by the term "community"?

In the context of disaster risk management, a community is a group of people living in a shared geographic area or connected through social, cultural, economic, or environmental ties, who face common hazards and risks, but may experience them differently based on their vulnerabilities, capacities, and access to resources.



A meeting where community members gather to discuss and address common issues affecting their village

From a disaster risk management perspective, “a community is a group of individuals who share some things in common, like the common things people share, can be stipulated as living in the same kind of environment, the same types of threats, and the same exposures to various disasters”. One of the most important aspects of a community is that its members usually live close to each other and experience the same kinds of dangerous situations.

Thus, they share common problems, concerns, and solutions to mitigate disaster risks. Nevertheless, individuals in a society do not have equal exposure, susceptibility, or capacity; some are more vulnerable, while others are better equipped to cope with disasters.

It underscores the importance of community participation in the development process, as it enables understanding of the local situation, opportunities, and limitations. they play an essential role in developing and applying regional solutions to disaster risks.

2.1.2. Understanding the concepts of community-based disaster risk management

Community-Based Disaster Risk Management (CBDRM) is a process in which local communities proactively participate and make decisions, with the underlying objective of saving lives, livelihoods, and property from natural or human-induced disasters. The CBDRM approach places communities in a leading role in project design, implementation, monitoring, and evaluation. It follows a bottom-up approach, aiming to reduce vulnerabilities and strengthen people's capacity to cope with disaster risks. Effective CBDRM ensures that communities are directly involved in implementing risk-reduction measures at the local level—the importance of a community-based disaster risk management approach.

The primary objective of using a CBDRM approach is to help communities take the lead in their development initiatives. It encourages actions that consider risks, reduce vulnerabilities, and build people's capacities to cope with the disasters they may face.

- The people in the community are the primary disaster victims, so they have the right to be active players not only during the risk assessment and disaster management planning but also in the preparedness measures for emergency response.
- The CBDRM approach helps in motivating the community to think out of the box and find solutions for their local issues rather than acting as aid recipients and disaster victims.
- The community members are the first responders in the wake of a disaster; therefore, they must be aware of the problems and issues they can face, and possible solutions to minimize the resources.
- The CBDRM is a participatory process that can be sustained with the least localized resources, which the community can own.
- The CBDRM approach helps external stakeholders to get a better understanding of the community's issues and solutions.
- The CBDRM approach adopts a mix of top-down and bottom-up approaches by involving stakeholders that could be both community representatives and external stakeholders. Communities and external stakeholders collaborate to gather information about existing risks and identify the most vulnerable individuals within the community, and plan for disaster risk reduction.
- The capacities of the affected community to deal with disasters will be developed as the community starts to think with different perceptions and use innovative ideas with mutual discussion, sharing experiences, and learn from best practices.
- It promotes leadership among community members while further strengthening social cohesion & cooperation as the community works as a team and regularly interacts for their concerns and solutions.

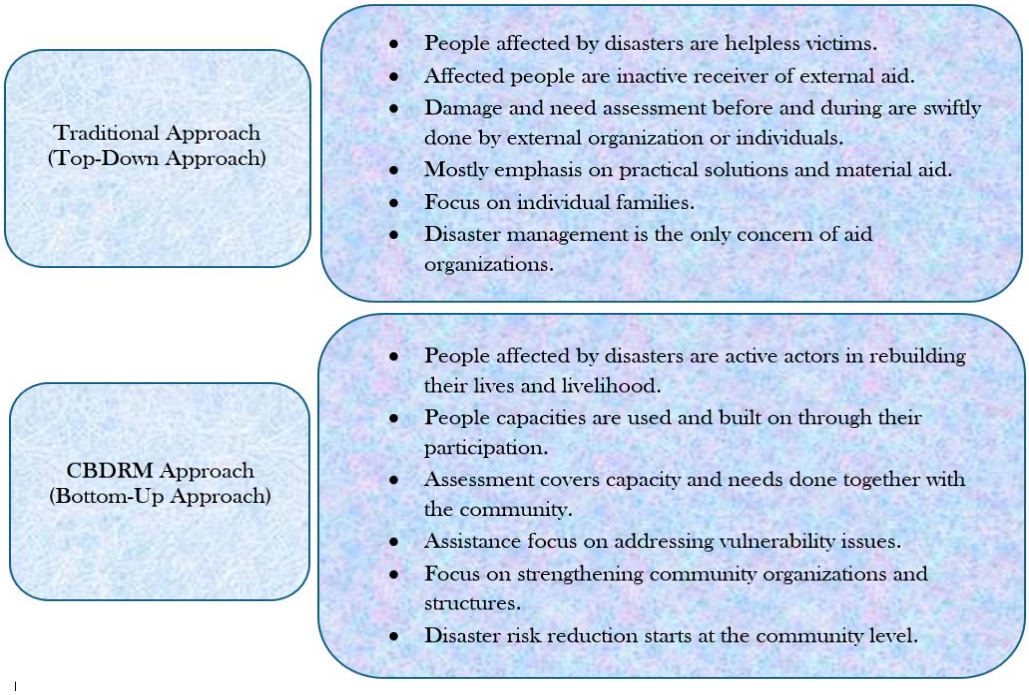
2.1.3. Evolution of disaster management approaches

There are two common approaches primarily used in disaster management systems: the traditional approach, also known as the top-down approach, and the CBDRM approach, commonly referred to as the bottom-up approach.

- Before the 2005 devastating earthquake, the top-down approach had been the dominant way of handling disaster situations, particularly in government-led initiatives. According to the approach, the government responded by providing relief, rehabilitation, and early recovery as deemed necessary, while the affected individuals or communities are helpless victims and aid recipients.
- In the aftermath of the 2005 earthquake, it became clear that community involvement is significant, since communities themselves are best placed to guide outside support, including government help. Under the Hyogo Framework for Action 2005, the bottom-up approach was recognized as a key means of building community capacities and resilience through self-help and self-reliance. Today, this approach is given high importance by both the government and non-government organizations.

Some of the key points about both approaches are given below:

After repeated experiences and lessons learned, the standalone approach of the bottom-up or top-down model has not yielded fruitful results in Pakistan. Based on these lessons, a mix of both approaches is now preferred in strengthening the disaster management system. In recent years, the government and communities in Pakistan have created a culture of working together to face disaster risks, and this combined approach is growing successfully.



Difference between Traditional and CBDRM Approach

2.1.4. Implementation process through the CBDRM approach

The CBDRM process consists of eight sequential stages, which can be executed before a disaster occurs or after one has happened, to reduce future risks. These steps follow a sequence, with each stage connected to and dependent on the one before it. Together, these steps form a complete process of assessment, planning, implementation, continuous monitoring, and evaluation to strengthen community capacities using the CBDRM approach. The CBDRM process includes the following sequential stages.

2.1.4.1. Selecting the community

In this process, a list of predetermined criteria is used to identify the most vulnerable communities whose risk is a potential target of direct assistance. To make a well-informed, balanced decision when selecting target areas, a set of selection criteria should be followed. Some key considerations are listed below:

- Severity of the community's exposure to risk (most vulnerable community)
- Population served by the CBDRM programme
- Readiness of the community to engage in CBDRM
- Accessibility of the community
- Security of staff engaged in the project implementation
- The targeted villages are usually proposed by the disaster management authorities or district administrations. Affected communities may also be identified by intermediaries like INGOs, UNs, or civil societies.

Note: Further explanations are available in the next session

2.1.4.2. Rapport building and understanding the community

This process begins by building trust and good relations with the local people. Once the community members feel confident in the external stakeholders working with them, they can actively take part in discussions about the issues, problems, and possible solutions for the betterment of the targeted communities.

As we build trust with the community, a clearer picture arises about its social organization, cultural practices, economic practices, spatial configuration, and different kinds of susceptibility of individual households, as well as an insight into its politics and economy. This knowledge allows external stakeholders to administer field-based risk assessment by using participatory rural appraisal techniques successfully and to identify doable disaster risk mitigation measures through a steady disaster management planning procedure.

2.1.4.3. Participatory risk assessment process

This assessment procedure discovers the threats that the community encounters and the manner in which individuals face the hazards. The process involves assessing multi-hazards, vulnerabilities, and capacities at both the community and household levels, taking into consideration people's perceptions of risk during the assessments.

A detailed participatory risk assessment will be explained in the upcoming sessions.

2.1.4.4. Participatory disaster management planning

This is after the review of the findings of the participatory risk assessment. People themselves derive risk mitigation measures that will help in reducing vulnerabilities and maximizing local capacities. These risk mitigation measures are then converted into a local disaster management plan at the village level.

2.1.4.5. Strengthening the emergency response mechanism at the community level

Empowering community-level emergency response mechanisms should include enhancing local capacities based on training of skills such as first aid, search and rescue, emergency evacuation, and shelter management, so that communities will be in a better position to respond effectively during disasters.

2.1.4.6. CBDRM in action: from planning to implementation

This is the process through which practical implementation of community-based disaster risk management is detailed wherein participatory risk assessments and disaster management planning is turned into tangible actions, including early warning dissemination, capacity building, hazard mitigation measures, and community-led emergency response- Not only must local communities have solution and problem knowledge on the risks they live in, but also have the means to reduce and manage such risks, thus ensuring that both local communities and disaster managers are better prepared and equipped to reduce and manage disasters.

2.1.4.7. Institutionalization and sustainability of CBDRM

The institutionalization and sustainability of CBDRM involve embedding local disaster management committees into the government's structure. External stakeholders actively involve communities in the planning and project execution. They help connect local disaster management committees with government bodies through formal registration and ongoing capacity building. This ensures that the committees stay active, responsible, and capable of playing a long-term, sustainable role in strengthening community resilience and improving overall safety and well-being.

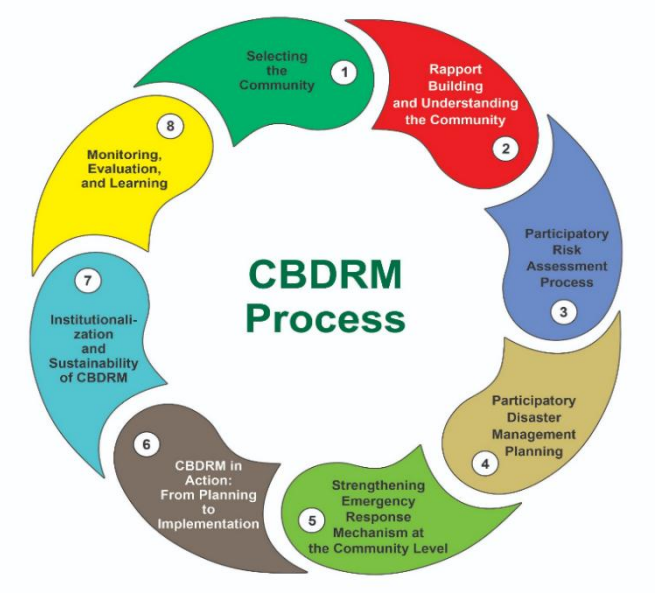
2.1.4.8. Monitoring, evaluation, and learning

In CBDRM, MEAL is a community-driven process that promotes local ownership, accountability, and long-term impact. The Union Council and Village Disaster Management Committees play a key role and remain actively involved in the monitoring, evaluation, and learning.

These committees monitor activities in their own villages and union councils, identify gaps, track progress, and highlight achievements. Communities assess their progress using simple, participatory tools such as success stories, seasonal calendars, and before-and-after

comparisons. Efforts are made to engage everyone—including women, elders, and youth—to encourage to share feedback, ensuring that feedback is inclusive and honest.

It further allows communities to learn by doing and then share their experiences with others. Peer learning, storytelling, and open discussions help spread useful ideas. Local disaster management committees act as bridges, making sure lessons from past experiences lead to better preparedness in the future.



Eight sequential steps in the CBDRM process

2.1.5. Consider gender and social inclusion in the CDBRM process

Disasters do not affect all communities in the same way. Their effects are often disproportionately felt by marginalized and vulnerable groups such as differently abled people, elderly people, pregnant and lactating women, children, adolescent girls and boys, ethnic minorities, and other marginalized groups. That's why inclusion is not a choice but a fundamental part of every stage of the CBDRM process.

Key Aspects of Inclusion in the CBDRM Process

- **Differently abled people:** Should be involved in risk assessments and planning processes. Disaster response mechanisms such as evacuation routes, early warning systems, and shelters must be physically accessible. Sign language interpreters, tactile alerts, and visual aids should be considered where necessary.
- **Elderly People:** Bring experience and indigenous knowledge that is often crucial for identifying risks and coping strategies. Their mobility, health conditions, and social isolation need to be considered during evacuation and recovery planning.
- **Pregnant and Lactating Women:** Require tailored health services, access to clean water, nutritious food, and privacy. Emergency shelters should have dedicated spaces for maternal and newborn care.
- **Children and Adolescents:** Must be protected from harm, exploitation, and trauma during and after disasters. School safety, psychosocial support, and child-friendly spaces should be part of disaster planning. They should also be engaged as active participants in drills and awareness activities.
- **Women and Girls:** Often carry caregiving responsibilities and may face gender-based violence risks during disasters. Gender-sensitive facilities (e.g., separate latrines), inclusion in decision-making bodies, and support for menstrual hygiene management are essential.

- **Transgender and Gender-Diverse People:** Face unique stigma and barriers in accessing services and safe spaces. Their specific needs must be respected through non-discriminatory practices and inclusive policies.
- **Ethnic and Linguistic Minorities:** Communication in local languages and culturally appropriate engagement methods are critical to ensuring they are informed and involved.

Case Study 1: Building Local Capacity through Standardized DRM and CBDRM Training in Khyber Pakhtunkhwa

The PDMA Khyber Pakhtunkhwa initiated a two-year project in 20 disaster-prone districts in 2014-15, under the Annual Development Programme. The project aimed to standardize the Disaster Risk Management and Community-Based Disaster Risk Management curriculum, providing a set of training courses for high-ranking government officers. This was then followed by a series of Training of Trainers on CBDRM, aimed at involving local government officials and communities in the same districts.

The project also aimed to establish Union Council Disaster Management Committees (UCDMCs) in crafting the disaster management system at the local level. By doing so, the project aimed to develop a pool of master trainers and community-based emergency responders who would serve as a volunteer workforce for district authorities, ensuring that other union councils replicate the model.

It was a great success in terms of improving the awareness of government officials and getting them to buy into the development of UCDMCs at the UC level. It served as the basis for establishing a well-integrated network of trained volunteers and responders. Nevertheless, district authorities were unable to maintain the same zeal and commitment to the project once its first phase was completed. Consequently, a good model that could have been duplicated in other districts stalled.

Lesson Learned: Making a proper initial investment in training and institutional development can lead to significant improvements in disaster management at the local level. Nevertheless, unless ownership and follow-up by authorities at the district level are ensured, even successful pilot projects are likely to lose their long-term effect and replication possibilities.

Self-Assessment / Key Questions & Answers

Q1. What does the term 'community' primarily refer to in disaster risk management?

a). People with the same profession and income level

b). Individuals living in the same geographical area with shared exposures to hazards

c). Member of the same political party

d). People working in disaster management agencies

Correct Answer: B

Q2. What is the primary objective of the CBDRM approach?

a). To develop nation-level disaster response policies

b). To promote international aid programs

c). To empower communities to reduce vulnerabilities and strengthen and disaster coping capacities

d). To centralize disaster risk planning at the district level

Correct Answer: C

Q3. Which of the following is the first stage in the CBDRM process?

a). Participatory Risk Assessment

b). Selecting the community

c). Strengthening Emergency Response

d). Disaster Management Planning

Correct Answer: B

Q4. What is a key advantage of the CBDRM approach?

a). It eliminates the need for government intervention

b). It promotes local ownership and uses cost-effective, participatory methods

c). It delays disaster response until expert teams arrive

d). It limits the role of communities in decision-making

Correct Answer: B

Q5. In your own words, describe the bottom-up approach and how it helps in dealing with disasters.

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Q5. What are the drawbacks you can see in adopting the top-down approach??

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References

- International Federation of Red Cross and Red Crescent Societies (2014), *"IFRC Framework for Community Resilience".*
- Asian Disaster Preparedness Center, Bangkok, Thailand (2011), "*Participants' Workbook on 'Community Based Disaster Risk Reduction".*
- National Institute of Disaster Management, National Disaster Management Authority, Government of Pakistan (2019), *"Participant's Workbook on Community-Based Disaster Risk Management".*



Session 2.2: Importance of Community Mobilization, Rapport Building, and Local Knowledge

Session Objectives

By the end of this session, participants will be able to:

- Explain the importance of community mobilization in disaster risk reduction and show how it enhances local ownership, participation, and sustainability.
- Identify key steps for selecting target communities, including the use of MHVRA data and criteria for prioritizing vulnerable areas.
- Apply effective strategies for rapport building between external stakeholders and local communities to ensure trust and meaningful engagement in the CBDRM process.
- Use local knowledge and cultural context in planning and implementing community-based disaster risk management initiatives.

Duration

01 hour

Facilitation Methodology

Interactive Lecture, Open Discussion, and Q/A

Training Aids Required

- Multimedia projector
- Laptop with a screen for display
- White Board with erasable markers
- Flip charts with permanent markers
- Session handouts

Training Approach

Facilitators are encouraged to follow the steps below while conducting this session:

1. Begin by providing an opening of the session. As a brainstorming activity, ask the participants whether they recall the definition of community. If they cannot describe it appropriately, provide them with an easy definition in your own words.
2. After the brainstorming activity, put the following question to probe the discussion.

   Probing Question: *"Think of a time when you were new in a community—what actions helped you to be accepted, and what mistakes should be avoided?"*
3. Based on the above continued discussion, help the participants understand the importance of community mobilization, which refers to bringing together community members and enabling them to address the primary issues. It is not just about meetings — it is about action as a team.

4. Describe that mobilization is effective when individuals can see the threats they share (such as flood, drought, fire, or earthquake). After they settle on such threats, they are in a position to combine their hands to mitigate or handle them. To this end, they should converge on one platform.
5. In the next step, ask participants what their strategy will be to get entry into a specific community to start the CBDRM project. Collect examples from the participants and note them down on the flip charts.
6. After writing about the tips for entry into the community and the way to mobilize it, hang the flip charts on the wall at prominent places.
7. After having a fruitful discussion and going to the following slides, ask participants again how to get the confidence of the community and what their suggestions are for building rapport in the community for the successful execution of the CBDRM project. Collect the maximum number of suggestions from participants and record them on the flip charts.

   Probing Question: *"How can local traditions, festivals, or indigenous knowledge be used as an entry point for effective community mobilization?"*
8. After a fruitful discussion over the above question, follow your PowerPoint slides and explain with different examples.
9. Finish by underlining that effective mobilization transforms communities into better-organized and stronger units. Encourage participants to remember that, when communities collaborate, they can mitigate disaster risks and manage emergencies independently, without relying on external assistance.
10. Remind at the end, that in the next session, the participants will learn the values of forming different disaster management committees at local levels and shall decide on the roles and responsibilities of each committee.

Useful Tips for the Facilitator

- It is advisable to start the next session with a short icebreaker to get the participants relaxed and ready for the next session.
- The facilitator may also request one volunteer to help with writing on flip charts.
- The daily management team may help in hanging flip charts on the wall at prominent places

Background Material of the Session

2.2.1. Selection of the Target Community

Identifying communities at risk has been a major challenge for both government and non-government stakeholders seeking to assist the vulnerable populations. With the devastating floods of 2010 and 2022, many non-government organizations supported the government institutions in developing flood resilience in flood-prone districts. However, one of the key challenges for disaster management authorities is the lack of a priority list of districts, tehsils, and union councils affected by disasters. This is largely due to the absence of a scientific multi-hazard vulnerability and risk assessment database. Unfortunately, such data is still not available at the district level. As a result, NGOs often selected target areas on their own or in

coordination with the DDMAs, based on disaster severity and their specific focus or interest. This highlights the urgent need for conducting a comprehensive Multi-Hazard Vulnerability and Risk Assessment (MHVRA) database, both at macro and micro levels. With this type of digital database so readily available, non-government stakeholders can also choose truly high-risk communities, reducing the chance of overlapping, targeting underserved or missed communities, and streamlining the impact of disaster risk reduction work in general.

2.2.2. Importance of Community Mobilization

Community mobilization is a very important procedure in the risk reduction of disasters and development planning since it has the capability of involving the locals actively in their need's identification, prioritization, and collective actions. It assists in creating ownership, trust, and the involvement of the members of the community so that it ensures that the DRR measures are relevant, sustained, and rooted in local realities. Mobilization makes the communities increase their awareness about the threats that they are most likely to encounter and are more able to prepare, including the use of local resources, coordinate themselves, and cooperate with external stakeholders. It is also associated with leadership, a stronger social cohesion, and increased ability of the communities to respond and recover after the emergency. Community mobilization in terms of CBDRM is part and parcel of participatory risk assessment, risk reduction planning, implementation, and long-term sustainability of disaster preparedness and response activities.

The external stakeholders must do certain things before commencing the project, so as to come into the community to facilitate rapport building and establish meaningful involvement of the stakeholders in the CBDRM process. These steps are explained in the following sub-sections, where each one is described in more detail:

2.2.2.1. Making an entry for getting local knowledge

As much information as possible should be collected before interacting with the target communities. These details will enable external stakeholders to comprehend the essential physical, demographic, and socio-economic backgrounds of the society, where the external stakeholders will engage to begin CBDRM projects. Before a person interacts with the community, the following are the minimum requirements needed to know about the community.

2.2.2.2. General information

- Location of the villages and the union councils
- Physiographic characteristics
- Climate and weather
- Population (total, male, female, children, elderly, and differently abled people, etc.)
- Major sources of livelihood
- Housing condition (katcha/pacca/semi pacca etc.)
- Location of houses and other infrastructure from the potential threat
- Land use pattern of the village
- Important disasters that happened in the past and their impact on the village

- Hazards, vulnerabilities, and capacities assessment database available within the village

2.2.2.3. Specific information

Identify social groups	Cultural arrangements	Vulnerable households and groups
✓ What types of social groups are available that include the main ethnic, class, and religion-based groups? ✓ Which group/class is in the majority, which one is in the minority, and more importantly, what is the level of relationship among the groups? ✓ Is there any disaster management committee available already? When was it formed? Who are/were the members? Who formed the committees, and what is the status of these committees? ✓ Is there any other sort of committee existing or working in the village? ✓ Enlist the volunteers who are the main driving force to interact and make an entry in the village. ✓ Enlist the social institutions that exist in the community.	✓ What types of hierarchy are available at the household level? What are family and community level structures, and how much are they organized? ✓ What are the common ways of celebrating, traditions, and other occasions? ✓ What are the appropriate timings and days for the community to engage them in CBDRM-related activities?	✓ What are the different vulnerable elements prone to frequent disasters? ✓ Collect information about the marginalized groups, including differently abled people, the elderly, children, and gender, including transgender individuals, etc. ✓ At the village level, different types of ongoing conflicts exist among various groups and societies. It is essential to understand the severity and current status of such disputes. It will also help the outsiders to maintain independence and neutrality with the groups.

These information will be useful before visiting the village/UCs so that a preliminary, clear image can emerge. One can cross-check and validate information during actual field surveys by using Participatory Rural Appraisal (PRA) tools for data collection. One cannot primarily gather all such information in advance from the secondary sources. However, some Government and Non-government Organizations might already have helpful information and data gathered beforehand. Most of the critical information, though, will be collected using PRA (Participatory Rural Appraisal) tools, which are explained in detail in Module 3 of this training manual.

- Check if the district-level MHVRA data are available. In most cases, the NDMA and PDMAs have conducted such assessments, which can be easily found on their websites.
- During 2023, the Pakistan Bureau of Statistics, Government of Pakistan, completed the population census for all districts of Pakistan. The District Census Report is a crucial tool for collecting basic information about the targeted villages.

- Revenue record (Mohafiz Khana) is one of the valuable sources available with the district administration and can be obtained through a proper request.
- Data about the villages can also be obtained through key informant interviews and focus group discussions conducted by individuals who work in or belong to the respective villages.
- Most of the I/NGOs and local civil society organizations might have information about the target villages.



The external stakeholders are collecting primary data with the targeted community members

- The external stakeholders can also search for such data in the respective district-level offices, as some additional data might be available in some shape.

2.2.3. Building Rapport with the Community

After selecting and gathering initial information about the targeted areas, the next step is to build rapport and confidence with the target communities. It has been observed that the community feels reluctant to share their household information and does not fully participate unless they are convinced about the CBDRM project initiatives. Therefore, the key to the success of the CBDRM project is to develop a relationship of trust and friendship and build rapport with the target communities. Once the rapport has been established to earn the community's trust, they will open their hearts, share their concerns, issues, and problems, and provide accurate information while participating in the full spectrum of the CBDRM process. Some of the following tools are helpful for outsiders to take into consideration while building rapport with the community:

- Frequent visits to the community.
- Be open and discuss the purpose of the meeting and working with the targeted communities.
- Listening to local people about their concerns/issues and problems.
- Learning about the coping mechanisms for facing disasters in the past.
- Do not give false hopes and be transparent.
- Learn to be more understanding and empathetic.
- Treat the community members as you would like to be treated yourself.

2.2.4. Behavioral and Dealing Approaches

The behavioral and dealing approach of external stakeholders can play a vital role in developing a rapport with the community. Below are some of the Dos, Don'ts, and tips for the project team to consider while in contact with the community:

- Remember key people's names with whom there will be more frequent interaction.
- During any meeting, the community should be given more time for discussion.
- During the meeting, if the community members are sitting on the ground, sit with them instead of sitting in a chair.
- Meet with a smiling face and show your humility.
- Learn to give and get feedback. Community and Outsiders
- Respect the local culture, problems, and way of living.
- Show interest and listen carefully to what people are saying.
- Listen to participants very attentively and say little.
- Create an atmosphere of friendliness and equality.
- Stimulate community members to reflect on their problems and needs.
- Open your heart and find the courage to trust.
- Be observant rather than judgmental.

Case Study 2: Building Trust Through Cultural Respect

Within the Cultural Area Karakorum (CAK) programme, implemented in Pakistan between 1992 and 1998 through collaboration between the Government of Pakistan and Germany, numerous study exchange activities were organized to promote scientific research and support PhD studies on both sides. Many of the researchers also completed their Ph.D. in various specialized areas.

One of them was a German anthropologist who came to Pakistan to conduct her PhD research in Chitral. She had already had an idea of the basic words in the Khowar language and even wore traditional clothes when she arrived at the airport in Peshawar. Her two-year stay among the Chitralis also engaged her in community life, as she not only took part in joyful but also sorrowful events, and experienced Ramadan fasting, living in unity with the people. As a result, she built strong trust, love, respect, and rapport with the community, and families welcomed her wholeheartedly, exchanging information openly.

Lesson learned: This example demonstrates that by being sensitive to local culture, language, and traditions, external stakeholders can earn the trust of the community and establish effective partnerships that foster meaningful interactions.

Self-Assessment / Key Questions & Answers

Q1. What is one of the primary challenges faced by stakeholders when selecting target communities after major disasters like the 2010 and 2022 floods?

a). Lack of funding from international donors

b). The community refused to participate in CBDRM

c). Absence of a formally approved list of high-risk areas by local authorities

d). Shortage of trained volunteers

Correct Answer: C

Q2. What is a key step in building information that should be gathered about a community before project entry?

a). Offer financial incentives during the first meeting

b). Minimize community interaction to avoid resistance

c). Conduct frequent visits and openly discuss project goals

d). Begin with technical training sessions

Correct Answer: C

Q3. Given Scenario: You are part of the project team to start a CBDRM project and plan to visit the targeted communities for the first time. The community members are reluctant to share their problems with you, as they feel many organizations have previously visited, made promises, and then left without real support.

- *What steps will you take to build rapport and gain the trust and confidence of the community to welcome you and share information wholeheartedly?*
- *How will you demonstrate transparency and avoid creating false expectations while still motivating the community to participate?*

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Q4. Given Scenario: In a drought-affected village in Umerkot, there are multiple social and ethnic groups, including farmers, daily wage laborers, small shopkeepers, religious leaders, and ethnic minorities. Conflict exists between ethnic groups, while on the other hand, women also have little voice in decision-making. You have been tasked with mobilizing this community.

- *What strategy will you adopt to ensure inclusive participation for all groups*
- *How will you handle the existing conflicts to make sure the wider community accepts mobilization efforts?*

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Q5. Community mobilization in the CBDRM process mainly helps by

a). Ensuring government funds are appropriately allocated

b). Activity involving locals in identifying MHVRA, Risk reduction planning, and participatory implementations

c). Reduce the number of NGOs working in the area

d). Eliminating all disaster risks

Correct Answer: B

References

- Prevention Web, *"Tool 1: Checklist for Inclusion in the 7 Steps of CBDRR".*
- International Federation of Red Cross and Red Crescent Societies (2014), *"IFRC Framework for Community Resilience".*
- Asian Disaster Preparedness Center, Bangkok, Thailand (2011), "*Participants' Workbook on 'Community Based Disaster Risk Reduction".*
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Session 2.3: Formation of Disaster Management Committees and Assigning Roles and Responsibilities

Session objectives

By the end of this session, participants will be able to:

- Explain the need and importance of forming village and union council disaster management committees to build resilience.
- Outline the structure, composition, and functions of local-level disaster management committees, sub-committees, and assign roles to committees and individuals.
- Identify key responsibilities and demonstrate coordination mechanisms between these committees and relevant stakeholders during disaster preparedness and emergency response.

Duration

01 hour 30 minutes

Facilitation Methodology

Group work, Interactive Lecture, Open Discussion, and Q/A

Training Aids Required

- Whiteboard
- Multi-color markers
- Flip charts
- Flip stand
- Multimedia with laptop and screen
- Masking tape
- Scissors
- Cutter
- Session handouts

Training Approach

1. Once you state the goals of the session, inform participants that this session will consist of a group exercise. They will be able to establish local-level disaster management committees, determine the purpose of the committees, and assign roles and responsibilities to each committee and its members.
2. Relate this session to the previous one. Ask the participants to share some of the key points they recall from the last session. Write these points on a flip chart with the help of a volunteer from the participants.
3. After a fruitful discussion, divide the participants into three broader groups equally:

- **Group 1:** Establish a union council-level disaster management committee, what will be the main functions of this committee, how many members would be required, and what are the criteria for selecting members. How will it be different from the CERT mentioned above?
- **Group 2:** Establish a community emergency response team. What will be the main functions of this team? How many members would be required? What are the criteria for selecting members? How will it be different from the UCDMC mentioned below?
- **Group 3:** Establish a village emergency response team, assign roles and responsibilities, and suggest whether you would like to form further sub-committees. How will it be different from the CERT mentioned above?

4. The following are to be discussed and decided by each group:
    a. What are the primary responsibilities of the committee/team?
    b. What specific roles and duties will each member have?
    c. What equipment and resources will the committee/team require?
    d. What types of training would be required for members?
    e. What support is needed to help the committee function effectively and remain sustainable?
5. Allow 30 minutes of discussion and committee formation, and then 10 minutes per group to do their committee presentations.
6. The groups will then discuss, and each will give their committee structure and how their members will carry out their duties and responsibilities.
7. As groups are giving presentations, the facilitator must recap what they are talking about and make valuable ideas to enhance the committee setup and clarification of roles and responsibilities.

Useful Tips for the Facilitator

- Though supported material is provided, it is suggested to the facilitator to avoid a proper lecture, and more involve participants in group work and discussion.
- This session is a follow-up of the earlier session; therefore, it is suggested to have the same facilitator.
- This is quite a critical session, and thus, the facilitator must remain active and participatory throughout the group work, their presentation, and the follow-up discussion.
- The facilitator is expected to move around the groups, observe, and provide required directions. Get everyone involved and engage them in the conversation.

Background Material of the Session

2.3.1. Need for Establishing Disaster Management Committees at the Local Levels

To understand the community's prevailing vulnerabilities, coping capacities, and potential risks, and to plan and implement DRR interventions, it is very important to form disaster management committees and emergency response teams in the target villages and union councils. These committees should be involved in every step of the CBDRM process. The purpose of such committees and teams is to help themselves organize and identify risks, develop an effective disaster risk reduction plan, and ultimately become disaster-resistant in the long run by being ready and able to mitigate and respond to disasters effectively. The extent of the disaster management committee's expression might differ depending on its geographical reach. However, in the yield villages and union councils, it is proposed that such committees should be considered at this point. The committee will be referred to as the "Union Council Disaster Management Committee" at the UC level. Under each of the UCDMC, sub-committees may be formed at the different levels, such as villages and communities in rural areas, and wards or housing societies in urban areas. These sub-committees can take the form of Community Emergency Response Teams (CERTs), Village Emergency Response Teams (VERTs), and Ward or Housing Society Response Teams (WRTs and HSRTs) to ensure localized preparedness and response. Where there is such a committee already in place, the existing scope of those committees and the proposed disaster management committees and emergency response teams shall be compared against the disaster management and emergency response capabilities. Subcommittees can also be established within the union council disaster management committee to enhance planning and the sharing of roles and responsibilities.

The following section outlines and clarifies the roles, responsibilities, and structure of the local disaster management committees.

2.3.2. Formation of the Union Council Disaster Management Committee

2.3.2.1. Proposed structure of UCDMC

The lowest level in the Government Governance structure is the Union Council. Disaster risk management and emergency response are on the frontline of forming a committee at this level. In most Government Departments, including agriculture, education, health, police, revenue, livestock, and elected representatives, among others, the lowest tier in the administrative structure is the one they interact with at the community level.

Whereas members of UCDMC can be chosen by a voting procedure that involves community representatives, respective Village Disaster Management Committees, and local government officials, the most important members should be the UC Secretary, UC Chairman, In-charge of BHU, school representatives, Halqa Potwari, Chairman Zakat Committee, Lady Councillor, Youth Councillor, religious leaders, and representatives of civil society organizations. This aims to promote an even representation of government, non-governmental, and community stakeholders. Similarly, UCDMC members can differ depending on the size of the union council and the presence of village-level disaster management committees.

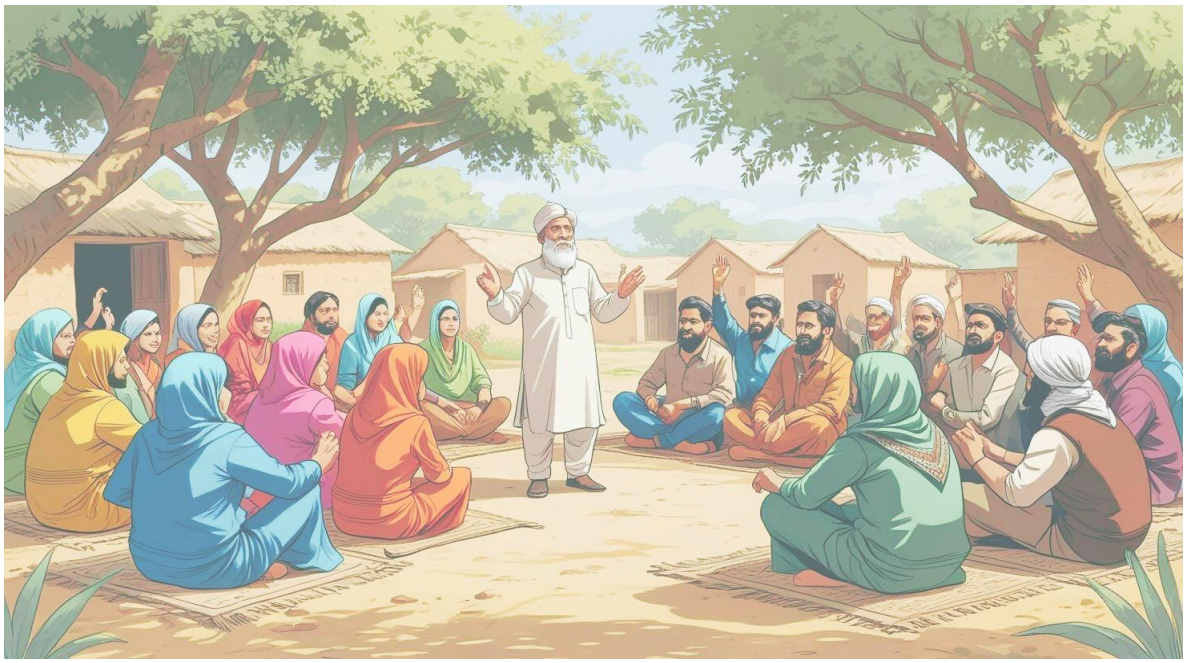
To ensure equal participation from the community levels, it is suggested that two members from the Village Disaster Management Committees can be selected from the VDMCs existing at the village levels in the respective UCs. To make it more inclusive, it is advised to choose one male and one female active participant who will be members of the UCMDC.

To further structure it and clearly allocate roles and responsibilities, the UCDMC can be divided into subcommittees focused on specific areas. Such sub-committees may focus on areas such as early warning systems, evacuation, shelter management, and coordination, among others. To improve their knowledge and increase their efficiency, specific tasks can be assigned to members, and they must also be trained to enhance their capacities.

Additionally, areas such as proposal writing, management skills, financial management, resource mobilization, leadership, interpersonal communication, and negotiation skills, among others, can be provided to UCDMC members to enhance their capacities.

2.3.2.2. Responsibilities of the UCDMC

The primary purpose of UCDMC is to establish networking at the Tehsil and District levels to coordinate effectively with government line departments and other stakeholders to manage unforeseen threats. UCDMC is responsible for mobilizing financial and technical resources of the VDMCs, CERTs, and VERTs to strengthen the capacities of members, community volunteers, and other stakeholders as a proactive community in the short term and a disaster-resilient community in the long term.



Community meeting to choose members for the local disaster management committees

The union council disaster management committee is responsible for:

- Organizing and ensuring cordial working relations with all local stakeholders in the whole process of disaster management, including the Government, Non-Government Organizations, and VDMCs.
- Conduct multi-hazard, vulnerability, and risk assessment and bring together the outcomes to produce a risk profile for the union council and formulate a UC-level disaster management plan based on the MHVRA results and MHVRA conducted at village levels by the VDMCs.
- Raise funds to undertake training and refresher courses and organize training programmes and refresher courses for the UCDMC members, VDMCs, CERTs, VERTs, and other community volunteers.
- Prepare and manage a community disaster management facility/center to operate the UCDMC office, conduct meetings, and store emergency response kits.
- Maintain emergency response kits, ascertain maintenance, upgrading, and records, and make the kits accessible to the CERTs who will have access to the kits in situations in case any incident or disaster occurs.
- Organize meetings regularly and more frequently during the monsoon season, or as required, share the updates with the DDMAs and tehsil administration, and keep proper records of the meetings for internal record and use.
- Provide direct support to government officials and humanitarian organizations in assessing damages and needs during disasters, and prepare reports for the relevant government authorities.
- Assist government officials and humanitarian partners in food and non-food items distribution during any emergency.
- Compile/revise the list of village-wise trained volunteers and consolidate different items of the training package, and simulate together through an exercise.

NOTE: The UCDMC may take such other measures as deemed necessary.

The UCDMC can also enlist the services of the Social Welfare Department, the UN, and NGOs to train on other topics, such as skills development, financial management, proposal development, resource mobilization, leadership, interpersonal communication, and negotiation.

2.3.3. Formation of Community Emergency Response Team

2.3.3.1. Proposed structure of CERT

Within the UCDMC, selected members can be professionally trained to form a sub-committee known as the Community Emergency Response Team (CERT). The CERT plays a critical role in saving lives and assisting local government, the UCDMC, and communities during emergencies. CERT members can be trained in first aid, search and rescue, and firefighting; should practice these skills regularly; and have the obligation to administer first aid and provide immediate medical care to the injured before relocating to safer places or to hospitals. They sort and treat injuries by severity, establish medical camps when necessary, and ensure that medicines are accessible to victims.

The CERT is the core of local disaster preparation and response. Headed by the CERT Captain, responsible for taking the lead, coordinating, planning, and reporting so that all activities of the team take place smoothly. In line with this role is the vice-captain, who serves as the deputy and assumes responsibility when the captain is unavailable. The two of them give leadership, direction, and commitment to the group.

Lastly, the success of CERT is not only based on training and equipment, but also on a sense of responsibility and trust that has been developed within the community. Frequent meetings, team drills, and practice help the team stay ready. It is the collaboration of leaders, rescuers, health workers, firefighters, and other professionals that makes the CERT a dependable first line of defense, saving lives and minimizing suffering in disasters.

NOTE: The CERT may acquire further support from Rescue 1122, Civil Defence, PRCS, AKAH-P, and local NGOs/CSOs to organize training on emergency response management, covering topics such as local early warnings, evacuation, first aid, search and rescue, and firefighting for UCDMC, CERT, and VERT members to build internal capacities.

2.3.3.2. Responsibilities of the CERT

- Information gathering and record-keeping are the key tasks. Members of CERT gather valuable information about the respective villages and union councils, including details on hospitals, health personnel, and population demographics. They document cases of those affected, including names, family information, village/UC of origin, and injury type, among other details, as part of the general emergency response.
- The team also maintains the emergency response kits, including first aid, light search and rescue, and firefighting-related equipment, keeps them functional and secure, and mobilizes resources and arranges logistics management.
- It is also the responsibility of CERT to coordinate and maintain networking with other committees, such as the VERTs, WERTs, and VDMCs.
- They are in frequent contact with local NGOs, INGOs, government organizations, and relief agencies. Their support to other groups facilitates prompt relief and coordination among various stakeholders.
- There is also the importance of community awareness and involvement. The team educates on disaster preparedness and response, conducts regular meetings, addresses internal team concerns, and pushes community members to engage in active participation to enhance resilience.
- Lastly, the CERT offers rescue and evacuation assistance. They are used to transport the injured to hospitals, facilitate safe transfers between hospitals, and assist in evacuation processes so that those who require advanced treatment can be promptly referred and attended to.

2.3.4. Formation of Village Disaster Management Committee

2.3.4.1. Proposed structure of VDMC

Establishment of VDMC is a critical step in the CBDRM process because, through this step, the impetus for the successful application of CBDRM-related interventions is realized, and the whole CBDRM development process is guaranteed to be sustainable not only for the interventions but also for the VDMC itself. VDMC members need to be elected in a manner

that reflects all settlements in the revenue villages, and they should make every effort to do so. As far as the members of the VDMC are concerned, it may vary according to the village/hamlet's size, presence, and members proposed by the community itself.

2.3.4.2. Responsibilities of the VDMC

The village disaster management committee shall follow:

- Conduct multi-hazard, vulnerability, and risk assessment and develop a disaster management plan to reduce the risks of natural and human-induced hazards at the village level.
- Maintain close coordination with other VDMCs, UCDMC, CERTs, and NGOs/CSOs during pre-disaster times in general and during any emergency in particular.
- The committee will conduct regular meetings among themselves, which should be more frequent during the onset of any imminent threats to the community.
- Monitor imminent threats, conduct drills, and simulation exercises to train the community volunteers and draw lessons to improve the coping mechanism.

NOTE: The VDMC may take such other measures as deemed necessary.

2.3.5. The Village Emergency Response Team

Within the VDMC, the Village Emergency Response Team (VERT) can be formed as a sub-committee mainly consisting of community volunteers/workers who will later be professionally trained as first responders. They assist affected village households and mobilize trained volunteers in their respective areas to ensure efficient, timely responses.

2.3.5.1. Proposed structure of the VERT

The VERT command/operational group consists of:

- VERT Captain
- VERT Assistant Captain
- Search & Rescue Group Leader & Assistant Group Leader
- First Aid Group Leader & Assistant Group Leader
- Fire Fighting Group Leader & Assistant Group Leader

2.3.5.2. Responsibilities of the VERT

Note: It is essential to clarify that both the VERT and CERT function as complementary units of the VDMC and UCDMC. Their primary role is to remain vigilant and prepared to respond to emergencies at the village or union council level.

Key responsibilities of the VERT include:

- Maintain close liaison with CERT leadership to seek guidance, instructions, and share the same with the members from time to time.
- Hold meetings of the VERT members every quarter and discuss issues and follow-up actions. Meeting minutes must be shared with the respective CERT leadership.
- Participate in various training sessions for enhancing the knowledge and disaster management skills of VERT Leadership offered by different organizations or CERTs.

- Arrange a refresher to enhance the capacity and improve the skills of the VERT members.
- Develop an emergency response plan for the area and organize VERT members and other volunteers for an effective and safe response.
- Carry a social hazard map of the area and identify safer places
- Provide logistic support and stockpile items to VERT in case of any emergency or disaster.
- Establish a command-and-control post during any emergency.
- Mobilize VERT members in case of any minor to medium disaster in the village or any neighboring villages to save lives and properties.
- Facilitate the assessments and survey teams in the field if required.
- Organize hazards awareness programs from time to time for the community members.
- Play an essential role in providing early warning alerts door to door if needed, subject to specific hazards, with precautionary measures from time to time.
- Any other assignment given by CERT leadership.

2.3.5.3. Functions of sub-committees formed under the VERTs

The subcommittees perform their duties under the guidance of the VERT Captain, as required and specific to their groups.

A. Basic Search & Rescue Group

The search and rescue subcommittee is alongside the others, all vital in saving lives. These volunteers tend to be physically fit, primarily young people, and are trained in basic search-and-rescue methods. They are involved in evacuating people from danger zones, transporting the injured to safer places, and also assisting in safe movement during floods, earthquakes, or fires. The availability of a motivated rescue team significantly enhances the community's ability to respond effectively.

- The team is always ready for any eventuality in the specified area.
- Continue training in evacuation techniques, rappelling, climbing, search and rescue, and keep updated on all the new methods.
- Must follow the safety protocols of evacuation and search and rescue.
- Assess the situation thoroughly and obtain all necessary information from the Incident Command Post before responding to the situation.
- Conduct search and rescue operations, evacuate injured individuals, and relocate them to safe areas.
- Coordinate with First Aid Group members and other responding teams at the disaster site.
- Hold regular meetings of the group members every month, and minutes of the meeting should be recorded.

B. First Aid Group

This team typically consists of local health workers and first-aid-trained volunteers. They offer direct medical care, first aid to the injured, and referral to health institutions when the patient requires advanced treatment. They are vital in emergencies when professional health services may not be available.

- Maintain a record of the capabilities of the available health and emergency facilities in the nearest area.
- Design training programmes for first aid and health capacity enhancement.
- Coordinate with the CERT for advanced training and capacity building of the group members.
- Motivate group members to respond to the disaster site with the available toolkit.
- Maintain first aid boxes and other equipment ready by reviewing and checking them regularly and replenishing the expired and used medicines.
- Establish a First Aid Post at a safe place for the treatment of victims.
- Assess the victims in the Post and provide necessary first aid, and maintain a record of the victims.
- Adopt triage procedure if there are mass casualties and make arrangements for transferring the victims to professional health care.
- Hold regular meetings of the group members, and minutes of the meeting should be recorded.

C. Firefighting Group

The firefighting members are community volunteers who undergo training in basic firefighting skills, the proper use of extinguishers, and measures to control fire expansion using local methods and resources. They also raise awareness among the population about fire safety practices. This team will liaise with the rescue group during emergencies to ensure that evacuation and fire control procedures are implemented.

- Maintain a record of Fire Brigade Services available nearby cluster and in the city.
- Inspect and identify fire hazards in the cluster/unit area regularly.
- Inspect the main gas and electric supply sources regularly to avoid any mishap in the cluster area.
- Create awareness in the community about the domestic fire hazards.
- Motivate households to learn fire extinguishing methods by using local and readily available resources in their homes, and learn how to use them.
- Arrange training programs for capacity building of the group members.
- Respond to fire incidents/disasters by extinguishing fires through an improvised system or with the help of Fire Extinguishers.
- Activate Emergency Protocols – removing gas cylinders from the incident site. Turn off power sources (electricity buttons).
- Hold regular meetings of the group members every month, and minutes of the meeting should be recorded.

2.3.6. The Housing Society or Ward Response Team

The housing society response team is a squad of volunteers trained in the urban context across the country, particularly in the urban centers. The team will act as effective first responders and assist affected communities/households in a timely and efficient manner.

The HSRT/WRT may also establish sub-committees similar to those under the VERT. However, given their role in managing urban emergencies, these teams may require more advanced emergency response equipment.

Case Study 3: Strengthening UCDMCs for Glacier Lake Outburst Flood Preparedness in Ghizer District, Gilgit-Baltistan

Communities in Gilgit-Baltistan, particularly Ghizer and Hunza, are highly vulnerable to Glacier Lake Outburst Floods (GLOFs), flash floods, and landslides due to fragile mountain ecosystems and the impacts of climate change. Recurrent disasters between 2010 and 2018 destroyed homes, farmland, and infrastructure, prompting the GLOF-II Project, led by UNDP, the Ministry of Climate Change, and local NGOs, to establish Union Council Disaster Management Committees.

These committees were formed in valleys such as Gupis and Yasin, with inclusive membership of women, farmers, youth, and religious leaders. They received training in risk assessment, hazard mapping, and early warning dissemination, supported by AKAH-P. The DDMA and Rescue 1122 were engaged in simulations to link community structures with formal institutions. Partnerships enabled the development of early warning systems, protective works, and volunteer-led monitoring of glaciers and rivers.

During the 2018 Ishkoman GLOF, UCDMCs worked with DDMA to evacuate 300 households, reducing casualties. Their inclusion in district contingency planning ensured local risk assessments shaped official strategies, while women's participation enhanced household preparedness and safe evacuation practices. NGO linkages also provided grants for climate-resilient agriculture, aligning disaster risk reduction with livelihoods. However, challenges emerged when many UCDMCs became inactive after donor-funded projects ended, due to limited resources, weak recognition, and the lack of a National CBDRM Framework. Inconsistent coordination with government departments further limited sustainability.

Self-Assessment / Key Questions & Answers

Q1. What is the primary purpose of forming Union Council Disaster Management Committees?

a). To manage national-level disaster programs

b). To assess risks and lead disaster management planning at the UC level

c). To replace the union councils in governance

d). To oversee district-level emergency funding

Correct Answer: B

Q2. Who is usually included in the Union Council Disaster Management Committee?

a). Only elected national assembly members

b). Only local NGO representatives

c). UC Secretary, Chairman, BHU In-charge, school reps, community, representatives, and civil society

d). District-level judges and lawyers

Correct Answer: C

Q3. One of the key responsibilities of UCDMC is to:

a). Provide legal aid during disasters

b). Mobilize resources and maintain coordination with stakeholders

c). Enforce zoning laws in flood-prone areas

d). Establish provincial emergency cells

Correct Answer: B

Q4. Given Scenario: If a UCDMC formed during a donor-funded project becomes inactive after the project ends, how could official recognition by DDMAs or municipal bodies ensure its long-term sustainability?

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Q5. Given Scenario: If multiple NGOs establish UCDMCs in the same district without coordination, what challenges might arise, and how could a comprehensive CBDRM Framework address these gaps?

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References

- United Nations-World Food Program, Islamabad (2012), *"Training manual on Community Based Disaster Risk Management".*
- United Nations Development Programme, Islamabad (2010), *"Training manual on 'Community Based Disaster Risk Management".*
- Provincial Disaster Management Authority, Government of Khyber Pakhtunkhwa (2014), *"Participant's workbook on Community Based Disaster Risk Management, Urdu version".*
- Provincial Disaster Management Authority, Punjab Government of Punjab (2020), *"Community Based Disaster Risk Management Programme".*
- Aga Khan Agency for Habitat, Islamabad, *"Training Manual on Community Emergency Response Team".*



Notes

Module Three:

Participatory Risk Assessment Process



Module Three:
Participatory Risk Assessment Process

Objectives

By the end of this module, participants will be able to:

- ⇒ Knowing the basic concepts and terms used in disaster management.
- ⇒ Describe the disaster risk profile of Pakistan, highlighting prevalent natural and human-induced hazards and vulnerabilities that drive these risks.
- ⇒ Analyze risk factors across urban, rural, mountainous, coastal, and conflict-affected areas, recognizing the social, economic, and geographic diversities in climate and disaster exposures and available capacities.
- ⇒ Explain how climate change impacts ecosystems and communities in Pakistan, focusing on trends such as extreme weather events, glacial melt, droughts, and floods.

- ❖ Credit hours covered:
- ❖ Time required for this module: Four hours and 45 minutes

Sessions to be covered in this module

Session 3.1: An Overview of the Participatory Risk Assessment Process

Session 3.2: Use of Participatory Rural Appraisal Techniques for Hazard, Vulnerability, Capacity, and Risk Assessment

Session 3.3: Introduction to Digital Tools, Mobile Applications, and AI Tools for Data Collection

Proposed Agenda of Module Three

Time	Duration	Title of the Session	Facilitation Methodology
9:00 AM – 9:30 AM	30 minutes	• Registration and introduction • Training objectives and overview	• Formal session • Formal ceremony • Welcome by organizers • Announcement of administrative arrangements • An overview of the training
9:30 AM – 11:15 AM	1 hour and 15 minutes	**Session 3.1:** An Overview of the Participatory Risk Assessment Process	• Interactive lecture, • Open Discussion • Q/A
10:00 AM – 10:15 AM	***15 minutes***	***Working Tea***	
11:15 AM – 12:00 PM	45 minutes	**Session 3.2:** Use of Participatory Rural Appraisal Techniques for Hazard, Vulnerability, Capacity, and Risk Assessment	• Group work • Outdoor activity • Group work and presentations • Interactive lecture • Discussion • Q/A
12:00 PM – 1:00 PM	***60 minutes***	***Lunch Break***	
1:00 PM – 2:15 PM	1 hour and 15 minutes	**Session 3.2:** Use of Participatory Rural Appraisal Techniques for Hazard, Vulnerability, Capacity, and Risk Assessment **(Session 3.2 continued)**	• Group work • Outdoor activity • Group work and presentations • Interactive lecture • Discussion • Q/A
2:15 PM – 3:15 PM	1 hour	**Session 3.3:** Introduction to Digital Tools, Mobile Applications, and AI Tools for Data Collection	• Interactive lecture • Open discussion • Q/A
3:15 PM – 3:30 PM	***15 minutes***	***Tea Break***	
3:30 PM – 3:45 PM	15 minutes	Training evaluation	
3:45 PM – 4:00 PM	15 minutes	Closing ceremony Certificate distribution	



Session 3.1: An Overview of the Participatory Risk Assessment Process

Session Objectives

By the end of this session, participants will be able to:

- Explain the concept and purpose of a participatory disaster risk assessment and its role in CBDRM
- Identify and outline the four main steps of the risk assessment process: hazard, vulnerability and exposure, capacity, and risk assessment.
- Demonstrate the importance of involving local communities, disaster management committees, and external stakeholders in ensuring accurate and inclusive risk assessments.

Duration

1 hour and 15 minutes

Facilitation Methodology

Interactive Lecture, Open Discussion, and Q/A

Training Aids Required

- Multimedia
- Laptop
- Screen
- Flip Charts
- Permanent markers
- Session handouts

Training Approach

1. Start your session by defining the risk assessment, followed by the community-based disaster risk assessment definition, process, and steps for implementation.
2. Define the term disaster risk assessment and its importance in the disaster risk reduction planning and implementation.
3. During the discussion on the risk assessment process, remind participants of the key concepts of hazards, disasters, vulnerability, capacity, and risks, and help them deepen their understanding.
4. To recall memories of earlier sessions, use four scenario-based questions to illustrate these terms, then engage participants in group work to discuss and answer the questions provided at the end of the session.

Group Activity 1: Divide participants into four equal groups. Try to balance the gender ratio.

- *Hand over to each group an equal number of copies of 4 different scenarios, given at the end of the resource material of this session. Please ensure that the members of the groups receive the exact copies of the scenario assigned to them.*
- *Encourage them to write their observations on the flip chart. Observe the process.*

5. After group work and presentations, stick the flip charts on the walls and have a question-and-answer session.

Probing Question: After the discussion on basic concepts, the facilitator may ask participants to *"Identify various tools used in participatory rural appraisal methods, also known as participatory risk assessment tools"*.

6. The facilitator should ask participants to raise their hands who know about the PRA tools. You can invite them one by one and ask each to enumerate at least one tool they have used.
7. First, ask which PRA tools are helpful for multi-hazard assessment. Invite one volunteer to write the tool's name on the whiteboard or flip charts.
8. Similarly, ask for another two questions, which PRA tools are helpful for vulnerability, followed by capacity and risk assessment.
9. Likewise, the volunteer shall write the tool names on the flip charts under specific categories.
10. After completing the discussion on the tools, in the next session of this module, participants will have the opportunity to practice using some of these tools.
11. At the end of the session, invite participants to ask further questions or seek clarifications about the topics discussed.

Useful Tips for Trainers

- If time allows, the facilitator may divide participants into four different groups to discuss the names of the different PRA tools. One group can focus on tools used for hazards, while the other three can identify tools for vulnerabilities, capacity, and risk assessment. Participants familiar with these tools can be evenly distributed among the groups to guide and support others in counting names.
- Summarize the points given by the participants.

Background Material of the Session

3.1.1. What is disaster risk assessment?

A qualitative or quantitative approach to determine the nature and extent of disaster risk by analysing potential hazards and evaluating existing conditions of exposure and vulnerability that together could harm people, property, services, livelihoods, and the environment on which they depend. By making use of the disaster risk assessment, we imply that we are evaluating the hazards, the vulnerabilities, the exposures, and capacities of a given region. With the knowledge about the hazards and vulnerabilities that communities are exposed to and familiarity with the available resources in the area, we will eventually be able to determine the risk as high, medium, or low.

Disaster risk assessment is a participatory study that combines primary and secondary data on the potential hazards in a given area, the adverse effects likely to result from each hazard, and the consideration of coping mechanisms.

3.1.2. Participatory disaster risk assessment: a community-centered approach

Conducting a meaningful disaster risk assessment is a foundational step in the CBDRM process. It ensures that disaster management plans are based on the reality of the community's conditions, perceptions, and priorities, which face the consequences of frequent threats. The community-based participatory nature of this process empowers the communities by making them the center of risk assessment, and also entails the participation of the external stakeholders to proofread. endorse, and map the technical features of estimation.

An extensive process of participatory risk assessment comprises four main steps:

3.1.2.1. Hazard assessment

It involves outlining and listing all possible threats to the community, such as floods, earthquakes, landslides, and drought. It consists of examining the frequency, intensity, and probable effects of each hazard, assessing the subject community's awareness level, and determining whether an early warning system is available. Social mapping, hazard mapping, seasonal calendars, and historical profiling are PRA tools that can be implemented with community members and local stakeholders.



Participatory method for hazard zonation using google maps

3.1.2.2. *Vulnerability assessment*

This step focuses on identifying both what is at risk (exposure) and why it is at risk (vulnerability). Exposure can be said to be having persons, their infrastructure, or livelihoods located in areas prone to hazards, whereas vulnerability is referred to as the susceptibility of persons to damage by factors such as poverty, poor infrastructure, and accessibility to services. Communities and local disaster management committees use PRA tools—such as transect walks, direct observations, problem trees, vulnerability matrix, and social mapping—to jointly evaluate these aspects. This approach helps them gain deeper insights into local risks and develop practical, context-driven risk reduction plans.



School-going children often use the routine shown in this photo to reach school each day, which puts their lives at greater risk

3.1.2.3. *Capacity assessment*

Within the targeted communities, there are often resources and local strengths that can help people cope with disasters. Some community members may already have valuable knowledge, skills, or experiences in dealing with emergencies. This step focuses on identifying existing resources, such as locally available equipment, traditional knowledge, local coping practices, mutual support systems, skilled individuals, and community-based institutions. Recognizing and using these local capacities is key to building effective and sustainable disaster risk reduction strategies. It also examines who owns access to such resources and who controls them. PRA tools, such as Venn diagrams, rankings, and resource mapping, are handy for visually depicting these assets and their allocation.

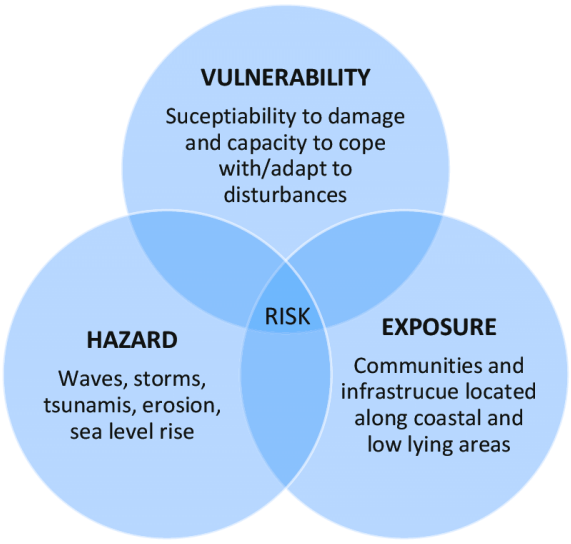
3.1.2.4. *Risk assessment*

Lastly, the process combines the data relating to hazard, vulnerability, and capacity to determine the perceived levels of risk. Risk is commonly expressed through the equation:

Risk = Hazard × Vulnerability × Exposure ÷ Capacity

This simple equation helps classify risk into different categories, such as low, medium, high, and very high-risk areas.

We need to understand how community members perceive risks, as this determines their actions, priorities, and readiness to take such actions. Community risk prioritization can

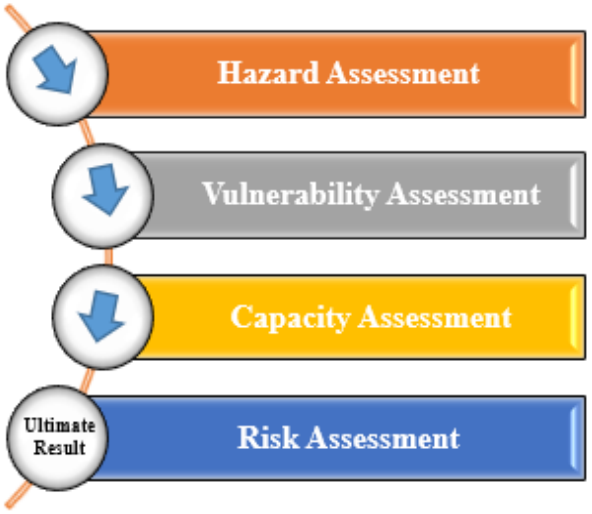


Risk exists where hazards, vulnerabilities, and exposure meet together

be achieved through matrix ranking and group discussions, which help quantify and rank risks according to their relative importance as perceived by the community.

The process of participatory risk assessment may involve community representatives, local disaster management committees, and other external stakeholders, including government organizations, NGOs, and technical experts, to ensure legitimacy, inclusivity, and accuracy. The local disaster management committees should be involved in particular, as they are positioned to help access, mobilize participants, and assist in interpreting the results locally.

By involving people in such an assessment in a collaborative manner, risk assessment transcends a technical activity, gaining significant potential as a method of awareness raising, organization, and action. It ensures that the after-the-event disaster management plans are not only technically acceptable but also locally owned, socially acceptable, and practically viable.



Chain of participatory risk assessment process

The nature of the hazard, vulnerability, and capacity analysis is depicted in the figure above, which indicates that the final product of the process is the estimation of the risk amount, along with the associated knowledge.

Self-Assessment / Key Questions & Answers

Scenario for Group One

Your village is situated in a drought-prone area. There has been no rain for the last 2 years. Animals are dying, and the community is finding it difficult to find water for survival. The government has implemented a water supply project in your village, but a significant chunk of the water is going to a few influential people in your village. Additionally, snake bites are prevalent in your town. Many people have died due to snake bites and are at greater risk, especially children.

Discuss the risk assessment process in light of the scenario as mentioned above.

Questions for Discussions

- *What are the major hazards the community is currently facing?*
- *What options do they have: to leave the village or to remain with the community?*
- *What risks might arise if you decide to leave, and what risks might occur if you choose to stay at the village?*

Scenario for Group Two

You live in a village situated on the riverbank 12 kilometers away from the main road. The village experiences floods every year. River erosion is also a serious issue faced by the community. Most people own their land across the river. Many accidents have occurred while traveling on obsolete boats, resulting in deaths and injuries to villagers. Children and women are especially vulnerable to these conditions, as they often cross the river to help their family members. Some people have also constructed houses in the dry riverbed. In the event of flooding in the riverbed, vulnerable families are often swept away, resulting in loss of life.

Discuss the risk assessment process in light of the scenario as mentioned above.

Questions for Discussions

- *What are the main hazards the community faces in this situation? Which of these hazards do you think poses the highest risk to the lives and livelihoods?*
- *Which groups are more vulnerable in this scenario, and why are they vulnerable?*
- *What coping strategies or resources does the community currently use to deal with these risks?*
- *If you were to prioritize the top three risks that need urgent action, what would they be? What practical measures can the community and local authorities take together to reduce these risks and protect lives and property?*

Scenario for Group Three

You live in a beautiful mountainous valley. You are fortunate to have a waterfall near your village. Your village is also renowned for its fruits and exotic trees. However, landslides have become a recurrent hazard in that area. The community has lost many human lives as well as livestock. Every second house has been affected by the landsliding in one way or another. Whenever it rains, the village also faces flash flooding.

Discuss the risk assessment process in light of the scenario mentioned above.

Questions for Discussions

- *What are the main hazards the community faces in this situation? How have these hazards affected people, livestock, and houses in the past?*
- *What are the root causes of frequent landslides?*
- *If you had to prioritize, which risks should be addressed first to protect lives and livelihoods? What actions can the community and local authorities take together to reduce the impact of landslides and flash floods?*

Scenario for Group Four

You live in a densely populated town where most houses are built very close to each other, often sharing walls. Many houses use gas cylinders for cooking, and electrical wiring is old, exposed, or poorly maintained. During the peak summer season, electricity load-shedding forces families to rely on candles or battery-powered lamps at night.

Last week, a major fire broke out in one of the houses after a short circuit in an overloaded extension cord. The fire spread rapidly to neighbouring houses, as many households store

flammable items such as firewood, fuel, and cloth materials. Three houses were completely burnt, and several people suffered burns and smoke inhalation. Children and elderly people had difficulty evacuating due to narrow lanes and blocked passageways.

Despite the community's efforts using buckets of water and sand, the fire brigade arrived late due to traffic congestion. The incident has heightened fear in the community, as many people realize their houses are also at high risk. However, few households have fire extinguishers, and there is no community-level fire response plan.

Discuss the risk assessment process in light of the scenario mentioned above.

Questions for Discussions

- *What are the main hazards in this situation: fire, smoke inhalation, electrical faults, gas cylinder leaks, or structural collapse?*
- *Which of these hazards has the highest potential to cause widespread damage?*
- *Who are the most vulnerable and why are they more at risk during a sudden domestic fire?*
- *What physical, social, or environmental factors increase the community's exposure to domestic fires?*
- *What resources or coping strategies does the community currently have? Are they enough?*

Additional Question, Answers to Practice as Homework

Q1. Which of the following is not part of the four key steps in participatory risk assessment?

a). Hazard assessment

b). Vulnerability and exposure assessment

c). Climate modeling assessment

d). Capacity assessment

Correct Answer: C

Q2. What does "exposure" refer to in disaster risk assessment?

a). The degree to which people are vulnerable due to poverty or lack of infrastructure

b). The presence of people, livelihoods, or assets in hazard-prone areas

c). The process of training community members in first aid

d). The technical analysis of disaster frequency

Correct Answer: B

Q3. What is the primary purpose of hazard mapping in PRA?

a). To calculate exact rainfall levels

b). To identify high-risk zones in the community

c). To conduct surveys on literacy levels

d). To draw political boundaries

Correct answer: B

Q4. Which PRA tool is most helpful in identifying seasonal trends in hazards and vulnerabilities?

a). Historical timeline

b). Problem tree

c). Seasonal calendar

d). Resource inventory

Correct answer: C

Q5. The Venn Diagram tool in PRA is mainly used to:

a). Evaluate land degradation

b). Identify resource-rich households

c). Analyze institutional relationships and influence

d). Measure rainfall distribution

Correct answer: C

Q6. Given Scenario: In a mountain community, landslides block the main road, disrupting access to schools and health facilities. During discussions, community members attributed poor drainage and deforestation to major causes.

- *What PRA tool can be used to examine the root causes of the landslide issue in this community?*
- *What can the community do with the results of this assessment to create a realistic risk reduction plan?*

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References

- United Nations Office for Disaster Risk Reduction, *"Definition: Disaster risk assessment".*
- National Institute of Disaster Management, National Disaster Management Authority (2009), "*Participant's Workbook on Community-Based Disaster Risk Management".*
- Data Shiksha, (2024). *"The Step-by-Step Process of Risk Assessment for Disaster Preparedness".*
- International Federation of Red Cross and Red Crescent, "Enhanced Vulnerability and Capacity *Assessment".*
- International Federation of Red Cross and Red Crescent, *"Vulnerability and Capacity Assessment Toolbox".*



Session 3.2: Use of Participatory Rural Appraisal Tools for Hazard, Vulnerability, Capacity, and Risk Assessment

Session Objectives

By the end of this session, participants will be able to:

- Explain the concept and purpose of participatory rural appraisal in the context of disaster risk assessment.
- Identify and describe specific PRA tools used for assessing hazards, vulnerabilities, capacities, and risks.
- Practice and apply PRA tools such as hazard mapping, problem tree analysis, and risk matrix to engage communities in MHVRA processes.
- Evaluate the strengths and limitations of community-based risk assessment using PRA tools for planning and preparedness.

Duration

02 hours and 30 minutes

Facilitation Methodology

Group Work, Outdoor Activity, Group Presentations, Interactive Lecture, Discussion, and Q/A

Material Required

- Note pad
- Pen
- Camera for field data collection
- Multimedia
- Laptop
- Screen
- Flip Charts
- Masking tape
- Scissors
- Permanent markers
- Session handouts
- Marker packet of small tips

Process for delivery of the session

1. After describing the session objectives, inform participants that the session is lengthy but very participatory, in which participants will conduct outdoor activity and hands-on exercises to assess hazards, vulnerabilities, and capacities in their villages.

Group Activity 1: Before the presentation, the facilitator shall divide participants into three groups for an outdoor activity lasting approximately 30 minutes. Each group will be assigned the following tasks:

- ***Group One:*** *Identify primary and secondary hazards in the surroundings of the training venue, including both natural and human-induced hazards, by observing the nearby surroundings.*
- ***Group two:*** *Identify types of vulnerability, vulnerable areas, and elements, note the vulnerabilities that you have observed, and discuss the root causes.*
- ***Group Three:*** *List resources and capacities found in the surroundings that could be useful for DRR and emergency response.*

2. After 15 minutes of group field observation, participants will return to the training hall, and each group will share its findings in a plenary session. Facilitators can then provide further clarification, particularly on distinguishing hazards and vulnerabilities, as participants often confuse the two during observation.
3. At this stage, when participants have clarity of hazards, vulnerabilities, and capacities, discuss that for the participatory risk assessment, different PRA tools can be used to assess risks.
4. Start explaining about the PRA tools one by one, first discussing the PRA tools used for hazard assessment, followed by other tools used for vulnerability, capacity, and risk assessment.
5. First of all, discuss the important tool, i.e., preparing social and hazard and risk maps and their importance and utility while participants are in the field.

Group Activity 2: Before explaining the rest of the PRA tools, conduct a short activity of 15 minutes of map reading. For this purpose, distribute color copies of the Hazard and Risk Maps of Gulmit (see below). Give them the following guiding questions for map reading:

1. *What types of hazards can you identify on this map? Which areas are shown as the most hazard-prone?*
2. *Which settlements, or community assets, fall in high-risk zones?*
3. *Which areas do you think need priority for preparedness and response?*
4. *Can you identify safer areas for evacuation or temporary shelters?*
5. *Based on this map, what three actions should communities take to reduce risks?*

Group Activity 3: While explaining the purpose and use of utilizing the PRA tools, the facilitator shall divide participants into six smaller groups and assign each group a specific tool to ensure proactive follow-up during their group work. The assignment for each group is as follows:

Group 1: *Draw a historical profile of the village of one of the participants who has more knowledge of his/her village.*

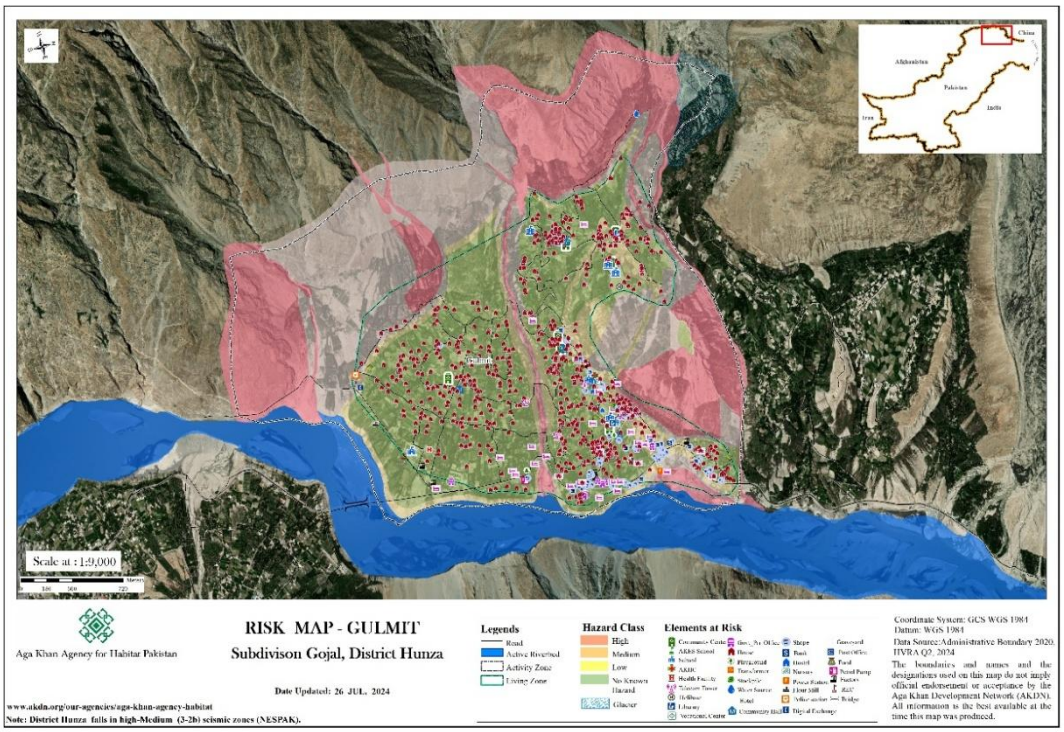
Group 2: *Draw a seasonal calendar of the village of one of the participants who has more knowledge of his/her village.*

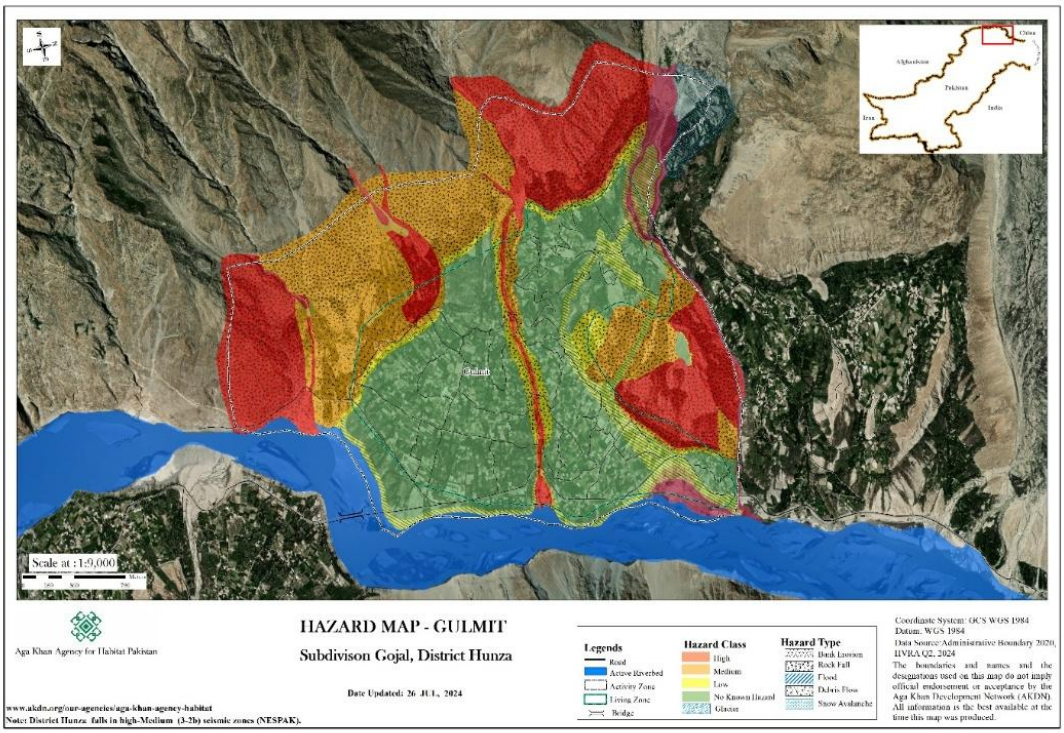
Group 3: *Develop a questionnaire form to collect information from community members for a door-to-door survey about hazard, vulnerability, and capacity.*

Group 4: *Prepare a matrix for prioritizing community hazards.*

Group 5: *Develop a problem tree for a community by identifying the major issues of the community.*

Group 6: *Develop a social and hazard map of any targeted village, using different colors to create a legend for both types of maps.*





6. Give them 30 minutes for group exercise and 10 minutes for group presentation.
7. The facilitator shall give suggestions to improve the tools and summarize the discussion about the above group exercises.
8. Close your session by asking any further questions.
9. After the participatory discussion. Thank all the participants for their active participation in the group exercises.

Useful Tips for Facilitator

- During the question-answer session, try to involve those participants who until now have not taken part in the discussion and ask them to explain the terms in their own words.
- As there are several group exercises, the facilitator should closely monitor timings to cover all PRA tools, and also each group has proper time for presentations followed by Q/A session.
- Follow up with participants in each group and give your comments for improvement while they are preparing PRA tools. Usually, participants prepare tools, especially a map with one marker, which does not look aesthetically pleasing. Therefore, ensure that participants use different colors for their exercises.
- Ensure that different color markers of small tips and larger tips are available in greater quantity.
- Also ensure that the Gulmit hazard and risk maps have been printed in color before the start of the session.

Background Material of the Session

3.2.1. Introduction of participatory rural appraisal

Participatory Rural Appraisal (PRA) is a set of innovative and interactive methods that enable local communities to share, enhance, and analyze their knowledge of life and conditions, thereby planning and acting effectively. PRA techniques are widely recognized for their role in disaster risk management, especially in community-based multi-hazard, vulnerability, and risk assessments. The tools facilitate participation, enhance locally owned information, and generate context-relevant knowledge that is vital for making risk-informed decisions.

3.2.2. Participatory rural appraisal tools and their utility in risk assessment

Participatory Rural Appraisal, often referred to as PRA, is a participatory and visual method that allows communities, particularly those in rural areas or in the face of disaster, to assess their living conditions, identify challenges, and develop measures for improvement. Risk assessment is one of the most valuable applications of PRA, especially in areas facing disasters, where lived experiences, local knowledge, and collective memory provide an essential foundation for research on hazards, vulnerabilities, and capacities.

PRA tools cannot be found to simply be instruments of gathering data; instead, they are processes of mobilizing local people, giving them authority to conduct risk analysis and make decisions. With these tools, it becomes possible to involve even the most oppressed part of the population, including women, the elderly, and differently abled people, in a relevant process. The communities are facilitated to discuss, map, and diagram their knowledge of hazards, vulnerabilities, capacities, and risks using simple materials such as flip charts, pens of exciting colors, stones, sticks, and local items.



Community meeting to conduct risk assessment using PRA tools

In the following sub-sections, the use of different PRA tools for risk assessment has been mentioned in detail:

3.2.3. PRA tools used for hazard assessment

Hazard assessment through PRA enables communities to identify and analyze the types, frequency, and impacts of natural and human-induced hazards they experience. The following PRA tools are typically employed:

3.2.3.1. Focus Group Discussions

Focus Group Discussions (FGDs) are facilitated group conversations where community members share their experiences, perceptions, and priorities related to hazards, vulnerabilities, and coping strategies. FGDs help gather diverse viewpoints—especially from women, youth, elders, and differently abled people—ensuring that the planning process remains inclusive and reflective of local realities. Through structured questions, participants discuss the impacts of past disasters, available resources, and potential solutions, enriching the overall risk analysis.

- **Purpose:** Understand community perceptions, lived experiences, vulnerabilities, and capacities related to hazards.
- **Output:** Consolidated qualitative insights that inform risk profiling, preparedness planning, and community-led interventions.
- **Participants:** Separate groups of men, women, youth, elders, differently abled people, and marginalized groups, facilitated by trained moderators.

3.2.3.2. *Key Informant Interviews*

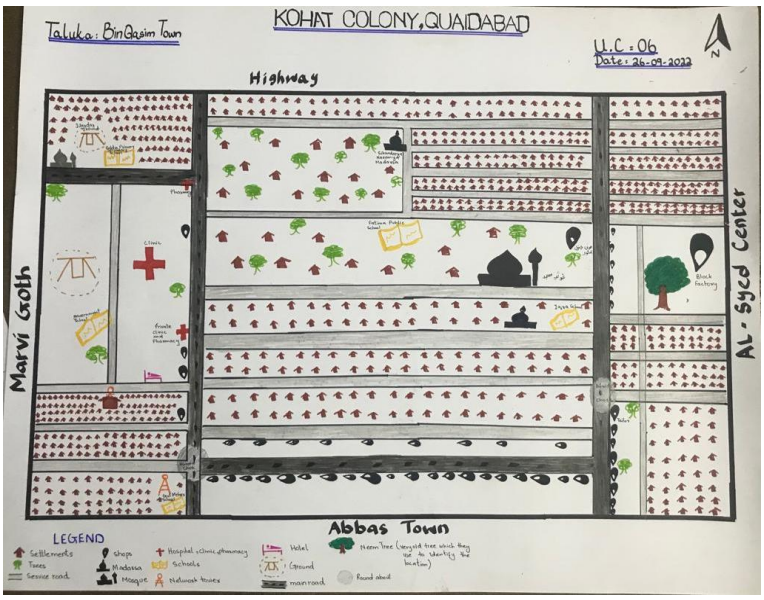
Key Informant Interviews (KIIs) involve one-on-one discussions with individuals who possess specialized knowledge about the community, local systems, or disaster history. These may include village elders, teachers, health workers, religious leaders, local government officials, or technical experts. KIIs provide in-depth information that may not surface during group activities, helping validate data collected through other tools and strengthening the accuracy of the risk assessment.

- **Purpose:** Collect expert insights, verify community information, and understand institutional roles, past disaster experiences, and systemic gaps.
- **Output:** Detailed qualitative information that complements FGDs and community mapping, contributing to a comprehensive risk profile.
- **Participants:** Local leaders, sectoral specialists, government representatives, schoolteachers, health staff, and individuals with long-standing knowledge of the area.

3.2.3.3. *Social mapping*

Social mapping is a participatory tool used to highlight important social features such as households, roads, schools, health centers, religious places, and water sources. Community members develop a social map using easily available materials such as different color flip charts, markers, and other local materials. This tool helps identify population distribution, social resources, and areas of concern within the village.

- **Purpose:** Understand community structure and identify vulnerable groups and key social resources.
- **Output:** Visual map showing the community layout and socially important landmarks.
- **Participants:** Local men, youth, elders, representatives of vulnerable groups, and external stakeholders.



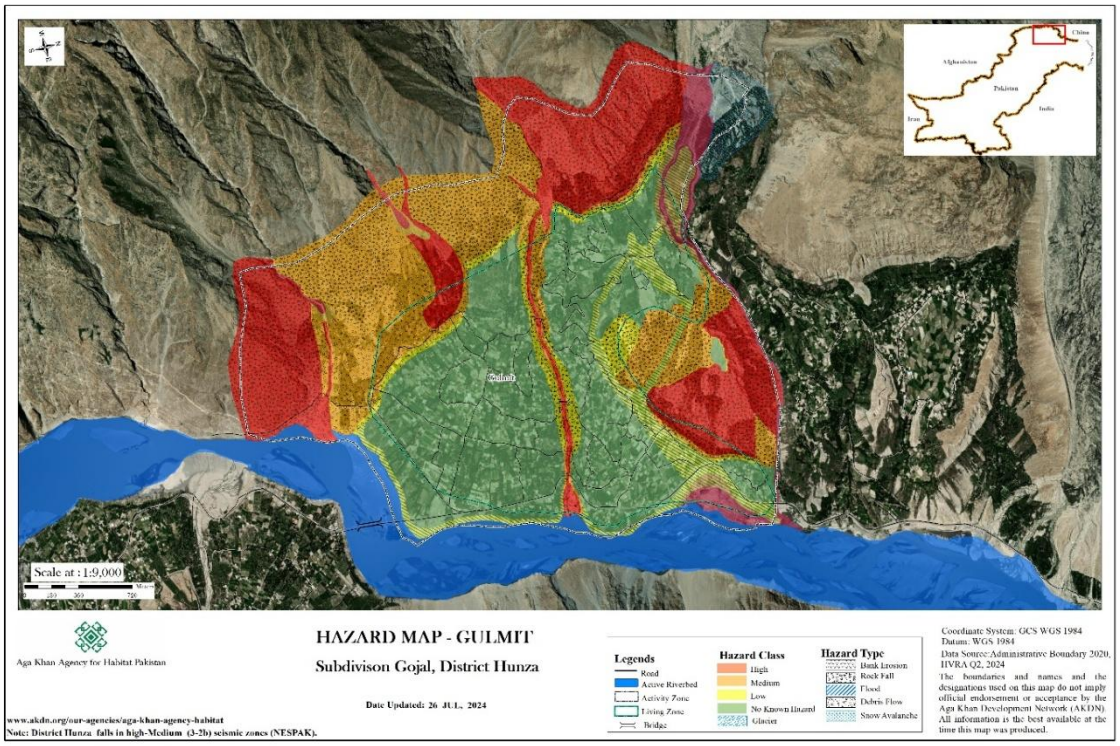
Social map developed by the community showing physical features of the village

3.2.3.4. *Hazard mapping*

Hazard mapping is a community-based method where local people draw maps indicating areas affected by various hazards, such as floods, landslides, or fires. Participants use markers, colored flip charts, different symbol charts, or other objects to highlight hazard-prone locations, thereby facilitating spatial awareness and community dialogue.

- **Purpose**: Identify hazard-prone areas and identify houses situated in hazard-prone areas
- **Output**: Visual representation of hazard-prone areas

- **Participants**: Local men, women, youth, elders, and external stakeholders as facilitators



Hazard map was prepared based on direct observations and social mapping

3.2.3.5. Hazard ranking

Hazard ranking is a participatory tool used to help communities prioritize the most significant hazards affecting their area. Through structured discussion, participants assess each hazard based on its frequency, severity, potential impact on lives and livelihoods, and the community's capacity to cope. This process enables communities to systematically compare multiple hazards and agree on which threats require immediate attention, deeper analysis, or preparedness measures.

- **Purpose:** Identify and prioritize hazards based on their likelihood and impact to support targeted risk reduction planning.
- **Output:** A ranked list of hazards showing community consensus on which threats pose the greatest risk.
- **Participants:** Local men, women, youth, elders, representatives of vulnerable groups, and facilitators who guide the scoring and discussion process.

3.2.3.6. Historical timeline/profile

This tool helps the community recall major hazard events over the past decades. It records the frequency, severity, and consequences of disasters experienced by the community. Involving children and youth also provides insights into the major disasters their village faced and how they managed to cope with them.

- **Purpose**: Understand past disasters and trends
- **Output**: Chronological list of significant events with dates and impacts

- **Participants**: Elderly men and women, differently abled people, children, VDMC members, youth, and facilitators

Year	Disaster Type	Direct effects	Severity
2005	Earthquake	Houses were badly damaged	Severe
2018	Drought	Crops affected, less water in wells ,streams ran out of water animal deaths	Very severe
2015	Earthquake	The walls of houses specifically collapsed	Severe
2019	Covid	Human loss, education loss, food scarce due to no employment	Severe
2022	Diarrhea	Human loss especially children under five	Very severe

Sample of historical profile

3.2.3.7. Direct observations

These tools are used to cross-check and validate the information collected during the focus group discussions and mapping exercises. It involves visiting different parts of the village to observe exposed infrastructure, physical features, environmental features, and community behaviors. External stakeholders take note of signs of risk, unsafe areas, and other visible details that may confirm or differ from what was shared during group exercises.

- **Purpose:** Verify and supplement information collected during earlier PRA exercises.
- **Output:** Filed notes, photos, videos, observations, checklists highlighting key risks and community conditions.
- **Participants:** External facilitators, local men, VDMC members, and youth, etc.



Together with community members, external stakeholders directly observing the damages caused by various floods

3.2.3.8. Seasonal calendar

The seasonal calendar enables communities to map out hazards across different months of the year, helping to identify periods of vulnerability due to climate-related events, such as floods or droughts.

- **Purpose**: Understand seasonal patterns of hazards
- **Output**: Monthly timeline linking hazards, livelihoods, and community activities
- **Benefits**: Useful exercise for seasonal planning and preparedness activities at the village level.

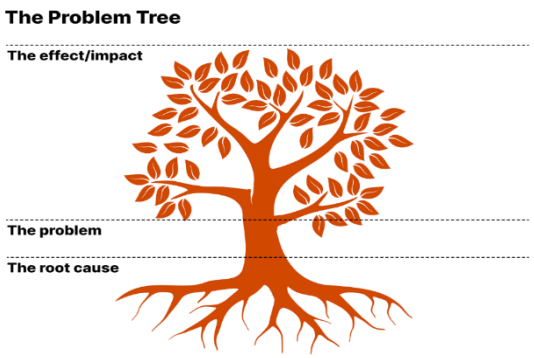
Rabi/Kharif Crops	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Gram												
Wheat												
Cotton												
Gawar												
Millet												
Sorghum												
Mash Bean												
Mung Bean												
Maize												
Sesame seed												
Sesbania												
Water Melon												
Vegetables												

A sample seasonal calendar developed by the villagers depicts different seasons, hazards linked to each season, and main activities carried out in the village throughout the year

3.2.4. PRA tools used for vulnerability and capacity assessment

Understanding a community's vulnerabilities and existing capacities is key to building effective disaster risk reduction measures. PRA tools facilitate this analysis through the following methods:

3.2.4.1. Problem tree analysis



A sample problem tree showing the root causes at the bottom (roots), the main cause (stem), and the effects as the outcomes (leaves)

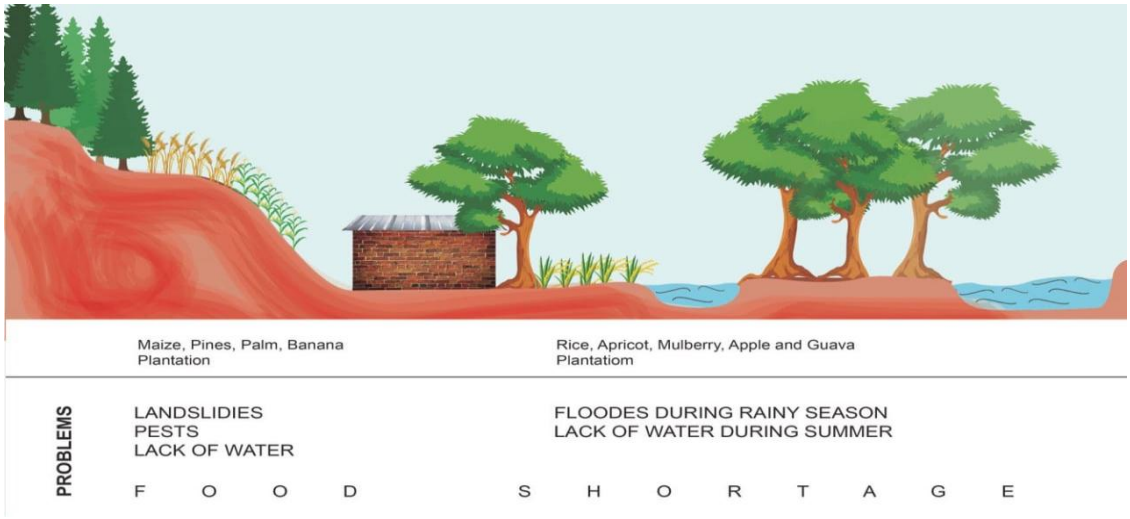
A visual tool that helps identify core problems and analyze their root causes and effects. Community members collectively build the tree structure by linking causes and consequences.

- **Purpose**: Explore underlying causes of vulnerability
- **Output**: A structured problem analysis diagram, knowing the problems, root causes, and their effects
- **Benefit**: Helps in designing context-specific interventions

3.2.4.2. Transect Walk

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

- **Purpose:** Examine physical features and identify areas or elements at risk through direct observation.
- **Output:** A cross-sectional sketch or table showing key observations across different zones of the community.
- **Participants:** Local people, youth, elders, community leaders, VDMC members, and external stakeholders.



Walking across the area with the community volunteers to note down changes

3.2.4.3. Household-level surveys for assessing vulnerabilities and capacities

To obtain more in-depth and firsthand information, collecting data at the household level or from a selected sample household is essential. This helps accurately identify specific vulnerabilities, as well as existing capacities and primary data for each sample household, for vulnerability and capacity mapping. Understanding household-level risks and strengths enables better planning of targeted disaster risk reduction interventions, ensuring that the most vulnerable groups receive appropriate support.

- **Purpose**: Visualize exposure and local capacities
- **Output**: Maps showing vulnerabilities and community assets
- **Benefits**: Supports integrated planning, capturing gender specific data

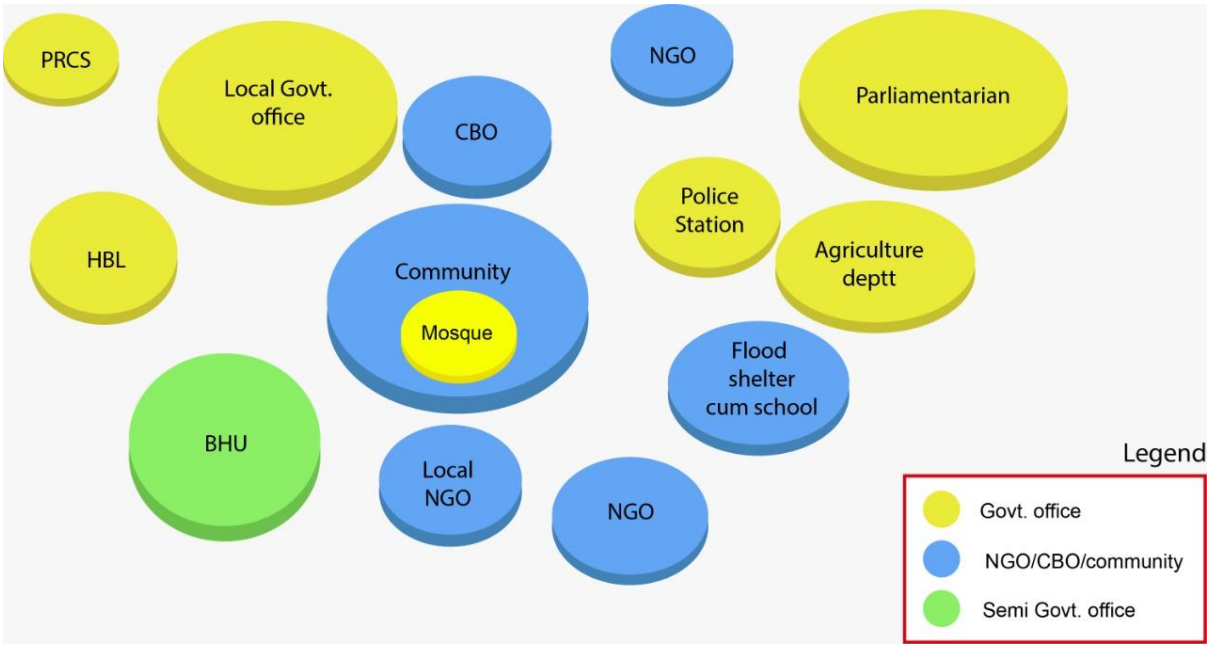
Name of the family head	Children under 05 years	Number of children living in the house	Number of females living in the house	Elder people who are more than 60 years old	No of differently abled people	House hold size	Age of the house	Katcha /Pacca /Semi Pacca	Numb er of stories in the house

3.2.4.4. Venn diagram

This is a very useful tool used to explore and understand the relationships between the community and different government and non-government organizations that influence and support them. **Note:** This PRA tool will be further explained in the next module.

- **Purpose:** Understand institutional linkages, support systems, and decision-making influence within the community.
- **Output:** Visual diagram showing different circles with sphere of influence and their level of involvement with the village.
- **Benefits:** Identify key stakeholders involved in DRR practices, highlight gaps where coordination or support is weak, and where stronger partnerships are needed.

3.2.4.5. Resource mapping/inventory



Sample Venn diagram showing different actors and their sphere of influence with the targeted village

This tool involves listing available human, physical, and financial resources at the community level, providing a baseline for what assets can be mobilized during a disaster.

- **Purpose**: Document resources available at the village and household levels
- **Output**: Comprehensive asset and skill inventory
- **Benefits**: Empowers community-led preparedness, emergency response, and recovery planning

3.2.5. PRA tools used for risk assessment

Risk assessment is the outcome of linking hazards, vulnerabilities, and capacities. PRA enables this process by synthesizing findings from previous assessments using specific tools:



Sample resource map developed by the community volunteers highlight resources available the village levels

3.2.5.1. Community risk mapping

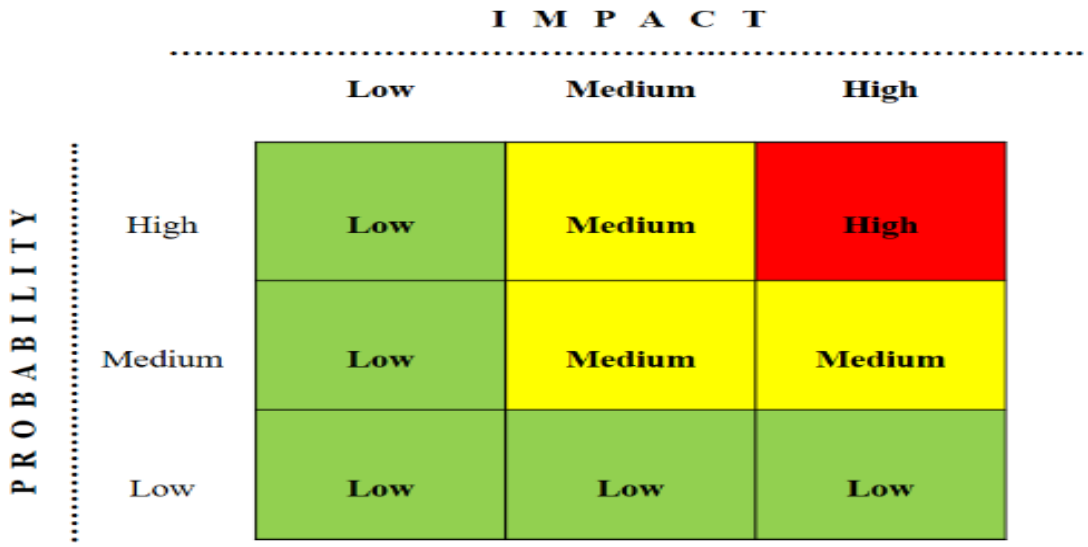
Combines the results from hazard, vulnerability, and capacity maps into a single integrated risk map, clearly visualizing where the highest risks lie and integrating community knowledge and perceptions.

- **Purpose**: Identify and locate risk hotspots
- **Output**: Classified risk map showing low, medium, high, and very high-risk areas
- **Benefits**: Helps external stakeholders in avoiding investment in high-risk areas or ensures that proper safety measures are taken for strengthening the infrastructure.

3.2.5.2. Risk matrix

After identifying hazards and vulnerabilities, communities can assess the probabilities and potential impact of each risk. A risk matrix helps prioritize risks based on severity.

- **Purpose**: Rank risks
- **Output**: Categorization of low, medium, high, and very high risks



Risk Assessment Matrix

- **Advantage**: Aids resource allocation and preparedness prioritization

Self-Assessment / Key Questions & Answers

Q1. In a PRA session, which tool is best suited for comparing the relative importance or severity of multiple hazards?

a). Hazard map

b). Risk matrix

c). Pairwise ranking

d). Resource inventory

Correct answer: C

Q2. Which of the following best describes the PRA tools?

a). Tool used only for data collection by external facilitators

b). Tools used together by the community and external stakeholders; however, community tales lead

c). A top-down approach, the government is taking the lead

d). A set of visual methods for communities to assess risks and capacities

Correct answer: B

Q3. What is the main purpose of social mapping?

a). Identify households with higher income

b). Locate hazard-prone areas

c). Showing physical features of the community

d). Tools used for capacity assessment

Correct answer: C

Q4. Which PRA tools can be used for finding the root causes of community issues?

a). Resource Mapping

b). Venn Diagram

c). Hazard Mapping

d). Problem Tree

Correct answer: D

Q5. Given Scenario: During a transect walk, the community observed that areas near the riverbank face frequent flooding, while upland areas suffer from water scarcity. Answer the questions below.

- *How can this observation help in disaster preparedness planning?*
- *Which PRA tool does this exercise represent?*

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Q6. Given Scenario: A community develops a seasonal calendar showing recurring floods during July–August and food shortages during the same period. Answer the questions below.

- *Which PRA tool is being applied in this case?*
- *What key insight does this provide for planning interventions?*

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Q7. Given Scenario: Last year's heavy rains submerged a small village. On the riverbank, many families lost crops, while families further upland were less impacted. Through the PRA exercise, the community used social mapping and vulnerability matrices to understand the impacts.

- *Based on this scenario, what PRA tool would be most helpful to target the households most exposed to flooding?*
- *What capacity analysis could the community undertake to find existing strengths that would enable it to deal with future floods?*

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References

- United Nations Office for Disaster Risk Reduction, *"Definition: Disaster risk assessment".*
- National Institute of Disaster Management, National Disaster Management Authority (2009), "*Participant's Workbook on Community-Based Disaster Risk Management".*
- Data Shiksha, (2024). *"The Step-by-Step Process of Risk Assessment for Disaster Preparedness".*
- International Federation of Red Cross and Red Crescent, "Enhanced Vulnerability and Capacity *Assessment".*
- International Federation of Red Cross and Red Crescent, *"Vulnerability and Capacity Assessment Toolbox".*



Session 3.3: Introduction to Digital Tools, Mobile Applications, and AI Tools for Data Collection

Session Objectives

By the end of this session, participants will be able to:

- Explain the role and functionality of digital tools, mobile applications, GIS, and AI technologies in conducting community-based disaster risk assessments.
- Demonstrate how participatory tools like mobile data collection apps and community-level mapping can enhance accuracy and inclusiveness in MHVRA.
- Highlight the importance of community training and involvement in the use of digital platforms for data gathering, risk prediction, and decision-making.

Duration

01 hour

Facilitation Methodology

Interactive Lecture, Open Discussion, and Q/A

Training Aids Required

- Whiteboard
- Multi-color markers
- Multimedia with a laptop and a screen
- Session handouts

Training Approach

1. Describe the session objectives and inform that this is a more technical but very important session. Also informed that there would not be any group activity in this session.
2. Insist on careful listening in this session, as this is a very important session.
3. These are more technical sessions, and concepts might be new and boring for the participants at the community levels. Therefore, the facilitator should plan in advance how to engage participants during this session.

   Probing Questions: Put a question at first about "*What participants understand about the digital tools". Ask for any examples*
4. You can also ask if participants have heard about "Artificial Intelligence". What is coming to their mind? Note it on the Flip charts about the views they are expressing.
5. After a fruitful discussion, start your session by explaining the introduction to different digital tools. While delivering the session, collect examples from the participants. Explain why it is so important to collect data from digital tools. What are the benefits they can see?

6. Explain how the community can benefit from the mobile technology.
7. While giving the example mentioned below in the box, you may also tell the story to the participants.
8. Further explain how the Google map can be a useful tool for risk assessment. Note down the story from the box and share it with participants.

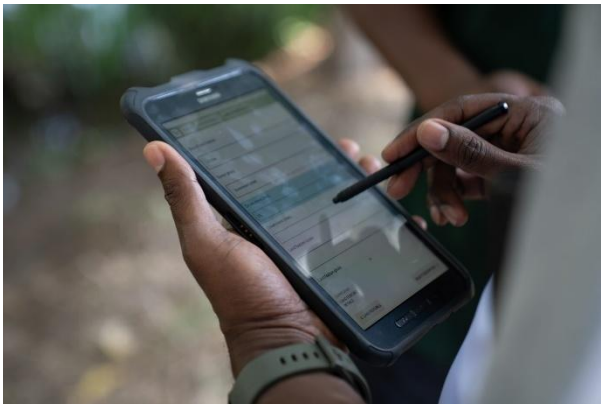
Background material of the session

3.3.1. Introduction to digital tools, mobile applications, and AI technologies for risk assessment and mapping

With disasters occurring more often and in a more severe way because of climate change and environmental degradation, the importance of precise, real-time, and community-focused data gathering has become highly important. It has always been customary to collect data on disaster risk assessments manually via field visits, field observations, and by means of PRA tools, and paper-based surveys by way of undertaking FGDs, KIIs, etc. Although these approaches remain useful, the advanced technology presents new and more potent tools that can significantly improve the quality, speed, and precision of the data gathered at the community level. Digital tools, mobile applications, and artificial intelligence (AI)-powered platforms are now playing a vital role in multi-hazard vulnerability and risk assessment, enabling disaster management practitioners and communities to make more informed decisions.

3.3.2. Use of mobile technology for community-based data collection

Smartphones are one of the most accessible digital tools found in both urban and rural settings. Given the increasing mobile penetration in Pakistan and other third-world countries, data collection through mobile applications has become a possibility, even in underprivileged regions. Apps like KoboToolbox, ODK (Open Data Kit), and Survey123 allow community volunteers and field staff to collect real-time data on hazards, exposures, vulnerabilities, capacities, and community needs.



Use of android mobile in the field for data collection

The applications succeed in that they are intended to be used offline and thus are a good fit in areas prone to disasters, where the availability of internet connectivity can be limited. The forms can be adapted to cover many indicators, including household structure, livelihood, and access to services, as well as past exposure to hazards and damage ratings. To utilize these tools properly, community members should be provided with basic education on the use of mobile applications, taking GPS points, taking pictures, and updating or syncing data. Community volunteers, once trained, can be actively working in collecting localized data and participating in feeding it to national or district-level disaster management systems.

3.3.3. Participatory GIS and GPS tools

Participatory Geographic Information Systems enable communities to generate spatial information about local hazards, vulnerabilities, exposure, and available resources. Participatory GIS does not focus on top-down mapping, as is usually present in methods of mapping risk, but instead concentrates on community knowledge and perceptions, which are incorporated into mapping risk. The technique can be applied in mapping flood-prone areas, landslide areas, evacuation paths, and positioning of essential facilities like schools, hospitals, and water terminations.



Participatory GIS mapping carried out with the community members during direct observation

Local disaster management committees, along with the trained volunteers, can mark important locations using a handheld GPS device or smartphone-integrated GPS applications, which provide accurate geo-referenced data. These tools support the creation of digitally enabled maps that are rich in context as well as in reliability and help in better planning and selective interventions.

GPS data and GIS data can also be linked to the hazard modelling or even satellite imagery, which only serves to improve the quality of risk evaluations. Societies that know how to and participate in this process of mapping have a higher chance of trusting the information and acting on the given information.

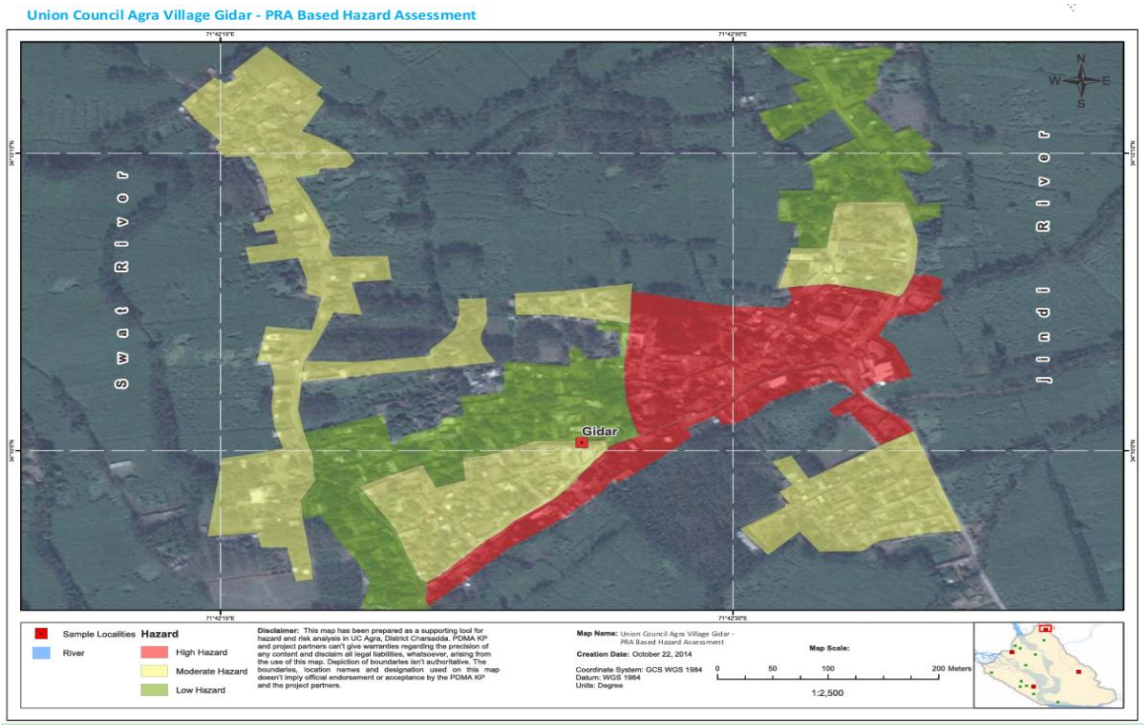
3.3.4. Google maps and high-resolution satellite imagery

Platforms including Google Maps, Google Earth, and other satellite resources serve as tools with high-resolution imagery, which can be analyzed for the terrains, infrastructures, and patterns of land-use. This assists in areas of flood plains, landslide areas, as well as well-populated informal settlements, which are all important in determining the exposure.



Hazard identification on a google map

With an orientation of the community members, it is possible to utilize these platforms to plot routes, map hazards, or even sketch the layout of their homes in an attempt to develop digital sketch maps. These visual resources help to present risk information that becomes more comprehensible and reachable, which is particularly relevant when communicating with people of different literacy levels.



Classified hazard map developed by combining community perceptions with google map, sung both local knowledge and digital tools during field work

3.3.5. AI-Based tools for risk assessment and predictive modelling

The integration of Artificial Intelligence (AI) in disaster risk management is an emerging but promising frontier. AI can crunch large volumes of data, such as satellite imagery, sensor outputs, social media, and hourly weather updates, to detect trends, look down the line into risks, and suggest action.

For instance:

- **Machine learning algorithms** can analyze past flood data to predict the extent of future floods.
- **AI-based image recognition** can detect damaged infrastructure from drone or satellite images.
- **Chatbots** can be designed to provide communities with real-time risk information, preparedness tips, and alert messages in local languages.

Although professionals typically operate these tools, the results can be easily distributed to the general population by presenting them in the form of mobile applications or on local telephone display screens. Complex AI-generated insights should be converted into community-friendly formats through proper training and working through local institutions.



Case Study 1: Empowering Communities through Advanced Early Warning Systems in Ghizer

The Aga Khan Agency Habitat-Pakistan (AKAHP) has set up an Early Warning System (EWS) in Sherqilla, Ghizer, that has turned out to be a savior of the communities. The system enables residents to save a lot of time, and warnings issued based on real-time data to share among residents will enable them to leave and go to safer grounds before the occurrence of disasters. Not only does it save lives, but it also causes less damage to personal property, crops, and livestock in this area, where most disasters strike.

In Pakistan, especially in the regions in the mountains, the deployment of the latest tools in community-based EWS is crucial since sudden-onset threats like flash floods, glacial lake outburst floods (GLOF), and landslides may appear. It is not possible to apply traditional knowledge anymore to this end; nowadays, we can observe that climate-induced disasters are becoming more frequent and of a stronger nature than before. The incorporation of recent technologies like automatic weather stations, river gauge sensors, cell phone-based alert communication, and the use of GIS to monitor helps position the local areas so that they are prepared in time to act.

Advanced EWS improves trust participation at the community level. Residents who have been trained in alerts and evacuation procedures feel more confident to act when alerts

and emergency evacuation procedures are undertaken. Women, youth, and volunteers involved in monitoring stations and disseminating warnings contribute to inclusive risk reduction, ensuring that no one is left behind. Moreover, in combination with community mobilization activities, including drills and simulation exercises as well as community education, these tools make early warnings into early action.

The case study of Sherqilla reveals the power of combining the impact of modern technologies and community ownership as a viable form of resilience. It illustrates that investments in localized EWS are not only about technology, but on the one hand, enable communities to be empowered in making informed and timely decisions to save lives and protect livelihoods.

3.3.6. The importance of community training and inclusion

Most of the effective application of digital models in assessing the risk of disaster relies on the training and empowerment of members of the local-level disaster management committees. No matter how advanced the technology is, it is not helpful when people who are in danger are not a part of the process, or when they do not have the capability to know what to do with the data and to interpret it. Therefore, the involvement of community volunteers and building their capacity through regular training and practical exercises is paramount to using advanced digital tools to get quicker and larger volumes of data. In this regard, the community volunteers can be trained through the following trainings:

Training programmes should focus on:

- Basic mobile phone operation and app usage
- Use of high-resolution satellite images for hazard and risk mapping
- Capturing and uploading data
- Reading and interpreting maps and GPS locations
- Reporting observations or hazards using simple digital formats
- Maintaining devices, charging kits, and connectivity

Training must be inclusive by including women, youth, differently abled people, and other groups left behind. This increases the levels of community ownership, and this also ensures that the risk information viewed is realistic about all sections of society.

Case Study 2: Building GIS Capacity for Disaster Risk Assessment: Lessons from Focus Humanitarian Assistance

Under the Focus Humanitarian Assistance programme (now known as AKAHP), a five-day training on the use of GIS and Remote Sensing in Disaster Risk Assessment was conducted in Karachi in 2006 by the Asian Disaster Preparedness Center, Thailand. The training brought together around 25 geologists and mapping experts from Focus Humanitarian offices in Pakistan, Afghanistan, and Tajikistan.

As a result, each country office began preparing GIS-based maps using GPS devices, having been trained to use these tools to delineate disaster-affected areas. Participants from Focus Tajikistan produced particularly valuable maps of the Khorog Valley, a region about 550 kilometers away, where mapping debris flow had always been challenging due to the two-day travel required for field data collection.

Following the training, the teams also instructed both male and female community members in the use of GPS devices and mapping techniques during debris flow events. These community participants successfully collected and stored field data, which the GIS teams used to prepare and regularly update disaster risk maps.

Importantly, this initiative also laid the foundation for establishing GIS labs in all Focus offices to support the continuous storage and updating of risk maps.

Self-Assessment/Key Questions & Answers

Q1. Which of the following tools allows offline data collection for community risk assessments?

a). Google Earth

b). Kobo Toolbox

c). Facebook Messenger

d). ArcGIS Online

Correct Answer: B

Q2. What is the primary function of participatory GIS in disaster risk assessment?

a). To conduct aerial drone surveillance

b). To involve local knowledge in mapping risks and resources

c). To simulate weather patterns

d). To send SMS alerts to communities

Correct Answer: B

Q3. Which statement best defines the use of Artificial Intelligence (AI) in disaster risk management?

a). AI is only used for social media analysis.

b). AI creates community evacuation plans

c). AI helps analyze large datasets to predict future risks and identify damage through pattern recognition.

d). AI eliminates the need for community input.

Correct Answer: C

Q4. Which of the following is not a benefit of using mobile-based tools for data collection in disaster-prone areas?

a). Real-time data transmission

b). Access to live TV broadcasts

c). Customized digital forms for damage assessment

d). Use in remote areas without internet

Correct Answer: B

Q5. Explain the role of community training in ensuring effective use of digital and AI tools for risk assessment. Why is inclusivity training essential?

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Q6. Describe how GIS and GPS tools can help identify and map hazards, Vulnerable locations, and evacuation routes in disaster-prone areas.

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Q7. In your opinion, what are some challenges communities might face when adopting digital tools for risk assessment?

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References

- Winjuan Son et.al., (2020); *"Applications of artificial intelligence for disaster management"*, abstract published in Springer Natural Link, Volume 103, pages 2631–2689
- United Nations Development Programme; *"Global Digital Guides".*
- United Nations Office for Disaster Risk Reduction, (2021), "*Making Disaster Risk Information Inclusive and Accessible: Guidance Note."*
- *ODK Docs, "Open Data Kit (ODK) Documentation and Guides."*
- Harvard Humanitarian Initiative, *"KoboToolbox for Humanitarian Response."*
- UNDP Global Centre for Technology, Innovation and Sustainable Development, *"Participatory GIS for Community-Based DRR."*
- OECD Policy Paper (2021), *"Artificial Intelligence and Disaster Risk: Opportunities and Challenges."*
- Microsoft AI for Good Initiative, *"AI for Humanitarian Action."*
- Tanu Gupta, and Sudip Roy (2024), *"Applications of Artificial Intelligence in Disaster Management", published in ACM Digital Library, Indonesia.*



Notes

Module Four:

Participatory Disaster Management Planning



Module Four:
Participatory Disaster Management Planning

Objectives

By the end of this module, participants will be able to:

- ⇒ Explain the key components and significance of community-level disaster management planning.
- ⇒ Analyze stakeholders and define their roles and responsibilities in the planning process.
- ⇒ Mobilize local and external resources for plan implementation.
- ⇒ Develop inclusive, actionable, and community-owned disaster management plans.
- ⇒ Integrate the needs of women, children, the elderly, and differently abled people into the planning process.

- ❖ Credit hours covered:
- ❖ Time required for this module: Six hours

Sessions to be covered in this module

Session 4.1: An Introduction to Disaster Management Planning at the Community Level

Session 4.2: Stakeholder Analysis for Disaster Management Planning Process

Session 4.3: Resource Mobilization for Disaster Management Planning and its Implementation

Session 4.4: Developing Disaster Management Plans at the Community Level

Proposed Agenda of Module Four

Time	Duration	Title of the Session	Facilitation Methodology
9:00 AM – 9:30 AM	30 minutes	• Registration and introduction • Training objectives and overview	• Formal session • Formal ceremony • Welcome by organizers • Announcement of administrative arrangements • An overview of the training
9:30 AM – 10:45 AM	01 hour and 15 minutes	**Session 4.1:** An Introduction to Disaster Management Planning at the Community Level	• Group work • Interactive lecture • Open discussion • Q/A
10:45 AM – 11:00 AM	***15 minutes***	***Tea Break***	
11:00 AM – 12:30 PM	01 hour 30 minutes	**Session 4.2:** Stakeholder Analysis for Disaster Management Planning Process	• Group work • Interactive lecture • Open discussion • Q/A
12:30 PM – 1:30 PM	***60 minutes***	***Lunch Break***	
1:30 PM – 2:30 PM	01 hour	**Session 4.3:** Resource Mobilization for Disaster Management Planning and its Implementation	• Group work • Interactive lecture • Open discussion • Q/A
2:30 PM – 3:30 PM	01 hour	**Session 4.4:** Developing Disaster Management Plans at the Community Level	• Group work • Interactive lecture • Open discussion • Q/A
3:30 PM – 3:45 PM	***15 minutes***	***Tea Break***	
3:45 PM – 4:00 PM	15 minutes	Training evaluation	
4:00 PM – 4:15 PM	15 minutes	Closing ceremony Certificate distribution	



Session 4.1: An Introduction to Disaster Management Planning at the Community Level

Session Objectives

By the end of this session, participants will be able to:

- Explain the process and significance of participatory disaster management planning at the community level.
- Identify the key steps in formulating a disaster management plan, including baseline information collection, risk prioritization, and action planning.
- Differentiate between structural and non-structural disaster risk reduction measures and demonstrate how to align local plans with government priorities.

Duration

01 hour and 15 minutes

Facilitation Methodology

Group work, Interactive lecture, discussion, and Q/A

Training Aids Required

- Multimedia
- Laptop
- Screen
- Flip Charts
- Permanent markers
- Erasable markers
- Printing of case study
- Session handouts

Training Approach

1. After session objectives, clarify that risk reduction planning is the backbone for transforming vulnerabilities into capacities.
2. At the beginning of the session, ask participants the following question to motivate discussion and take their input on flip charts or on a whiteboard.

   Probing Question: *"How can communities ensure that their disaster management plans remain practical and not just a 'wish list,' considering the available local resources and capacities?"*

3. After having a detailed discussion and taking input from the participants, explain the disaster management planning, why it is needed, and discuss its importance. Discuss that disaster management planning is very effective and meaningful when prepared jointly by the experts and community members.

4. Discuss that participatory assessment of risks, including hazards, vulnerabilities, and capacities, leads to concrete action planning. After discovering the potential dangers, the affected community, along with outsiders, plans to identify pre-disaster, during-disaster, and post-disaster risk reduction measures.
5. Refer to earlier sessions on multi-hazard, vulnerability, and capacity assessment and explain that these assessments remain meaningless until and unless they are transformed into a practical plan for implementation.
6. Discuss various steps to be taken while formulating the participatory disaster management plans.
7. At this stage, the facilitator can put the following question to take the participants' input.

Probing Question: *"What challenges might arise in aligning community-level disaster management plans with district and provincial priorities, and how can these challenges be addressed?"*

Group Exercise 1: Once the facilitator finishes the session, he/she will distribute printed copies of the case studies to participants, ask them to discuss in four groups, and have them answer the questions in the plenary session. Gave them 15 minutes for reading the case study and 15 minutes for discussions, followed by 15 minutes for presentations and Q/A if any.

8. Before wrapping up the session, invite participants for Q/A and comments or additions if they want to add.

Useful Tips for the Facilitator

- For reading case studies, make several copies for each participant to read and understand the exercise.
- Try to remind participants that their responses should be practical instead of being a wish-list.

Background Material of the Session

4.1.1. What is a plan?

In the previous module, a detailed discussion was conducted on participatory multi-hazard, vulnerability, and risk assessment, which serves as a platform for disaster management planning within the target community. The participatory risk assessment information helps prioritize elements at risk that require quick actions and remedies to reduce future hazards to the community. In this session, we will discuss the disaster management planning process to be conducted among disaster management committees, community volunteers, and external stakeholders. However, it is essential first to understand what is meant by a plan. A plan can be defined as a roadmap or guiding document that helps develop a disaster-resilient community through proper planning and consultation processes. The planning process guides the community in setting priorities for reducing future risks and achieving protected, disaster-resilient, and sustainable communities. The primary objective of planning is to identify hands-on actions for implementing mitigation measures to reduce vulnerabilities and increase the capacities of the target community within a specified period.

4.1.2. Participatory disaster management planning

Disaster management planning is a participatory exercise through which disaster management committees, together with the local people, community volunteers, and other



The local disaster management committee meets to conduct disaster management planning and prioritize schemes to be implemented

stakeholders, come together to evaluate the hazard, vulnerability, and risk assessment information and come up with an action plan that would assist disaster management committees in implementing disaster risk reduction measures to mitigate the targeted risk of the communities. Thus, the outcome of disaster management planning should be a guiding document, the Village Disaster Management Plan (VDMP), for all hazard-prone villages. Collectively, these plans contribute to the preparation of a Union Council Disaster Management Plan (UCDMP). In the following sub-sections, we will discuss the key features of these plans and elaborate on the main components needed for community-level disaster management plans.

4.1.3. Steps in formulating the participatory disaster management planning

Through a participatory disaster management planning process, local disaster management committees, along with external stakeholders and other community members, develop concrete steps and prepare a comprehensive disaster management plan. To understand the development of participatory disaster management planning, it is essential to examine each step taken in the development of the plan. The following steps can be considered when drafting a disaster management plan at the village or union council level.

4.1.3.1. Collecting baseline information

It is crucial to collect baseline information at both the village and union council levels. This should include details on sub-villages (hamlets), population breakdowns (men, women, children, elderly, minorities, and differently abled people), and the materials used in houses, schools, and other infrastructure. Information on literacy ratio (for men & women), basic health care facilities, accessibility, water & sanitation conditions, primary livelihood sources, key agriculture products, and livestock should be gathered. Such information provides a solid foundation for developing a realistic disaster management plan.

4.1.3.2. Review and analysis of participatory disaster risk assessment information

The DMCs should compile all the information gathered from the participatory risk assessment process and analyze the findings regarding the elements at risk, proposing their prioritization. The following table may help in arranging and summarizing the participatory MHVRA information:

Summary of Risk Assessment and Identified Elements at Risk

Assessment Process			**Identified Elements at Risk**
Types of Hazards	**Types of Vulnerabilities**	**Types of Capacities**	• Who is at risk? • What is at risk?
Type & characteristics of hazards affecting the exposed elements	• What makes the elements vulnerable to the hazard? • Why are they vulnerable?	• What types of resources are available? • What is the community's coping mechanism to deal with emergencies?	

4.1.3.3. Setting objectives of the participatory disaster management planning

Set clear, achievable objectives that guide the entire planning process. Well-defined objectives will help keep the planning process more focused, align actions with available resources, and provide a benchmark for measuring progress and success.

4.1.3.4. Selecting the structural and non-structural disaster risk reduction measures

After prioritizing the elements at risk from the prevailing hazards, it is necessary to propose more detailed solutions, including structural and non-structural measures, through consultation, in line with the established objectives. Priority disaster management measures should be selected based on community-level best practices that the target community commonly uses to mitigate disaster threats.

- **Structural mitigation measures** refer to any physical construction works that help in reducing or avoiding possible impacts from potential hazards. Examples include constructing houses in accordance with safety codes or retrofitting existing houses to withstand specific hazards.
- **Non-structural mitigation measures** refer to the measures that can reduce risk and related impacts. These include government laws, policies, and guidelines. They also

involve raising community awareness and understanding about hazards and risks. Other examples are building knowledge and skills to reduce risks, strengthening local capacities, and conducting mock drills and exercises.

It is preferable to develop specific risk-reduction measures for each risk, given their varying nature and the need for tailored treatment. The following table helps in developing a comprehensive set of potential measures and projects to address the issues.

Proposed Template for Disaster Risk Reduction Measures

Identified Risk	**Disaster Risk Reduction Measures**	
	Structural Measures	**Non-Structural Measures**
Risk A	Proposed measures 1, 2, 3…	Proposed measures 1, 2, 3…
Risk B	Proposed measures 1, 2, 3…	Proposed measures 1, 2, 3…
Risk C…	Proposed Measures…	Proposed Measures…

4.1.3.5. Determine the resources

The identified measures for disaster risk reduction will require internal or external financial and technical assistance, taking into account the community's coping mechanisms, with a preference for using community-owned skills, knowledge, and material resources. When determining resources, the community's available resources should be given due diligence and high priority, as this will be cost-effective and help in selecting measures that suit their needs. The final disaster management plan should, therefore, contain a series of disaster risk reduction measures – some of which require external assistance and some of which can be achieved by the community itself, but all of which the community is committed to trying to implement, either in the short, medium, or long term.

4.1.3.6. Timeframe and schedule of planned activities

The duration of the disaster management plan can be scheduled as short-term, medium-term, or long-term, preferably within the span of a project year. In exceptional cases, the Government and Non-Governmental Organizations have established their schedules for executing community development and disaster management projects, and they are obligated to complete them within the given deadline.

4.1.3.7. Formation of sub-committees and assigning roles & responsibilities for the implementation of the action plan

The VDMCs and UCDMCs were formed to serve various purposes, as discussed in the previous module of this manual. To make their work more organized and effective, sub-committees can be established, especially within the UCDMC. These may include Community Emergency Response Teams, which combine First Aid, Search and Rescue, and Firefighting sub-teams. Other possible sub-committees include evacuation, shelter management, fund mobilization, and coordination committees. Similarly, to implement the structural mitigation measures, a project implementation committee can be formed to ensure transparency and maintain quality standards.

4.1.4. Linking the community disaster management plans with the government priorities

Ideally, local-level disaster management plans should be aligned with district, provincial, and national disaster management plans to expand their scope and provide a legal basis for planned activities. Local stakeholders may also consult with external stakeholders to connect the offered activities with current Government priorities.

Case Study 1: Multi-hazard vulnerabilities and community resilience initiatives in District Swat

Village Bara Bandai is located in the District Swat of Khyber Pakhtunkhwa, at an altitude of 5,600 feet above sea level. The area is semi-arid with some short but occasionally heavy rainfall towards the end of the Monsoon season and moderate snowfall at the surrounding mountains, on whose foothills the village is situated. The weather pattern is of mild summers and harsh winters. The rainfall and snowfall patterns are erratic, and the town suffered three consecutive years with almost no rainfall about a decade ago.

The upper reaches of the mountains have thick forests and extensive grasslands, but these are under stress from logging and grazing. The area lies in a moderately active seismic zone, experiencing occasional tremors.

Two hill torrents pass through the village and the agricultural lands, with seasonal flow from snowmelt between March and June, and also drain floodwaters during occasional heavy Monsoon downpours on the adjacent mountains.

Several disasters of different types have hit the village and surrounding areas during the past decade, resulting in loss of life and property.

Population Profile

The community comprises 35 households. The land in the village is undistributed, and most households engage in livestock rearing as their primary economic activity. In total, the community owns around 1200 sheep and goats, with household flock sizes ranging from 8 to 40. The community also owns 12 cows. Eight households have individuals with low-level, permanent, or temporary employment in either the government or private sector. The male: female ratio is 51:49 in favour of males. The basic literacy level is 9% for men and 1% for women.

Village Amenities Profile

The nearest boys' primary school is at a distance of 5 kilometers in another larger village. There is no girls' school within a radius of 20 kilometers. A 6-kilometer dirt track connects the village to the highway, passing through dunes. The nearest functional health facility is 15 kilometers away. The closest large town is a drive of 4 hours. All the houses in the village are made of mud and stone walls with roofs made out of tree branches. There are no latrines in the village, and open defecation is the norm. The source of water is the Flood River nearby, in which the floodwater gathers in puddles after rain. Once the puddles dry up, the villagers have to travel 4 kilometers to fetch water from a natural spring. The village is not connected to electricity. The nearest telephone is 5 kilometers away, and nobody owns a mobile phone. Four people own a radio set. Overall, the community has one motorcycle among them.

Disaster Preparedness and Response Planning

1. What immediate preparedness actions should be included in the community's disaster management plan (e.g., early warning, evacuation, first aid)?
2. How would you plan for safe shelter, health care, and livestock protection during an emergency?
3. What structural and non-structural measures would you recommend to reduce disaster risks in Village Chashma?
4. How will you ensure the participation of women, children, the elderly, and differently abled people in the DRR planning process?
5. What role can schools, health facilities, and local leaders play in supporting community-based DRR?

Self-Assessment / Key Questions & Answers

Q1. Given Scenario: Imagine a situation where heavy monsoon rains trigger flash floods in Bara Bandai village, cutting off road access and damaging most of the mud houses. As a member of the village disaster management committee, what immediate steps would you prioritize to ensure safe evacuation, protect livestock, and provide temporary shelter for vulnerable groups such as women, children, and the elderly?

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Q2. Given Scenario: Suppose that during winter, an unexpected landslide blocks the only dirt track connecting the village to the highway, leaving the community without access to markets, schools, or health facilities. What short-term and long-term structural and non-structural measures would you propose in the disaster management plan to reduce the community's vulnerability to such events in the future?

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References

- International Federation of Red Cross and Red Crescent Societies (2014), *"IFRC Framework for Community Resilience".*
- Asian Disaster Preparedness Center, Bangkok, Thailand (2011), "*Participants' Workbook on 'Community Based Disaster Risk Reduction".*
- National Institute of Disaster Management, National Disaster Management Authority, Government of Pakistan (2019), *"Participant's Workbook on Community-Based Disaster Risk Management".*
- Provincial Disaster Management Authority, Government of Khyber Pakhtunkhwa (2014), *"Participant's Workbook on Community-Based Disaster Risk Management".*



Session 4.2: Stakeholder Analysis for Disaster Management Planning Process

Session Objectives

By the end of this session, participants will be able to:

- Explain the importance of stakeholder analysis in the CBDRM planning process.
- Identify and assess internal and external stakeholders and assess their roles, influence, and potential contributions or opposition in the disaster management process.
- Apply participatory tools like the Venn diagram and resource matrix to map relationships and design stakeholder engagement plans.

Duration

01 hour 30 minutes

Facilitation Methodology

Group Work, Interactive Lecture, and Q/A

Training Aids Required

- Whiteboard
- Multi-color markers
- Flip charts
- Flip stand
- Multimedia with a laptop and a screen
- Masking tape
- Session handouts

Training Approach

1. Once the objectives of the session are described, invite participants to list the stakeholders who may assist and, simultaneously, resist the DRR measures. To this end, one volunteer may be asked to write in two different columns, one in favour of and the other against the projects. Identify a random subset of participants as stakeholders and list them on flip charts or a whiteboard.
2. The facilitator should then summarize the importance of listing both types of stakeholders, highlighting how this helps in better project planning and prevents delays in implementation.
3. Remind participants that during module 3, session 3.2, they learn what a Venn Diagram is and its utility. In this session, they will practice this important tool.
4. Before making groups, the facilitator can demonstrate step by step, using PowerPoint slides, how to prepare a Venn Diagram.

Group Work 2: After the session, divide participants into four different groups

- Two groups will prepare a Venn Diagram of any of the villages in which they have working experience.
- Two other groups will be assigned the task of preparing a template for a resource matrix for any village.

5. The remaining participants from the four groups will be allowed to ask the seven questions shown below and attempt to fill in the resource matrix format.
6. The facilitator can encourage them when the groups desire to add more information to the matrix; they can do that.
7. Give them 30 minutes to do the assigned work, and 30 minutes for presentations and Q/A afterwards.
8. Conclude the group presentations by summarizing discussions about how this stakeholder analysis is a significant step in the planning process.
9. Thank the participants for their active participation and close your session.

Background Material of the Session

4.2.1. Why stakeholder analysis?

Various stakeholders can play a critical role in making a CBDRM project/programme successful. During disaster management planning, it is essential to identify these stakeholders. Some stakeholders may support the disaster management planning and implementation, while others may create problems or act against the project during its execution.



Community meetings among the external and internal stakeholders

To achieve the above objective, the disaster management committee, in collaboration with external stakeholders, prepares the first inventory of stakeholders who may be present in the local area or in the target union councils. While analyzing the resources, it can be split into two broader portions:

- Stakeholders and resources that are available externally, including external stakeholders who can support the community. These stakeholders may include local political leaders, the government, non-governmental organizations, and influential philanthropists from the surrounding area.

- Local stakeholders and resources, such as disaster management committee members, community volunteers, local political leaders, and all other assets available at the village or UC levels, that can be utilized during the project implementation.

In the previous module, we discussed different PRA tools used to assess hazards, vulnerabilities, and capacities. One such tool is the Venn diagram, which is highly effective for mapping the institutional and social networks of the target community in relation to the government, non-governmental organizations, and other stakeholders. This Venn diagram helps prepare for engaging both active and inactive stakeholders in long-term resource mobilization for the community.

4.2.2. Institutional and social network analysis through a Venn diagram

As mentioned above in module two session 3.2, the Venn diagram is a useful tool for illustrating relationships and coordination among different stakeholders. It also highlights various types of vulnerabilities, as poor or missing coordination often prevents communities from fully utilizing the facilities provided by both government and non-government stakeholders. The primary goal of developing a Venn diagram is to illustrate the connection between stakeholders and organizations, as well as their contributions to the target villages and UCs. When the connection between stakeholders and villagers is not adequate, it can still be enhanced through open and transparent negotiations. There is also the possibility that areas of activity may overlap, and a Venn diagram can assist with finding ways to reduce overlapping and wasted actions.

4.2.3. Resource matrix

Besides the Venn diagram, external facilitators and community representatives can prepare a matrix to identify resources, distribute workload, set a timeframe, allocate a budget, and support organizations during the execution of the CBDRM project. Key questions while preparing the matrix are the following;

- *Enlist the stakeholders who can support the DRR planning and implementation process.*
- *How could the stakeholders contribute to the project?*
- *Identify the stakeholders who might create hindrances or oppose the process.*
- *What is the current status of the relationship between stakeholders, the disaster management committee, and the community?*
- *What are the interests and expectations of each stakeholder involved in the process?*
- *Identify the role of each stakeholder during the implementation of the disaster management plan.*
- *How much influence do the stakeholders have in disaster management planning and its implementation, or how much do they influence the CBDRM project? Strategy for engaging the stakeholders.*

Self-Assessment / Key Questions & Answers

Q1. In a Venn diagram, what does the size of a circle representing an organization indicate?

a). The physical office size of the organization

b). The significance or importance of the organization to the community

c). The distance of the organization from the Village

d). The number of employees in the organization

Correct Answer: B

Q2. What does the proximity of a stakeholder's circle to the community in a Venn diagram signify?

a). The physical location of the stakeholder

b). The strength of the stakeholder's relationship or influence with the community

c). The age of the organization

d). The funding amount received

Correct Answer: B

Q3. Write a short note on the purpose and process of preparing a Venn diagram during stakeholder analysis. Include how circles are sized and placed.

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References

- Piktocharts (2025), *"What is a Venn Diagram and When to Use Them?"*
- Atlassian, *"What is a Venn diagram? Definition, uses, and examples."*
- *Rijan Upadhyay (2016), "Uses of Venn diagram in PRA",* published in ResearchGate, DOI:10.13140/RG.2.2.34280.44803



Session 4.3: Resource Mobilization for Disaster Management Planning and Its Implementation

Session Objectives

By the end of this session, participants will be able to:

- Apply techniques for identification and mobilization of financial, human, and material resources within the community.
- Demonstrate advocacy skills and build partnerships with government, NGOs, the private sector, and donors to support community-level disaster risk reduction.

Duration

01 hour

Facilitation Methodology

Interactive Lecture, short Q/A session, followed by discussion

Training Aids Required

- Whiteboard
- Multi-color markers
- Multimedia with a laptop and a screen
- Session handouts

Training Approach

1. Greet participants and set the tone. The facilitator may briefly connect the previous session on stakeholders' analysis and its importance for resource mobilization, including technical, financial, institutional, and human resources.

   Recap Questions: To facilitate discussion, the facilitators may ask short recap questions from the participants to collect their views on it:

   - *What do you understand by the term "resources" in disaster management?*
   - *Why is resource mobilization essential for resilience building?*
   - *Can you give examples of local resources already available in your community/organization?*

2. Encourage two to three quick responses before starting the main content.
3. Afterwards, introduce the resource mobilization strategy for ten minutes. Try to collect as many examples as possible. Share an example, e.g., community volunteers during floods, or local fundraising for relief.
4. Define resource mobilization: "*The process of identifying, securing, and utilizing resources—financial, technical, human, and institutional—for achieving organizational*

or community goals.". Stress its role in sustainability, ownership, and effective DRR planning.

5. The facilitator can explain the types of resources
    - *Financial Resources: grants, donor funding, government allocations, local fundraising.*
    - *Human Resources: volunteers, experts, community groups.*
    - *Material/Technical Resources: equipment, relief items, technology, GIS tools.*
    - *Institutional Resources: partnerships, networks, organizational structures.*
6. Encourage participants to share one example from their own work.
7. In the following slides, share learning on the internal strategies for resource mobilization that can be included: community contributions, membership fees, and local fundraising.
8. Besides, put lights on the external strategies for resource mobilization, including donor proposals, government support, and partnerships with NGOs/the private sector.
9. Inform participants that the importance of building trust among the external contributors, i.e., transparency, accountability, and clear communication, is the backbone of building rapport and confidence among the external contributors for future resource mobilization.
10. Discuss the need for diversification to avoid relying on a single source of resource mobilization.

    Case Study: Share a case example: e.g., how a local NGO mobilized community labor and government machinery for embankment repair.
11. Wrap-up session and ask for a reflection of participants if time allows.
12. Summarize your session with at least three key takeaways.

Useful Tips for the Facilitator

- Keep examples local and relatable.
- Use flip charts or slides for visual support.
- Encourage interactive discussion instead of one-way lecturing.
- Involve quieter participants by asking direct but gentle questions.

Background Material of the Session

4.3.1. Resource mapping for disaster risk management

Local disaster preparation and response primarily depend on the resources mobilized by the community. Therefore, it is essential to leverage local resources, including financial resources, natural resources, skilled volunteers, and social networks, which can be effectively utilized to minimize overall expenses. Additionally, untapped resources and the support of external stakeholders should also be identified.

4.3.2. Local and external resource mobilization

As described above, the community-level assets should be identified at the start of disaster management planning. These assets constitute the initial defense mechanism in the occurrence of disasters. The communities must also enlist external stakeholders and identify the types of resources they can request, particularly government schemes through which they can channel financial assistance and services. Accessing these requires awareness and advocacy, both at VDMC/UCMDC and local government levels. The contribution of NGOs includes training and mobilization skills, whereas the private sector brings the aspects of logistics and innovation. The private sector deals with public-private partnerships. A combination of internal and external resources creates formidable, on-the-ground disaster management policies.

4.3.3. Strategic planning and advocacy for resource mobilization

Strategic planning helps communities outline DRR interventions, prioritize them, and align resources. It can sustain effective utilization of internal and external assistance. An effective plan clearly defines the roles, requirements, and schedules of stakeholders. Advocacy complements planning by raising awareness and building support for initiatives. It assists communities in lobbying for policy change and in securing government or donor funds. Engaging stakeholders effectively leads to stronger partnerships. Focusing on planning and advocacy can help sustain a steady stream of resources and increase local communities' resilience in the face of disasters.

Case Study 2: Resource Mobilization for Disaster Management in Village Council Barikot, District Swat

Village Council Barikot is located in the mountainous areas of District Swat, Khyber Pakhtunkhwa Province. The VC is prone to seasonal floods and landslides. Over the past ten years, repeated monsoon floods have resulted in loss of life, damage to households, and destruction of local infrastructure. In response, the community initiated a local disaster risk reduction programme focused on resource mobilization, guided by a community-based disaster management approach.

The process started with participatory resource mapping involving community elders, youth volunteers, and women's groups. The exercise identified key local resources, including a high-elevation school building suitable for use as a shelter during emergencies; skilled masons and carpenters; traditional early warning signs such as changes in river water color, noises from

rolling boulders, and heavy rainfall; and the presence of local health workers. The emergency response plan was built around these available local resources.

The village disaster management committee visited the District Disaster Management Unit at Swat to request funding through the Annual Development Programme. Their advocacy efforts were successful, resulting in grants to build a flood protection wall and the provision of emergency response kits from the provincial relief, rehabilitation, and settlement department. A local NGO further supported the committee by providing first aid training, offering them search and rescue equipment, and guidance on contingency planning.

The community developed a village council disaster management plan that defines the roles and responsibilities of different groups. Women were assigned leadership roles in food and shelter management, and trained youth dealt with early warning and evacuation. The plan encompassed time frames of preparedness measures before the monsoon season. Close communication and visibility were maintained as the disaster management committee approached local government officials, providing regular progress reports and holding advocacy meetings. During the 2024 monsoon rainfall, timely early warnings and organized evacuation kept casualties to zero and significantly reduced property damage. The community shelter safely accommodated 38 families. This success inspired nearby VCs, and the local government committed to replicating the same planning across Swat.

Self-Assessment / Key Questions & Answers

Q1. Scenario: If a flood-affected community has limited internal resources, how would you map and mobilize external support from government, NGOs, and the private sector to ensure a timely response?

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Q2. Scenario: If a community wants to strengthen its disaster preparedness, how would you use strategic planning and advocacy to align local assets with external partnerships for sustained resilience?

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References

- National Institute of Disaster Management, National Disaster Management Authority, Islamabad(2021), *"Community-Based Disaster Risk Management."*
- Provincial Disaster Management Authority, Government of Sindh, *"Training Manual, Participant's Guidebook on Community-Based Disaster Risk Management".*



Session 4.4: Developing Disaster Management Plans at the Community Level

Session Objectives

By the end of this session, participants will be able to:

- Explain the structure and purpose of Village Disaster Management Plans and Union Council Disaster Management Plans.
- Identify essential components and considerations for preparing effective community-level disaster management plans.
- Describe mechanisms for disaster preparedness, emergency response, and financial management as outlined in VDMPs and UCDMPs.

Duration

01 hour

Facilitation Methodology

Group Work, Interactive Lecture, Open Discussion with Q/A

Training Aids Required

- Whiteboard
- Multi-color markers
- Flip charts
- Flip stand
- Multimedia with a laptop and a screen
- Masking tape
- Scissors
- Cutter
- Session handouts

Training Approach

The facilitator is encouraged to follow the steps outlined below while they facilitate the session:

1. After session objectives, mention that developing management plans at the community level is the backbone of sustainable planning and disaster management.

Group Work 3: As this is a practical session, it would be better rather deliver a lecture, divide participants into four different groups, and assign the following tasks

a. *Group I: Suggest a table of contents for the village-level disaster management plan*

b. *Group II: Suggest a table of contents for the Union-Council level disaster management plan*

c. *Group III: What will be the key differences between the two types of table of contents*

d. *Group IV: Suggest a table of contents for the CERT team, if they want to prepare their emergency response plan.*

2. Gave them 30 minutes for group work, and 30 minutes for group presentations and discussion.
3. After participation from the group members, share the standard template mentioned below to standardize the format for both VDMP and UCDMP.
4. Before wrapping up the session, invite participants for Q/A and comments or additions if they want to add.
5. Close your session with thanks

Useful Tips for the Facilitator

- To avoid repetition within specific groups, the facilitator is advised to form new groups each time so that participants can interact with different group members.
- Moreover, it has also been observed that a few outspoken and experienced participants often dominate the presentations, while others are willing to contribute but remain silent due to their hesitation or shyness.

Background Material of the Session

4.4.1. Types of disaster management plans at the community level

After conducting the stakeholder analysis and resource inventory, the disaster management committee, along with other community members/volunteers and outsiders, intends to develop a community-level disaster management plan. As discussed in session 4.1, two types of disaster management plans can be developed:

- Village Disaster Management Plan, commonly called “VDMP.”
- Union Council Disaster Management Plan, commonly called “UCDMP”

4.4.2. Essential considerations for developing a disaster management plan

A community-level disaster management plan, whether at the village or union council level, is a strategic guiding document for the disaster management committees to use for DRR planning and implementation. These plans primarily serve as preparedness tools, which can be utilized by disaster management committee members, community volunteers, and external stakeholders alike, both before, during, and after a disaster, for future disaster management and development planning. Therefore, while preparing the VDMP and UCDMP, ensure to consider the following:

- The disaster management plans must have a clearly defined set of objectives.
- The plan must have a logically and systematically prioritized and chosen set of mitigation measures.

- Disaster risk reduction measures should be based on participatory risk assessment results and acceptable to all community members, especially the marginalized and vulnerable groups.
- The plan must have crisp, refined roles and responsibilities for the sub-committees and community members with their defined designations.
- Define the hindrances and barriers to the implementation of the plan.
- Have a clear and doable timeframe for completion of activities or interventions.
- Have mentioned a clear budget with proper heads against each budget line.
- Conduct periodic review and plan improvement through regular assessment, review, and adjustment of the plan.
- Conduct drills and simulations defined for its implementation.

4.4.3. Possible contents for the development of the village disaster management plan

The following are the proposed possible contents for the development of a VDMP. The non-



Consultation among communtiy members in preparing the VDMP and chsoing members for various committees

governmental organization and disaster management committee may wish to add new information/content based on the project's requirements and the structure of the respective VDMC. However, we shall encourage the use of a standard template with a minimum of the required information as part of the VDMP.

NOTE: A detailed sample format of the VDMP, used by AKAH-P at the village level, is provided as Annexure I at the end of this training manual.

Sample Format for Developing the Village Disaster Management Plan

I. Brief Description of the Village

- *This section will include geographical features, including the location of the village with the surroundings of other villages, population distribution, agriculture, livelihood sources, and other socio-economic characteristics, including the distribution of schools and health facilities.*
- *Diagrams/maps may include a social map, a pie or chart diagram for population distribution, and other indicators.*

II. Formation of Disaster Management Committees

- *Establishment of VDMC and sub-committee(s) if required.*
- *Explaining roles and responsibilities of the VDMC and sub-committee(s).*
- *Linking VDMC to other committee(s) if exist.*
- *A table with the name and designation of the VDMC may be included.*

III. Disaster Risk Profile of the Village

- *Hazard assessment*
- *Vulnerability and capacity assessment*
- *Risk assessment profile*
- *Tools/techniques used for MHVRA assessment may include historical profile, seasonal calendar, problem tree, Venn diagram, transect walk, direct observation, hazard mapping, vulnerability and resource mapping, etc.*

IV. Disaster Preparedness Plan

- *Capacity building (awareness campaign, drills, and simulation exercises).*
- *Identifying safe evacuation routes and shelter places.*
- *Family preparedness plan.*
- *Tools to be used may include a list of responsible persons, a community map that shall indicate the safer evacuation routes, and the location of the shelter, etc.*

V. Annexures

Annexure I: Dos and Don’ts of Critical Hazards

Annexure II: List of significant telephone numbers of Government Offices

Annexure III: List of committee members, including phone numbers, CNICs, and addresses.

Annexure IV: Different templates or formats

4.4.4. Possible contents for the development of the union council disaster management plan

For the formation of UCDMP, the information should be compiled from the VDMPs developed for different villages within the same union council. With minor adjustments, the content below is proposed for the development of a UCDMP. The Non-Government Organizations and Disaster Management Committee may wish to add new information/content based on the project's requirements and the structure of the respective VDMCs and UCDMC. However, we shall encourage using the proposed template below for the development of UCDMP.

Sample Format for Developing the Union Council Disaster Management Plan

Brief Description of the Union Council

- *This section will include geographical features, including the location of the union council with surrounding other villages, population distribution (if possible, village-wise), livelihood sources, and other socio-economic characteristics.*
- *Diagrams/maps may include a social map compiled from VDMPs and the rest of the villages where no VDMCs exist, a chart, or a pie diagram for population distribution and other parameters.*

Formation of the Union Council Disaster Management Committee

- *Establishment of UCDMC.*
- *Explaining the roles and responsibilities of UCDMC.*
- *Linking UCDMC to other committee(s) if they exist in the Union Council.*
- *A table with the name and designation of the UCDMC may be included.*

Disaster Risk Profile of the Union Council

- *Hazard assessment*
- *Vulnerability and capacity assessment*
- *Risk profile*
- *Tools/techniques used for MHVRA assessment may include historical profile, seasonal calendar, problem tree, Venn diagram, transect walk, direct observation, hazard mapping, vulnerability and resource mapping, etc.*
- ***Note:** Most of the data can be compiled from the already developed VDMPs, with additional information provided for villages where no VDMC exists.*

Planning for Disaster Risk Management

a. Mitigation Measures

- *Establishment of Project Implementation Committee (PIC) and explaining the roles & responsibilities of PIC.*
- *Disaster management and DRR action plan with detailed budget, timeline, and names of responsible persons.*
- *Early warning mechanism.*

- *Identifying safe evacuation routes, shelter places, and their management.*
- *Plan for capacity building and arrange specialized and skill development training for UCDMC, VDMCs, community volunteers, and other members.*
- *List of PIC with members' names and designations, etc.*

b. Financial Mechanism

- *Establishment of Community Disaster Management Fund (CDMF).*
- *Clarifying the role and responsibilities of the CDMF committee.*
- *Fund generation and utilization mechanism.*
- *List of CDMF with members' names and designations, etc.*

c. Emergency Response Mechanism

- *Establishment of Community Emergency Response Team (CERT).*
- *Formation of sub-committees within the CERT, such as First Aid, Search and Rescue, Firefighting, Evacuation, Shelter Management, and Early Warning System.*
- *Explaining the roles and responsibilities of CERT.*
- *Capacity building (basic training, training of trainers, master instructor workshops, and refresher courses) for CERT and community volunteers.*
- *Plan for mock drills, simulation exercises, and awareness campaigns.*
- *Stockpiling and equipment handling of the emergency response kit.*
- *List of CERT with members' names and designations, etc.*
- *Maintaining data of emergency responders/volunteers at the UC level.*

d. Annexures

- Annexure I: Dos and Don'ts of essential hazards.
- Annexure II: List of significant telephone numbers of government offices.
- Annexure III: List of committee members, including phone numbers, CNICs, and addresses.
- Annexure IV: Different templates or formats.

Self-Assessment / Key Questions & Answers

Q1. What is the primary purpose of a disaster management plan at the community level?

a). To construct new schools and hospitals

b). To develop a roadmap that guides communities in reducing disaster risk and increasing resilience

c). To enforce national laws at the village level

d). To record population data for the government census

Correct Answer: B

Q2. What should a Village Disaster Management Plan ideally be linked with?

a). Business investment proposals

b). Local market trends

c). Link with the district, provincial, and national disaster management plans

d). International trade regulations

Correct Answer: C

Q3. What is the primary difference between a VDMP and a UCDMP?

a). VDMPs focus on education, while UCDMPs focus on healthcare

b). VDMPs are prepared at the village level, while UCDMPs compile information from multiple villages within a union council

c). VDMPs are national plans, while UCDMPs are international frameworks

d). VDMPs include early warning systems, but UCDMPs do not

Correct Answer: B

Q4. List at least five essential contents of a VDMP and briefly describe the purpose of any two.

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Q5. Describe the role of the Community Emergency Response Team in the emergency preparedness mechanism of a UCDMP.

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References

- Z4soulutions, *"A Guide for Village Disaster Management Plan: Community Resilience"*
- Odisha State Disaster Management Authority, India (2018), *"Preparation of Village Disaster Management Plans (VDMPs): OSDMA Program for Enhancing Community Resilience"*
- USAID TAHAFUZ: Building Resilience through Community-Based Disaster Risk Management in the Sindh Province of Pakistan, *"Village Disaster Management Committee"*



Session 4.5: Inclusive Planning: Engaging Women, the Elderly, Children, Differently Abled People, and Marginalized People

Session objectives

By the end of this session, participants will be able to:

- Explain the benefits of active involvement of all community members, especially women, the elderly, children, differently abled people, and marginalized groups in every step of CBDRM.
- Assess and integrate the capacities and needs of marginalized groups in disaster risk assessment, preparedness planning, and implementation.

Duration

01 hour 15 minutes

Facilitation Methodology

Group Work, Group Presentation, Discussion, Interactive Lecture, and Q/A

Training Aids Required

- Whiteboard
- Multi-color markers
- Flip charts
- Flip stand
- Multimedia with laptop and screen
- Masking tape
- Scissors
- Cutter
- Session handouts

Training Approach

1. After describing session objectives, ask participants what they understand by gender. Who can be included in gender? Involve participants who have a low level of participation. Please encourage them to speak and share their experiences.
2. After a fruitful discussion, what they understand about the marginalized group, who can be included in this group, and why they are included in such groups. Ask for root causes to reach the conclusion and link them to the vulnerability.
3. Afterwards, start your session by explaining why gender inclusion matters in DRR and resilience building.

4. Highlight that women, men, the elderly, children, and differently abled people experience disasters differently due to roles, responsibilities, and vulnerabilities.
5. After showing a few slides on the inclusion and discussing why they also need to be considered in the DRR planning and management, divide participants into four different groups. Ensure that women and differently abled people, if any, are equally divided into various groups.
6. Rotate members to avoid the same outspoken people dominating.

Group Work 4: After the presentation, the facilitator shall divide the participants into four groups and provide them with the following questions to answer. They are then asked to write their key points on flip charts for the final presentation in the plenary session.

   a. *What specific roles do women, men, boys, and girls play in your community during a disaster?*
   b. *How much do their efforts help in reducing vulnerabilities and building capacities?*
   c. *What cultural, social, or institutional barriers limit women's and marginalized groups' participation in decision-making?*
   d. *What happens when these groups are excluded from planning?*
   e. *How can we ensure women's and men's voices are equally heard in disaster committees?*
   f. *How can gender inclusion be mainstreamed into local and provincial disaster risk reduction policies?*

7. Gave them 30 minutes to discuss and prepare flip charts. Each group presents for 3–4 minutes.

👉 **Facilitator Tip:** Encourage quieter participants (especially women, if present) to share their views. You may assign them as group reporters or presenters to build confidence.

8. Facilitator summarizes by pointing out common themes, gaps, and innovative ideas.
9. Conclude with 2–3 key takeaways on gender and marginalized groups' inclusion in disaster management.

Background material of the session

4.5.1. Vulnerabilities of marginalized groups

Such groups are often more vulnerable in an emergency due to their physical, social, and economic conditions. For example, they may not be able to evacuate promptly or access relief due to mobility challenges, limited access to timely information, or restrictive social norms. Additional challenges may include a lack of personal transportation and the absence of identification documents needed for relief distribution. Their dependence on daily wages

makes them reluctant to leave their homes, language barriers in understanding warnings, limited access to safe shelter, or fear of harassment and exploitation in shelter places.

4.5.2. Importance of inclusive planning in CBDRM

Inclusive planning is a foundational principle in CBDRM. It highlights an active involvement of all the sectors of society, so that the voice and needs of women, the elderly people, children, differently abled people, and other marginalized groups are heard, respected, and catered to every phase of disaster risk management, which includes assessment, planning, implementation, and recovery.

Below are some practical strategies for ensuring the meaningful and inclusive participation of all segments of society.

4.5.2.1. Inclusion of marginalized groups in VDMCs

To have inclusivity in disaster risk management, representation of women, the elderly, the youth, and differently abled people within VDMCs and UCDMCs should be ensured. The reasons behind their inclusion are to provide various voices and plan interventions that serve the needs of everyone in the community.

4.5.2.2. Capacity building and awareness

The capacity-building activities should be tailored to the specific needs and abilities of different groups in society, including women, the elderly, differently abled people, and other marginalized groups. When these groups are trained in basic first aid, search and rescue, evacuation procedures in the event of a disaster, and the use of early warning systems, they become empowered to take an active role in disaster preparedness and emergency response. Training materials should also be presented in a clear and friendly format to all groups to facilitate good communication and understanding. Besides, they should conduct regular inclusive drills and simulation exercises, with their active participation, to ensure they know how to evacuate and take shelter during any disaster situation.

4.5.2.3. Participatory disaster risk assessment

The inclusive CBDRM process ensures the participation of all community group members, including women, children, differently abled people, and the elderly, in the participatory risk assessment process, enabling them to identify local hazards, their specific vulnerabilities, and available capacities. The inclusive tools to be used during this process should include focus group discussions, participatory mapping exercises, the use of other PRA tools, and storytelling through which people of various backgrounds can share their experiences in a meaningful manner.

4.5.2.4. Participatory disaster management planning

Inclusive disaster management planning emphasizes the importance of including all community members, with a special focus on women, children, the elderly, and differently abled people. It appreciates the diverse needs and capacities required to model fair and inclusive risk reduction mechanisms. Inclusive planning strengthens community ownership and enhances resilience. It encourages the relationship of marginalized groups with decision-makers to have long-term solutions

4.5.2.5. Inclusive infrastructure and services

Evacuation routes and emergency shelters should be designed to meet the diverse needs of the community, including differently-abled people, the elderly, pregnant women, and children. Features such as ramps, wide pathways, and clear signage ensure physical accessibility, making evacuation safer and faster. Inclusive design not only supports vulnerable groups during emergencies but also improves the overall effectiveness and fairness of emergency response.

Case Study 3: Inclusive CBDRM in GLOF-Prone Valleys of Gilgit-Baltistan

Northern Pakistan, particularly Gilgit-Baltistan and Chitral, is highly vulnerable to Glacial Lake Outburst Floods due to rapidly melting glaciers. These disasters disproportionately affect marginalized groups such as women, the elderly, children, and differently abled people, who face challenges in accessing early warnings, safe evacuation routes, and relief services.

Under the GLOF-II Project (2017–2024) led by the Government of Pakistan, UNDP, and Green Climate Fund (GCF), communities in Bagrot Valley (Gilgit) and Reshun Valley (Chitral) adopted an inclusive CBDRM approach. Village Disaster Management Committees were formed with at least 40% women's representation, and a separate quota was reserved for the elderly and differently abled people. Women actively participated in risk mapping and identified evacuation challenges such as unsafe bridges and narrow pathways that hindered families with children or elderly members.

Inclusive infrastructure was developed, including accessible community-based early warning systems equipped with sirens, SMS alerts, and color-coded warnings, all of which were explained in local languages. Evacuation shelters were designed with ramps, wide entryways, and separate spaces for women and children, making them accessible to individuals with limited mobility. Training sessions on first aid, emergency response, and livelihood recovery were tailored for women and youth, enabling them to play active roles before, during, and after disasters.

The project also integrated local indigenous knowledge from elderly residents about seasonal weather and glacier behavior with modern forecasting, enriching risk assessments. Schoolchildren participated in disaster drills and storytelling exercises, becoming active messengers of preparedness within their families.

Self-Assessment / Key Questions & Answers

Q1. Given Scenario: If the government asked for rapid evacuation, how would you ensure that differently abled people and the elderly can access safe shelters through inclusive infrastructure and services?

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Q2. Given Scenario: If a community is developing a disaster preparedness plan, how would you involve women, youth, and marginalized groups in VDMCs to ensure their specific needs are addressed?

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References

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Notes

Module Five:

Strengthening Emergency Response Mechanisms at the Community Level



Module Five:
Strengthening Emergency Response Mechanisms at the Community Level

Objectives

By the end of this module, participants will be able to:

- ⇒ Explain the principles and stages of emergency response at the family and community level.
- ⇒ Perform essential emergency response techniques, including first aid, fire safety, and search and rescue operations.
- ⇒ Apply water rescue methods relevant to swift and riverine flood water.
- ⇒ Describe the Incident Command System and its Linkages with the Emergency Response Operation Centers for an effective emergency response.
- ⇒ Practice psychological first aid techniques to support affected individuals during emergencies.
- ⇒ Demonstrate community-level response systems through drills and simulations.
- ⇒ Explain the challenges faced by displaced persons and the role of CCCM in ensuring safety, dignity, and access to essential services.

- ❖ Credit hours covered:
- ❖ Time required for this module: 27 hours

Sessions to be covered in this module

Session 5.1: Preparing Family and Community for Emergency Response
Session 5.2: Hands-on Exercises on the First Response
Session 5.3: Hands-on Exercises on the Fire Emergencies
Session 5.4: Hands-on Exercises on the Search and Rescue
Session 5.5: Techniques for Water Search and Rescue
Session 5.6: Techniques for Avalanche & Debris Flow Search and Rescue
Session 5.7: Incident Command System and Emergency Operation Center for an Effective Emergency Coordination
Session 5.8: Psychological First Aid
Session 5.9: Camp Management

Proposed Agenda of Module Five

DAY ONE			
Time	**Duration**	**Title of the Session**	**Facilitation Methodology**
9:00 AM – 9:30 AM	30 minutes	• Registration and introduction • Training objectives and overview	• Formal session • Formal ceremony • Welcome by organizers • Announcement of administrative arrangements • An overview of the training
11:00 AM – 11:15 AM	***15 minutes***	***Working Tea***	
9:30 AM – 12:00 PM	2 hours and 30 Minutes	**Session 5.1:** Preparing Family and Community for Emergency Response	• Group work • Role play • Interactive lecture • Q/A
12:00 PM – 1:00 PM	***60 minutes***	***Lunch Break***	
1:00 PM – 4:30 PM	3 hours and 30 Minutes	**Session 5.2:** Techniques for First Aid	• Group work • Role play • Interactive lecture • Q/A
3:00 PM – 3:15 PM	***15 minutes***	***Working Tea***	
DAY TWO			
Time	**Duration**	**Title of the Session**	**Facilitation Methodology**
9:00 AM – 9:30 AM	30 minutes	Recap of Day One	
9:30 AM – 10:30 AM	1 hour	**Session 5.2:** Techniques for First Aid ***(Session 5.2 continue)***	• Group work • Role play • Interactive lecture • Q/A
10:30 PM – 10:45 AM	***15 minutes***	***Working Tea***	
10:30 AM – 12:30 PM	2 hours	**Session 5.2:** Techniques for First Aid ***(Session 5.2 continue)***	• Group work • Role play • Interactive lecture • Q/A
12:30 PM – 1:30 PM	***60 minutes***	***Lunch Break***	
1:30 PM – 3:00 PM	1 hour and 30 minutes	**Session 5.3:** Techniques for Handling Fire Emergencies	• Group work • Role play • Interactive lecture • Q/A
03:00 PM – 03:15 PM	***15 minutes***	***Working Tea***	
3:00 PM – 5:00 PM	2 hours	**Session 5.3:** Techniques for Handling Fire Emergencies ***(Session 5.3 continue)***	• Group work • Role play • Interactive lecture • Q/A

DAY THREE			
Time	**Duration**	**Title of the Session**	**Facilitation Methodology**
9:00 AM – 9:30 AM	30 minutes	Recap of Day Two	
9:30 AM – 10:30 AM	1 hour	**Session 5.4:** Techniques for Search and Rescue	• Group work • Role play • Interactive lecture • Q/A
10:00 AM – 10:15 AM	***15 minutes***	***Tea Break***	
10:30 AM – 12:00 PM	1 hour and 30 minutes	**Session 5.4:** Techniques for Search and Rescue ***(Session 5.4 continue)***	• Group work • Role play • Interactive lecture • Q/A
12:00 PM – 1:00 PM	***60 minutes***	***Lunch Break***	
1:00 PM – 2:30 PM	1 hour and 30 minutes	**Session 5.4:** Techniques for Search and Rescue ***(Session 5.4 continue)***	• Group work • Role play • Interactive lecture • Q/A
2:30 PM – 3:30 PM	1 hour	**Session 5.4:** Techniques for Search and Rescue ***(Session 5.4 continue)***	• Group work • Role play • Interactive lecture • Q/A
3:30 PM – 3:45 PM	***15 minutes***	***Tea Break***	
3:45 PM – 4:45 PM	1 hour	**Session 5.5:** Techniques for Water Search and Rescue	• Group work • Role play • Interactive lecture • Q/A
DAY FOUR			
Time	**Duration**	**Title of the Session**	**Facilitation Methodology**
9:00 AM – 9:30 AM	30 minutes	Recap of Day Three	
9:30 AM – 12:00 PM	2 hours and 30 minutes	**Session 5.5:** Techniques for Water Search and Rescue ***(Session 5.5 continue)***	• Group work • Role play • Interactive lecture Q/A
10:00 AM – 10:15 AM	***15 minutes***	***Tea Break***	
12:00 PM – 1:00 PM	***60 minutes***	***Lunch Break***	
1:00 PM – 2:00 PM	1 hour	**Session 5.5:** Techniques for Water Search and Rescue ***(Session 5.5 continue)***	• Group work • Role play • Interactive lecture Q/A
2:00 PM – 3:00 PM	1 hour	**Session 5.6:** Techniques for Avalanche & Debris Flow Search and Rescue	• Group work • Role play • Interactive lecture • Q/A

3:00 PM – 3:15 PM	***15 minutes***	***Working Tea***	
3:00 PM – 4:00 PM	1 hour	**Session 5.6:** Techniques for Avalanche & Debris Flow Search and Rescue ***(Session 5.6 continue)***	• Group work • Role play • Interactive lecture • Q/A
4:00 PM – 5:00 PM	1 hour	**Session 5.7:** Incident Command System and Emergency Operation Center for an Effective Emergency Coordination	• Simulation exercise • Interactive lecture • Q/A
DAY FIVE			
Time	**Duration**	**Title of the Session**	**Facilitation Methodology**
9:00 AM – 9:30 AM	30 minutes	Recap of Day Four	•
9:30 AM – 10:30 AM	1 hour	**Session 5.7:** Incident Command System and Emergency Operation Center for an Effective Emergency Coordination ***(Session 5.7 continue)***	• Simulation exercise • Interactive lecture • Q/A
10:30 AM – 11:15 AM	***15 minutes***	***Tea Break***	
11:15 AM – 12:15 PM	1 hour	**Session 5.8:** Psychological First Aid	• Group work • Role play • Interactive lecture • Q/A
12:15 PM – 1:15 PM	***60 minutes***	***Lunch Break***	
1:15 PM – 2:15 AM	1 hour	**Session 5.9:** Camp Management	• Simulation exercise • Interactive lecture • Q/A
2:15 PM – 2:30 PM	15 minutes	Training evaluation	
2:30 PM – 2:45 PM	15 minutes	Closing ceremony Certificate distribution	



Session 5.1: Preparing Family and Community for Emergency Response

Session Objectives

By the end of this session, participants shall be able to:

- Explain the importance of preparing for disasters at the family and community level.
- Identify common hazards in their specific locality and develop a customized emergency family and community plan.
- List the essential items to include in a family and community emergency response kit.
- Describe the family and community preparedness against major disasters to mitigate the losses.

Duration

2 hours and 30 minutes

Facilitation Methodology

Group Work, Role Play, Interactive Lecture, and Q/A

Training Aids Required

- Whiteboard
- Multi-color markers
- Flip charts
- Flip stand
- Multimedia with a laptop and a screen
- Masking tape
- Scissors
- Cutter
- Session handouts

Training Approach

1. Better before starting the session, conduct an icebreaker to freshen up for the next session. The activity must not take more than 10-15 minutes.

   Icebreaker: Begin by asking the participants, *"If an earthquake or flood occurs tonight, what is the very first thing that your family, as well as the collective community, will do?"*

2. Take input from participants and afterwards connect it with the significance of disaster preparedness.

3. Introduce participants to the whole module and specifically to the first session, and set the goals of the session.
4. Start your session on why families should prepare through a slide show; however, side by side, ask participants for reflections and experience sharing.
5. Briefly explain the examples of localized hazards, e.g., earthquakes, floods, fire, road accidents, or any other hazard prevailing in the specific areas. Ask participants for rapid Q&A to maintain their attention.
6. In the next sub-session, conduct a group exercise about the family risk identification and planning for 30 minutes. Make groups with each consisting of 4-5 participants.
7. Provide flipcharts/markers to each group and give them the following guiding questions to discuss.
8. Task: identify 2 to 3 common hazards in your area and write a brief "family emergency plan for your group.

Guiding questions:

- *What are the most likely hazards in the area?*
- *Where is your family to meet in case separated?*
- *Who to help: children, the elderly, pregnant or differently abled people?*
- *What are the emergency numbers to be remembered?*
- *What three things should each of the family members know/do in case of a disaster?*

9. After the group work, each group will present the outcome in plenary. Each groups take turns of 15 minutes each by introducing their plan.
10. After a fruitful discussion on the group activity, next discuss arranging the family emergency kit for 20 minutes. The facilitator can share an example of such a kit with pictures or a video.
11. Brainstorm on the things required to sustain the water, food, lighting, hygiene, first aid, clothing, and documents.
12. The facilitator will insert the missing items and also focus on maintaining the emergency response kit.
13. In the next sub-session, discuss the hygiene and sanitation after disasters for 20 minutes.
14. Discuss safe water, handwashing, waste disposal, and mosquito control with examples and slide shows.
15. Besides discussion, develop a scenario on how they would make water safe to drink in case there is floodwater in your house?
16. Discuss the child-centered preparedness measures for 25 minutes. The task of children in disasters is to conduct drills on the *"Stop, Drop, and Roll"* exercise and practice with the participants.
17. The facilitator can also ask participants to tell us how they interact with children at home.

18. Continue with the final slides. The significance of preparedness, family plans, emergency kits, hygiene, and child involvement should be summed up.

Background Material of the Session

5.1.1. Securing Family and Community to Prepare for Better Response

The natural tendency of emergencies to catch us by surprise when we least expect them is the reason why we should be prepared. During those periods, the response effectiveness and speed of people and their families are decisive in minimizing the harm and loss of lives.

This session presents the family and community-based response in terms of emergency response management, in which the authorities empower the families/communities to take part in preparedness and response.



It insists on awareness, forethought, and combined action as household groups and in the community at large. With the knowledge of emergency response fundamentals, the communities will have solid ground for resilience in the face of damage and the potential to recover.

5.1.2. Why Should Families and Communities Be Prepared?

Imagine it is late at night and an earthquake shakes your house, or a flood warning is issued, requiring you to leave immediately. Will your family know exactly what to do?

Being prepared means you can:

- Stay calm
- Act fast
- Protect your loved ones

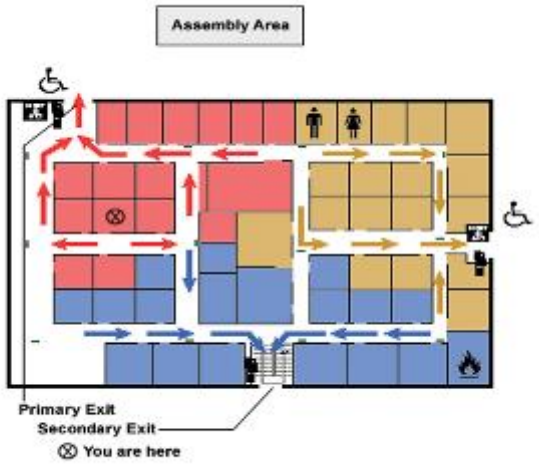
Disasters cause confusion and panic—but when a family has a plan, they know how to stay safe.

5.1.2.1. Understanding the risks in your area

Different parts of Pakistan face different threats and hazards. In the north, earthquakes, avalanches, GLOFs, debris flow, and landslides; in riverine areas, floods; and in cities, fires and road accidents. Knowing the risks in your area helps you make the right plan

5.1.2.2. Talk with your family and make a plan

It is essential to sit with your family and discuss what to do in an emergency. Everyone, including children and elders, should understand the evacuation plan.



Choose meeting or assembly area

Talk about:

- How to safely leave the house
- Who will help children, elderly, or differently abled people members
- Where to meet if you get separated
- Which phone numbers to call for help (e.g., 1122 for emergencies, 15 for Police, etc.)

Teach family members how to:

- Turn off the gas, water, and electricity safely
- Call for emergency help
- Use a fire extinguisher (if available)

Choose meeting points

During a disaster, your family might get separated. That is why you need to choose two meeting places:

- One near your home (like a neighbor's gate or corner shop)
- One outside your neighborhood (a relative's home or school)

Also, select a person in another city or village your family can call if phone networks are busy or down, and only limited government phone lines are working.

5.1.3. Make a Family Emergency Kit

In any disaster, whether a flood, earthquake, or fire, access to clean water, food, electricity, or medical assistance can be disrupted. Stores may close, streets may be blocked, and assistance may take a long time to arrive. In such situations, having your own Family Emergency Kit may save a life, at least for 3 days without external assistance. Such a kit should be prepared in advance, packed in a portable form (like a bag or box), and ready to grab in case you need to evacuate quickly. It is important to know what items your Family Emergency Kit includes:

5.1.3.1. Water

Every person needs at least 4 liters of clean water per day; therefore, it is important to store at least:

- 2 liters for drinking
- 2 liters for cooking and cleaning

Water needs to be stored in clean plastic bottles, such as mineral water bottles. Avoid using glass bottles or any containers that can break.

Tip: Store at least a 3-day supply of water for each person. For a family of 5, that means 60 liters in total.



Family Emergency Response Kit

5.1.3.2. Food

Select food that:

- Does not need cooking
- Does not spoil quickly
- Is easy to carry and eat (dry food: biscuits, roasted grams (bhunay chanay), dates, dry fruit, peanuts)
- Canned food: beans, fish, meat, vegetables
- Instant food: soup packets, noodles (if you can boil water)
- Energy foods: chocolate, granola bars, jaggery (gur), trail mix

Note: Check expiry dates and replace food every few months.

5.1.3.3. Lighting and Tools

- Torchlight/flashlight (with extra batteries)
- Candles and a matchbox or a lighter
- Small radio (battery-powered or hand-crank)
- Safety whistle (to signal for help)
- Pocket knife or multipurpose tool

5.1.3.4. Hygiene and sanitation

Staying clean helps prevent disease after disasters.

- Soap and hand sanitizer
- Toothpaste and toothbrushes
- Tissues, toilet paper, sanitary pads
- Disinfectant wipes
- Towels and a comb

5.1.3.5. First aid and basic medicine

Prepare a basic first aid kit with:

- Bandages, gauze, antiseptic cream, and painkillers

- Scissors, tweezers, cotton, medical tape
- Gloves and thermometer
- Personal medicines (for BP, diabetes, asthma, etc.)
- Oral rehydration salts (ORS)
- Water purification tablets or bleach drops

5.1.3.6. Important documents

- Photocopies of important documents in a waterproof plastic bag or envelope:
- CNICs and B-forms
- Marriage and birth certificates
- ATM/debit cards, bank account info
- Medical records and prescriptions
- Emergency contact list with names, numbers, and addresses
- House and vehicle ownership documents (if needed)

5.1.3.7. Clothes and bedding

- Include at least one complete change of clothes per person
- Comfortable clothes for hot/cold weather
- Undergarments
- Raincoat or umbrella
- Blanket or shawl
- Sturdy shoes or sandals
- Socks, gloves, and a hat (for winter)
- Tip: Pack clothes in plastic to keep them dry.

5.1.3.8. Special items for babies, the elderly, and others

- For infants: baby formula, feeding bottles, diapers, wipes, baby soap
- For the elderly: regular medicines, a walking stick, extra glasses
- For women: sanitary items, scarf/dupatta, extra undergarments
- For differently abled people: mobility aids or special equipment

Keep the Family Emergency Kit in an easy-to-reach place (near the exit or main door) and make sure every family member knows where the kit is stored. Review the kit items every 6 months and replace any expired items. If possible, prepare two kits—one for your home and one for your car.

This emergency kit can help the family stay safe, calm, and self-sufficient in the first hours or days after a disaster—until outside help arrives.

5.1.4. Practice Your Plan

- Having a plan is not enough—you must practice it.
- Do a practice evacuation from your house.
- Teach children how to call rescue 1122.
- Repeat the plan every few months so no one forgets it.
- Make it fun for children by turning it into a game or quiz.



Practice your plan

5.1.5. Stay Clean, and Stay Safe

After a disaster, keeping clean is very important. Dirty water, spoiled food, and poor hygiene can cause illness like diarrhea, cholera, and skin infections. Simple precautions can help protect your family from sickness when basic services are not available.

5.1.5.1. Use safe drinking water

Clean water is the most important item during any emergency. Use water that is stored safely and treat it if needed.

- Water should be boiled to eliminate germs.
- Put bleach: Add four drops of unscented household bleach to 1 liter of water. Stir and leave to stand 30 minutes.
- Filter the dirty water in a clean cloth, then treat.



Safe drinking water



Keep washing your hands

- Keep drinking water in clean bottles (plastic bottles with lids). Avoid garbage or chemicals.

5.1.5.2. Keep handwashing

Germs spread easily through hands, especially after using the toilet or before eating. There, wash your hands:

- Before and after meals
- After using the toilet
- After cleaning or handling waste
- Use soap and clean water. If soap and water are not available, use alcohol-based sanitizer.

5.1.5.3. Waste and mosquito control

Staying healthy during disasters can be challenging, but proper waste disposal helps. Throwing garbage away from living, water, and food areas, and burning or burying it to reduce the risk of disease.

Removing standing water to stop mosquito breeding is one other very important element for staying healthy. Using mosquito nets and wearing long clothes at night is also helpful.

Clean water, clean hands, clean food, and a clean home protect from sickness. In any disaster, cleanliness is a simple but powerful way to stay safe.

5.1.5.4. Be ready to act

Preparedness is not just about planning; it is about making the right decisions at the right time, too. An emergency might develop very fast, and what you do within the first few minutes may make a significant difference. That is why it is important to act quickly according to the situation and not waste time waiting for someone else to take action.

- Be confident with the plan for your family.
- You should make wise use of your emergency reserves, including water, food, and medicines.
- Avoid risky actions, such as re-entering unsafe buildings or ignoring evacuation warnings.
- Help others if you can, but not at the cost of your own safety.
- Stay informed through a battery-powered radio or local announcements.

Such measures may be used to minimize the risks and safeguard not only your family but also others in your surroundings. Preparedness will only count when you put it into practice.

5.1.6. Family and Community Preparedness Tips Against Various Hazards

5.1.6.1. Family and community preparedness for flooding

- Start by determining the level of risk. The family should first examine whether their house is located in a flood-prone area and monitor local flood maps and early warning systems regularly. By being updated, a person is guaranteed to take action in time in case there is a threat of a flood.
- As discussed above, also keep ready an emergency



Safe evacuation measures for affected families

response kit with items that are specifically required to evacuate in case of heavy rain and flood water around.

- To avoid damage to important documents like identity cards, passports, education degrees, nikah name, land records, and medical files, they should be stored in waterproof bags.
- Formulate an emergency evacuation plan and act upon it through drills and exercises. This includes finding the safest ways to exit, finding the closest shelters, and the nearest meeting point in case members are divided.
- The number of emergency contacts should be taught to women and children to help them know where to call in case of emergency when they need the assistance of someone they can trust or the authorities.
- Raise the electrical appliances and other valuables, prepare and store sandbags or barriers in case of frequent flooding, and ensure livestock and pets have safe shelter.
- During a flooding situation or in case of continuation of heavy rains, it becomes essential to keep up-to-date information from NDMA, PDMA, PMD, or call DEOC for further details. The families are required to tune into the radio, television, or mobile warnings and comply with evacuation warnings.
- If staying at home, the family member should carefully handle electrical appliances in standing water and should go to a higher place or an upper level of the house in case of necessity.
- Should avoid crossing floodwaters when it is running fast. It is very risky to walk, swim, or drive up and down them. A single inch of fast-flowing water is enough to knock someone down, and two feet of water will easily blow a car away.
- Children must be taught that under no circumstances should they ever walk or play with flood water, whether in a shallow or deep area. Trained the children with the rule: *"Turn Around, Do not Drown".* This is a catchy distraction that can be used to save a life.
- It is recommended that when one wants to go home, he or she should first be assured by the authorities that it is safe. Even at that time, families will be required to pay attention to dangers like broken glass, debris, snakes, or dangerous buildings. Checking of utilities should be done; no one should use electricity when the system is not checked, and water should never be used without boiling or purifying.
- The aftermath requires special consideration of health and hygiene. Access to clean water and soap for washing hands, disposing of spoiled food, and seeking medical care when experiencing symptoms of waterborne diseases will help the family avoid further complications.

5.1.6.2. Family/community preparedness for an earthquake

- The families must begin by getting informed about the earthquake threat in their region. They should be more vigilant and aggressive in their planning in case they reside in a high-risk area. It is also necessary to prepare an emergency kit that includes such items as safe drinking water, dry food, first aid, a flashlight, batteries, a radio, needed medicines, personal safety items, and copies of essential papers in waterproof bags.



Ensure safe evacuation with priority to vulnerable people first



- An emergency plan for the family should also be established. It should identify safe meeting points within and outside the home, the evacuation route, and emergency contacts. Children ought to be taught how to dial emergency numbers and what they should do in case of an earthquake, whether they are in school or not at home.
- The family should make their homes safer by fixing heavy furnishings, shelves, and gas cylinders to the walls with the use of nails.
- The shelves that are not breakable should be placed in lower shelves, and emergency exits should never be obstructed.
- When the ground shaking starts, it is advised to keep in mind the rule: Drop, Cover, and Hold On. This is getting to the floor, cowering under heavy pieces of furniture and hanging on until the trembling ceases.
- In case there is no shelter around, put your head and neck under your arms and keep out of the windows, mirrors, and heavy objects that can fall.
- If family members are living in a single-storey building and can safely exit, they should proceed outside and gather at the designated assembly area instead of doing the exercise of Drop, Cover, and Hold On.
- Trained your children to use the “Drop, Cover and Hold On” if they are alone in house or inside class room and further taught them that, in case there is no table nearby,

they could duck next to the wall, out of reach of windows and objects that may fall, removing all the other things except their arms or a backpack that would cover their head.

- In an indoor area, remain indoors, and go to a safe place; outdoors, stay clear of structures, walls, power lines, and trees.
- The individuals driving in a car during an earthquake stop the vehicle quickly in an open field and wait until the shaking stops.



- After the shaking is over, the family should examine the injuries, although, where possible, first aid should be given. They should also be aware of the dangers of gas leakages, fire, debris falling, and broken power lines. Electricity and gas connections shouldn't be used without inspecting them to avoid accidents.
- The families must be prepared for the aftershocks, which are equally hazardous as the actual quake. The removal to open and safe places decreases risk in these secondary shocks. When authorities declare homes unsafe, the families should not enter them until they are cleared.
- The other important aspect is communication. Text messages may be used to keep the networks open in case of emergencies, as opposed to calls. Sections of the families must also keep in touch, either by radio alerts or mobile alerts, on relief efforts or evacuation centers, as well as safety measures.

5.1.6.3. Family and community preparedness against fire incidence

Fires can start quickly and spread even faster. The best way to prepare children is through hands-on practice and simple, repeated instructions.

- First of all, call emergency numbers like Rescue 1122
- Use the same techniques of Stop, Drop, and Roll if caught in a fire.
- If clothes caught fire, one should never run. Running feeds the fire with more air and makes it worse. Instead, teach them to:
  - *Stop – Freeze where they are. No running.*
  - *Drop – Drop to the ground.*
  - *Roll – Cover your face with your hand and roll over and over on the ground to smother the flames.*
- Teach children what to do if their clothing catches fire. The action plan—Stop, Drop, and Roll—must be practiced often until it becomes a natural reaction. They should stop moving, drop to the ground, cover their face with their hands, and roll over and over to put out the flames. Use a soft mat or carpeted area to practice this safely.

- Teach family members, including children, how to escape through smoke. Smoke rises, so they must crawl low to the ground to breathe cleaner air. Use chairs and blankets to create a safe *"smoke tunnel"* and let them practice crawling toward a marked exit.
- Walk through every room in your home and identify two exits. Teach family members how to unlock doors or open windows in case of an emergency. Establish a meeting point outside—such as a tree, gate, or neighbor's house—and practice getting there during drills.

⇒ ***Note: Detailed information and hands-on exercises will be covered in this module in later sessions***

5.1.6.4. Family/community preparedness to heatwaves

- Families are urged to remain vigilant to the weather predictions and heat warnings by local governments.
- A family plan should be prepared - how to keep yourself cool, where the shaded or air-conditioned areas are closest, and how to educate all the family members about the symptoms of heat exhaustion and heatstroke.
- Risk reduction will be achieved by stocking up on drinking water, oral rehydration salts (ORS), and light and breathable clothing.
- Special attention and planning should be made for the vulnerable family members, including children, the elderly, differently abled people, pregnant women, and people with chronic illnesses.
- The safest thing to do is to remain indoors when the weather is hot, that is, between 11 a.m. and 4 p.m.
- When it is necessary to go outside, wear fresh, light, and loose cotton hats, umbrellas, and water bottles. Even when not feeling thirsty, keep drinking water. families should consume a lot of safe drinking water, and also, they should not consume caffeinated or high-sugar drinks that make them more dehydrated. Light and frequent meals with no heavy or oily food should be taken.



Keep drinking to be hydrated



Keep splashing water on your head to stay cool

- Do not forget to educate children on the necessity of regular consumption of water even when not thirsty, as well as learn to determine such symptoms of heat exhaustion as dizziness, weak knees, or nausea

- Curtains, shades, and reflective materials should be used to cover windows of the homes to keep them cool and well-ventilated. When it is possible, use fans, coolers, or air-conditioning. Families are also advised to go and visit neighbors, especially individuals living alone or older people.
- The families are also advised to remain hydrated and take rest for those who have been exposed to high temperatures. It is necessary to seek medical assistance as soon as one exhibits symptoms of heatstroke, such as confusion, fainting, extremely high body temperature, and dry skin with no sweat. The fact that family preparedness is reviewed following each heatwave will also help enhance responses in future events.
- If your community has public cooling spaces—like mosques, libraries, or schools—point them out to family members and explain how and when they could go there with a family member.

5.1.6.5. Family and community preparedness to cloudburst

- The community and family should be alerted in time about heavy rainfall, cloudburst, and flash flood risks. Local mosques, WhatsApp groups, rescue volunteers, and community leaders should be included in the early warning system. High-risk areas should be identified, and warning signboards should be installed.
- Community evacuation routes should be clearly marked. Families should prepare emergency plans, including an emergency bag, important documents in waterproof covers, and safe assembly points
- People from low-lying areas should be immediately shifted to safe points. Community volunteers should assist the Rescue/Police in evacuation and crowd control. A community group of swimmers would be helpful to provide an immediate response. People should be instructed to stay away from electric poles, open drains, nullahs, and bridges. Motorbikes, cars, and pedestrians should be stopped from crossing flowing water.
- Basic first aid–trained volunteers should be deployed in high-risk areas. Community centers should be converted into temporary shelters. Clean drinking water, blankets, ORS, and first aid supplies should be made available.
- Special focus should be given to children, elderly persons, differently abled people and pregnant women. Volunteer teams should ensure their safe evacuation and protection.
- Continuous communication should be maintained between local leaders, Rescue Services, Police, the Health Department, and UC management. Public address systems (mosques, mobile speakers) should be used to provide real-time updates.
- Conduct a rapid assessment of affected households. Organize community cleanup drives (debris removal, drainage clearing). Provide psychological first aid for stress and trauma. Implement long-term risk reduction measures (tree plantation, drainage improvement).

5.1.6.6. Family and community preparedness to glacial lake outburst floods

- Ensure that communities receive timely alerts from early warning systems. Display risk maps and inform people living near rivers, nullahs, and mountain slopes. Use mosques, mobile announcements, WhatsApp groups, and community leaders to spread warnings quickly. Train community members to recognize danger signs like unusual lake water level, rumbling sound, or rapid river rise.
- Identify and clearly mark safe evacuation routes and elevated safe areas. Conduct regular community evacuation drills. Establish safe assembly points away from river channels.
- Move people quickly to higher ground; avoid all riverbanks and low-lying areas. Community volunteers support Rescue/Police with evacuation and managing crowds. Restrict movement on bridges, near unstable slopes, or fast-flowing water. Stop vehicles and pedestrians from crossing flooded areas.
- Deploy community first-aid teams in at-risk areas. Activate community centers or schools as temporary shelters. Provide drinking water, ORS, blankets, and emergency food supplies. Ensure that livestock is moved to safe areas as well.
- Prioritize: elderly, children, differently abled people and pregnant women. Assign volunteers specifically responsible for helping these groups evacuate safely.
- Maintain constant communication between local leaders, rescue services, police, health department and local government. Use loudspeakers, mosque announcements, and mobile alerts for real-time instructions. Keep communities updated on river levels and potential aftershocks or secondary flooding.
- Conduct rapid damage and needs assessment. Participate in community cleanup and debris removal. Report missing persons to authorities quickly. Provide psychological first aid and emotional support. Improve local drainage, riverbank protection, and community preparedness for future events.

Self-Assessment / Key Questions & Answers

Q1. Given Scenario: An earthquake occurs at night. Your house shakes, and power goes out. Some family members panic while children start crying.

- *What immediate steps should your family take according to the emergency response plan?*
- *How can children contribute to ensuring safety in this situation?*

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Q2. Given Scenario: During heavy rains, water begins to flood your home. The basement is filling quickly, and your neighborhood is at risk.

- *How should your family respond to ensure safety?*
- *What rules must children follow regarding floodwaters?*

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Q3. Why should families prepare a Family Emergency Plan?

a) To avoid paying extra insurance
b) To stay calm, act fast, and protect loved ones
c) To follow government orders only
d) To avoid practicing emergency drills

Correct Answer: B

Q4. Which of the following items should NOT be included in a Family Emergency Kit?

a) Canned food and dry fruit
b) Torch with extra batteries
c) Important documents in waterproof bags
d) Freshly cooked meals for one day

Correct Answer: D

Q5. What is the correct action plan if a person's clothes catch fire?

a) Run fast to find water
b) Stop, drop, and roll
c) Shout and wait for help
d) Remove clothes while standing

Correct Answer: B

Q6. Explain the essential components of a Family Emergency Kit. Why is it important to update and practice its use regularly?

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References

- Punjab Emergency Service, Rescue 1122, Government of Punjab, *"Community Action for Disaster Response Participants Workbook of Program for Enhancement of Emergency Response".*
- FEMA P-21421 (2024), *"Be prepared for any Hazard"*.
- Sindh Emergency Rescue 1122, Government of Sindh, *"Cooking safety."*



Session 5.2: Techniques for First Aid

Session Objectives

By the end of this session, participants will be able to:

- Perform the correct steps of basic life support and cardiopulmonary resuscitation for adults, children, and infants.
- Recognize signs of choking and perform appropriate relief techniques (back blows, abdominal thrusts) for different age groups.
- Identify signs of head, neck, or spinal injuries
- Demonstrate how to stabilize and safely care for such injuries in a disaster setting
- Recognize symptoms of common weather-related emergencies and apply suitable first aid responses
- Demonstrate initial response techniques during traffic crashes, including helmet removal and vehicle extrication in a safe and coordinated way.
- Manage different forms of shock and poisoning, including insect stings and snake bites, using basic community-level tools.
- Apply community quick response and sorting technique to categorize victims and prioritize care in mass casualty situations.

Duration

6 hours and 30 Minutes

Facilitation Methodology

Hands-on Exercises, Role play, Interactive Lecture, and Q/A

Training Aids Required

- CPR mannequins (adult, child, infant)
- First aid supplies, bandages, splinting supplies
- Plastic-cap home stretchers, boards, blankets, helmets
- Flip charts, markers, and a projector for visuals
- Scenario play cards
- Whiteboard with erasable markers
- Session handouts

Training Approach

1. After outlining the session objectives, inform participants that this is a lengthy session and will involve 13 hands-on exercises and role play. Motivate every participant to take part in the hands-on exercises.
2. Before starting the exercises, arrange the seating in a circle so that all participants can clearly see the exercises while the facilitator demonstrates.
3. In the middle of the rounded chairs, arrange a blanket for conducting hands-on exercises.

Hands-on exercise 1: Start by showing the PPT slides on the basic life support (CPR) for adults, children, and infants. The exercise might take 60 minutes altogether. While showing slides side by side, the facilitator shall practice first and then invite other participants one by one to practice CPR on mannequins.

4. The facilitator can also form small group practice on the mannequins for adults, children, and infants, with hands-on rotations of CPR by the participants.

Hands-on exercise 2: After having enough exercises for 60 minutes, start the next sub-session on choking management for 45 minutes. While showing slides, also ask one volunteer to come forward to the center for dummy choking using the abdominal thrusts, chest thrusts, and infant back blows, as explained.

5. Afterward, make small groups to repeat one by one for all participants to practice choking relief for adult, child, and manikin.

Hands-on exercise 3: Start the next sub-session about the management of head, neck, and spinal injuries with a slide show and practice for 45 minutes. The facilitator describes the stabilization and log-roll technique, providing participants with opportunities to practice and learn.

Hands-on exercise 4: Further explain the immobilization of a casualty with minimum equipment, like blankets, boards, and so on, and while explaining, continue practicing in small groups.

Hands-on exercise 5: Afterwards, explain the weather-related emergencies and continue the session for 45 minutes with hands-on exercises.

6. You can also ask participants about precautionary measures for heatstroke, hypothermia, and heat exhaustion. They might be interested in sharing their experiences.

Simulation Exercise 6: The facilitator can generate a scenario-based group role-play exercise that involves simulating a response to a patient with heatstroke or hypothermia. Invite a few participants to take part in this role-play exercise.

7. Start the next sub-session on explaining the traffic crash response for 45 minutes. Share your slides, explain in depth, and ask participants to share their experiences. Gave different examples of severe traffic accidents in Pakistan.

Hands-on exercise 7: Carry out a demo of basic vehicle extrication and helmet removal. Invite two participants to practice removing helmets.

Hands-on Exercises 8: Conduct another exercise on safe extrication with a role play with log-roll or 2-man lift, and involve volunteers among the participants.

Hands-on exercise 9: After a fruitful discussion on the traffic crash response techniques, start the next sub-session on fracture management, which shall continue for 30 minutes.

Hands one exercise 10: In the next sub-session, define sling and swathe, pelvic wrap, and improvised splints, and do the practice yourself afterwards, inviting participants to do it one by one.

8. Make an improvised splint out of the materials available and repeat the hand exercises with the participants.

Hands-on exercise 11: The next sub-session will cover the shock and poisoning management, which shall continue for 45 minutes. Explain different procedures on how to extract poisons by doing it along with the participants.

9. The facilitator can do this by developing a group scenario of the treatment of a person affected by a snake bite or a shock victim. Ask participants what they will do in such a situation.

Hands-on exercise 12: The next sub-session is about mass casualty management, which can be done by doing role play with assigning each participant their role.

10. For this simulation exercise, a group of 6-8 victims was given specific role-play cards to act out their assigned roles. The exercise must be highly interactive, and participants will enjoy it if it is well-planned.

Hands-on exercise 13: At the end, discuss the responder's well-being for 30 minutes with a brief discourse on the physical, emotional, and mental strength of the responders.

11. After conducting 13 hands-on exercises and role plays, wrap up the session and ask for participants' reflections about these exercises.
12. Recap key skills by asking participants to give one skill that they feel confident with after training.
13. Thanks to the participants for their active participation in all hands-on exercises.

Background Material of the Session

5.2.1. Scene Size Up and Scene Assessment

Scene size-up is the very first and one of the most important steps in giving first aid. It means quickly assessing the area where the emergency has happened before approaching the injured person. Before helping others, you must ensure you are safe. Hazards like fire, live wires, traffic, or aggressive people can harm the rescuer. If you get hurt, you can't help anyone. Looking around helps you understand what happened (e.g., fall, crash, fire). This helps you

guess what kind of injuries the person might have. Scene size-up helps to see how many people are hurt. You may need to call for extra help if there is more than one victim. By observing the scene, you can give accurate information to emergency responders (*e.g., "There's a car crash with two unconscious people and fuel leakage").*



Understanding the situation helps decide what first aid to give first, especially if there are multiple injuries or victims. Scene size-up also helps in danger removal, which is a first step in First Aid. This danger removal is highly important to ensure the safety of the First Responder.

5.2.2. Basic Life Support and Hands-on Exercises on the CPR

In an emergency like a building collapse, a road traffic accident, an electrocution incident, or an acute health case, one can find cases when the life of the person is at stake, depending on the events in the initial few minutes. A trained bystander or a First Responder in these cases is the one who can mean the difference between life and death.



Check response



Check breathing

Basic Life Support (BLS) describes the important emergency medical practice that is deployed in assisting the person who is currently in a cardiac arrest (the heart stops), respiratory arrest (the person stops breathing), or airway obstruction. BLS is mainly aimed at:

- To revive and sustain circulation and respiration
- To maintain brain function
- To stabilize the victim in awaiting safe medical care from the professional hospital staff

One of the central actions in BLS is **Cardiopulmonary Resuscitation (CPR)**.

5.2.2.1. Step-by-step CPR for adults

a) Ensure scene safety

Before approaching the victim, always check if the environment is safe—for example, no falling debris, fire, or exposed wires. Protect yourself first.

b) Check for responsiveness

Gently tap the victim on the shoulders and shout: *"Are you okay?"* If there is no response, immediately move to the next step.

c) Call for help

Shout loudly for help and ask a specific person to call emergency services (Rescue 1122). If you're alone, call immediately using speaker mode so you can begin CPR while staying on the line.

d) Check breathing

- Look for chest movement.
- Listen for breath sounds.
- Feel for air on your cheek.
- If the person is not breathing normally (or only gasping), begin CPR.



Chest compressions method

e) Start chest compressions

- Place the heel of one hand on the center of the chest (on the lower half of the long middle chest pain).
- Place your other hand on top, interlacing your fingers.
- Keep your elbows straight, shoulders above your hands, and press down firmly.
- Compress at least 2 inches (5 cm) deep and at a rate of 100 to 120 compressions per minute.
- Allow the chest to recoil between compressions fully.



Continuous chest compressions

f) Continue CPR until

- The person begins breathing normally
- Emergency responders arrive
- An automated external defibrillator (AED) is available
- You are physically exhausted and unable to continue
- It is as easy as calling someone and starting chest compressions.



Call to Rescue 1122

- Pressurize to the right depth and velocity, and do not stop.
- It is particularly advisable for adult cardiac arrest victims in public areas.

g) *Continuous chest compression CCC- CPR (compression-only CPR)*

Despite its importance, bystander CPR rates are low, mainly due to hesitancy around mouth-to-mouth resuscitation. Studies, including one by the American Heart Association (AHA), show that compression-only CPR (Continuous Chest Compression - CCC) is often more effective for witnessed adult cardiac arrests and encourages more public participation.

The American Heart Association 2020 guidelines recommend:

- Untrained responders perform compression-only CPR (also called Cardio-Cerebral Resuscitation).
- Trained responders should give 30 chest compressions followed by two rescue breaths.
- Dispatchers should guide laypeople to perform hands-only CPR when appropriate.

Pulse checks by laypeople are discouraged due to inaccuracy, assuming most adult collapses are cardiac in nature.

h) *Steps for Continuous Chest Compression (CCC)-CPR*

1. Ensure scene safety
2. Check responsiveness and shout for help
3. Call emergency services
4. Start chest compressions (2 inches deep, 100–120/min)
5. Continue until help arrives

i) *Change From ABC to CAB*

The **CPR sequence** has shifted from **ABC (Airway-Breathing-Compressions)** to **CAB (Compressions-Airway-Breathing)**, except for cases like **drowning**, where rescue breathing is essential.

Even in cases when you have not been trained how to give rescue breaths, or it is not safe (e.g., in the pandemic), the hands-only CPR will still be highly effective

Basic CPR Steps – Community Responder Chart

Step No.	Step Name	Description	Category
1	Scene Safety	Ensure the area is safe for you and the patient.	Safety
2	Ensure Personal & Patient Safety	Use gloves/mask if available.	Safety
3	Check Response	Gently tap and shout, "Are you okay?"	Assessment
4	Call for Help	Call emergency services or ask someone nearby to do so.	Assessment
5	Check Breathing (LLF)	Look, listen, and feel for breathing for no more than 10 seconds.	Assessment
6	Exact Kneeling Position	Kneel beside the patient's chest, close and steady.	CPR Action
7	Elbows are Straight	Lock your elbows, shoulders over hands.	CPR Action
8	Hand Placement	Place interlocked hands in the center of the chest.	CPR Action
9	Adequate Rate of Compressions	Perform compressions at 100–120 per minute.	CPR Action
10	Adequate Depth	Compress the chest at least 2 inches (5 cm) in adults.	CPR Action
11	Chest Recoil	Allow full chest recoil between compressions.	CPR Action
12	Re-Assess	Reassess breathing and responsiveness after ~2 minutes.	

5.2.2.2. CPR for Children (Aged 1–8 Years)

The steps are similar to adult CPR but adjusted for size and fragility:

- Use one hand instead of two for chest compressions if the child is small.
- Compress the chest about 2 inches deep.
- If you are alone, give 2 minutes of CPR before calling for help.

5.2.2.3. CPR for Infants (Under 1 Year)

Infants require special care due to their delicate body structures.

- **Check responsiveness** by tapping the soles of the feet or gently shaking.
- **Use two fingers (**index and middle) at the center of the chest, just below the nipple line.
- Compress to a depth of about **1.5 inches** (4 cm)**.**
- Deliver **gentle puffs** into both the nose and mouth.
- Repeat the **30 compressions** and **two breaths cycle**.



CPR for Infants (Under 1 Year)

Always support the infant's head and neck, and ensure you are using just enough air to make the chest rise slightly.

Age-wise CPR Chart

Age Group	Compression Depth	Hand Position	Compression Rate
Adult (Above puberty)	2 inches (5 cm)	Two hands on center of chest	100–120/min
Child (1 year to puberty)	2 inches (5 cm)	One or two hands depending on size	100–120/min
Infant (Below 1 year)	1.5 inches (4 cm)	Two fingers in center of chest	100–120/min
Newborn (0–28 days – for trained personnel)**	1/3 chest depth	Two-thumb encircling technique	100–120/min

5.2.2.4. Special considerations for community responders in Pakistan

- CPR should be molded according to cultures and settings. In mass emergencies, such as earthquakes and building collapses, several people can require CPR. Significant attention should be paid to unconscious patients with no pulse and no breathing.
- CPR can be required to be administered in muddy or flooded settings, in flood areas, or in rural settings. To Start, a victim has to be brought, in case of an unstable surface, to a hard, dry surface.
- Hands-only CPR is recommended during a pandemic (e.g., COVID-19), and in case of the possibility, a rescuer and victim are required to wear masks or face coverings.

5.2.3. Foreign Body Airway Obstruction in Infants, Children, and Adults

Choking is one of the most frightening medical emergencies because it happens quickly and often silently. A person who is choking cannot cough, speak, or breathe properly because something is blocking their airway—commonly food, small objects, or liquids.

5.2.3.1. Choking in adults

When dealing with a choking adult or child who is conscious but cannot breathe, speak, or cough, the standard technique is the abdominal thrust.



- Approach the person calmly but quickly.
- Stand behind them, wrapping your arms around their waist.
- Form a fist with one hand and place it just above the belly button, but below the rib cage.
- Grasp your fist with your other hand and deliver quick, upward thrusts into the abdomen.
- The motion should be sharp and inward, aiming to force air from the lungs to expel the object.
- Continue delivering abdominal thrusts until the object is dislodged, the person begins to
- breathe or cough, or they lose consciousness.
- If the person becomes unresponsive, you must gently lower them to the ground and begin CPR immediately, checking the mouth for visible objects before giving each breath.
- If you are helping an obese person or someone in a seated position (such as a vehicle crash victim), adapt your body position as needed, but keep the thrusts firm and upward. In pregnant women or very obese individuals, chest thrusts (instead of abdominal thrusts) may be used by placing your hands at the center of the chest (on the sternum) and pushing inward.

5.2.3.2. Choking in infants (under 1 year old)

Infants are naturally curious and tend to explore their world by putting objects into their mouths, making them especially prone to choking on toys, buttons, coins, or food. However, their small, fragile bodies require special handling during emergencies.

If you suspect that an infant is choking—if they are unable to cry, cough, or breathe—do not attempt blind finger sweeps in the mouth. Instead, act immediately.



Back bow (under 1 year)



Five quick compression

- Hold the infant face-down on your forearm, supporting their head and neck with your hand.
- Position their head lower than their chest. Using the heel of your hand, give five firm back blows between the shoulder blades.
- These should be controlled but forceful enough to dislodge the obstruction.
- Next, turn the infant over, keeping the head supported and lower than the body. Use two fingers to deliver five quick compressions on the chest, just below the nipple line.
- This cycle of five back blows followed by five chest compressions should be continued until the object is expelled or the baby becomes unresponsive.

If the infant stops responding or goes limp, you must begin infant CPR immediately, remembering to check the mouth before giving each breath. Gentle puffs should be given, as their lungs are very small.

If the person becomes unconscious

When a conscious choking victim, who could be an infant, child, or adult, passes out, the procedure changes to CPR. The first action should include performing chest compressions, which can potentially push the object out. Never forget to peep in the mouth before giving the rescue breaths to find out whether the body has become visible or not. When you can detect it, and then cut it out. Nevertheless, avoid performing a blind sweep of the mouth, particularly in children or infants, since it may drive the object even further.

5.2.3.3. Additional considerations for community responders

Choking is more likely to happen in crowded environments with high stress situations, where there are disaster shelters, child-friendly places, or in food distribution. The safety volunteers who are supposed to be part of the community must be on their toes whenever there is a meal to be served, and they must be attentive to small children and toddlers. Parents need to be informed on how to cut food into small pieces and how to avoid serving food such as nuts, whole grapes, or hard candy to young children.

Weakened swallowing is more dangerous to a disabled person or an elderly person, as he or she is at risk of choking. The families are to be trained to recognize the early signs, and they should know how to respond calmly and effectively.

5.2.4. Care for Head, Neck, and Spinal Injuries

Head, neck, and spinal injuries are among the most serious and potentially life-threatening conditions that can result from falls, car accidents, or trauma caused by natural disasters such as earthquakes or floods. These injuries require immediate care to prevent further harm and potential permanent damage to the brain, spinal cord, or surrounding structures.

5.2.4.1. Identifying head, neck, and spinal injuries

Signs of head, neck, or spinal injuries may not always be immediately obvious, especially in situations where the person is unconscious or confused. However, several key signs can help identify the need for urgent care:

- The presence of a head injury can include bleeding, swelling, or scalp/ facial bruise. With more severe trauma, a victim can be subjected to the symptoms of the concussion, which can include confusion, dizziness, blurred vision, nausea, or even a sense of emptiness.
- Neck injuries are associated with pain, swelling, or deformation of the neck area. The victims can complain of inability to move the neck, weakness, or tingling sensation in the arms or legs.
- Spinal injuries are suspected in cases where it is difficult to move limbs, there is a lack of sensation, or paralysis. One can report pain in the back or the neck area, or he/she can report numbness, weakness, or tingling of the limbs.

It is crucial to assume spinal injury in any case of trauma involving the head, neck, or back until proven otherwise. Movement can worsen spinal injuries, so it is essential to minimize *any motion of the neck or back.*

5.2.4.2. Control bleeding

Uncontrolled bleeding initially causes weakness. If bleeding is not controlled, the victim will go into shock within a short period of time and will finally die. An adult has about five liters of blood. Losing one litre can result in death.

There are three types of bleeding, and the type can usually be identified by how fast the blood flows:

A. Arterial bleeding

Arteries transport blood under high pressure. Bleeding from an artery is spurting bleeding.

B. Venous bleeding

Veins transport blood under low pressure. Bleeding from a vein is flowing bleeding.

C. Capillary bleeding

Capillaries also carry blood under low pressure. Bleeding from capillaries is oozing bleeding.

5.2.4.3. Main methods for controlling bleeding

There are two main methods for controlling bleeding

A. Direct pressure

Place direct pressure over the wound by putting a clean dressing over the wound and pressing firmly. Add dressing above the first one if it is completely wet. Maintain pressure on the dressing over the wound by wrapping the wound firmly with a pressure bandage.

B. Elevate the wounded part of the body

Elevate the wound above the level of the heart.

Direct pressure combined with elevation will address most bleeding. Direct pressure and elevation can take 5 to 7 minutes to stop the bleeding completely. The use of a dressing and pressure bandage allows the rescuer to move on to the next victim. A pressure bandage should be tied with a bow, so that it can be loosened—rather than cut—to examine the wound, and then retied.

This procedure helps to conserve supplies and save time.

5.2.4.4. Recognizing and treating shock

Shock is a disorder resulting from ineffective circulation of blood. Remaining in shock will lead to the death of:

• Cells

• Tissues

• Entire organs

The body will initially compensate for blood loss and mask the symptoms of shock. Therefore, it is important to continually evaluate patients for shock and monitor their condition.

Capillary refill is how long it takes for the color to return. This is called the “blanch test.”

A. Procedures for treating shock

- Lay the victim on his or her back. Elevate the feet 6-10 inches above the level of the heart.
- Maintain an open airway.
- Control obvious bleeding.
- Maintain body temperature (e.g., cover the ground and the victim with a blanket if necessary).
- Avoid rough or excessive handling unless the rescuer and victim are in immediate danger.

B. Wound care

This section will focus on cleaning and bandaging to control infection:

The objectives of treatment for wounds are to:

- Wounds should be cleaned by irrigating with water, flushing with a mild concentration of soap and water, then irrigating with water again.
- You should not scrub the wound. A bulb syringe is useful for irrigating wounds. In a disaster.



Stabilization head, neck and spinal injuries

- When the wound is thoroughly cleaned, you will need to apply a dressing and bandage to help keep it clean and control bleeding.

C. Amputations

When the severed body part can be located, community responders should:

- Save tissue parts, wrapped in clean material and placed in a plastic bag, if available.
- Keep the tissue parts cool.
- Keep the severed part with the victim.

D. Impaled objects

You may also encounter some victims who have foreign objects lodged in their bodies—usually as the result of flying debris during the disaster.

In case of an extruded eyeball, place moist gauze on the affected eye and secure the impaled object. Do not apply the wash if there is an impaled object or cuts in the eye. Cover both eyes.

When a foreign object is impaled in a patient's body, it should not be removed but secured in place while the patient is shifted to the hospital.

5.2.4.5. Immediate response to head, neck, and spinal injuries

When dealing with suspected head, neck, or spinal injuries, the primary goal is to prevent further damage by keeping the head and neck stable and minimizing movement. Here's how you should respond:

- If the person is conscious, ask them to remain still and not to move their head or neck. If possible, have them lie down in a position that supports the neck, using any available support (e.g., rolled towels, hands) to maintain alignment.
- Minimize movement. When moving an injured person, especially in cases of spinal injury, it is important to avoid any twisting, bending, or lifting motions. Keep the head and neck aligned with the spine at all times.
- If the person is unconscious, do not attempt to move them unless absolutely necessary (such as if they are in immediate danger, like from fire or flooding). If you must move them, do so by using the log roll method, where the body is kept straight while turning.
- Do not unnecessarily walk around with the person. When they need to be transported (such as in an unsafe environment), then provide transportation using a spinal board or stretcher. This aids in maintaining the spine in the right position and also reduces further spinal destruction.
- Employ adequate methods: In case of necessity to manipulate the person, it is better to involve several people in this task, and the head, neck, and back have to be aligned throughout the process.

- When the individual is wearing a helmet (in case of a motorcycle accident, etc.), you are not to take it off unless it is an obstruction to the airway or there is a desperate need to do so. Poor removal of a helmet may cause additional damage to the neck and the spine.

5.2.5. Severe Weather Emergencies

In Pakistan, extreme heat is a major hazard, especially during the summer months when temperature spikes can exceed 45°C in many regions. During disasters, the risk is worsened by power outages, lack of clean drinking water, and overcrowding in shelters or temporary camps.

5.2.5.1. Heat exhaustion

Heat exhaustion occurs when the body becomes overheated but is still trying to cool itself through sweating. It is not immediately life-threatening, but if not addressed quickly, it can lead to heat stroke.

Common signs of heat exhaustion include:

- Heavy sweating
- Weakness or fatigue
- Dizziness or fainting
- Nausea or vomiting
- Muscle cramps
- Pale or clammy skin
- Headache

Response:

Transfer the individual to shade or a cooler place. Place them in a prone position and raise the legs by some inches. Undo their clothing and put cool and wet tissues on the forehead, neck, armpits, and groin. Give sips of cool water or an oral rehydration solution (ORS) when they are awake and are not vomiting. Do not force fluids on a semi-conscious person or a confused individual.

Take a close watch on their condition. In case of deterioration of their symptoms or failure to improve after 30 minutes, regulate the situation as a medical emergency.

5.2.5.2. Heat stroke

Heat stroke is a life-threatening emergency where the body's temperature regulation fails. Unlike heat exhaustion, sweating often stops, and body temperature can rise rapidly, causing damage to the brain, heart, kidneys, and muscles.

Symptoms of heat stroke:

- Very high body temperature (above 39.4°C)
- Hot, red, dry skin (lack of sweat)
- Rapid, strong pulse

- Confusion, agitation, slurred speech
- Seizures or unconsciousness

Response:

- Immediate cooling is critical.
- Move the person to a shaded or air-conditioned place.
- Remove excess clothing. If possible, immerse the person in cold water (a tub or shower) or place ice packs on their neck, armpits, and groin.
- If immersion isn't possible, sponge them with cold water or fan them while wetting the skin.

Do not give fluids if the person is unconscious or vomiting. Call for emergency help and continue cooling efforts until professional responders arrive.

5.2.5.3. Hypothermia

Hypothermia is a situation whereby the body loses more heat than it generates, and it leads to a drop in the core body temperature to less than 35 °C. This may happen during bad weather, cold, and wet weather conditions, i.e., usually following disasters such as landslides, floods, or winter storms, and this is particularly mentioned in displacement to people, being caught out in the open or without access to adequate shelter and clothing.

Common signs of hypothermia include:

- Shivering (which may stop as hypothermia worsens)
- Cold, pale, or bluish skin
- Slurred speech
- Confusion or memory loss
- Drowsiness or fatigue
- Shallow breathing
- Weak pulse

In infants, signs include cold skin, low energy, and refusal to feed. Elderly individuals may not exhibit obvious shivering, making diagnosis more difficult.

Response:

Take the individual inside or to an area that is dry and sheltered. Take off any wet clothes and substitute them with warm, dry clothes or a blanket. Wrap the whole body and neck (only the face should remain without the covering). Re-warm infants or severely affected adults with the use of body heat, e.g., by having skin-to-skin contact.

Warm (not hot) water bottles or a heating pad may be used, if available; temperatures should not be so high that they would be put in direct contact with the skin. Quick re-warming, such as warm baths or direct fire, should be avoided as it may cause a dangerous heart rhythm.

In case the individual is unconscious or not breathing normally, start CPR and immediately call for emergency help. Do not stop CPR until a person recovers or professional healthcare is provided.

5.2.5.4. *Preventive measures in the field*

To reduce the number of weather-related medical emergencies during response operations, first responders and volunteers should:

- Watch weather services and limit outdoor activities during the hotter period.
- Have community shelters with clean water and shaded places to rest.
- People living in camps, particularly those with access to older people and infants, should ensure that they have their own proper clothes and bedding.
- Arrange buddy checks so that people observe one another for possible signs of heat or cold stress.

During flood evacuations or mountain rescues, hypothermia becomes a real threat due to wet clothes and wind exposure. Always keep dry blankets and spare clothing in the medical kit.

Severe weather emergencies often occur alongside other injuries or illnesses. A person suffering from trauma, dehydration, or shock is even more vulnerable to environmental extremes. That's why a trained responder must always consider heat and cold as potential complications in any disaster setting.

5.2.6. Response to Road Traffic Accident

5.2.6.1. *Approaching the crash scene*

Before attending to the injured, assess the environment. A traffic accident can pose multiple dangers—not just to victims, but also to rescuers. Your first responsibility is to ensure scene safety.

- Search for potential risks, such as fire, a leakage of fuel, a broken electric pole, or unstable vehicles.
- If the accident happened on a busy road, delegated person(s) will guide or divert traffic through hand signals or emergency markers.
- And in the case that you were the first at the scene, you use something visible, such as clothes, cones, or tree branches, to warn the oncoming cars at a safe distance.
- Park cars off the roadway and switch on hazard lights.



Traffic accident

- Get close to the car only when it is safe to get nearby. Never be in a hurry to handle a situation emotionally, and more so in case one is seeking help.

Once the scene is secure, approach the victim(s) calmly and assess their condition. Speak gently and identify yourself: "I'm here to help. My name is ___. I know first aid*." Provide help after assessing the patient".*

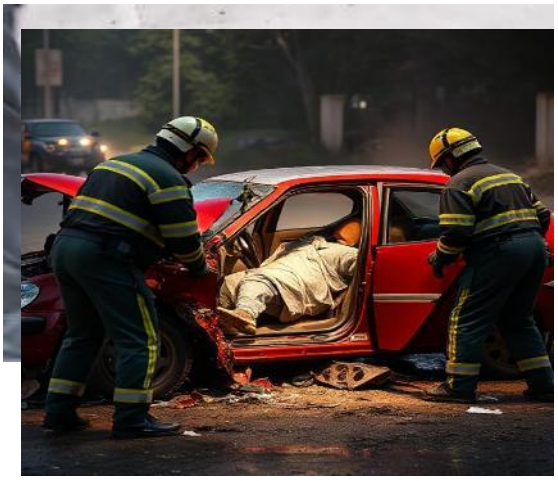
5.2.6.2. Helmet removal: when and how

In Pakistan, most traffic crash victims are **motorcyclists**, many of whom wear helmets—sometimes poorly fitted or damaged. Knowing when and how to **remove a helmet properly** is crucial.

When should you remove a helmet?

Only remove the helmet if:

- The victim is unresponsive and has no breath, and you must open the airway to carry out CPR.
- The correct passage to the airway is obstructed due to the helmet (e.g., vomiting or bleeding when inside the helmet).
- The helmet is broken or is injuring (e.g., pressing into the skull or neck).
- You have been trained and socialized to remove the helmet properly.



Extricating victims from vehicles

When should you not remove the helmet?

If the person is breathing and stable, **do not remove the helmet**. Instead, support the neck in a neutral position and monitor for changes.

How to remove a helmet properly (2-person technique)

- One of the responders is at the front of the face and holds the bottom part of the helmet, maintaining the alignment of the neck.
- The second one releases the chin straps carefully.
- The second then carefully opens out the helmet, and starts sliding it off, and overhead the nose and ears, without the action of twisting.
- The first responder cradles the neck and head as the helmet is being removed to prohibit movement.
- Upon removal, carefully balance the neck with the aid of hands, towels, or any make-shift implement until professional assistance can be called.

Never pull a helmet off in a hurry. If alone and untrained, leave the helmet on unless it is necessary for resuscitation

5.2.6.3. Extricating victims from vehicles

Extrication refers to the safe rescue of a victim out of a wrecked car in a way that does not lead to more destruction. But on most occasions, the people might be immobilized or pinned or buried beneath metal ruin. Mishandling might cause paralysis or death, especially in cases where the spine is damaged.

When to extricate

- The vehicle is at risk of catching fire or exploding.

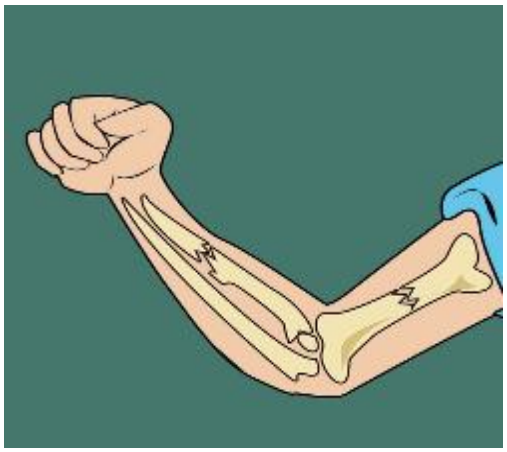
- The victim is not breathing and needs CPR.
- The vehicle is sinking in water or unstable.

When not to extricate

- The victim is conscious, breathing, and not in immediate danger.
- There are no visible life-threatening injuries that require urgent relocation.
- You are untrained or don't have the proper tools or support.

How to safely extricate with minimal resources

- Place hands or any supporting structures, such as rolled towels, on the neck and spine as much as possible.
- Loosen the seat belt. When it is stuck, apply caution with a sharp object or cutter.
- Both of your hands should support the head and lower part of the body of the victim.
- The log roll technique, when lying on the floor, or the two-man lift when seated.
- Do not yank the arms or legs. Make sure the head, neck, and back are straight throughout.



Fracture of upper extremities

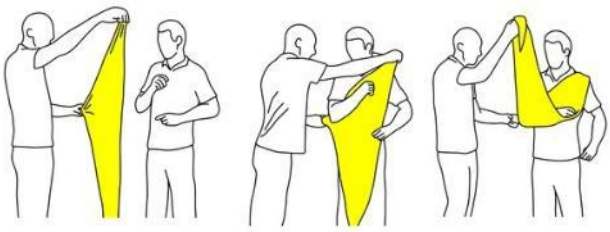
- After getting out of the car, put the individual on a hard surface and proceed to check the person regarding breathing and pulse.

If possible, use a makeshift stretcher (wooden board, mat, or cloth supported by poles) to carry the victim to a safer location.

5.2.7. Management of Fractures of the Upper Extremities

5.2.7.1. Understanding fractures

A fracture is a break or crack in a bone. It may be complete or partial, open (where the bone pierces the skin) or closed (beneath the skin). Swelling, bruising, visible deformity, inability to move the limb, and severe pain are typical signs.



First aid : How to sling an injured arm



Sling & Swathe, Pelvic Wrap Techniques

Breaks or fractures, as they are also called, are one of the most common accidents in both natural life and in

disasters. In the event of earthquakes, the collapse of buildings, landslides, or road accidents, people may get broken arms, legs, ribs, or pelvis. Without proper stabilization of such injuries, there may be internal bleeding, nerve damage, infection, or permanent disability.

As a first responder, you are not expected to correct the fracture; it will be the job of a medically trained individual, but you must do all you can to stabilize the injury, alleviate suffering, minimize additional injuries, and ready the individual to transport him or her to a comfortable environment.

5.2.7.2. Upper extremity fractures (shoulder, arm, elbow, wrist)

Fractures of the upper limb—especially the arm and shoulder—can occur when someone tries to break a fall or suffers a direct blow. The **Sling and Swathe** technique is one of the most effective ways to immobilize these injuries.

Sling and swathe technique

A **sling** supports the weight of the injured arm by suspending it against the chest, while a **swathe** secures the arm to the body, preventing movement at the shoulder and elbow.

Steps to apply a sling and swathe:

1. **Support the injured arm** gently, with the elbow bent at approximately 90 degrees.
2. Use a **triangular bandage or piece of cloth** to create the sling. Place one end at the elbow and the other at the wrist. Tie the ends around the neck, ensuring the hand is slightly higher than the elbow to reduce swelling.
3. Check that circulation is intact by pressing a fingernail and seeing if color returns within 2 seconds.
4. Use a second bandage—the **swathe**—to wrap around the injured arm and the chest. This keeps the arm tight against the torso and limits all shoulder movement.

This method is particularly helpful for suspected fractures of the collarbone, upper arm (humerus), or elbow.

5.2.7.3. Lower extremity fractures (thigh, leg, pelvis)

Fractures of the thigh (femur), shin (tibia and fibula), or pelvis are more dangerous due to the risk of internal bleeding and shock. Victims with these injuries often cannot move and experience severe pain, swelling, and bruising



Thigh, leg, pelvis

a) Pelvic wrap technique

The **pelvis** is a case-like bone structure that takes up a large percentage of the body's weight. Disrupted, the spot, usually because of a traffic crash, fall, or crush damage, may initiate a torrent of blood even when it does not appear.

Reduction in bleeding and deterioration of the injury must be done rapidly by immobilization. The pelvic wrap holds the pelvic bones in their place, applying mild pressure and thus immobilizing them.

To apply a pelvic wrap

- A broad, stiff band should be used: a folded bed sheet, blanket, or special pelvic binder.
- Place it on a line with the hip bones instead of the waist or stomach.
- Fold the cloth until it covers the pelvis, then pull both ends of the cloth to fuse together the bones.
- Wrap or bind it tight and not too tight as to hinder the circulation of the legs.
- Avoid rigorously moving the person; keep him or her lying down. Do not permit them to sit or twist their torsos.

Once stabilized, the person must be transferred to a hospital immediately. Avoid moving them more than necessary.

b) Improvised splints for arms and legs

In disaster areas, splints may need to be improvised from everyday materials: wooden boards, cardboard, rolled-up newspapers, bamboo, or even thick clothing.

Guidelines for splinting

- Wrap up the injury to find a position. Do not attempt to turn a crooked path straight.
- Place the joint above the fracture and below the fracture in immobilization.
- Prepare by placing some padding between the splint and the skin.
- Bind the splint with strips or bandages of cloth, wrap it firmly but not tightly.
- Be sure to check circulation every few minutes- numbness, pale fingers and toes, or more pain could mean that the splint is too tight.

Key safety points

- In most cases, evaluate the overall condition of a victim prior to paying attention to a fracture. In case they are unconscious or do not breathe, manage these problems in the first place.
- In open ones (bone protruding out of the skin), put on a sterile dressing (without trying to minimize the bone inwards).
- Do not permit the individual to walk on a possibly broken leg or pelvis.
- Watch out for symptoms of shock: fast pulse, Paleness or sweating of skin, and weakness or confusion. In case no spinal or pelvis injury is believed to have been incurred, raise the legs and keep the individual warm.

5.2.8. Treatment for the Shock

5.2.8.1. What is shock?

The human body relies on a continuous supply of oxygen-rich blood to function properly. Shock occurs when this supply is reduced due to any number of causes. Regardless of the type, the effects of shock are the same: a drop in blood pressure, poor circulation, and oxygen starvation to the brain, heart, and other organs.

5.2.8.2. Recognizing shock

Shock can happen quickly or develop over time. In its early stages, the signs may be subtle. That's why it's essential to watch for these common symptoms, especially after trauma or blood loss:

- Pale, cold, and clammy skin
- Rapid breathing and rapid heartbeat
- Weak or thready pulse
- Dizziness or fainting
- Confusion, anxiety, or restlessness
- Nausea or vomiting
- Dry mouth and thirst
- Bluish lips or fingertips (a sign of oxygen deprivation)

5.2.8.3. Steps to treat shock

If you suspect someone is in shock, your priority is to maintain blood flow to the vital organs and keep the person alive until professional care arrives.



Step to treat shock

Here's what you should do:

a) Lay the person down on their back

Absent signs of spinal, leg, or pelvis injury, lie the person down on his or her back and bring the legs up to approx. 12 inches or so. This helps send more blood to the heart and brain. Elevate by means of a folded bag, blanket, or your own knees. Unless suspected spinal or pelvic injury, the legs are not allowed to be elevated. Keep the individual as motionless as you can, and pay attention to stop him or her.

b) Maintain body temperature

People in shock often feel cold. Cover them with a blanket or spare clothing to keep them warm. In hot weather, shade them from the sun and provide ventilation while keeping their body from overheating.

c) Monitor airway and breathing

Ensure the person is breathing normally. If not, begin CPR. If they are vomiting or unconscious but breathing, turn them gently onto their side into the recovery position to prevent choking.

d) Control bleeding

If the person is bleeding, apply direct pressure using a clean cloth or bandages to stop the bleeding. If a limb is bleeding heavily, you may need to apply a tourniquet (as taught in advanced first aid).

For severe, life-threatening bleeding that does not respond to the above measures, a tourniquet may be applied above the site of the wound on the affected limb. Tourniquets must be used with caution and only by individuals trained in advanced first aid, as improper

use can cause further damage. Tourniquets are not suitable for minor bleeding and should be considered only as a last resort. Life or limb situation.

Throughout the process, it is crucial to keep the injured person calm and still. Lay them down and cover them with a blanket to help prevent shock, which can occur rapidly during significant blood loss. While continuing to monitor the person and maintain pressure on the wound, seek immediate medical assistance or arrange for evacuation to the nearest health facility. Timely and appropriate first aid intervention can make the critical difference between life and death in bleeding emergencies.

e) Do not give food or drink

Even if the person is thirsty, do not give anything by mouth—especially if surgery might be needed later. Moistening the lips is fine if they are conscious.

f) Reassure the person

Speak calmly. Let them know they are not alone. Psychological stress can worsen shock, so the more relaxed and supported they feel, the better their body will respond.

g) Preventing shock in mass casualty situations

In disasters where resources are limited, the best way to prevent shock is to:

- Control bleeding early
- Protect victims from cold or heat
- Avoid unnecessary movement
- Provide psychological comfort

5.2.9. First Aid/Treatment of Poisoning, Including Snake Bites and Sting Bites, etc.



A major emergency, a condition that can be ignored up to its escalation, is poisoning. The condition takes place due to exposure of a body to a harmful substance, either by swallowing, breathing, touching the skin, or by a bite or sting. In case of disasters, the usual routines deteriorate, making the dangerous materials more available, and cases of poisoning can reach new heights.

From pesticide poisoning at rural homes to snake bites during the floods, the first responders need to identify the poisoning fast and take instant action. There are some poisoning cases that need immediate medical attention, and there are others that one could handle by simple first Aid as they await medical assistance. Being aware of the distinction may be life-saving.

5.2.9.1. General signs and symptoms of poisoning

While symptoms vary depending on the type of poison, general signs include:

- Nausea, vomiting, abdominal pain

- Difficulty breathing
- Burns or stains around the mouth (from ingesting chemicals)
- Excessive salivation or sweating
- Muscle twitching or weakness
- Confusion, dizziness, or fainting
- Bluish lips or skin
- Seizures or unconsciousness

In the case of insect stings or allergic reactions, look for swelling of the face, tongue, or throat, difficulty breathing, and rapid pulse—signs of anaphylaxis.

5.2.9.2. First aid for snake bite

If a person is bitten by a snake:

- Reassure him by saying that help is on the way. Explain that not all snake bites are deadly, and encourage him to stay still, as this will help keep him safe.
- Reassurance is extremely helpful in managing a snake bite, especially in the critical first moments before medical help arrives. Fear and panic increase heart rate and blood circulation, which can spread venom faster in the body. Reassurance helps keep the person still and reduces anxiety, which can slow venom absorption.
- Motion accelerates the venom delivery.
- Restrict the bitten part by placing it below the heart.
- Take off tight clothes, rings, or bangles at the bite area.
- Avoid sucking out the venom, as well as cutting the wound, or applying ice or an electric shock.
- Put a loosely tied bandage (not tightly done) around the limb to retard the spread of venom.
- Send the individual to the closest health institution as soon as possible.
- When you can, note color, size, and markings of the snake--but take no thought of capturing or killing it.

Snake venom affects the blood, nerves, and muscles. Anti-venom is available at many hospitals in Pakistan, so the patient should be transported to the hospital as soon as possible, and anti-venom should be administered as soon as possible.

5.2.9.3. Bee or wasp stings

For non-allergic reactions:

- Remove the stinger gently using a flat object (e.g., a credit card) without squeezing it.
- Clean the area with soap and water.
- Apply a cold pack to reduce swelling and pain.
- Give an antihistamine if available.

For signs of severe allergic reaction (anaphylaxis):

- Lay the person down with legs elevated.
- Loosen clothing and cover them to maintain body temperature.
- Use an epinephrine auto-injector (if available).
- Call for emergency medical help immediately.

5.2.9.4. Ingested chemicals or poisonous substances

If someone swallows a household chemical (bleach, acid, pesticides):

- Do not induce vomiting unless told by a poison control center or healthcare provider.
- Do not give anything by mouth unless instructed.
- If the substance is burning the lips or mouth, rinse with water carefully.
- Check if the container is available—take it with the person to the hospital for identification.
- Move them into fresh air if the poison was inhaled.
- Call for emergency help immediately.

Keep the person lying still. Do not let them eat or drink unless medical personnel advise it.

5.2.9.5. Pesticide poisoning (organophosphate compounds)

Common signs include excessive salivation, constricted pupils, sweating, vomiting, and seizures. These symptoms require a rapid response.

- Evacuate the individual from the polluted site.
- In case of the skin or clothes: remove contaminated clothes, wash the body with water.
- Do not touch it with your hand.
- Put the individual in a side-lying position to eliminate choking when vomiting happens.
- Do not put something in the mouth.
- Get the individual to a hospital right away.

Pesticide poisoning is extremely dangerous and can worsen quickly.

5.2.9.6. Food poisoning

Symptoms such as diarrhea, vomiting, and stomach cramps often appear within hours of eating spoiled or contaminated food.

- Oral rehydration solution (ORS) should be provided and used to replace lost fluids.
- Promote clear drinking water in little doses.
- Drinking milk and fatty foods or spicy foods should be avoided during recovery.
- In case of bloody diarrhea, constant vomiting, high fever, or dehydration manifestation (dry mouth, decreased urination), consult a health specialist.

In mass shelter settings, maintain food hygiene and discard any food that smells or looks unusual.

5.2.9.7. Carbon monoxide poisoning

People may fall unconscious in rooms with poor ventilation while using gas stoves, charcoal burners, or generators.

- Immediately move the person into fresh air.
- Check for breathing and pulse. Begin CPR if necessary.
- Loosen clothing and keep the airway open.
- Do not allow the person to re-enter the contaminated area.
- Seek medical assistance. Oxygen therapy is required in severe cases.

Symptoms include headache, confusion, nausea, and cherry-red lips or skin.

5.2.10. Well-Being of First Responders

5.2.10.1. Why responder well-being matters

A strong responder must have both the technical knowledge and the mental resilience to function in difficult, unpredictable, and emotionally intense conditions. Without attention to personal well-being, even the most skilled responder can experience:

- Burnout- physical and mental fatigue as a result of working long hours and emotionally straining.
- Compassion fatigue: the loss of empathy when people witness people suffering.
- Trauma and PTSD were the psychological injuries that developed as a result of exposure to disturbing events
- Impaired decision-making capacity - one does not get enough sleep, water, or feels emotionally overloaded
- Physical collapse - injuries, infections, or failure to exercise personal care



Well-being of medical first responder

Disaster response is not a sprint. It is a marathon of endurance, clarity, and resilience. That's why building habits for self-care before, during, and after deployment is as important as any medical technique.

5.2.10.2. Maintaining physical health in the field

1. **Hydration and Nutrition**

- Always carry clean water and **drink frequently**, even when not thirsty. Dehydration reduces focus and weakens immunity.
- Eat regular meals when possible. Prioritize foods that provide sustained energy (nuts, dates, rice, lentils, fruits). Avoid energy drinks and caffeine overload.

2. **Personal Hygiene and Protection**

- Wash hands regularly or use hand sanitizers, especially after treating patients.
- Wear protective gloves, masks, and if possible, safety goggles.
- Keep a personal hygiene kit with soap, toothpaste, tissues, sanitary supplies, and spare clothing.
- Take rest breaks. A 15-minute rest can restore alertness more than continuing through exhaustion.

3. **Injury Prevention**

- Wear sturdy shoes and appropriate clothing for rubble, heat, or cold.
- Use proper lifting techniques to avoid back or joint injuries.
- Carry a basic first aid kit for minor cuts, bites, or burns you may suffer.

5.2.10.3. Mental and emotional well-being

1. **Emotional monitoring**

- Be aware of emotional fatigue symptoms. It may include irritability, numbness, too much silence, and anger.
- Accept how you feel. Normal reactions to a sight of death or serious injury are grief, guilt, or helplessness.
- Understand that you cannot save everybody. Giving the best is the key.

2. **Use of peer support**

- Debrief regularly with fellow responders. Talking about what you've seen and done reduces emotional burden.
- Work in pairs or teams whenever possible to avoid isolation.
- If something bothers you deeply, share it—whether with a teammate, mental health professional, or spiritual leader.

3. **Managing stress on-site**

- Make small breaks by performing deep breaths or even a few minutes of silence in case of being overwhelmed.
- When you experience panic, confusion, or an emotional breakdown, move away temporarily. Ask any other team member to step in.

- Bring comforting photos, object tokens, or prayers. These mini anchors assist you in stabilizing your mind under great pressure

4. Post-mission recovery

Returning from the field does not mean your body and mind recover instantly. Often, responders feel restlessness, nightmares, or a sense of emptiness after an intense deployment. This is common, but it should be addressed.

- Take time off and rest before getting back to the daily activities.
- Be with the family, be in nature or with the chosen friends.
- Write your experiences and have some reflection and release.
- We need to do positive sport (walking, stretching, light sports).
- When you cannot exclude the distress after a couple of weeks, turn to counseling. Asking is not a weakness, but it is a strength.

Self-Assessment / Key Questions & Answers

Q1. Explain the step-by-step procedure of performing CPR for adults. How does it differ for children and infants?

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Q2. Discuss the recognition signs and immediate first aid management of heat stroke, hypothermia, and shock in disaster response situations.

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Q3. Given Scenario: During a road accident, you reach the scene and find an unconscious motorcyclist wearing a helmet. Fuel is leaking from the vehicle.

- *What steps will you take to ensure scene safety before attending to the victim?*
- *When should you remove the helmet, and how?*

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Q4. Given Scenario: You are in a flood relief camp. A child suddenly starts choking on food and cannot breathe.

- *What immediate actions will you take depending on whether the child is over 1 year old or under 1 year old?*
- *What precautions should parents take to prevent such incidents in camps?*

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Q5. What is the very first step before giving First Aid in any emergency?

a) Call for help immediately
b) Check the responsiveness of the victim
c) Scene size-up to ensure safety
d) Start CPR without delay

Correct Answer: C

References

- Punjab Emergency Service, Rescue 1122, Government of Punjab, *"Community Action for Disaster Response Participants Workbook of Program for Enhancement of Emergency Response".*
- Punjab Emergency Service, Rescue1122, Government of Punjab, *"Community Safety Guidebook."*



Session 5.3: Techniques for Handling Fire Emergencies

Session Objectives

By the end of this session, participants will be able to:

- Explain the basics of fire science for general understanding.
- Demonstrate practical skills in fire extinguishing, particularly using the bucket brigade method in low-resource or community settings.
- Design and participate in fire evacuation planning and drills, ensuring safe and coordinated exits during emergencies.
- Apply kitchen fire safety practices, recognizing hazards, preventing common fire causes, and responding effectively to small fires.
- Identify and respond to fire hazards during traffic crashes, including techniques for fire prevention, safe extrication, and suppression at crash scenes.
- List causes and prevention methods for crop fires, and organize community-level responses using local tools and teamwork.
- Analyse the causes, risks, and safe response to forest fires, including evacuation techniques and firebreak strategies.

Duration

3 hours and 30 minutes

Facilitation Methodology

Group Work, Hands-on exercise, Drills, Interactive Lecture, and Q/A

Training Aids Required

- Markers, flip charts, masking tape.
- Buckets with water/sand
- Sample fire extinguisher (PASS demo)
  - *Whistles/bells for drills*
  - *Scenario role cards*
- Whiteboard
- Multi-color markers
- Multimedia with a laptop and a screen
- Masking tape
- Session handouts

Training Approach

1. Introduce the session objectives with a quick introduction of fire science and the fire triangle
2. The facilitator can ask a question for discussion, e.g., how do the fire hazards in your neighborhood most often occur?
3. In the following slides, discuss the fundamentals of fire science and different fire stages. While showing slides, use interactive visuals on the ignition, growth, fully developed, and decay stages.
4. At this stage, a quick exercise can be conducted: Participants draw the fire triangle and mark the three elements of it.
5. After a fruitful discussion, show slides about the bucket brigade / extinguishing methods for 35 minutes and do the hand sob exercise to show as a demonstration.

   Hands-on exercise 1: The facilitator, along with participants, can practice the bucket brigade technique to do it practically.

6. For this purpose, have the participants line up to perform a water/sand bucket transfer to one another. During the exercise, the facilitator can solicit feedback on the problems with teamwork and coordination.

   Hands-on exercise 2: In the next sub-session, show slides on fire emergency planning and conduct a drill exercise with the participants.

7. Instruct safe exits, plan for it, and discuss the buddy system and roles during the evacuation exercise.

   Hands-on exercise 3: At this stage, conduct a hands-on exercise 3 with the following instructions:

   - *Groups develop an emergency evacuation strategy for a school/household.*
   - *Minimize the assembly point headcount evacuation drill.*

8. In the plenary, discuss the strengths and weaknesses that they have witnessed. The group members are to respond one by one in groups
9. Afterwards, show slides about kitchen fire safety and show different photos and videos to demonstrate safe practices.

   Hands-on exercise 4: Conduct the PASS rule of extinguisher and conduct hands-on exercise 4 with the participants:

   - *Practice smothering a pan fire with a lid/ cloth (pretend, not fire).*
   - *Role-play: Stop–Drop–Roll on catching fire.*

10. In the next sub-session, discuss the fire safety traffic crash for 30 minutes.
11. Explained hazards associated with the gas cylinders, sparks, and leaks of fuel, etc.

    Hands-on exercise 5: In the small groups, the simulation of a safe approach to the crash site, engine off, hazard identification, and safe extrication is performed.

12. After a fruitful discussion and hands-on discussion, introduce crop/ forest fire safety measures for around 25 minutes.

13. At the end of the session, conclude the session and repeat the main lessons learned. Review the main practices (triangle, bucket brigade, drills, kitchen safety, firebreaks).
14. Engage participants by asking if every participant can share at least one of the actions he/she will use in his/her community.

Background Material of the Session

5.3.1. What is Fire

Fire is the burning or combustion that gives bright light, heat, and smoke. Heat, Oxygen, and Fuel are the three essential components of a fire; these elements make a Fire Triangle.

The heat and light of combustion characterize the active principle of burning. It is a rapid, self-sustaining oxidation process accompanied by the evolution of heat and light of varying intensity. The flame is the visible portion of the fire and consists of glowing hot gases.

5.3.1.1. Triangle of fire

For many years, the fire triangle (oxygen, fuel, and heat) was used to teach the components of fire.



Triangle of fire

Fuel_____

Heat _____

Air (Oxygen)_____

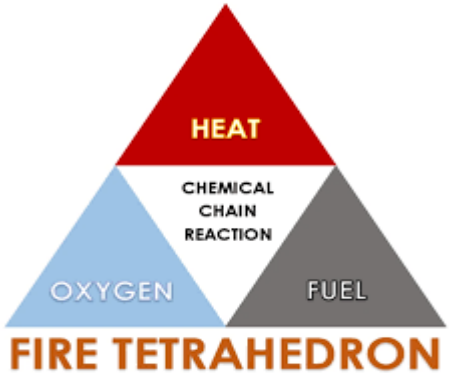
Fire Tetrahedron

For combustion to occur, four components are necessary:

- Heat _____
- Fuel _____
- Oxygen (oxidizing agent) _____
- Self-sustained chemical reaction _____

5.3.1.2. Stages of fire

1. **Ignition**
    - **Description:** A massive amount of fuel, oxygen, and a high temperature mix in an unquenchable chemical reaction.
    - **Key Point:** At this phase, the fire remains small and can normally be controlled or put out using a fire extinguisher.



2. **Growth**
    - **Description**: The initial flame heats nearby materials, causing more fuel to ignite. Heat transfer through convection and radiation spreads the fire.
    - **Key Point**: Fire size increases, flames reach the ceiling, and hot gases collect at the top of the room, raising the temperature of all surfaces closer to ignition.
3. **Fully Developed**
    - **Description:** The space is on fire, with most or all of the fuel that is available being burned. This is the most harmful stage and also the hottest.
    - **Key Point:** The maximum heat production takes place, and Oxygen is exhausted fast.
4. **Decay (Burnout)**
    - **Description**: As available fuel is consumed, the fire intensity decreases and temperatures begin to drop.
    - **Key Point**: Less heat is generated, and the fire gradually burns out.

5.3.1.3. Classification of fires

American Fire Class	European / Australian / Asian Fire Class	Fuel / Heat Source	Examples
Class A	Class A	Ordinary combustibles (solid organic materials)	Wood, cloth, paper, rubber, plastics
Class B	Class B	Flammable liquids	Petrol, gasoline, solvents, oil-based liquids
Class C	Class C	Flammable gases	LPG, natural gas, methane, propane
Class C *(Electrical)*	Class E *(Electrical)*	Electrical equipment fires	Short circuits, electrical panels, machinery, overloaded cables
Class D	Class D	Combustible metals	Magnesium, sodium, titanium, potassium, lithium, uranium, calcium
Class K	Class F	Cooking oils & fats (high-temperature fires)	Deep fryers, commercial kitchen oils, ghee, fat fires

Quick Summary

- *Class A = Class A → Solid combustibles*
- *Class B = Class B → Flammable liquids*
- *Class C (Gas) = Class C (Gas)*

- *Class C (Electrical, USA) = Class E (Electrical, Europe/Asia)*
- *Class D = Class D → Metal fires*
- *Class K (USA) = Class F (Europe/Asia) → Cooking oil/fat fires*

5.3.2. Types of Fire Extinguishers

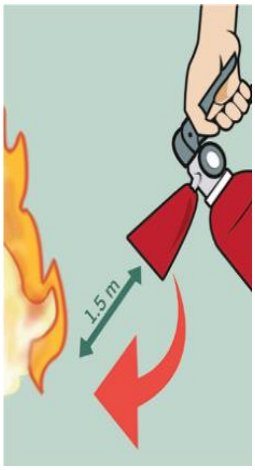
Type	Contents / Mechanism	Fires Suitable For	Notes
Water (Pressurized Water)	Water under pressure	Class A fires (wood, paper, cloth)	Do NOT use on electrical or flammable liquid fires
Foam (AFFF – Aqueous Film-Forming Foam)	Foam solution	Class A & B fires (solids & flammable liquids)	Forms a blanket over liquid to prevent vapors
Dry Chemical (ABC / BC Powder)	Monoammonium phosphate or sodium bicarbonate	Class A, B, C fires	Most common multipurpose extinguisher
Carbon Dioxide (CO_2)	Compressed CO_2 gas	Class B & Electrical (Class C/E) fires	Leaves no residue; good for electronics

5.3.3. Use of Fire Extinguisher

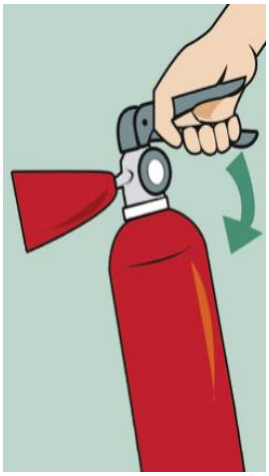
- **Pull the pin:** This is the first step to activate the fire extinguisher. Pulling the pin breaks the tamper seal and unlocks the operating lever, allowing you to discharge the extinguisher when needed.
- **Aim the nozzle at the base of the fire:** Point the nozzle or hose toward the lowest part of the flames, where the fire is actually burning. Targeting the base is crucial because spraying the flames themselves will not extinguish the fire.
- **Squeeze the handle:** Firmly press the handle to release the extinguishing agent. Maintain steady pressure so the flow remains continuous and effective.
- **Sweep from side to side:** Move the nozzle in a slow, controlled sweeping motion across the base of the fire. Continue sweeping until the fire is completely out, ensuring no flames are left to reignite.



Pull the pin



Aim at the base



Squeeze the handle



Sweep

5.3.4. Fire Extinguishing Through the Bucket Brigade Method

A common and communal way of controlling fire is the bucket brigade. It is the process of lining up people between an available water source or sand/soil source and the location of the fire. They have buckets filled up with mouth-to-mouth and give their empty ones back up the line in order to be filled. Although this method is basic, it is unique in areas of rural or low-resource areas where professional firefighting services might not be available at the time of the fire outbreak.

To execute the bucket brigade method effectively:

- The team members are supposed to be properly spaced in a line so as to coordinate the fast transfer of water buckets in a continuous manner.
- Cans of water should be filled and delivered effectively so as to minimize spillage and maximize the quantity of water that reaches the fire.



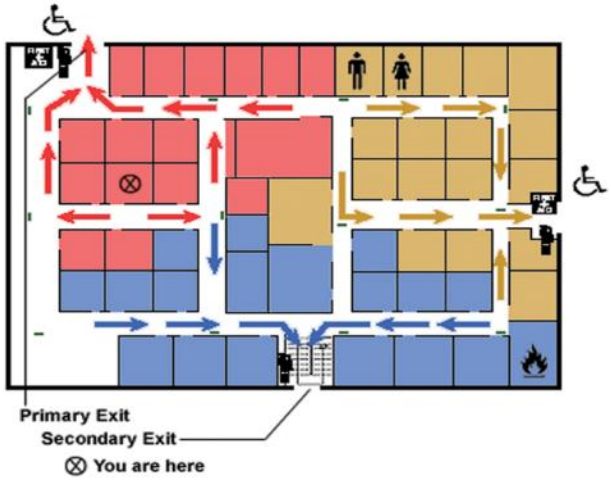
Bucket brigade method

- The members should be coordinated and in rhythm to prevent delays and forward flow of water in a consistent way.
- Other methods can also be used together with the given ones when fighting spreading fires, such as putting up firebreaks.

This hands-on technique emphasizes teamwork, resourcefulness, and rapid community mobilization, making it an integral part of grassroots fire response efforts.

5.3.5. Fire Evacuation Planning and Conducting Drills

The major element is evacuation planning and drills to save lives during a fire evacuation. An immediate, responsive, and safe act following a fire emergency usually relies on the preparation of the individuals and the organizations in advance. The planning ought to entail identification of safe exits, knowledge of fire behavior, and evacuation drills that demonstrate clear procedures.



Establish fire evacuation route

Key components of fire evacuation planning include:

- **Identifying fire exits:** All possible exits should be c
- clearly marked and known by all members of a household or organization.
- **Establishing a fire evacuation route:** A safe, fast, and unobstructed path should be pre-identified. This route must lead people away from the building or fire area to a designated safe zone.
- **Assigning evacuation roles:** Individuals should be assigned specific roles, such as headcount coordinators or persons in charge of assisting children, the elderly, or differently abled people.
- **Using the buddy system:** Individuals should be paired so they can help each other evacuate safely.



Fire evacuation planning & drill

Conducting fire drills regularly is equally essential

Drills simulate a real emergency and allow participants to practice responding calmly and effectively. They should be scheduled at various times and under different conditions to test readiness and improve response.

Fire evacuation drills should include

- Dialing of sticks, pressing the alarm button, or shouting that the drill is started
- An instant stop to the activities that were then going on
- Leadership of prescribed evacuation routes
- Gathering in a pre-determined secure site
- Carrying out a head count to cover all the people present
- Browsing on good and bad things and what to do better

This training approach, when practiced and reinforced through hands-on activities, strengthens the safety culture and preparedness of the community.

5.3.6. Traffic Crash Fire Safety

Traffic accidents often involve fuel, electrical sparks, and crushed or exposed vehicle components, all of which increase the risk of fire. Fire may ignite immediately after a collision or develop minutes later due to heat or fuel leakage. Understanding how to prevent, respond to, and manage fire hazards in road traffic crashes is essential for both rescuers and community members.

5.3.6.1. Recognizing fire hazards at a crash scene

When approaching a crash site, responders must always assume that a fire can break out at any moment. The following signs should alert responders to a high fire risk:

- Smell of fuel or visible fuel leakage from the vehicle.
- Sparks from damaged electrical wiring or batteries.
- Smoke or steam rising from the engine.
- Loud hissing noises, which may indicate gas or compressed air leakage.

It is vital to stay alert and not approach a vehicle blindly. Responders should perform a visual scan of the area before attempting to assist the victims.



Traffic crash fire safety

5.3.6.2. Immediate safety actions

If a vehicle is on fire or there is a high risk of fire, the primary goal is to remove the occupants as quickly and safely as possible—without causing further injury.

Switch off the engine of the vehicle.

- Remove the battery enough to be safe, to stop electrical sparks.
- Where there is visible fire, apply a fire extinguisher to suppress flames, concentrating on the base of the fire.
- Lack of available extinguisher. Clear up the space and never move to fight a well-established fire with water, particularly when fuel is involved.



Rescuers should never attempt to move trapped victims if fire is already spreading unless there is immediate danger to life. Instead, use basic tools (such as crowbars or metal cutters) to widen access points, ventilate the car interior, or support emergency medical responders.

5.3.6.3. Extrication techniques and fire risk management

Extrication of victims from vehicles must be done quickly and safely. Key precautions include:

- Checking for fuel leaks before starting the extraction.
- Keeping all ignition sources, including cell phones and lighters, away from the scene.
- Assigning one team member to monitor fire risks at all times.
- Keeping victims as calm and still as possible to prevent injuries while moving them.



Recognize fire hazards

Community volunteers trained in basic rescue should be aware of the **potential explosion zones** in and around vehicles, including fuel tanks, gas cylinders (in CNG/LPG vehicles), and the engine compartment.

Self-Assessment / Key Questions & Answers

Q1. Which of the following is NOT part of the Fire Triangle?

a). Heat

b). Fuel

c). Oxygen

d). Carbon dioxide

Correct Answer: D

Q2. At which stage of fire is it usually possible to control or extinguish the fire with simple tools like an extinguisher?

a). Ignition stage

b). Growth stage

c). Fully developed stage

d). Decay stage

Correct Answer: A

Q3. What is the correct action when a small grease fire starts in a cooking pan?

a). Pour water over the flames

b). Cover with a metal lid or baking sheet

c). Sprinkle flour over the flames

d). Move the pan to another stove

Correct Answer: B

Q4. Which one is an essential step in a fire evacuation drill?

a). Staying inside until the fire services arrive

b). Shouting or using alarms to signal evacuation

c). Hiding under furniture

d). Leaving by elevators

Correct Answer: B

Q5. What is the PASS rule in using a fire extinguisher?

a). Push, Alert, Shout, Spray

b). Pull, Aim, Squeeze, Sweep

c). Point, Act, Shout, Stop

d). Pull, Act, Spray, Support

Correct Answer: B

Q6. Given Scenario: You are in a household kitchen when a sudden gas leak is noticed. Someone tries to switch on the light, and you smell strong gas.

- *What immediate actions should you and your family take?*
- *How can such kitchen fire risks be prevented in the future?*

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Q7. Given Scenario: During a traffic crash, a car is leaking fuel, and smoke is coming from the engine. People rush to rescue passengers.

- *What fire hazards should rescuers be aware of?*
- *What immediate steps must be taken to ensure both rescue and fire safety?*

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References

- Punjab Emergency Service, Rescue1122, Government of Punjab, *First Responders in Pakistan."*
- Punjab Emergency Service, Rescue 1122, Government of Punjab, *"Community Action for Disaster Response Participants Workbook of Program for Enhancement of Emergency Response".*



Session 5.4: Techniques for Search and Rescue

Session Objectives

By the end of this session, participants shall be able to:

- Explain the management principles for effective rescue teams, including safety roles and communication strategies.
- Determine the fundamental principles of managing a rescue team, including the buddy system, safety officer roles, communication protocols, and evacuation signals to ensure safe and coordinated search and rescue operations.
- Demonstrate understanding of the scene size-up process and the nine-point size-up model to assess risks, evaluate structural conditions, determine team capabilities, prioritize actions, and make informed decisions before initiating rescue operations.
- Describe and apply organized search techniques such as cross-pattern hailing, line search methods, and signaling procedures to efficiently locate trapped or hidden victims in disaster environments.
- Identify and explain basic load-lifting, cribbing, victim extraction, and rope rescue techniques, emphasizing safe application of levers, cribbing, ascending/descending, belay, and stretcher methods to avoid injuries and prevent secondary incidents.

Duration

05 hours

Facilitation Methodology

Group Work, Hands-on exercise, Drills, Interactive Lecture, and Q/A

Training Aids Required

- Whistles, ropes, wooden blocks, poles, blankets.
- Pictures and videos of the case study.
- Helmets, gloves, PPE (helmets, gloves) to demonstrate.
- Whiteboard
- Multi-color markers
- Flip charts
- Flip stand
- Multimedia with laptop and screen
- Masking tape
- Cutter
- Session handouts

Training Approach

1. Introduce the safety principles after the session objectives. Ask participants that there will be a hands-on demonstration and encourage their involvement.
2. Carry on a short discussion about SAR principles like buddy system, safety officer, communication, signals, etc.

   At this stage, conduct a **small group exercise 1:** SAR team roles (leader, safety officer, communicator)

3. Conduct a scene size-up and coordination session for the next 40 minutes, along with slide shows during the presentation
4. In this part of the session, the trainer introduces participants to the importance of conducting a scene size-up before engaging in any search and rescue operation. The facilitator explains the nine-point size-up model, which provides a structured way of assessing the situation.

   Hands one Exercise 2: After explaining the steps, the facilitator leads participants through a hands-on exercise**,** a case study simulation. Participants are divided into groups and are provided with a simulated photo of a collapsed building. Each group is asked to carefully examine the photo and apply the nine-point size-up model to the situation. Specifically, they are tasked with identifying potential hazards (such as unstable debris, gas leaks, or exposed electrical wires), setting priorities (including which areas to search first or who may be most at risk), and considering available resources (including equipment, manpower, and local support).

5. The group exercise helps participants to think critically, collaborate, and practice decision-making in a safe learning environment. After their discussions, each group presents its findings in a 5-minute presentation. These presentations allow participants to compare different perspectives, highlight key learning points, and strengthen their ability to coordinate effectively during real-life emergencies.
6. In the next sub-session, introduce search techniques by discussing cross-pattern and line search for 50 minutes, which will also include hands-on exercises.

   Hands-on exercise 3: The participants train to form a cross pattern and line search in an open space with the methods of hailing.

7. At the end of the exercise, ask participants to reflect on the difficulties and the advances they see.
8. In the next sub-session, discuss and show PPT slides on lifting loads safely by discussing the cribbing and leveraging for the next 45 minutes.
9. Discuss the basic mechanical principles lecture/demo (levers, cribbing, “lift an inch, crib an inch”).

   Hands-on exercise 4: Afterwards, conduct a hands-on exercise with group practice with wooden blocks/sticks to stabilize objects that are lifted.

10. Ask for participants' teamwork and safety reflection, and note it down on the whiteboard.

11. The next sub-session will describe the victim extraction and handling technique, which, together with the hands-on exercise, is expected to take approximately 45 minutes.
12. The facilitator first describes the various collapse conditions (surface victims, entrapments, voids).

    Hand on exercise 5: In this exercise, participants train on the safe and casualty extraction with improvised stretchers (blanket + poles, etc.).

13. Discuss the possible spinal injury precautions to take while conducting exercise.
14. The next sub-session will focus on the fundamentals of mountain and rope rescue. The trainer will begin by introducing participants to the key concepts of community-based mountain rescue and the basic principles of rope rescue. To make the discussion more interactive, participants will be invited to share any personal experiences or observations they may have related to rescue operations in mountainous or difficult terrains.

    Hands-on exercise 6: This will be followed by a hands-on exercise, where participants will engage in group practice. They will learn and practice tying essential rescue knots such as the bowline, setting up simple anchors, and performing a short role-play exercise to stabilize a victim on an uneven surface. This practical activity will help participants build confidence in using ropes and simple rescue techniques that can be applied in real-life emergencies.

15. Lastly, wrap up the session with a vote of thanks for their active participation and take some reflection for 30 minutes.

Background Material of the Session

5.4.1. Management of the Rescue Team

Effective search and rescue (SAR) operations depend on more than bravery and speed—they require a well-organized, disciplined, and safety-focused team. Each team must be prepared to operate in high-risk environments such as collapsed buildings, unstable terrain, or disaster zones where professional responders may not be immediately available.

A few fundamental principles ensure the safety and coordination of rescue teams:

- **The Buddy System:** All the rescuers should be in pairs or teams. Such a system guarantees that in case of an accident where one of the people is injured or trapped, their companion can get them immediate attention or give him or her a call. An individual must not undertake a task in a dangerous place.
- **Safety Officer Role:** The best role will be one whereby each team has a safety officer whose task will be to survey hazards and



Management of the rescue team

he/she keep a check that every team member adheres to safe processes. He is not interested in rescue, but his role is to detect risks; therefore, he is not involved in any rescue activities. Nonetheless, in cases of a few team members, each member has to be on their toes, and individually, they have to take up safety responsibility for themselves and others.

- **Effective Communication:** Communication is the key to successful SAR. The best instruments to use are those that constitute a two-way radio, but the teams should have a backup of messengers in the event of equipment failure (this is where conveyors come in). As an essential rule, though, one might do well to bear in mind that: when I send a message and do not get a response to it, the message was not heard; never take any action on unconfirmed instructions.
- **Signaling Trapped Rescue Workers:** If a rescue worker is trapped by the rubble or inside a collapsing building, then a regular tapping code must be used. The advisable rhythm is three taps followed by a sea shot (a casual pause), and three more taps again and again in cycles. It is a clearer signal than a shout and can be heard through walls and rubble.
- **Evacuation Signals:** Every rescue team should agree on audible whistle or horn signals to coordinate group movement. For example:
    - ***Three short blows*** *indicate* ***immediate evacuation****.*
    - ***One long blow*** *signals* ***"stop and maintain silence"*** *to detect victim sounds.*
    - ***One long and one short blow*** *means* ***"resume operations."***

Each incident site must establish its **own unique evacuation signal**, especially when multiple teams are working in the same area, to avoid confusion and delay.

These simple but crucial elements help rescue teams avoid injury, work efficiently, and ensure no responder becomes an additional victim.

5.4.2. Coordination with Rescuer Workers

Before beginning any rescue operation, the team must complete a **Scene Size-Up**, a structured situational assessment that the Point **Size-Up Model** provides a step-by-step method:

1. **Gather Facts:** Understand what happened. Is it an earthquake, landslide, or building collapse? Determine the time of day, occupancy of the structure, weather conditions, and potential hazards such as gas leaks, broken electrical wires, or unstable debris.
2. **Assess Damage:** Examine the structure to determine whether it is safe to enter.

   and whether it will remain stable during operations. Assess the extent of visible collapse and identify potential entry and exit points.



Coordination of rescue worker

3. **Evaluate Hazards and Risks:** Consider current and future dangers to both victims and rescuers. What are the chances of further collapse? Are there flammable materials, toxic gases, or weakened floors?
4. **Assess Your Team's Capabilities:** Before attempting a rescue, make an honest assessment of what your team can safely accomplish with available personnel and equipment.
5. **Set Priorities:** Decide whether your team can intervene safely and what tasks should be prioritized—search, evacuation, first aid, or requesting backup.
6. **Make Decisions:** Based on the previous steps, decide what actions to take, where to start, and what tools or resources are needed.
7. **Develop and Execute a Plan:** Create a simple, flexible plan of action, then communicate it clearly to the team. Always include contingency options if conditions change.
8. **Perform the Rescue:** Work systematically, with continuous monitoring of safety and victim status.
9. **Evaluate Progress and Revise as Needed:** Regularly reassess the scene, your team's performance, and the condition of victims. Modify the plan if better information or resources become available.

By following this structured approach, rescue teams enhance coordination, mitigate risk, and utilize resources more effectively.

5.4.3. Cross Pattern and Line Search Variations

The **Nine-Point Size-Up Model** provides a step-by-step method:

1. **Marshall the Facts:** Learn the facts. Is it an earthquake, landslide, or building collapse? Identify the time of the day, people in the building, conditions of the weather, and nearby dangerous factors like burst gas lines, frayed electrical cables, or unsteady debris.
2. **Determine the Damage:** Evaluate the building to figure out whether it is safe to access and whether it will be resistant throughout the operations. Evaluate how much there is to be seen, collapsing, and where possible entry and exit points can be located.
3. **Hazards and Risks:** Assess the present and future risks to both victims and anyone involved during the rescue mission. How likely is the possibility of more collapse? Are there inflammable substances, poisoned air, or uneven floors?
4. **Capabilities of Your Team:** Before you can consider making a rescue attempt, you need to make an honest evaluation of what your team can safely undertake with personnel and equipment at your disposal.
5. **Prioritize:** Determine which activities your team is safe to intervene in and prioritize among the search, evacuation, first aid, and call for backup.
6. **Decision Making:** Making decisions based on the steps given above, make a decision regarding what you have to do, what should be the starting point, and what tools or resources you would need.

7. **Plan and Put it into Action:** Formulate an easy-to-adopt plan of action and communicate it in a straightforward manner to the team. During contingencies, always have alternative options.
8. **Do the Rescue:** Do it systematically with constant attention paid to safety and the state of the victim.
9. **Analyze the development and adjust accordingly:** Periodically look at the scene, the work of your staff, and the status of victims. Alter the plan in the event of the availability of superior information and facilities

By following this structured approach, rescue teams improve coordination, reduce risk, and make better use of time, energy, and limited resources.

5.4.4. Hailing Search Methods

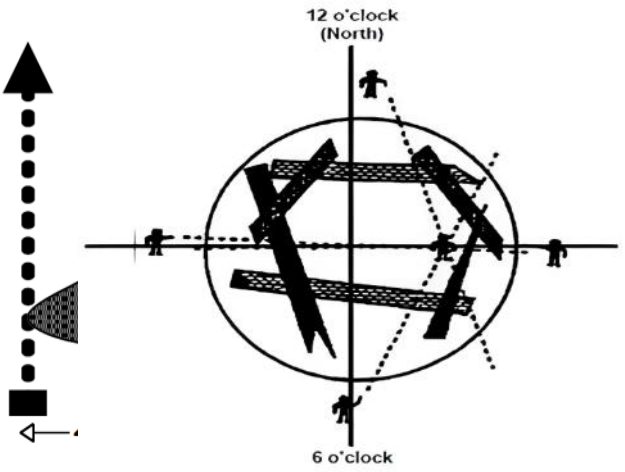
When searching for victims trapped under rubble or hidden in a disaster area, organized sound-based hailing is a crucial technique—especially when visual searches are impossible.

5.4.4.1. Cross pattern hailing search

- The leader of the team starts by instructing silence in the location.
- A four/five team member can be positioned around the search site in a (plus sign), roughly eight to sixteen meters apart.
- A rough sketch of the site is done so as to facilitate the organization of a search.
- One of them will inspect the condition of the structure, whereas others will ready themselves to perform the hailing process.
- Then rescuers cry out very loudly: "Make a noise or knock three times in case you can hear me!"
- All people listen attentively. Should a sound be heard (tapping, crying, movement), then this is indicated on the sketch.
- Then the team tries to communicate with the person verbally by inquiring how the person feels and whether there are any concerns.
- This is useful in prioritizing the location of physical entry and planning of victim extraction.

5.4.4.2. Line search method

- Team members form a horizontal line at a short distance from the structure's base.
- Each rescuer halts and hails individually, ensuring no area is overlooked.
- The line advances in steps, allowing sound detection without the confusion caused by standing directly on unstable rubble.



Cross patron hailing search

- This method is especially useful when debris is fragile or the victim's sounds are faint.

These search techniques allow communities to locate survivors systematically and safely, especially when using minimal equipment or working in dense debris fields.

5.4.5. Lifting Loads to Access Victims

In many disaster scenarios, community responders may face situations where heavy debris must be lifted or moved to access trapped victims. training emphasizes the importance of using basic mechanical principles, particularly leveraging and cribbing, for such operations.

5.4.5.1. Basic principles

The Lever

A lever is the simplest and most efficient method for lifting a heavy load. It is a rigid bar that pivots on a fixed point known as a **fulcrum**. The three primary components of a lever are:

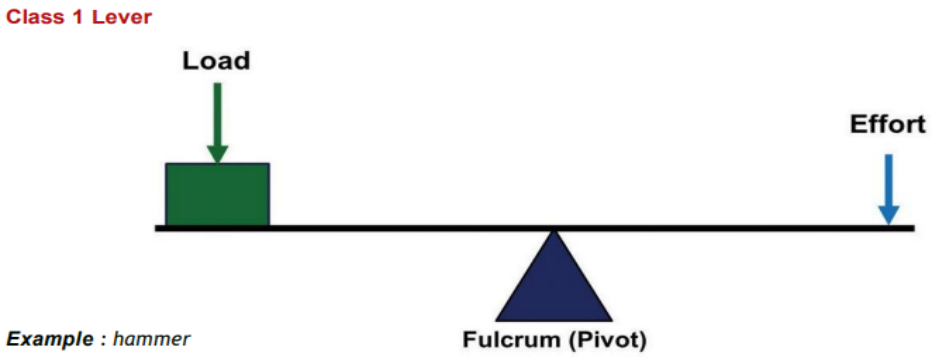
- **Fulcrum**: The pivot point that supports the bar.
- **Load**: The object that needs to be moved.
- **Force**: The effort applied to lift the load.

Levers allow rescuers to move objects that would otherwise be too heavy to lift by hand. They can be used for:

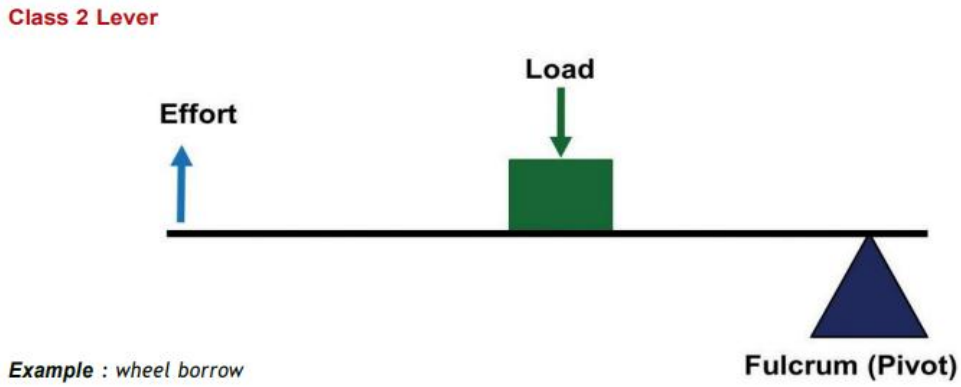
- Lifting heavy debris.
- Pulling or hauling.
- Gaining access to entrapped victims.

There are **three classes of levers**:

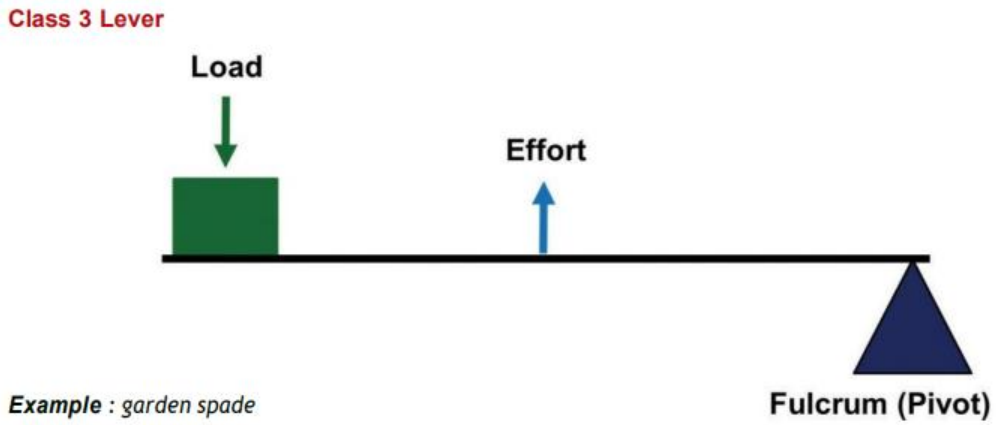
- **Class 1 Lever** (e.g., hammer): Fulcrum is between the load and force.



- **Class 2 Lever** (e.g., wheelbarrow): Load is between the fulcrum and the force.



- **Class 3 Lever** (e.g., garden spade): Force is between the fulcrum and the load.



5.4.5.2. Cribbing techniques

Cribbing is the process of building temporary wooden structures to stabilize and support loads that have been lifted. It allows rescuers to work safely under or around debris without fear of it shifting or collapsing again.

Two common types of cribbing used in rescue situations are:

- **Box Cribbing**: Wooden pieces are stacked in alternating layers to form a stable, box-like support.
- **Platform (Cross-tie) Cribbing**: Cross-laid pieces form a platform to distribute weight.



Box Cribbing



Platform Cribbing

5.4.5.3. *Safety guidelines for cribbing*

- Use the "Lift an inch, crib an inch" principle—raise the load slightly, insert a cribbing layer, then repeat.
- Never build the cribbing stack higher than three times the width of its base.
- Apply cribbing gradually from both sides if necessary to maintain balance and stability.
- Always use personal protective equipment (PPE).

5.4.5.4. *Leveraging and cribbing together*

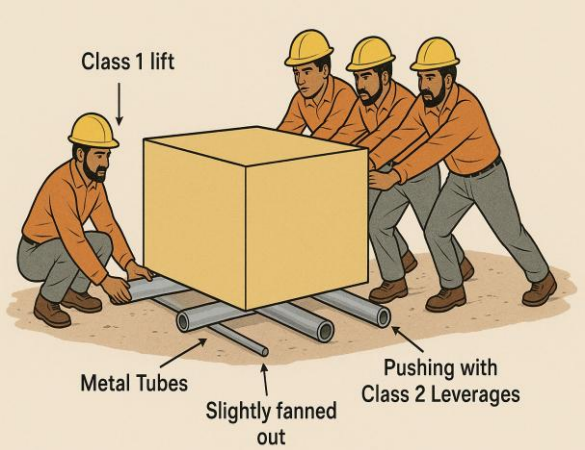
These two techniques are often combined. The sequence usually involves:

1. Inserting a lever under the load.
2. Transmission of force by pivot.
3. Raising the burden so as to be able to wedge in cribbing.
4. Repeating this till the proper elevation of the load and in a safe position.
5. After removing the victim, reverse the process and bring the debris down in a controlled manner.

5.4.5.5. *Moving loads with metal tubes*

Where available, metal tubes can be used to roll loads rather than lift them completely. The method involves:

1. A Class 1 lift to unload the load slightly.
2. Put the three metallic tubes below.
3. Pushing and rolling the load by using Class 2 Leverages.
4. The tubes can be slightly fanned out to allow for controlled directional movement.



Moving Load with Metal Tubes

This technique minimizes physical strain and reduces the risk of injury to rescuers.

5.4.5.6. *Extraction of the victim from rubble*

Following a disaster, such as an earthquake or structural collapse, rescuers often face the challenge of locating and safely extracting victims trapped beneath debris. The process of extraction is part of a larger light search and rescue operation and is carried out after the search team has successfully performed the scene size-up and identified the locations of trapped individuals.



Extraction of victim from rubble

5.4.5.7. Understanding structural collapse situations

These are four common types of structural collapse scenarios that determine the approach needed for victim extraction:

1. **Injured, Not Entrapped (Surface Victims):** These are people who most frequently were hit by falling debris or fell. They are exposed and reachable, and all they need is to be carried out to be safe and wounds attended to. They are about 50 percent of the victims.
2. **Non-Structural Entrapment (Light Rescue):** The person is entrapped beneath the aftermath of non-structural elements like shelves, cabinets, or small bits of debris in buildings that still have the form of the building. Rescue involves the lifting of debris by hand or having the debris removed manually by using common town hand tools. About 30% of those victims belong to this category.
3. **Void Space Entrapment:** This is entrapment when some or all the buildings collapse, and those trapped in the building are in voids formed due to debris. Structural components do not directly crush victims, even though the building does not resemble its original appearance anymore. The process of rescue is more complicated and typically lasts about four hours. It needs structural stabilization and rational organization of debris removal, which makes approximately 15 percent of cases.



Preparation of extraction

4. **Entombed Victims:** These are victims who are buried beneath such heavy structural materials as floor, walls, or roof collapse. This is the most complicated and risky situation, which can demand the use of heavy equipment and control to break or lift structural elements. The mean time to salvage is more than eight hours, and these types of cases constitute approximately 5 percent of all trapped persons.

5.4.5.8. Preparation for extraction

Before attempting to extract a victim, community responders must first complete a **scene size-up** using the 9-step model, which includes:

- Gathering facts about the incident (type of structure, time of day, occupancy).
- Assessing hazards such as weather or structural stability.
- Checking availability of tools and resources.
- Prioritizing areas where rescue can be safely and effectively conducted.

If the situation is deemed unsafe or beyond the team's capacity, community responders must not proceed.

5.4.5.9. Extraction methods and tools

Once victims are located, the method of extraction depends on the type of entrapment. For both void space and entombed rescues, **lifting and moving heavy loads** becomes essential.

Techniques for Load Movement

- **Levering:**
  A basic principle where a bar is used to lift a load by applying force at one end while the other rests on a fulcrum. CADRE explains the use of Class 1 (e.g., crowbar), Class 2 (e.g., wheelbarrow), and Class 3 levers (e.g., shovel or spade).
- **Cribbing:**
  Cribbing involves stacking wooden blocks or planks in a stable configuration under lifted debris to support it and prevent further collapse. The two primary types are:
  - **Box Cribbing:** Alternating layers of wood forming a square or rectangle.
  - **Platform Cribbing (Cross-tie):** Horizontal stacking to distribute weight.

Principles for Safe Operation

- Always combine **levering and cribbing**: lift a little, then crib before lifting more.
- Follow the rule: "**Lift an inch, crib an inch.**"
- Never build cribbing higher than three times the width of the base.
- Always wear personal protective equipment (PPE) during these operations.

Alternative Tools

In some community settings, locally available tools such as hydraulic jacks, screw jacks (bottle or alligator), and come-along may be used to aid in lifting and shifting loads.

Victim handling and transfer

After lifting debris and reaching the victim, responders must:

- Handle a victim carefully before moving.
- Use improvised stretchers where necessary, and the required materials include laying blankets on poles.
- Watch the condition of the victim, give primary help, and evacuate the victim safely out of harm.
- Victims should always be marked appropriately, and detailed records of those rescued and those who remain trapped must be maintained. This ensures proper handover to professional rescue teams upon their arrival.

5.4.6. Rope Rescue Techniques

Rope rescue involves saving victims in high-angle or steep slope environments where ropes and related gear are essential. This method is also referred to as *vertical rescue* or *technical rope rescue*.

The techniques allow rescuers to remove a victim from hazardous locations, keep them stable, and protect them from falling while being moved to safety.

5.4.6.1. Types of technical rope rescue

- Ascending / Descending
- Rappelling
- Belay
- Tripod or ladder method
- Basket stretcher lowering/raising
- Swift water rescue with ropes

5.4.6.2. Mountain rescue*Equipment used in rope rescue*

Sr. #	Name of Equipment	Capacity	Picture	Description
1	Static Rope	6000 lbs		A type of rope designed to be used in applications such as rescue, rappelling, and ascending, in which high or moderate stretch would be a disadvantage, and in which no falls, or only short falls, are expected before the rope catches the climber.
2	D-Ring / Carabiners	25 KN - 35 KN		• Load-bearing metal connectors • The closing gate is used to link the elements of the high-angle system. Also, sometimes called biners, Snap links, or krabs.
3	Figure of Eight	25 KN - 35 KN		A device used for rappelling and, in some cases, for lowering. The descender has the general shape of the numeral 8, with a large ring to create friction on the rope and a smaller ring to attach to a seat harness.
4	Rope Roller	-		Used on the edges or sharp areas for the protection of the rope. The Rope slides onto it.
5	Full Body Harness	150 Kg		A type of harness that offers pelvic and upper body support as one unit.

6	Ascender	150 Kg		Rope Grab Devices are used to ascend a fixed rope or, with specific types of ascenders, to create a hauling system. Also known as Ascending Device.
7	Descender	150 Kg		A rappel device that creates friction by means of a rope running through it; it is attached to a rappeler to control descent on a rope, and is also called a descent control device.
8	Single Pulley	15 KN–20 KN		A device with a freely turning, grooved metal wheel used to reduce rope friction. It also has side plates to which a carabiner may be attached.
9	Double Pulley	35 KN – 40 KN		
10	Basket Stretcher	150 Kg		A Litter with a rigid structure that is shaped to hold a rescue subject. It is constructed of rugged materials to protect the subject and to resist damage when used in the rescue environment.
11	Ladder	150-200 Kg		They are used to evacuate a victim from a height or any depth.
12	Tripod	680 Kg		They are used to evacuate a victim from a height or any depth.
13	Cords	6000lbs(08mm)		A piece of thick string or thin rope. Cords are smaller in diameter and used for a variety of tasks for which regular rope would be too bulky. They are soft and more flexible. It is up to 9mm.

14	Web	15-25KN		• Webbing is more comfortable than rope against the body for a seat harness. • Also, it has a wide, flat surface. It exhibits greater abrasion resistance in specific rigging applications. Ranges in width from ½ inch to 6 inches. • Widths from 1 to 2 inches are most often used in high-angle work. Larger widths are more comfortable for seat harnesses.
15	Rescue Buoys			For throwing to a victim in water
16	Throw Lines			Pulling or reaching stranded swimmers
17	Rescue Boards			For reaching and supporting victims in deep water
18	Life Jackets			Keeps rescuer or victim afloat in water

5.4.6.3. Rope work techniques

A) Belay Technique

The term "belay" comes from old sailing practices, where ropes were tied around pins to secure heavy loads. In rescue, belay means using a safety rope to catch or stop a fall.

- **Belay Rope:** Not under load unless the main rope fails or extra tension is required.
- Belay can be run upward or downward depending on the scenario.

B) Standard Belay Signals

- Climber: *"On belay?"*→Belayer: *"Belay on."*
- Climber: *"Climbing/rappelling."* → Belayer: *"Climb/rappel on."*
- To end: Climber: *"Off belay."* → Belayer: *"Belay off."*
- If rope is too tight: Climber: *"Slack."*
- If rope is too loose: Climber: *"Tension."*

C) Belay Equipment

- Carabiners, static ropes (11mm), harness, safety belts, ascender/descender, pulleys, slings, rope roller, figure of eight device.

D) Practice Procedure

- Wear full PPE.
- Secure the scene and clear hazards.
- Set up two solid anchor points (one for belay, one for safety line).
- Attach the figure of eight descender to the anchor.
- Connect the main rope and the safety rope to the rescuer's harness.
- Descend smoothly with clear communication.

(Note: Body belay around the waist should only be used in emergencies.)

5.4.6.4. Rappelling technique

Rappelling is the **controlled descent down a rope** using friction devices.

Types of Rappel

- **Arm Rappel:** Uses friction on arms, suitable for short, low-angle slopes.
- **Body Rappel (Dulfersitz):** Rope wrapped around body, used only in emergencies when no hardware is available. Risk of rope burns and injury.
- **Seat Rappel, Australian Rappel, Lizard Rappel, Helicopter Rappel:** More advanced variations.

Rappelling Equipment

Carabiners, static ropes, harness, descenders (figure of eight, brake bar rack, etc.), rope roller, pulleys, slings.

Procedure

- Wear PPE and secure the area.
- Set up two anchors (main and safety).
- Attach ropes with proper knots.
- Connect the descender device to the harness.
- Descend slowly, controlling speed with a friction device.
- Communicate continuously with the belayer.

5.4.6.5. Ascending and descending technique

Ascending is climbing up a fixed rope with ascenders or friction knots. Descending is the controlled return down the rope.

Equipment

Static rope, carabiners, ascenders, descenders, harness, prusik knots, pulleys.

Procedure

- Wear PPE and secure the scene.
- Fix the rope to a solid anchor.
- Connect ascenders: one to the harness, one to the foot loop.
- Attach a safety line.
- Climb upward with alternating movements of ascenders.
- For descending, attach a descender and control with a lever.

5.4.6.6. Basket stretcher technique

Used for lowering or raising a casualty in vertical situations.

Equipment

Basket stretcher, spine board, static ropes, carabiners, pulleys, figure of eight, harness.

Procedure

- Secure the scene and wear PPE.
- Attach straps and ropes to the basket stretcher.
- Secure patient to spine board, then to stretcher.
- Connect the main and safety lines to the stretcher and rescuer.
- Lift slightly to test balance.
- Lower smoothly using descenders and controlled release.
- Maintain constant communication.

5.4.6.7. Depth rescue with tripod or ladder

A) Tripod System

A three-legged metal frame with pulleys is used to extract victims from wells, tanks, or confined depths.

Main parts: anchor point, pulleys, gear system, telescopic legs, securing chain, and hook.

Procedure

- Secure the scene and wear PPE.
- Extend tripod legs and secure with chains.
- Attach pulleys and rope system.
- Lower the rescuer or basket stretcher, then raise the victim with a mechanical advantage.

B) Ladder System

A ladder is used as an improvised frame.

- Anchors are tied on ladder rungs.
- Double pulleys and ropes are attached for lifting/lowering.
- Rescuers secure the ladder with pickets and angle it at 60–70 degrees.
- Victim is lowered or raised while rescuers maintain side support.

Signals

- *"Release rope."*
- *"Tension rope."*

5.4.6.8. Safety reminders

Key safety practices during rope rescue:

- Always wear full PPE.
- Secure the area and mark danger zones.
- Move with "controlled urgency"—never rush.
- Establish clear safety perimeter and anchor systems.
- Maintain loud, clear communication.
- Always use safety lines in addition to main lines.
- Check ropes and equipment before each use.
- Avoid standing below while lowering basket stretchers.
- Obey the incident commander's instructions.
- Only train under qualified instructors.

Safety Priorities

1. Your own safety.
2. Safety of fellow rescuers.
3. Safety of the victim.

Never create "an incident within an incident."

5.4.6.9. The dirty dozen of human errors

Twelve common causes of mistakes in rope rescue:

1. **Lack of communication** – failing to share vital info.
2. **Complacency** – overconfidence, reduced awareness.
3. **Lack of knowledge** – inadequate training or experience.
4. **Distraction** – attention diverted by unrelated issues.
5. **Lack of teamwork** – individuals working alone.
6. **Fatigue** – exhaustion leading to errors.
7. **Lack of resources** – insufficient equipment or manpower.
8. **Pressure** – stress from external or internal demands.
9. **Lack of assertiveness** – not speaking up when something feels wrong.
10. **Stress** – overload causing reduced performance.
11. **Lack of awareness** – failure to assess risks and ask "what if
12. **Norms** – following unsafe shortcuts as "the usual way."

5.4.7. Mountain Rescue Techniques

The mountain rescue techniques are helpful for rescue in the mountainous areas of Pakistan, which include Gilgit-Baltistan, Chitral, Swat, Murree, Azad Kashmir, and other highland regions. The major reasons due to which people are trapped in mountainous areas are landslides, earthquakes, flash floods, and accidents as they hike or are driven along the road. It is usually the case in such distant places where the local communities are found to respond in such situations, long before the professionals arrive.



Mountain rescue techniques

Mountain rescue is not merely a matter of courage alone, but there must be preparation and cooperation with a variety of safe methods, and it is work such as above in steep, unstable, and rough terrain.

5.4.7.1. Key aspects of mountain rescue

1. Common Scenarios

- Lost or stranded hikers/ climbers
- Falls or accidents injuries
- Avalanches
- Hypothermia or altitude-related sickness
- Emergencies associated with weather

5.4.7.2. Rescue of stranded or lost hikers

Rescuing stranded or lost hikers is a delicate process that requires quick thinking, safety awareness, and coordination.

a) Gather initial information

Before launching any rescue:

- **Last known location** (trail name, coordinates, photos, check-ins)
- **Number of people** and their **experience/fitness level**
- **Time since last contact**
- **Weather and daylight conditions**
- **What they were carrying** (food, water, clothing, phone, GPS)

b) Call emergency services

Immediately contact local authorities or mountain rescue:

- Emergency Service 1122 for professional services.
- Even if you plan to help, **let professionals know** so they can coordinate or advise you.

c) Prepare for field search (if safe and appropriate)

Only proceed if you're experienced, and it's safe to do so:

- Bring: map, compass/GPS, flashlight, extra food/water, first aid, warm clothing, power bank
- Stay in teams of 2 or more
- Leave a note with your route/ETA
- Be aware of **your own limits and environmental risks**

d) Search methodically

- Start at the last known point and follow likely paths (trails, water sources, downhill slopes)
- Look for footprints, disturbed vegetation, and dropped gear
- Yell or whistle in regular intervals
- Mark areas you've searched (flagging tape, GPS pins)



Search methodically

e) Rescue and assist

If you locate the hikers:

- Inquire about their physical well-being (wounds, hypothermia, dehydration)
- Provide first aid if needed.
- Provide food, water, and warmth (staying warm, jackets, and blankets)

- Evacuate only when it is safe; otherwise, stay where you are and direct rescue teams

f) Evacuation

- In serious cases (injury, terrain difficulty), wait for professional evacuation (helicopter, stretcher, rope systems)
- Maintain **clear communication** with SAR via phone, radio, or signal mirrors

g) Safety tips

- Do not intensify the problem of getting lost/injuring yourself
- Go in groups at all costs

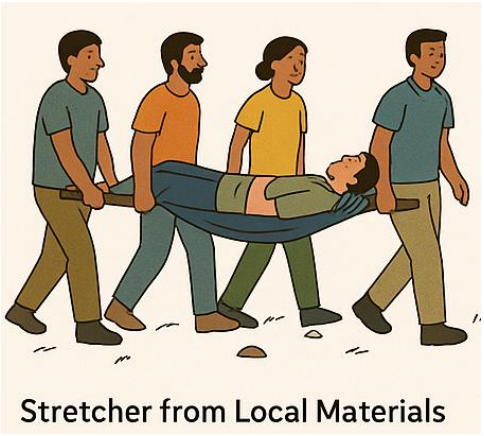
In case of being lost: remain where you are, make noise, try to signal (bright colors, fire, mirrors)

5.4.8. Victim Evacuation Techniques

5.4.8.1. Stretcher from local materials

When a victim cannot walk, an improvised stretcher helps carry them safely.

- Take two robust sticks (bamboo tree branch), and a blanket, shawl, or chador.
- Put the cloth beneath the sticks and roll it snugly over the sticks.
- At each end, tie with strips of cloth or with rope.
- The stretcher can be transported over rough Country by four people.



Stretcher from Local Materials

5.4.8.2. Carrying without a stretcher

If materials are unavailable, use safe carrying techniques:

- **Two-person sling carry** for stable injuries.
- **Chair carry** with a strong wooden chair, if one is available.
- Avoid single-person carries unless the victim is light and uninjured in the spine or legs.



Carrying victim without stretcher

5.4.8.3. Stabilizing the victim

Before moving the person:

- Support hurting appendages with splints fabricated of sticks or cardboard fastened with clothes.
- In suspected spinal injuries, twist or turn. A gentle lift of various people is needed when it is needed to ensure that the body is straightened.
- Take a scarf or towel to brace the neck.

5.4.8.4. Emergency shelter

If evacuation is delayed:

- Construct a shelter by making use of plastic sheets, tarpaulin sheets, large leaves, or taking cloth to cover against cold or rain.
- Do not leave the victim exposed to cold ground using bags, jackets, or branches.
- Wrap the victim in warm clothes or a blanket and observe the condition.



Emergency Shelter

5.4.8.5. Communication and help-seeking

- In case of availability of mobile networks, call Rescue 1122 or the local disaster office nearest to you.
- There is no signal, assign a runner to deliver information: the number of victims, the type of their injuries, and landmarks of the place (e.g., 3 km above Jhika Gali trail).
- Signal on hillsides by using whistles, mirrors, or smoke.

Preparing the community

To be ready for mountain emergencies:

- Keep a working rescue kit in the local community soil centers: equip it with rope, flashlight, whistles, gloves, splinting materials, and first aid elements.
- Organize rescue training with young people and volunteers to practice making stretchers, a safe method of raising and transporting patients.
- Identify safe evacuation routes and hazardous areas on popular mountain routes.

Self-Assessment / Key Questions & Answers

Q1. What principle should be followed when using cribbing to stabilize debris?

a). Lift two feet, crib one foot

b). Lift an inch, crib an inch

c). Lift until stable, then crib

d). Lift completely before cribbing

Correct Answer: B

Q2. Which signal indicates immediate evacuation during rescue operations?

a). One long whistle blow

b). Three short whistle blows

c). One long and one short whistle blow

d). Continuous shouting by the leader

Correct Answer: B

Q3. Explain the Nine-Point Scene Size-Up Model used in search and rescue operations. How does it help teams make safe and effective decisions?

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Q4. Describe the use of leveraging and cribbing techniques in victim extraction. Why is it essential to combine these methods in collapsed structure rescues?

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Q5. Given Scenario: During an earthquake, a community rescue team arrives at a collapsed house. Gas leakage is suspected, and the building looks unstable.

- *What steps should the team take before attempting to enter?*
- *How can the scene size-up model guide their decision-making?*

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Q6. Given Scenario: A victim is trapped under heavy debris after a landslide. The rescuers only have wooden planks, metal bars, and ropes available.

- *How can the team use levering and cribbing with these local tools to extract the victim safely?*
- *What safety measures must be observed during this process?*

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Session 5.5: Techniques for Water Search and Rescue

Session Objectives

By the end of this session, participants shall be able to:

- Explain the different types of water emergencies and identify the key hazards associated with ponds, canals, rivers, floodwaters, and swift-moving water.
- Demonstrate safe, community-level water rescue techniques to assist victims without endangering the rescuer.
- Apply team-based water rescue methods, including upstream and downstream spotters, V-formation, and safe river-crossing techniques, to ensure coordinated and risk-aware rescue operations.
- Provide essential post-rescue care, including warming the victim, checking breathing and pulse, managing shock or hypothermia, and performing CPR when required—while maintaining rescuer safety at all times.

Duration

4 hours and 30 Minutes

Facilitation Methodology

Group Work, Hands-on exercise, Drills, Interactive Lecture, and Q/A

Training Aids Required

- Sticks, poles, inner tubes, jerry cans, bottles
- Flotation (when present)
- CPR manikins, blankets, and a first aid kit
- Whistles for signaling
- Projector with whiteboard
- Flip chart with markers.
- Multi-color markers
- Flip stand
- Session handouts

Training Approach

1. Present slides about the ordinary water emergencies that happen during flooding, in canals, or in rivers. Emphasis should be on the rescuer's safety as the priority.

   Group exercise 1: Hazard spotting game - the participants analyze a photo of the river in terms of risks.

2. After the discussion on the exercise, describe the reach and throw techniques with the participants. Side by side, the facilitator can conduct physical exercises for

practical learning. The facilitator will instruct the participants on the use of the stick, rope, and flotation device, providing a demonstration during this sub-session.

⇒ **NOTE: If possible, the participants can be taken outside to conduct exercises in the nearby river, canal, or swimming pool for a practical demonstration.**

Hands-on exercise 2: The participants will practice reaching with sticks/poles.

Hands-on exercise 3: The participants will train on throwing using ropes and flotation equipment.

3. After the hands-on exercises, show slide presentations on the human chain/V-formation techniques and conduct hands-on exercises for further demonstration. Describe when and how the chain and V-shape should be used.

Hands-on exercise 4: Practice of making a human chain in shallow water.

Hands-on exercise 5: V-formation in a waist-deep section of a river (trainer-led, a safety rope in action).

4. After conducting hands-on exercises on the human chain and V-formation, the next sub-session will clarify the post-rescue care through PPT slides and interactive discussion.

Hands-on exercise 6: The participants will train in CPR on manikins on how to give first aid to a drowning person.

Hands-on exercise 7: Role play on the care of a rescued hypothermic with blankets and dry clothes.

5. In the next sub-session, participants will learn about river rescue methods and conduct another demonstration by the facilitator on extension assist and throw-and-tow techniques.

Hands-on exercise 8: Pairs all exercises with the assistance of poles and carries on exercise using throw-and-tow techniques in a river current with flotation devices and ropes.

6. After conducting demonstration and hands-on exercises, wrap up the session and, if time permits, take a reflection of participants for revising a few tips they learnt

Background Material of the Session

5.5.1. Basic Water Rescue Techniques

Water emergencies can occur anywhere, even in shallow or slow-moving water. The goal of a community rescuer is to save the person without becoming a victim themselves.

5.5.1.1. Common water emergencies

- People trapped in floodwater
- Children falling into ponds or irrigation canals
- Drowning incidents in rivers
- Hypothermia due to cold or prolonged exposure
- Shock and panic from near-drowning experiences

5.5.1.2. Key rescue actions

a) Assess the scene first

Always take a few seconds to look carefully before acting. Ask yourself:

- *Is the water deep or fast-moving?*
- *Is there a current, debris, or electrical wires nearby?*
- *Can I rescue without going in?*

b) Reach – do not go in

Use a long object—stick, rope, pole, paddle, branch, or cloth—to extend to the person. Lie down flat to stay balanced and prevent being pulled in.

c) Throw a flotation device

If the person is far, throw a floatable object—like an inner tube, water container, plastic drum, or a proper life ring if available. Tie a rope to it if possible, to pull the person in.



Assist the victim don't go in



Throw floating device

d) Human chain (shallow water only)

If the water is shallow and slow, trained community members can form a line and hold hands or use a rope around their waists to approach the person safely.



Defensive swimming position

e) Post-rescue care

Once the person is out of the water:

- *Remove wet clothing and keep them warm.*
- *Check breathing and pulse.*
- *If unresponsive and not breathing, begin CPR.*
- *Prolonged CPR up to forty minutes can help the patient revive.*
- *Monitor for signs of hypothermia, shock, or vomiting.*

5.5.2. Swift Water Rescue

Swift water refers to **rapid-flowing rivers, canals, or urban floodwaters**. These conditions are **extremely dangerous** and can sweep away even strong swimmers or vehicles.

a) Rescue do's and don'ts

Never enter deep or fast-moving water without proper training and safety gear.

- Water as shallow as knee-deep can sweep you off your feet if the current is fast.
- Avoid acting on impulse—swift water rescues should only be attempted after careful assessment and planning.

b) Always wear a flotation aid

- Use a certified life jacket when available.
- In remote or resource-limited areas, improvisation is possible:
  - *Tie empty plastic jerry cans or sealed water bottles to your chest and back.*
  - *Use inner tubes or foam pads tied securely to your body.*

c) Face into the current when entering water

- Shoot at a time and with caution.
- Run with a firm foothold, not on slippery or loose river beds.
- Do not get into the water sideways or with your back to the current, as it would raise the risk of being washed away by a current.

d) Defensive swimming position if swept away

- Float on your back with:
  - *Feet pointed downstream to protect from head injury.*
  - *Arms spread wide for stability and balance.*

- *Head up to scan for obstacles and rescuers.*

- Avoid trying to stand up in a strong current—it can trap your legs in underwater debris.

e) Team-based swift water rescue techniques

Community-based response requires coordination and support. Here's how to organize a safe and efficient rescue:

Upstream Spotters

- Place at least one person upstream to watch for:
  - *Floating debris*
  - *Sudden rise in water level*
  - *Changing flow conditions*
- Spotters should signal to the rescue team and victims using whistles or hand signals.

Downstream Safety Rescuers

- Have trained responders downstream holding throw bags or flotation devices.
- If someone is carried away, they can throw a rope or assist in retrieving the person.

f) Use of Human Chains and V-Formations

Human Chain Method (For Shallow, Calm Water)

- *Form a line with rescuers holding hands or tied with rope around waists.*
- *Move slowly toward the victim.*

5.5.3. Considerations While Crossing the River

a) Assess the river first

- *Check depth and speed of the water.*
- *Avoid crossing if the river is fast-flowing or above knee-height.*
- *Look for safe, shallow, and calm areas.*

b) Use a guide or experienced leader

- *Let someone experienced lead the group.*
- *Appoint someone to watch from the bank and assist if needed.*

c) Use a stick or pole

- *Everyone should carry a long stick to test the riverbed and keep their balance.*
- *Move one step at a time with the stick planted firmly.*



Floatation aid



Face into current when entering

d) Cross in groups (chain method)

- *Hold each other's shoulders or waists in a human chain.*
- *Keep the strongest person upstream to break the current.*
- *Cross sideways, not head-on into the current.*

e) Remove heavy items

- *Take off shoes, backpacks, or clothes that can trap water (if safe).*
- *Carry essentials in waterproof bags above water level.*

f) Use ropes if available

- *Stretch a rope across the river and let people hold onto it while crossing.*
- *Anchor the rope securely on both sides.*

g) Never cross alone or at night

- *Always move as a group.*
- *Avoid crossing in poor visibility or during floods.*

h) Have emergency help ready

- *Keep a first aid kit on hand.*
- *Know how to rescue someone swept away (without endangering others).*

i) V-formation method (for slightly deeper or faster water)

The V-formation is a more advanced version of the human chain, ideal for slightly deeper water (still under waist height) or when a specific direction of approach is needed due to current, obstacles, or terrain.

How to form and use a V-formation:

1. The team stands in a V-shape, with the point (tip) of the "V" facing the victim and the arms of the V fanning out behind.
    - *The person at the tip is the lead rescuer.*
    - *Each row behind provides support, balance, and directional control.*
2. The formation moves forward gradually, using synchronized steps, guided by the person at the center tip.
3. The V-formation distributes the weight of the current in several individuals, with the advantage of letting the lead rescuer reach the person(s) in trouble, whilst followed by the strength of the group.
4. After contact is made with the victim:
    - *The team holds firm while the lead gently stabilizes and grasps the victim.*

- *The formation slowly withdraws, ensuring no sudden jerks or missteps.*

5.5.4. River Water Rescue

River rescues are perilous because of fast currents, deep areas, slippery rocks, and hidden debris. Rescuers must rely on distance-based techniques.









5.5.4.1. Techniques

1. **Extension Assist (Reach with Equipment)**
   - *Use a strong stick, paddle, or clothing to reach the person.*
   - *Stay low or lie flat to maintain your balance.*
2. **Throw-and-Tow Method**
   - *Throw a rope with a floating device tied to it.*
   - *Aim upstream so the current pulls it toward the person.*
   - *Pull steadily and guide them toward shore or a calm area (eddy).*
3. **Never Attempt a Direct Contact Rescue**
   - *Untrained rescuers should not swim to a conscious drowning person—they may pull you under in panic.*
   - *Only enter the water with a rope tied securely to you and a flotation aid*

5.5.4.2. Water safety

Being aware of water hazards and acting safely is the first line of defense in water emergencies.

Key Hazards

- Strong currents and low-head dams
- Submerged debris and foot entrapment
- Electrocution (live wires near water)
- Panicked swimmers
- Contaminated water
- Hypothermia and dehydration

5.5.4.3. Essential water safety practices

- Never enter moving water deeper than your knees unless properly trained.

- Use improvised flotation devices if life vests are not available: inner tubes, water containers, Styrofoam, wood planks, etc.
- Understand and use whistle signals:
    - *1 blast = Stop and listen*
    - *2 blasts = Begin agreed action*
    - *3 blasts = Emergency, need help*

a) Hand Signals

- Raise one arm = I need help
- One hand on top of the head = I am OK



Hands signals

Self-Assessment / Key Questions & Answers

Q1. Which of the following is the safest first step in a water rescue?

a). Jump into the water immediately

b). Shout loudly for the victim to swim to shore

c). Assess the scene before acting

d). Throw heavy objects toward the victim

Correct Answer: C

Q2. In a swift water situation, what is the correct defensive swimming position if swept away?

a). Swim headfirst into the current

b). Float on your back with feet pointed downstream

c). Lie face down and paddle strongly

d). Swim sideways with arms folded

Correct Answer: B

Q3. Explain the basic water rescue techniques (Reach, Throw, Human Chain) and describe when each should be applied in community settings.

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Q4. Given Scenario: A child falls into a village irrigation canal with a strong current. You have only a stick, a rope, and a water container nearby.

- *What rescue method(s) will you use to save the child without entering the water yourself?*
- *What precautions must you take to avoid becoming a victim?*

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Q5. Given Scenario: During a flood, several community members are stranded in waist-deep, fast-moving water. A trained rescue team is on site.

- *How can the team organize itself using a V-formation to reach the victims?*
- *What post-rescue care should be given to the victims once they are safely out?*

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References

- Scouter Mom, "*Water Rescue Methods"*
- EMRA, *"Water Rescue."*
- Peter Glerum and Daniel Graham (2014), "*Water Rescue, Treatment and Lifesaving."*
- DIDIOKMAKINGS (2025*), "5 Essential Steps of Water Rescue: A Lifesaving Guide"*



Session 5.6: Techniques for Avalanche and Debris Flow Search and Rescue

Session Objectives

At the end of this session, the participants will be able to:

- Explain the basic concepts of debris flow and snow avalanches, including their causes, characteristics, and potential impacts on communities and rescuers.
- Identify the major risks faced by rescuers during debris-flow and avalanche operations—such as secondary slides, unstable terrain, hypothermia, poor visibility, and burial hazards—and discuss measures to ensure responder safety.
- Describe and apply systematic search and rescue techniques for debris flow and avalanche events, including scene assessment, visual search, probing, transceiver use, marking, safe digging, recovery, and victim stabilization
- List and explain the essential community-level equipment required for effective debris-flow and avalanche response—such as shovels, probes, transceivers, GPS, radios, ropes, PPE, and first-aid supplies—and understand their operational importance.

Duration

02 hours

Facilitation Methodology

Group Work, Hands-on exercise, Drills, Interactive Lecture, and Q/A

Training Aids Required

- Laptop and multimedia projector
- Hazard maps or schematic diagrams
- SAR team role cards
- Piles/objects of cloth probing simulation
- Blanket hypothermia exercise
- Stockpile item lists printed
- Session handouts

Training Approach

1. Set the objective of this session and present one short video of avalanches/debris flows or picture slides.

   ⇒ **NOTE: The Facilitator can download the video in advance for showing during the session**
2. Ask participants what the real threats to rescuers in such situations are right now? Collect two to three answers from different participants

3. In the following slides, discuss the hazard knowledge and conduct a short Q/A session to take input from the participants. The possible questions are:
    - *Describe avalanche and debris flow.*
    - *Describe hazards to rescuers (secondary slides, hypothermia, falling rocks, etc.).*
    - *Highlight safety areas and exit routes.*

    Hands-on exercise 1: Give a hard copy of a hazard map (or schematic diagram) and deploy participants to locate the possible avalanche/debris flow courses and designate safe areas/escape routes with markers.

    ⇒ **NOTE: The Facilitator can download the hazard map or schematic diagram in advance for showing during the session**

4. After the discussion on the exercise, explain the five SAR phases for the next 20 minutes.
5. As a summary, the facilitator can ask questions about what is involved in each stage: alert, scene safety, search, rescue/recovery, medical/evacuation.

    Hands-on exercise 2: Provide participants with role cards (Rescuer, Team Lead, and Safety Officer).In pairs, they take on the role of a fast coordination conversation to activate the SAR response following an alert call.

    Hands-on exercise 3: Simulate probing and marking with classroom items (e.g., markers, tiny objects) concealed beneath cloth piles. The participants are required to alternate in probing, while the others are needed to monitor accuracy and speed.

6. Next, discuss the rescue and recovery position by including the airway clearance, circulation, CPR fundamentals, spinal care, and prevention of hypothermia.
7. Participants can showcase their knowledge with a blanket and role-play scenarios related to hypothermia prevention.

    Hands-on exercise 4: Participants in small groups are taught to wrap a casualty up in blankets/clothing layers to prevent hypothermia.

8. Conduct a group exercise on the simulation of stockpile management. For this purpose, separate the participants into three categories. Give every group a list of 15-20 items of a stockpile (both mixed non-essential and essential).
9. Gave them the task of choosing the 10 most important avalanche/debris SAR items and explaining their selections.
10. After the group discussion, the groups will present their results in the plenary session, with 5 minutes for each team.
11. Conclude session with recap of main points, including hazards, SAR phases, equipment, rescue care, stockpile, and info management, etc.
12. Ask participants to tell you about one of their most helpful lessons.

Background Material of the Session

5.6.1. Debris Flow Search and Rescue Techniques

5.6.1.1. What is debris flow

A debris flow is a fast-moving landslide composed of mud, rocks, water, soil, and vegetation that rapidly travels down slopes, valleys, or channels. It can destroy roads, houses, bridges, and anything along its path due to its high speed and heavy mass.

5.6.1.2. Risks from debris flow to rescuers

Rescue operations in debris flow areas are extremely hazardous. Key risks include:

- **Secondary slides:** Unstable slopes can trigger additional flows while rescuers are on site.
- **Unstable ground:** Loose rocks, mud, and boulders increase the chance of slips and entrapment.
- **Falling rocks and debris:** Aftershocks, rainfall, or vibrations may dislodge additional material.
- **Burial hazards:** Deep mud and debris can trap rescuers within seconds.
- **Poor visibility:** Dust, rain, or moving debris may reduce visibility and slow down operations.
- **Hypothermia and exhaustion:** Cold, wet, and harsh conditions can quickly weaken responders.

5.6.1.3. Search and Rescue Phases

Phase 1: Alert & activation

- Receive distress call or witness report
- Activate trained debris SAR team
- Notify the local disaster management authority

Phase 2: Scene assessment & safety

- Assess terrain: slope angle, recent weather, and flow path
- Use lookout and safety zones
- Establish escape routes
- Monitor for after-events (e.g., secondary flow)

Phase 3: Search operations

a. Techniques

- Visual search for clues: equipment, clothing, disturbed snow/debris
- Avalanche transceivers/beacons
- Probing in a grid pattern

- Drones or helicopters (weather permitting)

b. Marking & Coordination

- Use flagging tape, poles, or GPS to mark search zones
- Maintain communication between search teams

Phase 4: Rescue & recovery

- Carefully dig using shovels and avoid injuring the buried person
- Prioritize:
- Airway & Breathing: Clear mouth/nose, provide oxygen
- Circulation: Check for chest rise and fall; begin CPR if needed
- Spinal care: Handle gently due to possible spine injuries
- Hypothermia prevention: Use blankets, remove wet clothes

Phase 5: Medical & evacuation

- Provide first aid on-site
- Evacuate using a stretcher, snow sled, or helicopter
- Transport to nearest trauma facility

5.6.1.4. Equipment checklist

- Avalanche beacons/transceivers
- Probes and snow shovels
- Rescue dog kits
- GPS, radios, satellite phones
- Ropes, pulleys, harnesses (for steep terrain)
- Thermal blankets and first aid kits
- Personal Protective Equipment



Prevention & preparedness

- Educate at-risk communities on warning signs and response
- Use early warning systems and hazard mapping
- Practice regular drills with SAR teams
- Equip tourists and mountaineers with transceivers

5.6.2. Avalanche Search and Rescue Techniques

5.6.2.1. What is an avalanche

An avalanche is a sudden, rapid flow of snow, ice, and debris down a mountainside. Avalanches can travel at very high speeds and bury people, animals, or infrastructure under several meters of compacted snow.

5.6.2.2. Risks to rescuers in avalanche search and rescue

Snow avalanche environments are extremely dangerous for rescuers. Key risks include:

- **Secondary Avalanches:** New avalanches may occur due to unstable snowpack, aftershocks, or vibrations from rescue activities.
- **Unstable Terrain:** Loose snow, hidden crevasses, and unstable slopes increase the likelihood of slips, falls, or burial.
- **Exposure to Extreme Cold:** Rescuers are at continuous risk of hypothermia, frostbite, and cold-induced fatigue.
- **Falling Ice and Debris:** Avalanche zones may contain boulders, tree trunks, and compacted snow blocks that can fall or shift.
- **Poor Visibility:** Fog, snowfall, and blowing snow can make navigation and searching extremely difficult.
- **Deep Burial:** Snow compaction can make digging physically exhausting and highly time-sensitive.

5.6.2.3. How to search for victims in a an avalanche

Avalanche search and rescue must be fast, organized, and extremely cautious due to the limited survival window (typically 15–30 minutes for buried victims).

Scene Assessment & Safety Setup

- Assess slope conditions, weather, and snowpack stability.
- Establish lookout positions and safety zones.
- Identify likely flow path and deposition areas.

Start Visual Search for Clues

Search for:

- Gloves, clothing, poles, skis
- Disrupted snow surfaces
- Branches, gear, or backpack fragments
- Mark all clues using flags, bamboo poles, or GPS.

Use Avalanche Transceivers (Beacons)

If victims and rescuers carry transceivers:

- Switch rescuers to search mode
- Follow the signal strength and direction
- Pinpoint the closest point using “fine search” techniques

Probing in a Grid Pattern

Once an approximate area is identified:

- Use a long probe to systematically check for buried victims
- Probe straight down in a structured grid (25–50 cm spacing)
- Mark probed areas clearly

Digging and Extraction

When a victim is located:

- Begin digging downslope from the probe point to avoid collapse
- Use shovels carefully to prevent injuries
- Clear airway first (mouth and nose)
- Handle gently—victims are prone to spinal injuries and hypothermia

Rescue & Immediate Medical Care

Once uncovered:

- Check breathing and pulse
- Provide CPR if needed
- Prevent heat loss by wrapping in thermal blankets
- Protect from wind and snow
- Evacuate using a snow sled or stretcher

5.6.2.4. Community-level equipment required for avalanche search and rescue

Community responders in high-risk mountain areas should maintain an essential avalanche rescue kit, including:

Search & Detection Tools

- Avalanche transceivers/beacons
- Probes (2–3 meters in length)
- Drones for aerial reconnaissance (if available)
- GPS devices

Rescue Tools

- Strong snow shovels (lightweight, durable)
- Ropes, harnesses, and pulleys for steep angles
- Marking poles, flags, or tape

Safety Gear for Rescuers

- PPE: helmets, warm gloves, waterproof boots
- Avalanche airbags (if available)
- Thermal blankets and layered clothing
- First aid kits

Communication & Coordination Tools

- Radios or walkie-talkies
- Whistles
- Satellite phones (for remote areas)

Self-Assessment / Key Questions & Answers

Q1. Given Scenario: A rescue team arrives at a mountain village hit by an avalanche. Snow is still falling, and secondary avalanches are possible. Several villagers are missing.

- *What immediate safety measures should the team take before starting the search?*
- *Which search techniques can be applied in this situation?*

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Q2. Given Scenario: During a debris flow incident, rescuers locate a person buried under mud and rocks. The victim is unconscious and showing signs of hypothermia.

- *What steps should rescuers follow for safe recovery and first aid?*
- *How should evacuation be organized to prevent further injury?*

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Q3. Which of the following is NOT a risk to rescuers during avalanche or debris flow operations?

a). Hypothermia and frostbite

b). Falling rocks or unstable ground

c). Limited visibility and deep burial

d). Increased oxygen availability in the snowpack

Correct Answer: D

Q4. Which technique is commonly used to locate victims buried in avalanches?

a). Fire extinguishers

b). Avalanche transceivers and probing

c). Water pumps

d). Rope ladder climbing

Correct Answer: B

References

- AIARE, Avalanche Research Education, *"Avalanche Rescue."*
- AvalancheOrg. *"Search and Rescue"*
- Mountaineering Scotland, *"Essential skill for Avalanche Rescue."*



Session 5.7: Incident Command System and Emergency Operation Center for an Effective Emergency Coordination

Session Objectives

By the end of this session, participants will be able to:

- Explain the fundamentals of the Incident Command System and Emergency Operations Centers.
- Identify key roles, functions, and structures within ICS and EOCs.
- Demonstrate understanding of community quick response sorting techniques in mass-casualty incidents.
- Conduct a simulation exercise in the field to better understand how the ICS and EOCs operate to handle any disaster situation.

Duration

02 hours

Facilitation Methodology

Simulation exercise, Interactive Lecture, and Q/A

Training Aids Required

- Laptop and multimedia projector
- Flic charts, permanent markers with flip stand
- Masking tape and scissors, etc
- Session handouts

Training Approach

1. Start your session with the session objectives and describe that this session is of extreme importance if we want to handle emergencies in an organized and coordinated manner to minimize losses and secure properties and livelihood assets.
2. Start your session with the PPT slides by defining the ICS, discussing the core components, and describing the 14 characteristics of the ICS.
3. Next, discuss how ICS can be organized by explaining the organizational charts of the ICS and discussing the roles and responsibilities of each member.
4. Now, teach the participants how to sort disaster victims using the sorting technique and practice it using different color codes.
5. After a fruitful discussion on the ICS, next discuss the emergency operation center, first define it, discuss the objective, functions, and different types of EOCs, and finally, the role of community responders at the EOCs for effective response management.
6. At this stage, close the session and conduct a group exercise for practical learning.

⇒ **The facilitator will first give them a scenario as described below**

⇒ **Given Scenario:** Consider that it is a morning of a working day, Monday, 11.00 a.m., and a big earthquake hits a mid-sized city. Some of the schools, markets, and government offices are badly hit. Numerous individuals are hurt, and specific constructions have fallen down. The roads are partially blocked, the communication systems are disconnected, and panic is rife. The first to arrive at the scene are the local responders and volunteers in the community. The response is coordinated by setting up the District Emergency Operations Center (EOC) within an hour.

7. After giving the scenario, ask each group that you will work in five different teams and determine how to handle this situation following the concepts of the ICS and communication with the EOC.

8. Divide participants into five main groups. These groups will represent one major area of emergency response functionality. The groups are as follows:

   (a). A specialized group is going to provide the Incident Command Post (ICP),

   (b). Perform as an Operations Section

   (c). Perform as a Planning Section

   (d). Provide Logistics Section

   (e). Perform as the EOC Team

9. This separation assists participants in paying attention to a particular responsibility and how each area of the emergency management works.

10. Now the facilitator will assign tasks to each group. Every member will pretend that he/she is a part of the group that they are assigned and speak about what their duties are. The guiding questions that they will answer include:

    i. *Determine Precedent and Goals-- Consider what your section would do first in the first two hours of the earthquake. An example is that you may save lives, stabilize the situation, and protect property. Choose three of your best goals.*

    ii. *Roles and Responsibilities- Determine the key roles in your group and determine what each of them will do. As an example, who will deal with search and rescue in case you are the Operations Section? Who will make water and fuel available in case you are the Logistics Section?*

    iii. *Coordination with others- Discuss how you will liaise with other sections and EOC. Will you rely on formal reports, messages, and the short-term informal updates? Consider what vital details need to be provided, e.g., casualty counts, emergency requirements, or risks onsite.*

    iv. *Resource Requests- Determine what three resources are the most necessary to help your work. An example is that the Operations may request ambulances, Planning may require updated maps, and Logistics may require food, tents, or fuel.*

11. Give them 15 minutes to discuss in each group what their role will be. After the discussions are over, the results of each group will be presented. Approximately five

minutes will be given to discuss the immediate objectives of each group, the roles they have identified, the main steps they will take, and at least one challenge they anticipate. The other groups may ask a single clarifying question to facilitate interaction and cross-learning after every presentation.

12. After the presentation from each group, the facilitator will then convene them into a discussion. The facilitator will emphasize how one part is linked to another, and the coordination between the Incident Command Post and the EOC is necessary to have an effective response. Some of the relevant ICS concepts that will be strengthened through the discussion include unity of command, span of control, management by objectives, and accountability.

13. Lastly, the facilitator will highlight the fact that chaos can be minimized through effective communication and clearly defined roles that will make emergency response more organized.

14. Close your session with clapping for each group for their active participation.

Background Material of the Session

5.7.1. Definition of Incident

An event caused by a natural phenomenon or human activity that requires the intervention of emergency service personnel to prevent or mitigate loss of life and damage to property and the environment.

The Incident Command System is a suitable solution for initial response, as it prepares personnel to manage incidents more effectively.

5.7.2. Introduction to Incident Command System

The Incident Command System (ICS) is a standardized management approach designed to handle both small and large emergencies, natural disasters, and acts of terrorism. It is not just an organizational chart but a complete management framework that has become the standard for emergency operations. ICS allows multiple entities—the government and the private sector to work together for the management of an emergency. The ICS has the following components:

5.7.3. Core Components of ICS

1. **Resource Management** – Systematic handling of personnel, equipment, and supplies.
2. **Command and Coordination** – Clear leadership roles and structures.
3. **Communications and Information Management** – Ensuring information is accessible and reliable for decision-making.

5.7.4. ICS Management Characteristics

ICS incorporates 14 key characteristics that form the backbone of effective incident response:

- Common Terminology
- Modular Organization
- Management by Objectives
- Incident Action Planning
- Manageable Span of Control
- Incident Facilities and Locations
- Comprehensive Resource Management
- Integrated Communications
- Establishment and Transfer of Command
- Unified Command
- Chain of Command and Unity of Command
- Accountability
- Dispatch/Deployment
- Information and Intelligence Management

Each characteristic includes specific practices, such as using standard terminology, creating written Incident Action Plans for complex events, limiting the span of control to a manageable number, and ensuring accountability through check-in/check-out systems and resource tracking.

5.7.5. Incident Command and Unified Command

The ICS and the concept of Unified Command explain how authority, communication, leadership, and structure work together to ensure effective incident management.

Chain of Command and Unity of Command

- ICS is based on a clear chain of command.
- Every individual reports to only one designated supervisor (unity of command).
- This prevents confusion, avoids conflicting instructions, and ensures accountability.

Unified Command

- In complex incidents involving multiple jurisdictions, agencies, or organizations, a Unified Command is established. This system allows agencies to:
- Work together toward joint objectives.
- Share resources efficiently.
- Ensure a coordinated response without duplication or gaps in services.

  Unified Command respects the authority of each participating agency while aligning them under one collaborative structure.

5.7.6. Communication in ICS

Communication is essential and occurs in two forms:

- Formal Communication: used for task assignments, official requests, and progress reports.
- Informal Communication: used for information-sharing across different units and helps build situational awareness.

  Both types are essential, but formal communication maintains accountability and proper documentation.

5.7.7. Leadership in ICS

Leaders have specific responsibilities:

- Ensure safety of responders and affected communities.
- Motivate and guide teams to maintain morale.
- Adapt plans as situations evolve.
- Supervise tasks to ensure objectives are met.

  Leadership values in ICS are summarized in three principles: Duty, Respect, and Integrity.

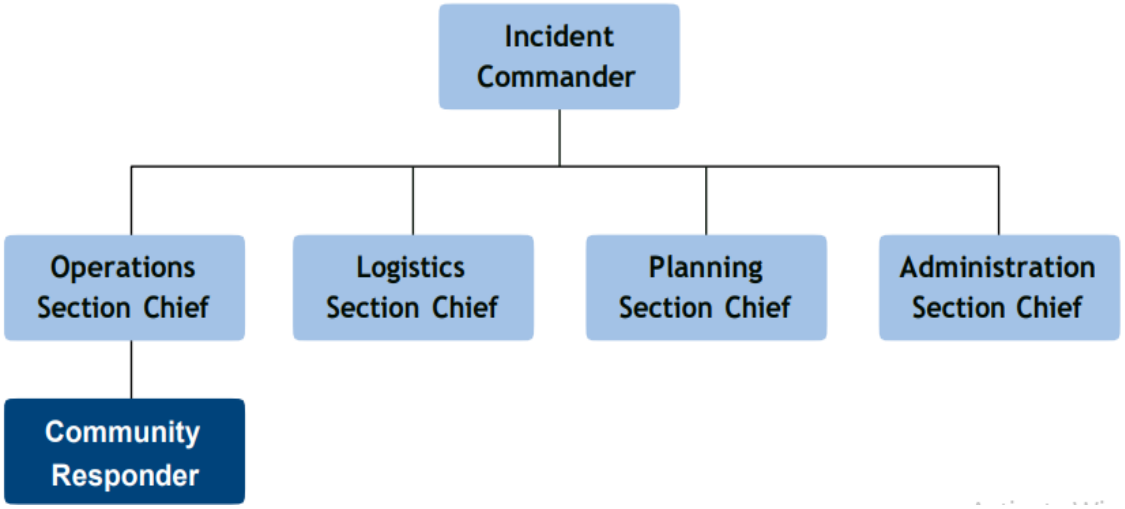
5.7.8. ICS Organizational Structure

ICS is organized into **five main functional areas**

1. **Command** – overall direction of the incident.
2. **Operations** – tactical response and field-level actions.
3. **Planning** – collection and analysis of information; development of Incident Action Plans (IAPs).
4. **Logistics** – provision of resources, services, and facilities.
5. **Finance/Administration** – managing costs, procurement, and claims.

The system is **scalable and modular**, allowing additional Divisions, Groups, or Branches to be added as the incident evolves.

5.7.9. Basic ICS structure



5.7.10. Community-Quick Response Sorting Technique

A community approach to sorting injured or ill persons during an emergency or disaster.

It is a preliminary triage done at the impact site to help professional responders respond accordingly once they arrive.

5.7.10.1. Steps for the community quick response due to the sorting technique

- Secure the scene.
- Ensure personal safety and proper use of PPE.
- Identify collection area for “Green”, “Red”, and “No-Tag”
- Make introductions, call out for all walking wounded.
- Guide them to the safe designated area and tag them as GREEN as soon as possible.
- Assign tasks to the team and perform systematic tagging for the rest of the victims. Gather and record the number of tags.
- Team leader collates all information
- Evacuate patients to the designated collection area by priority

5.7.10.2. Strengths

- No special benchmarks used.
- Designed for lay community response
- Quick and easy to do
- No special tags needed

5.7.10.3. Weaknesses

- Re-sorting needed
- No identification for the dead

5.7.11. Emergency Operations Center in Disaster Management

An Emergency Operations Center (EOC) is the central command and control facility responsible for carrying out emergency preparedness and disaster response coordination during and after a disaster or crisis event.



Emergency operation center in disaster management

5.7.11.1. Definition

An Emergency Operations Center (EOC) is a physical or virtual location where coordination, decision-making, and communication take place to manage disaster response and recovery operations efficiently. During the COVID-19 pandemic, many countries operated EOCs to:

- Monitor virus spread,
- Distribute PPE and vaccines,
- Coordinate health services,
- Disseminate public information.

5.7.11.2. Objectives of an EOC

- Coordinate multi-agency response
- Manage information flow during emergencies
- Allocate and mobilize resources
- Maintain situational awareness
- Provide support to field operations
- Issue public alerts and warnings

5.7.11.3. Functions of an EOC

Function	Description
Command & Coordination	Centralizes control and links field responders with higher authorities
Communication	Ensures reliable contact among responders, media, and public
Information Management	Collects, verifies, and shares real-time data
Resource Management	Tracks and deploys personnel, equipment, and supplies
Planning & Documentation	Maintains records, creates action plans, and forecasts needs
Public Information	Delivers timely updates and safety instructions

5.7.11.4. Types of EOCs

Type	Description
Permanent EOC	Full-time facility equipped for 24/7 readiness
Temporary/Field EOC	Set up near the disaster site during significant incidents
Virtual EOC	Online or remote coordination platform

5.7.11.5. EOC and the community responder

Community Responders can help evacuate people before official rescue arrives, provide real-time updates to district EOCs, and distribute food and water with EOC coordination.

EOC Function	Community Role	How They Coordinate
Command & Control	Follow the direction from the local command structure	EOC shares guidelines and task orders
Communication	Relay local situation updates	EOC provides radios, apps, or hotlines
Situation Reports	Report needs, damage, casualties	Community sends reports to EOC (via mobile, radio, forms)
Resource Support	Request basic supplies or support	EOC dispatches teams or material based on verified need
Public Messaging	Help spread safety messages	EOC provides accurate info for local sharing

5.7.11.6. Benefits of engaging community responders

- Faster initial response
- Local knowledge of terrain and needs
- Builds trust and cooperation
- Supports limited official resources
- Promotes resilience and preparedness

5.7.11.7. Challenges

- Lack of training or equipment
- Communication gaps with EOC
- Unverified information
- Role confusion during large-scale incidents

5.7.11.8. Best practices for EOC–community coordination

- Pre-disaster training for community groups
- Simple communication channels (e.g., WhatsApp groups, radio)
- Clear roles and task assignments
- SOPs and local emergency plans, including community roles
- Joint drills and simulations

Self-Assessment / Key Questions & Answers

Q1. Given Scenario: A rescue team arrives at a mountain village hit by an avalanche. Snow is still falling, and secondary avalanches are possible. Several villagers are missing.

- *What immediate safety measures should the team take before starting the search?*
- *Which search techniques can be applied in this situation?*

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Q2. Given Scenario: During a debris flow incident, rescuers locate a person buried under mud and rocks. The victim is unconscious and showing signs of hypothermia.

- *What steps should rescuers follow for safe recovery and first aid?*
- *How should evacuation be organized to prevent further injury?*

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Q3. Given Scenario: A road accident involving a school bus and multiple vehicles has resulted in more than 30 people injured.

- *As the first responder on site, how would you apply the Community Quick Response Sorting Technique to ensure effective triage before professional responders arrive?*

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Q4. Given Scenario: During severe flooding, multiple agencies (health, police, army, NGOs) are responding in the same district.

- *How can the Unified Command System ensure coordinated efforts, avoid duplication, and maintain accountability?*

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Q5. Given Scenario: After a major earthquake, the district EOC is activated.

- *As a community responder, what specific information and support should you provide to the EOC*
- *How can this improve decision-making and resource allocation?*

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References

- Federal Emergency Management Agency of the USA (2020), *"Basic Incident Command System for Initial Response".*
- Scot Mason by Silent Beacon, *"Incident Command System (ICS): History, Structure, and Modern Applications".*



Session 5.8: Psychological First Aid

Session Objectives

By the end of this session, participants shall be able to:

- Define Psychological First Aid and explain its purpose in disasters and crises.
- Explain the three core action principles of PFA: Look – Listen – Link.
- Identify common stress reactions across physical, emotional, cognitive, behavioral, and spiritual dimensions.
- Demonstrate effective communication and active listening skills when interacting with distressed individuals.
- Describe appropriate ways to link individuals to practical and emotional support systems.

Duration

01 hour

Facilitation Methodology

Group Work, Role play, Interactive Lecture, and Q/A

Training Aids Required

- Stress reaction lists handouts and Look-Listen-Link steps
- Ready case scenarios of group work
- Role cards on active listening exercise.
- Whiteboard
- Multi-color markers
- Flip charts
- Flip stand
- Multimedia with laptop and screen
- Session handouts

Training Approach

1. Greet the participants and start the session with a short icebreaker.

NOTE: The facilitator should show the icebreaker relevant to the session, and for this purpose, the facilitator should search different websites for learning about the icebreaker.

2. Provoke participants with the question of what they think of when the term psychological first aid is mentioned to them.
3. The next question to ask participants is about the current goals and significance of PFA during a disaster.

4. After a fruitful discussion, show your slides while also asking the following questions for brainstorming.
    - *State the meaning of PFA: an approach that is humane, supportive, and practical.*
    - *Describe important distinctions between PFA and professional counseling.*
    - *Emphasize the Look – Listen- Link model.*

    Hands-on exercise 1: Conduct a stress reaction identification exercise. The facilitator presents a brief case scenario (e.g., an earthquake survivor who is showing signs of distress.

5. After briefing them on the scenario, the participants will work in pairs to identify potential stress reactions (physical, emotional, behavioral, etc.).
6. The participants will share their point of view, and the facilitator will then summarize.

    Hands-on exercise 2: One of the participants is a distressed survivor in pairs, whereas the other one uses active listening skills (nodding, eye contact, open posture, calm voice).

7. The facilitator will then switch roles after 5 minutes.
8. Conduct a **group exercise** of using Look –Listen-Link for 25 minutes. For this purpose, participants shall be divided into 3-4 groups. Assign each group a various disaster situation (e.g., a flood-affected child with no parents, an injured earthquake survivor, a woman with a display of panic after a fire).
9. In each group, discuss and write:
    - *How they would look (measure situation and needs).*
    - *How they would listen (be empathetic).*
    - *The way they would be linked (connected to services/support).*
10. After the exercise, the groups will present the outcome in the plenary, with 5 minutes allocated to each group for presentation.
11. After the group presentations and discussion, the facilitator will highlight the key lessons learned from the exercise.
12. Afterwards, in the next sub-session, discuss the referral and self-care techniques. Describe when to send people to professional assistance. Furthermore, talk about how to take care of the helper: signs of stress, positive coping, and the significance of breaks.
13. As the next activity, conduct practice exercise three about grounding techniques for 10 minutes
14. The facilitator shows how to do a basic breathing technique to soothe troubled people.
15. The participants will do slow breathing together and reflect on the experience.
16. At the end of the session, summarize key takeaways. Ask participants to reflect on a few points if they want to share.

Background Material of the Session

5.7.1. Psychological First Aid



Psychological first aid

Psychological First Aid (PFA) is a humane, supportive, and practical approach to helping individuals affected by distressing events such as disasters, accidents, violence, or loss.

5.7.2. Stages of Psychological First Aid

The stages of Psychological First Aid (PFA) are essential for providing immediate support to in dividuals experiencing distress. Here are the key stages involved in PFA:

1. **Promote Safety**: Ensure the safety of both the helper and the person in distress by pr oviding practical assistance and directing them to necessary resources.
2. **Promote Calm**: Offer emotional support by listening carefully and empathetically, wit hout judgment or pressure to talk.
3. **Promote Connection**: Help individuals reconnect with their social supports, such as f amily and friends, to provide a sense of safety and continuity.
4. **Promote Hope**: Remind individuals that help is available and provide information abo ut resources and support services.
5. Promote SelfEmpowerment: Encourage individuals to take control of their recovery b y suggesting ways they can help themselves and regain a sense of independence.

These stages are designed to help individuals cope with their distress and begin a healthy rec overy process. PFA is not a substitute for professional mental health care but serves as a criti cal first step in providing immediate support.

It does not involve diagnosis or deep counseling—it is about supporting safety, promoting calmness, and helping people access further help if needed. There are three Action Principles of Psychological First Aid:

Look – Listen – Link

5.7.1.1. Look

Assess the Situation and Identify Needs:

The first step is to observe carefully and gather key information:

- **What has occurred and who is involved?**

  Comprehend the kind of crisis in a short time. Is it an accident, flood, fire, or a conflict? Evaluate the magnitude of the incident and the number of individuals that can be affected.

- **Who is in greatest need?**

  In groups, pay attention to single out weak people, that is, those who were hurt, those who are panicked, those who are alone, and those who are visibly perturbed.

- **Inspect danger risks**

Before rendering a helping hand, make sure the location is safe for both the victim and you. In the case of an immediate threat, like fire, a melted structure, or violence, this needs to be dealt with or avoided first.

- **Seek physical injuries.**

  When a person is physically injured, first attend to the physical body and then provide emotional support or seek health care rather than emotional care.

- **Evaluate emergency practical requirements.**

  Ask, What is your need or what do you require at the moment? It may be water, someplace to shelter, an avenue of communicating with loved ones, or instantaneous medical attention.

- **Observe their reactions.**
  People express distress in many ways. Watch for signs in these areas:
  - ***Physical:*** *trembling, nausea, shallow breathing, exhaustion*
  - ***Behavioral:*** *crying, withdrawal, anger, hyperactivity, smoking or substance use*
  - ***Emotional:*** *shock, sadness, fear, anxiety, numbness, mood swings*
  - ***Cognitive:*** *confusion, poor memory, difficulty concentrating, intrusive thoughts, or nightmares*
  - ***Spiritual:*** *feeling hopeless, disconnected, questioning one's beliefs or faith*

These are **normal reactions to abnormal situations**, but you should also recognize when reactions are **severe** and may require professional help.

Refer a person immediately if they:

- Can't care for themselves or others (e.g., not eating, neglecting children)
- Are extremely disoriented or confused
- Threaten to harm themselves or others
- Show signs of a serious mental health condition or uncontrolled substance abuse

5.7.1.2. Listen

Connect with empathy and attention:

Listening goes beyond just hearing—it means being fully present and engaged.

- **Introduce yourself clearly and calmly.** A gentle, respectful introduction builds trust: *"My name is ___ and I'm here to help."*
- **Use active listening skills**
    - *Face the person directly.*
    - *Maintain open, non-threatening body posture.*
    - *Make eye contact if appropriate.*
    - *Nod occasionally or use encouraging responses like "I understand," or "That sounds difficult."*



Connect with empathy

- **Let the person speak without interruption**
  If they want to talk about what happened, listen patiently. Avoid pushing them or rushing their story.
- **Calm someone who is overwhelmed**
  Use grounding techniques such as slow, deep breathing. Ask them to take a few breaths with you. This can help lower panic and increase focus.
- **Ask helpful questions**
  These should focus on their current situation:
    - *"Do you feel safe right now?"*
    - *"Is there someone you would like to contact?"*
    - *"What is worrying you most at the moment?"*

These questions help people feel heard and supported, and they allow you to guide them toward solving problems step by step.

5.7.1.3. Link

Connect people to support and services:

Once safety and emotional support have been established, the next step is to help individuals access further help.

- **Give details of their responses**

Of course, in each case, it could be beneficial to realize that their worry or depression is typical, thus making people less alienated. Provide them with some basic written information (if possible) or discuss with them the ordinary responses to stress and the way these responses can be handled.

- **Assist them in finding their way back to loved ones**

In case a person is not with his/her family or friends, assist them in finding or communicating with them. This can be as little as allowing them to make contact via your phone or assisting them in locating a family member.



Connect with the people to Support

- **Assist in effective problem-solving**

This can include taking a person to a medical tent, helping him or her find a secure place to rest, or organizing transportation. Collaborate in developing realistic, feasible next steps.

- **Refer to formal or informal services**

Based on what they need, direct them toward:

  - *Health services*
  - *Community elders*
  - *Religious leaders*
  - *Women's support groups*
  - *Relief agencies*
  - *Psychosocial support teams*

Support can be informal or formal—what matters most is that it helps the individual feel supported and capable of moving forward.

Caring for the helper: do not forget yourself

Supporting others in crisis can be emotionally exhausting. Helpers also need to Look, Listen, and Link—for themselves:

- Be aware of the indicators of your stress: anger, tiredness, insomnia, loss of drive.
- Spend some time to refresh, feed, rehydrate, and recuperate.
- Discuss the concern with co-workers, friends, or managers.
- Have breaks. Do stuff that makes one happy or comfortable.
- Don't engage in unhealthy coping measures (alcohol, isolation, and working too much).

PFA is not just about helping others—it's about strengthening the entire community through compassion, safety, and connection.

Self-Assessment / Key Questions & Answers

Q1. Discuss the common stress reactions (physical, emotional, behavioral, cognitive, and spiritual). How can responders identify when individuals require referral to professional mental health support?

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Q2. Given Scenario: A woman has just lost her home in a fire. She is crying uncontrollably and says she feels hopeless and disconnected.

- *How should a responder apply the **Look – Listen – Link** approach to support her?*
- *At what stage should she be referred to professional services?*

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Q3. Explain the Look – Listen – Link principles of Psychological First Aid. Provide practical examples of how each step supports survivors in emergencies.

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References

- World Health Organization (2013), *"Psychological first aid."*
- Kathi Valeii, (2024), *"Psychological First Aid: How It's Used",* published by VeryWellHealth
- International Federation of Red Cross and Red Crescent Societies (2018), *"A guide to Psychological First Aid."*



Session 5.9: Camp Management

Session Objectives

By the end of this session, participants shall be able to:

- Explain the challenges faced by displaced persons and the role of CCCM in ensuring safety, dignity, and access to essential services.
- Apply the camp lifecycle approach (planning, care and maintenance, closure) to manage displacement sites effectively.
- Promote community participation and protection principles in camp management while planning for durable solutions.

Duration

1 hour

Facilitation Methodology

Interactive Lecture, and Q/A

Training Aids Required

- Multimedia with a laptop and a screen
- Session handouts

Training Approach

1. The session begins with a warm welcome to the participants, followed by a brief introduction of the session objectives.

   Probing Question: At the start, the facilitator can ask a simple question: *"What comes to your mind when you hear the word displacement or camp management?"* This helps participants connect their own perceptions and experiences to the topic.

2. Take some points from participants and write them down on the whiteboard.
3. Explain first the displacement and the challenges faced by Internally Displaced Persons (IDPs). The facilitator shall explain how natural disasters, such as floods, earthquakes, or landslides, often force people to leave their homes suddenly and without warning, compelling them to relocate.

   Probing Question: At this stage, the facilitator can probe a question for reflection and discussion: *"Which challenge do you think is most difficult for displaced families to cope with, and why?"*

4. The discussion then moves to settlement options and the camp lifecycle. The facilitator explains that displaced families often first seek help from host communities or rental housing, while camps are considered a last resort.

5. Also explain that while camps are established, they go through three phases—planning and set-up, care and maintenance, and eventually closure and durable solutions.
6. The facilitator emphasizes the importance of planning for closure from the very beginning to prevent camps from becoming long-term settlements. A guiding question is posed: *"Why do you think camps should never be considered a permanent solution?"*
7. In the following slides, discuss the role of Camp Coordination and Camp Management (CCCM). The facilitator shall also explain how CCCM facilitates coordination among government bodies, NGOs, and communities themselves.

   Probing Question: Participants are then asked: *"How can displaced people themselves be part of managing camps?"*—a question that encourages them to think about community participation in practice.
8. The session concludes with a wrap-up and reflection. The trainer summarizes the key lessons covered: the challenges of displacement, settlement options, the camp lifecycle, the role of CCCM, and the importance of effective camp management.
9. Participants are invited to share one key takeaway each. The session closes with a powerful reminder: *"Camps are temporary solutions—our ultimate goal is durable solutions and dignity for displaced people."*

Background Material of the Session

5.8.1. Displacement Due to Natural Disasters

Natural disasters, such as earthquakes, floods, and landslides, often force people to leave their homes and seek shelter elsewhere. When people are displaced within their own country's borders, they are recognized as Internally Displaced Persons (IDPs).

Displacement disrupts communities and exposes them to a wide range of protection risks and humanitarian needs.

5.8.2. Key Challenges Faced by IDPs

- **Loss of Shelter & Property**: Displaced people often lose their homes and possessions. Many are forced into temporary shelters or displacement sites that may lack safety and dignity.
- **Loss of Land & Livelihoods**: Without access to land, jobs, or businesses, many IDPs experience poverty, marginalization, and exploitation.
- **Basic Needs & Services**: In disaster contexts, food, safe water, education, and healthcare are often unavailable. Prolonged deprivation leads to hunger, malnutrition, and illness.
- **Family Separation & Community Breakdown**: Families are frequently separated during crises. Vulnerable groups such as unaccompanied children, women-headed households, elderly persons, and differently abled people are at heightened risk of abuse, exploitation, or neglect.

- **Loss of Identity Documents**: IDPs may lose or have documents destroyed/confiscated, which limits their access to education, health care, and recovery of lost property.

5.8.3. Displacement Solutions and Settlement Options

Most displaced people do not move into camps immediately. Instead, they prefer:

- **Host communities** – staying with relatives, friends, or neighbors.
- **Rental housing** – for those with financial means, sometimes supported by subsidies from governments or NGOs.

Camps and camp-like settings are considered a last resort, used only when no other housing solutions exist. While they provide temporary protection and assistance, they are not durable solutions.

5.8.4. The Camp Lifecycle

Displacement caused by disasters often creates complex humanitarian crises, requiring the establishment of temporary camps. However, camps are not solutions—they are short-term measures that must be managed carefully through the lifecycle of planning, maintenance, and closure. Effective camp management prioritizes protection, dignity, and community participation, while always aiming for durable solutions such as return, integration, or resettlement.

Camps evolve dynamically through three overlapping phases:

5.8.4.1. Planning and Set-Up

- Begins at the onset of displacement.
- Includes site planning, infrastructure installation (shelters, sanitation, cooking, waste management, recreation areas), and registration of displaced people.
- Community mobilization structures should be established to ensure participation.
- Planning must already include exit and closure strategies to avoid camps becoming long-term settlements.
- Even in spontaneous camps, conditions must be improved to meet minimum humanitarian standards.

5.8.4.2. Care and Maintenance

- The most extended and most demanding phase.
- Focuses on maintaining infrastructure, repairing shelters, and ensuring ongoing services (water, sanitation, food, health, and education).
- Includes monitoring new arrivals and departures.
- Encourages active participation of residents in decision-making and camp management.
- This phase can be prolonged if durable solutions are not identified quickly.

5.8.4.3. Closure and Durable Solutions

- Aims at ending displacement through one of three options:
    1. *Return to home communities.*
    2. *Local integration in the area of displacement.*
    3. *Resettlement elsewhere.*
- Involves deregistration, cleanup, waste disposal, and decommissioning of camp facilities to avoid environmental damage.
- Closure is only appropriate when protection needs have ceased and a durable solution is in place.
- Planning for closure must start early, with continuous communication to camp residents.

5.8.5. Role of CCCM (Camp Coordination and Camp Management)

CCCM is a recognized humanitarian sector that coordinates protection and assistance in camp settings.
Its principles emphasize:

- **Protection and Assistance** – ensuring safety, dignity, and access to basic services.
- **Community Participation** – involving displaced people in camp governance.
- **International Laws and Standards** – ensuring that humanitarian operations respect global frameworks.
- **Durability and Transition** – avoiding long-term dependency on camps, promoting return or integration whenever possible.

5.8.5.1. Do's and Don'ts of Camp Management

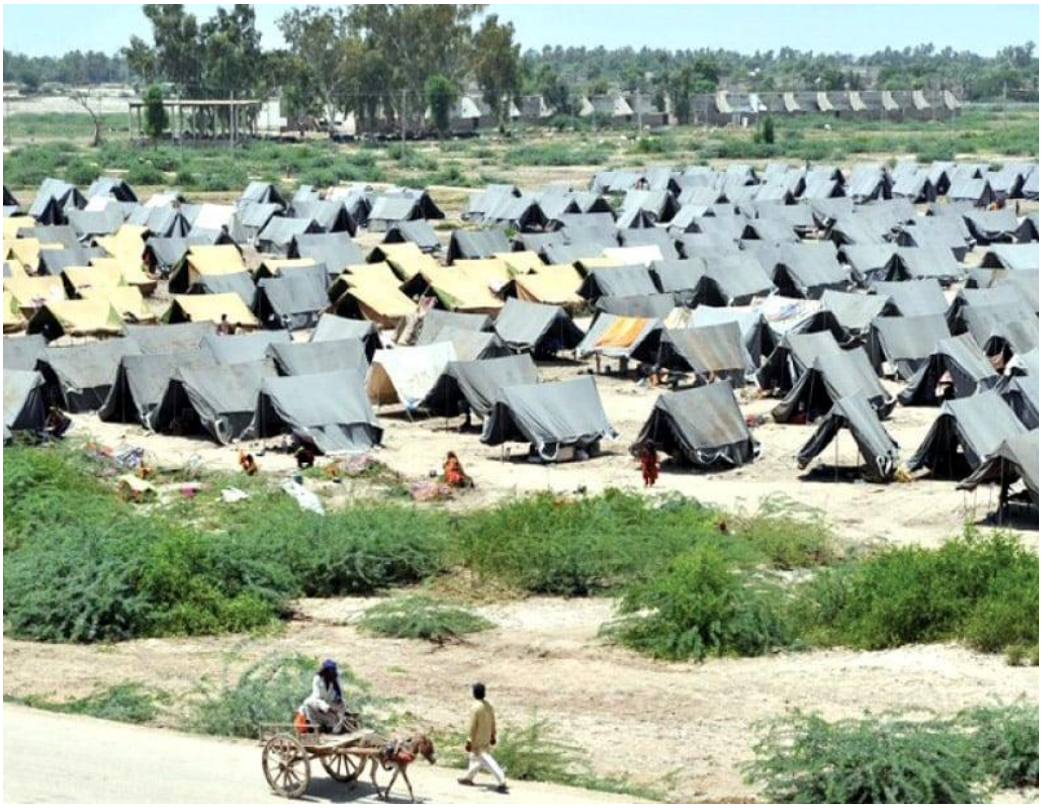
Well-managed camps should:

- Provide safety, health, and education.
- Ensure inclusion of vulnerable groups.
- Encourage dignity and participation.
  Poorly managed camps, by contrast, neglect basic services and exclude communities from decision-making.

5.8.5.2. Do's of Camp Management

- **Ensure safety and dignity**: Plan site layout with adequate space, lighting, drainage, and safe access to water, shelter, and sanitation.
- **Promote participation**: Involve IDPs (including women, children, the elderly, and differently abled people) in camp committees and decision-making.
- **Maintain transparency**: Share clear, accessible information on services, rights, and responsibilities.
- **Coordinate effectively**: Work with government, humanitarian agencies, and host communities to avoid duplication and gaps in services.

- **Support livelihoods and education**: Facilitate access to schools, health care, and opportunities for skills or income.
- **Monitor and adapt**: Regularly check services (water, food, shelter, security) and adjust responses as needs evolve.
- **Plan for closure**: From the beginning, consider durable solutions and exit strategies to avoid long-term dependence on camps.
- Don'ts of Camp Management
- **Don't isolate or exclude**: Avoid discrimination based on gender, ethnicity, religion, or status.
- **Don't overcrowd**: Poor site planning that ignores space standards increases risks (fire, disease, violence).
- **Don't ignore vulnerable groups**: Failure to identify and support people with special needs leads to exploitation and harm.
- **Don't centralize decisions**: Top-down management without community participation weakens ownership and sustainability.
- **Don't delay coordination**: Lack of communication among agencies results in service gaps or duplication.
- **Don't create dependency**: Camps should not be permanent; avoid practices that discourage self-reliance.
- **Don't neglect protection**: Failing to provide security, lighting, or safe spaces heightens risks of abuse, GBV, and child exploitation.





Jalozai Relief Camp in District Nowshera

Self-Assessment / Key Questions & Answers

Q1. Which of the following is considered a last resort settlement option for displaced persons?

a). Rental housing

b). Host communities

c). Camps and camp-like settings

d). Staying with relatives

Correct Answer: C

Q2. Which of the following is a "Do" of camp management?

a). Ensure safety, dignity, and transparent information sharing

b). Centralize decisions to maintain control

c). Exclude vulnerable groups from participation to save time

d). Overcrowd the site to accommodate more families quickly

Correct Answer: A

Q3. Discuss the principles of CCCM (Camp Coordination and Camp Management). How do these principles ensure protection, participation, and durable solutions for displaced populations?

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Q4. Explain the Camp Lifecycle by describing its three phases—Planning and Set-up, Care and Maintenance, and Closure and Durable Solutions. Why is early closure planning important?

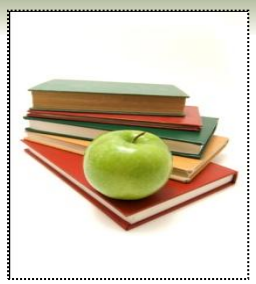
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References

- International Organization for Migration (2015), *"Camp Coordination and Camp Management Training Package."*



Notes

Module Six:

CBDRM in Action: From Planning to Implementation



Module Six:
CBDRM in Action – From Planning to Implementation

Objectives

By the end of this module, participants will be able to:

- ⇒ Apply anticipatory action frameworks within community DRR plans to reduce the impact of forecasted hazards through proactive, timely interventions.
- ⇒ Design and support community-based climate adaptation strategies, including ecosystem management, resilient agriculture, and climate-smart technologies.
- ⇒ Utilize digital preparedness tools, such as mobile-based early warning systems, to enhance real-time risk communication and emergency readiness.
- ⇒ Develop inclusive community early warning systems tailored to local capacities and accessible to all segments, including differently abled people.
- ⇒ Implement gender-responsive and child-safe emergency strategies, integrating protection, dignity, and empowerment in disaster contexts.
- ⇒ Apply context-sensitive CBDRM approaches in geographically distinct areas like coastal zones, drought-affected regions, Northern mountainous regions, and urban informal settlements.
- ⇒ Promote participatory and nature-based solutions to address environmental degradation while strengthening resilience to climate-related risks.
- ⇒ Strengthen livelihood protection and recovery mechanisms to enhance economic resilience and safeguard assets before, during, and after disasters.
- ⇒ Advance gender equality, equity, and social inclusion throughout the implementation of CBDRM by engaging marginalized groups meaningfully.
- ⇒ Explain the basic concepts, types and various stages involved in the evacuation before or during disasters.

- ❖ Credit hours covered:
- ❖ Time required for this module: 15 hours

Sessions to be covered in this module

Session 6.1: Integrating Anticipatory Actions in Community DRR Planning

Session 6.2: Community-Based Climate Adaptation

Session 6.3: Community-based Early Warning Systems

Session 6.4: Digital Preparedness and Mobile-Based Early Warning

Session 6.5: Gender and Child Protection in Emergencies

Session 6.6: Promotion of the CBDRM Approach Among the Coastal Communities

Session 6.7: Disability Inclusive DRR

Session 6.8: Promotion of the CBDRM Approach Among the Drought-Prone Areas

Session 6.9: Participatory Approaches for Promoting Nature-Based Solutions

Session 6.10: Livelihood Protection and Recovery

Session 6.11: Gender and Social Inclusion in the CBDRM Process

Session 6.12: Community-Based Urban Disaster Risk Management

Session 6.13: Evacuation Management at the Community Level

Proposed Agenda of Module Six

DAY ONE			
Time	**Duration**	**Title of the Session**	**Facilitation Methodology**
9:00 AM – 9:30 AM	30 minutes	• Registration and introduction • Training objectives and overview	• Formal session • Formal ceremony • Welcome by organizers • Announcement of administrative arrangements • An overview of the training
9:30 AM – 11:00 AM	1 hour 30 minutes	**Session 6.1:** Integrating Anticipatory Actions in Community DRR Planning	• Interactive lecture • Probing questions for discussions • Q/A
10:45 AM – 11:00 AM	***15 minutes***	***Working Tea***	
11:00 AM – 12:00 PM	1 hour	**Session 6.2:** Community-Based Climate Adaptation	• Interactive lecture • Probing questions for discussions • Q/A
12:00 PM – 1:00 PM	***60 minutes***	***Lunch Break***	
1:00 PM – 2:30 PM	1 hour 30 minutes	**Session 6.3:** Community-based Early Warning Systems	• Group work • Interactive lecture, • Probing questions for discussions • Q/A
2:30 PM – 3:30 PM	1 hour	**Session 6.4:** Digital Preparedness and Mobile-Based Early Warning	• Group work • Interactive lecture • Probing questions for discussions • Q/A •
3:30 PM – 3:45 PM	***15 minutes***	***Tea Break***	
3:45 PM – 4:30 PM	45 minutes	**Session 6.5:** Gender and Child Protection in Emergencies	• Interactive lecture • Probing questions for discussions • Q/A
4:30 PM – 4:45 PM	15 minutes	Key Takeaways from the Day One Sessions	

DAY TWO			
Time	**Duration**	**Title of the Session**	**Facilitation Methodology**
9:00 AM – 9:30 AM	30 minutes	Recap of Day One	
9:30 AM – 10:45 AM	1 hour and 15 minutes	**Session 6.6:** Promotion of the CBDRM Approach Among the Coastal Communities	• Group work • Interactive lecture • Probing questions for discussions • Q/A
10:45 AM – 11:00 AM	***15 minutes***	***Tea Break***	
11:00 AM – 12:00 PM	1 hour	**Session 6.7:** Disability Inclusive DRR	• Interactive lecture • Probing questions for discussions • Q/A
12:00 PM – 1:00 PM	***1 hour***	***Lunch Break***	
1:00 PM – 2:30 PM	1 hour 30 minutes	**Session 6.8:** Promotion of the CBDRM Approach Among the Drought-Prone Areas	• Interactive lecture • Group work • Probing questions for discussions • Q/A
3:00 PM – 3:15 PM	***15 minutes***	***Working Tea***	
2:30 PM – 4:00 PM	1 hour 30 minutes	**Session 6.9:** Participatory Approaches for Promoting Nature-Based Solutions	• Interactive lecture • Group work • Probing questions for discussions • Q/A
4:00 PM – 4:30 PM	30 minutes	Key Takeaways from the Day Two Sessions	

DAY THREE			
Time	**Duration**	**Title of the Session**	**Facilitation Methodology**
9:00 AM – 9:30 AM	30 minutes	Recap of Day Two	
9:30 AM – 10:30 AM	1 hour	**Session 6.10:** Livelihood Protection and Recovery	• Interactive lecture • Probing questions for discussions • Q/A
10:30 AM – 10:45 AM	***15 minutes***	***Working Tea***	
10:45 AM – 12:00 PM	1 hour and 15 minutes	**Session 6.11:** Gender and Social Inclusion in the CBDRM Process	• Interactive lecture • Probing questions for discussions • Q/A
12:00 PM – 1:00 PM	***1 hour***	***Lunch Break***	
01:00 PM – 2:30 PM	1 hour 30 minutes	**Session 6.12:** Community-Based Urban Disaster Risk Management	• Interactive lecture • Probing questions for discussions • Q/A
2:30 PM – 3:30 PM	1 hour	**Session 6.13:** Evacuation Management at the Community Level	• Interactive lecture • Group activity • Probing questions for discussions • Q/A
3:00 PM – 3:15 PM	***15 minutes***	***Working Tea***	
3:30 PM – 3:45 PM	15 minutes	Training evaluation	
3:45 PM – 4:00 PM	15 minutes	Closing ceremony Certificate distribution	



Session 6.1: Integrating Anticipatory Actions in Community DRR Planning

Session Objectives

At the end of this session, the participants will be able to:

- Explain the concept of anticipatory action and its importance in bridging the gap between preparedness and emergency response.
- Identify and describe key community-level anticipatory actions across various domains such as households, livelihoods, infrastructure, and communication.
- Analyze the process of setting community-defined triggers and thresholds linked with early warning systems.
- Demonstrate how communities can develop activation matrices, tools, and protocols for early and timely actions.
- Review lessons learned from Anticipatory Action experiences in Pakistan and identify enabling factors for success.

Duration

01 hour 30 minutes

Facilitation Methodology

Interactive Lecture, Probing Questions for Discussions, and Q/A

Training Aids Required

- Meta cards in four different colors
- Whiteboard
- Multi-color markers
- Multimedia with laptop and screen
- Masking tape
- Session handouts

Training Approach

1. The facilitator should begin his session by welcoming the participants, followed by introducing the session's objectives.

   Probing question: *"Why do you think it is important that communities take action before a disaster strikes, rather than after a disaster occurs?"*

2. Take some discussion points from participants. This discussion not only helps participants to reflect on their current knowledge but also prepares them to take action.
3. The session proceeds to explain such a concept as anticipatory action. The facilitator explains its role in bridging the gap between preparedness and emergency response in simple language, using familiar examples. The facilitator can provide examples of

the 2022 floods or the 2025 floods, which caused massive losses due to a lack of preparation in advance.

Probing question: At this point, the facilitator may ask another question to provoke discussion: "*What would you say is the gap that anticipatory action fulfills that traditional disaster response usually leaves?"* This motivates participants to think, even when they are not working in groups.

4. The facilitator then points out pragmatic community-based anticipatory actions. They include stocking the household go-bags, arranging the mosque announcements to give early warnings, roof strengthening, or pre-prepared water storage. To demonstrate, the facilitator could provide such simple images as a hazards map, a seasonal calendar, or a specimen of native warning signs.

Probing question: Discuss with the participants by asking questions that might make them interested, such as the following: *"Which of these anticipatory actions would be the most effective within your community, and why?"*. These kinds of questions enable the participants to relate the content to their realities.

5. Taking support of the PPT slides, the facilitator presents the concepts of triggers, thresholds, and activation matrices. This section discusses the manner in which communities make decisions on when to take action, who will act, and what resources need to be mobilized.

6. **Given Scenario for Discussion:** At this point, develop a scenario for participants: Imagine that forecasts indicate that the rain is going to fall more than 50mm tomorrow in your village. At-risk communities should take anticipatory actions to mitigate the impending threat.

Probing question: Based on this scenario, the facilitator may pose a question,

"What anticipatory actions would you like to select in case of floods or heat waves, in case you were the leader of your village committee?"

This inquisitive question will prompt participants to consider local contexts, all while remaining within a guided lecture format.

7. The session is closed with a wrap-up, during which the facilitator will summarize the key points.

Probing question: A final reflective question that the facilitator can ask is, *"What is one action that you can anticipate introducing in your own community?".*

8. To do this, give each participant one meta card and ask them to write a short, straightforward answer to the above question in either English or Urdu, making sure it can be read easily. Two volunteers can be requested to collect the meta cards from each participant and paste these cards on the wall with clear visibility. After all cards are pasted, the facilitator should read the answers. And give a summary of the discussion, highlighting a few cards that are most relevant to the topic and scenario.

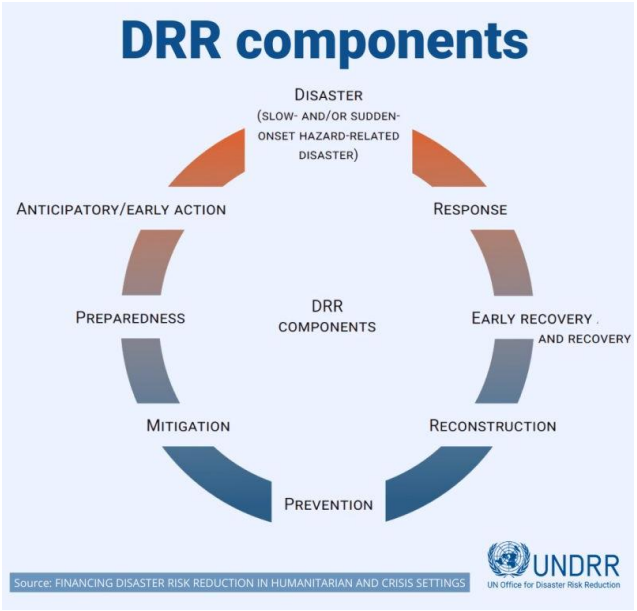
9. Appreciate all participants with a round of applause and thank them for their active participation.

Useful Tips for the Facilitator

- To begin with, a brief related story is essential to capture the facilitator's attention.
- During the session, be conversational and ask participants to talk about their personal experiences in response to probing questions.
- Note down essential ideas raised by the participants using the whiteboard- this will enforce the validity of their input and make the session interactive without necessarily involving group activities.

Background Material of the Session

6.1.1. Anticipatory action in CBDRM: A community-focused guide



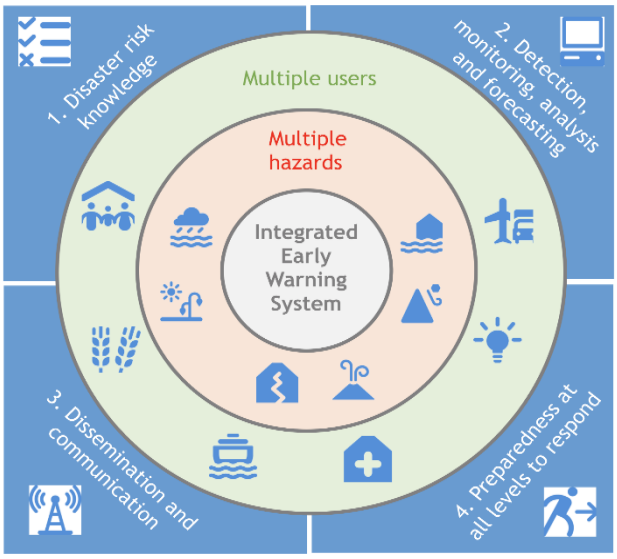
Anticipatory Action refers to a set of pre-planned, pre-financed, and context-specific actions that are implemented once reliable early warnings are received—*but before* a disaster strikes. This approach closes the gap between long-term preparedness and immediate emergency response. By focusing on that narrow window between a credible forecast and an actual disaster event, Anticipatory Action enables communities to reduce risks before losses occur.

Rather than reacting after devastation, communities are empowered to act quickly, with dignity, and cost-effectively. The process involves interpreting scientific forecasts, identifying locally agreed triggers, and launching early interventions to minimize the impact of hazards. Within the CBDRM framework, anticipatory action plays a transformative role. It enables village disaster management committees to lead from the front, activating timely, community-centered responses and protecting lives, assets, and livelihoods.

Recognizing its critical importance, the UNDRR has integrated anticipatory action into the disaster risk management cycle, reinforcing the global shift toward proactive and preventive approaches.

6.1.2. Significance: Acting ahead saves lives

Anticipatory Action is more than just a method—it is a paradigm shift in how communities prepare for disasters. By moving from a reactive to a proactive approach, Anticipatory Action empowers local actors to take the lead, reduces dependency on delayed external aid, and ensures that risks are addressed before they become disasters.

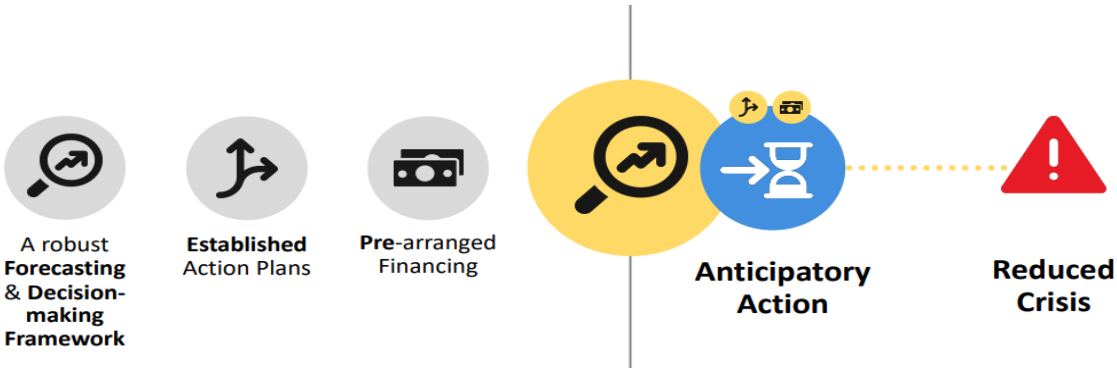


When communities are equipped with the right knowledge, tools, and protocols, and when they define their thresholds for action, they are better positioned to protect lives, livelihoods, and development gains. CBDRM gives people the platform to prepare. Anticipatory Action gives them the power to act—on time, with confidence, and with resilience.

6.1.2.1. Why anticipatory action matters for Pakistani communities

Pakistan is one of the most hazard-prone countries in South Asia, facing a broad spectrum of threats, including riverine flooding, flash floods, urban flooding, landslides, cloud outbursts, avalanches, debris flows, rockfalls, GLOFs, cyclones, heatwaves, and earthquakes. The need for anticipatory action is underscored by the country's increasing vulnerability to climate-induced disasters. The devastating floods of 2022, which affected more than 33 million people, revealed a critical weakness in traditional response systems—relief and aid arrived after the damage had already been done.

Anticipatory Action offers a practical and people-centered solution to this challenge. By acting before the crisis unfolds, communities can reduce loss of lives, avoid displacement, and protect critical livelihoods. International evidence supports this model. In Bangladesh, anticipatory cash transfers issued before major floods reduced distress borrowing by over 30 percent. These lessons are directly applicable to regions in Pakistan such as Sindh, Balochistan, and South Punjab, where similar socio-economic and environmental conditions prevail.



Anticipatory action matters for Pakistani communities

Anticipatory Action enables communities to protect years of development investment and ensures that disaster response starts with the people most at risk.

6.1.2.2. Community-based anticipatory actions

Anticipatory action functions at various levels within the community and tackles multiple aspects of disaster risk. At the community level, actions may include pre-monsoon cleaning of drainage systems, activating mosque/prayer hall loudspeakers for early alerts, and opening shelters before rainfall reaches critical levels. Within households, families can prepare go-bags with essential documents, food, medicine, and hygiene supplies. Valuables can be elevated to avoid water damage, and water storage can be secured ahead of forecasted shortages or floods.

For livelihood protection, families may relocate livestock to higher ground or harvest crops early if flood warnings are issued. Infrastructure can also be fortified in advance by reinforcing rooftops, unblocking storm drains, and installing temporary barriers where needed. Communities play a central role in identifying and executing these actions using practical tools. Participatory hazard mapping helps locate vulnerable zones and assets, while seasonal calendars enable communities to anticipate periods of heightened risk based on weather patterns and local experience. The use of indigenous early warning indicators—such as glacier color changes, unusual animal behavior, or increased water turbidity—adds local knowledge to scientific forecasts. Community-installed rain gauges and water level poles also provide real-time monitoring to support local decision-making. This table helps to understand more clearly.

6.1.2.3. Anticipatory actions domain

Community Tools to Use

- Hazard maps
- Seasonal hazard calendars
- Indigenous signs (e.g., glacier color, animal behavior)
- Local rain gauges or water level poles

6.1.3. Setting triggers and thresholds

The effectiveness of anticipatory action depends on the accuracy and relevance of its triggers and thresholds. A trigger is a forecast-based condition that signals when early action should begin—for example, a forecast predicting more than 50 millimeters of rain in 24 hours. A threshold is the specific magnitude of the trigger that has been pre-agreed by the community—for instance, a heat index exceeding 42°C for two consecutive days may prompt the opening of cooling centers.

The process of defining these triggers and thresholds must be community-led. Community Risk Watch Groups (CRWGs) and VDMCs play a central role in developing these parameters through participatory consultations. These groups should include women, youth, elders, religious leaders, and differently abled people to ensure inclusivity and ownership. Scientific forecasts from the Pakistan Meteorological Department must align with local realities and be integrated into national early warning systems. Coordination with the National and Provincial Disaster Management Authorities ensures that local triggers match official alert systems and benefit from institutional support.

Domain	Examples of Anticipatory Action
Community Level	Clear drains, mosque/prayer hall announcements, open shelters.
Household Level	Prepare "Go Bags", lift valuables, and stock water/food.
Livelihoods	Move livestock to high ground, pre-harvest crops.
Infrastructure	Reinforce roofs, clean drainage, and install flood barriers.

6.1.3.1. How to activate early actions

Once an agreed trigger is reached, communities need a structured process to translate early warnings into timely and meaningful actions. This process is guided by a written Activation Matrix. The matrix outlines the specific hazard forecast, the corresponding action to be taken, the individual or group responsible for implementing that action, and the source of funding that will support it. For example, if rainfall is expected to exceed 50mm in a day, the matrix may instruct the CRWG and local religious leaders to lead drain cleaning and community alerts, using resources from the ward contingency fund or local NGO support.

In the event of a GLOF, satellite alerts and visual confirmation of lake expansion may activate livestock relocation led by youth volunteers and supported by DDMA vehicles. For extreme heat, a forecast of 42°C, over two consecutive days could initiate the distribution of Oral Rehydration Salts (ORS), market closures, and the activation of cooling shelters by Lady Health Workers and local officers, backed by the health department's contingency stock.

Each action must have prior community approval, typically requiring a quorum of the CRWG Chairperson, a religious leader such as the local imam, and a woman elected representative. Key resources such as water tanks, emergency kits, and evacuation transport must be prepositioned and readily accessible. Vendor contracts, such as for boats or vehicles, should be signed in advance to avoid delays. This organized and participatory approach ensures that communities are not only prepared to act but can do so quickly and confidently.

Hazard	Trigger	Action	Responsible	Funding
Flood	Rain ≥ 50mm/day	Clear drains, alert the public	CRWG + Imam	Ward fund / NGO
GLOF	Glacier Lake expands	Move livestock, alert households	Youth + CRWG	DDMA vehicle
Heatwave	Temp ≥ 42°C	Distribute ORS, close markets	LHW + Ward Officer	Health Dept

6.1.3.2. Strengthening key community tasks

To make Anticipatory Action operational at the grassroots level, communities must undertake several foundational tasks. The first step is forming a CRWG with balanced representation—ideally including women, schoolteachers, health workers, and tech-savvy youth. This group leads the coordination of risk monitoring, alerts, and early responses.

Next, the community must develop hazard maps and seasonal calendars to visualize risks and plan intervention timing. These tools help align disaster planning with local agricultural cycles, school schedules, and cultural events. The community should also design and rehearse

activation protocols by conducting regular mock drills—at least twice a year—to test early actions under realistic conditions.

To strengthen outreach, communities are encouraged to use digital platforms such as the NDMA App, PMD's mobile app, the Kissan App, Roshni alerts via WhatsApp, and community-managed Facebook groups for rapid dissemination of messages. Equally important is the storage and maintenance of supplies, including emergency kits, water containers, sandbags, and basic medical supplies. These assets should be accessible, clearly labelled, and regularly inspected to ensure they are ready.

6.1.4. Lessons learned from Pakistan

Past experiences from Pakistan provide powerful lessons for improving Anticipatory Action. During the 2023 GLOF event in Chitral, although the scientific trigger was accurately forecast and recognized, the evacuation of livestock failed because no pre-contracted helicopter service was available. This situation highlighted the need for advanced arrangements, especially for logistics and vendor contracts, to close the gap between forecasting and response.

In contrast, the 2020 monsoon season in Karachi demonstrated how proactive community action can yield tangible results. Local CRWGs led successful drainage cleaning operations in vulnerable neighborhoods, effectively preventing flooding in narrow lanes. However, attempts to issue anticipatory cash transfers failed due to a widespread power outage that disabled mobile networks. This mixed outcome underlined the importance of building redundant systems and ensuring backup options for digital payments and communication.

A standout success came during Cyclone Biparjoy in 2023. Accurate early warnings from PMD allowed the PDMA Sindh to convene stakeholders, activate alerts, and mobilize resources before landfall. Vulnerable communities were safely relocated, and shelters were pre-stocked with food, water, and medical supplies. This example demonstrates how early, coordinated, and well-funded actions can save lives and set a new standard for anticipatory response in Pakistan.

Case Study 1: Community Anticipatory Action during a Glacier Lake Outburst Threat in Gilgit-Baltistan

Background

In the remote valleys of Gilgit-Baltistan, communities live under the constant threat of Glacial Lake Outburst Floods driven by rapid glacier melt. One such incident highlights the power of local knowledge and community-led anticipatory action.

Early Warning by a Shepherd

Mr. Wasiyat Khan, a shepherd from a high-altitude village in GB, noticed unusual cracks and rising water levels near a glacial lake while grazing his livestock. Recognizing these as danger signs of a potential outburst, he immediately returned to the valley and alerted the Village Disaster Management Committee. His observation acted as a community-defined trigger for early action.

Community Anticipatory Action

With support from the VDMC and Community Risk Watch Group, a series of anticipatory measures was quickly activated:

- **Evacuation of Vulnerable Groups:** Pregnant women, elderly persons, children, and differently abled people were prioritized for safe relocation.
- **Livelihood Protection:** Livestock was herded to higher ground, while farming families harvested standing crops early.
- **Essential Preparedness:** Households prepared "go-bags" containing dry food, medicines, important documents, and communication gadgets.
- **Asset Protection:** Vehicles and machinery were moved to safe zones, while valuables were placed on elevated platforms.
- **Collective Support:** Youth volunteers and local transport owners provided vehicles and stretchers to assist differently abled people and older adults during evacuation.

External Support

The District Disaster Management Authority and local NGOs supported the response by providing evacuation transport, emergency kits, and temporary shelters. Community health workers ensured that medical supplies, including maternal care kits, were available at the shelters.

Impact

Thanks to the quick action of a vigilant shepherd and the VDMC's organized anticipatory measures, the village was evacuated before the glacial lake partially burst.

- No lives were lost.
- Vulnerable groups were safely sheltered.
- Livelihoods and critical assets were protected.

This case demonstrates how indigenous knowledge, combined with community structures, can transform early warnings into effective anticipatory action.

Key Lessons

- Local knowledge is a powerful early warning tool when linked to formal systems.
- Inclusive evacuation saves lives and ensures no one is left behind.
- Protecting livelihoods (livestock, crops, tools) is as crucial as saving lives.
- Strong linkages between VDMCs and district authorities enhance effectiveness.

Case Study 2: Anticipatory Action during Cyclone Biparjoy, Pakistan

In June 2023, Pakistan faced a significant threat from Cyclone Biparjoy in the Arabian Sea, with forecasts from the Pakistan Meteorological Department predicting strong winds, storm surges, and heavy rainfall along Sindh's coastal belt. Unlike previous disasters where responses were delayed, the Government of Pakistan activated Anticipatory Action protocols well before the cyclone made landfall.

Triggers and Early Warning

Based on PMD's scientific forecasts and international satellite data, the National Disaster Management Authority and the Provincial Disaster Management Authority, Sindh, set clear thresholds. Once the forecast confirmed sustained winds above 120 km/h with storm surges threatening coastal settlements, early actions were triggered. This included prepositioning relief stocks, alerting the DDMA, and issuing public advisories via mosque loudspeakers, radio, and mobile alerts.

Community Relocation and Protection

More than 80,000 vulnerable residents from hotspot areas—including fishermen, women-headed households, and elderly populations—were relocated to safer shelters before the cyclone struck. Anticipatory evacuation prevented large-scale casualties. Families carried "go-bags" with essential items, livestock were shifted to higher ground, and schools and community centers were converted into temporary shelters.

Humanitarian Support

The anticipatory response was strengthened by international humanitarian organizations, including UN agencies, the Red Cross/Red Crescent Movement, and INGOs, which coordinated closely with government authorities. They provided pre-stocked relief items, cash-readiness mechanisms, medical supplies, and technical expertise. This collaboration ensured that shelters were equipped with food, safe drinking water, and essential health services before displacement.

Impact

When Cyclone Biparjoy finally brushed the Sindh coastline, damages were minimized, and no mass casualties were reported. The anticipatory relocation protected lives, reduced losses of assets and livelihoods, and demonstrated that acting early is more cost-effective than post-disaster relief. This case has since been recognized nationally and internationally as a model for proactive disaster risk management in South Asia.

Key Lessons for CBDRM

- Reliable forecast-based triggers are critical to timely activation.
- Community ownership—through VDMCs and local volunteers—ensures smooth evacuations.
- Pre-positioned resources and advance vendor contracts reduce response gaps.
- Strong government–humanitarian coordination turns forecasts into lifesaving actions.

Self-Assessment / Key Questions & Answers

Q1. What is the main purpose of anticipatory action in disaster risk reduction?

a) To take early, pre-planned actions before a disaster strikes
b) To wait until the communities' request for support
c) To respond only when government aid arrives
d) To provide relief after a disaster

Correct Answer: a

Q2. Which of the following is an example of a community-level anticipatory action?

a) Installing air conditioners in homes
b) Pre-harvesting crops before floods
c) Cleaning drainage systems before monsoon rains

Correct Answer: c

Q3. What role do community risk watch groups play in anticipatory action?

a) Provide loans to disaster-affected households
b) Develop community triggers and thresholds for early actions
c) Only distribute relief after disasters

Correct Answer: b

Q4. Given Scenario: The Pakistan Meteorological Department issues a forecast that 60 mm of rain is expected within the next 24 hours in your district. The CRWG has already developed an activation matrix.

1. *What anticipatory actions should the community immediately activate?*
2. *Who should be responsible for leading these actions, and how will they coordinate with external actors (e.g., DDMA, NGOs)?*
3. *If one of the planned actions (e.g., arranging transport for evacuation) cannot be implemented due to a lack of resources, what alternative strategies could the community adopt?*

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Q5. Given Scenario: A forecast predicts that temperatures will remain above 43°C for three consecutive days in your community. The agreed community threshold is 42°C for two days.

- *What actions should be triggered to reduce the impact on vulnerable groups such as children, the elderly, and outdoor workers?*
- *How can community health workers, religious leaders, and youth groups collaborate to ensure timely implementation?*
- *If the power supply goes out and cooling centers cannot be maintained, what other anticipatory measures can the community put in place?*

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Session 6.2: Community-Based Climate Adaptation

Session Objectives

At the end of this session, the participants will be able to:

- Explain and apply participatory climate adaptation planning by using community consultations to emphasize environmental sustainability, climate-resilient livelihoods, and ecosystem restoration in the face of climate change.
- Recognize and demonstrate the value of indigenous knowledge by documenting local practices, engaging with community elders, and integrating traditional insights into climate adaptation solutions.
- Describe and practice participatory planning approaches by facilitating community meetings, conducting vulnerability assessments, and elevating the leadership roles of marginalized groups (women, youth, and elders) in the adaptation process.
- Assess real-life community-based climate adaptation initiatives through case studies, field examples from across Pakistan, and interactive learning exercises to extract practical lessons learned.
- Formulate and design adaptation ideas by using problem-solving exercises to develop ecosystem-based adaptation, agroecology, green infrastructure, and climate-smart livelihood options tailored to local vulnerabilities.
- Promote inclusive climate resilience by integrating gender, equity, disability inclusion, and local governance principles into adaptation planning through guided reflection and scenario-based analysis.
- Explore and develop opportunities for eco-tourism, sustainable livelihoods, and community entrepreneurship by analyzing local resources, mapping market opportunities, and brainstorming climate-adaptive income-generating activities.

Duration

01 hour

Facilitation Methodology

Interactive Lecture, Probing Questions for Discussions, and Q/A

Training Aids Required

- Meta cards in four different colors (pink and yellow)
- Whiteboard
- Multi-color markers
- Multimedia with laptop and screen
- Masking tape
- Session handouts

Training Approach

1. After describing the session objectives, the facilitator can ask the following simple questions to set the tone for discussion.

Probing questions:

- *What is Pakistan's global ranking among climate-affected countries?*
- *What is Pakistan's contribution to global greenhouse gas emissions?*
- *Why is Pakistan among the most climate-vulnerable countries?*
- *Why is Lahore considered one of the most polluted cities, and what are the specific reasons behind it?*

2. After a fruitful discussion on the above questions, the facilitator can put another question to take input from the participants.

Probing question: *"How do you think climate change would have different impacts among communities in urban communities than in rural communities?".* This is an instant contributor to helping participants be more reflective about their contexts.

3. The facilitator can take support by distributing meta cards of two different colors— yellow for Urban communities and pink for Rural communities— and ask participants to write down the answers accordingly.

4. As in earlier sessions, two volunteers can be invited to collect the meta cards from each participant and paste these cards on the wall with clear visibility. After all cards are pasted, the facilitator should read the answers. Give a summary of the discussion, highlighting a few cards that are most relevant to the topic and scenario.

5. The session is followed by the introduction of the principle of participatory climate adaptation planning, with an accent on environmental sustainability, climate-resilient livelihoods, and ecosystem restoration.

6. The facilitator emphasizes that the climate of various settings, such as urban, rural, arid, mountainous, coastal, and slum communities, presents a unique set of challenges that must be addressed in distinct ways.

Probing question: Here, the facilitator may ask the following question to generate the discussion: *"What kind of community do you belong to, and what do you observe are the particular climate issues there?"*.

7. Then, the facilitator describes some adaptation examples in cities, including rooftop gardens, rainwater collection, and environmentally friendly transport systems. This can be made relatable with visual examples, such as rainwater harvesting in Karachi or cool roofing in Islamabad.

Probing question: To probe, the facilitator can ask, "What urban initiatives would you introduce to your area, and what should be your first step?" Generate discussion by asking a few participants for their reflections.

8. The session is then changed to rural and dry communities. The facilitator explains how climate-smart agriculture, reforestation, and drought-resistant seeds play critical roles in such situations. Examples of real-life endeavors include crop diversification in Punjab and water tank restoration in Tharparkar.

Probing question: To get warm-ups, the facilitator might pose another question: *"Are there any standard practices in your community that conserve water or make farming in harsh conditions?".* Generate discussion by asking a few participants for their reflections.

9. To mountainous and coastal regions, the facilitator demonstrates how communities can track glacial lakes, maintain mangroves, and rehabilitate the degraded lands. Examples of glacial monitoring in Gilgit-Baltistan or mangrove rehabilitation in Thatta can illustrate community-led success.

Probing question: A question that may be probed here includes: *"Why is it that you think mangroves or forests are good to defend communities against climate disasters?".* Encourage participants to answer the question to overcome their hesitation and shyness.

10. Lastly, the facilitator provides the topic of adaptation in slum communities, emphasizing the local management of waste, the drainage landscape, and flood-resistant shelters. Participants observe how marginalized communities can take the lead in climate resilience action by presenting community gardens or storytelling projects in Karachi and Lahore.

Probing question: The facilitator may pose: *"What can be installed in informal settlements or in underserved areas at low costs?"* Collect a few examples from the participants and note them down for the summary discussion.

11. The session ends with a summary of the essential points.

Useful Tips for the Facilitator

- Start with a familiar climate narrative or a current situation in Pakistan that people can relate to. The facilitator should have some relevant information ready to share during this session.
- Stimulate the participants to provide personal observations or customary practices when answering questions.
- Finish the session with a reinforcement of the notion that communities already possess functional solutions and that the first place of adaptation is at their highest level.
- For each environmental setting, questions will be asked so participants can share their views. The facilitator should keep track of time to ensure the discussion stays within the stipulated time.

Background Material of the Session

6.2.1. Community-based climate adaptation

Community-based climate change adaptation is an approach that places communities at the center of planning and implementation to address the impacts of climate change. It builds on local knowledge, resources, and participation to develop context-specific solutions that reduce vulnerabilities and strengthen resilience. By actively engaging communities in

assessing risks, identifying priorities, and implementing adaptation measures, CCA ensures that strategies are relevant, sustainable, and socially inclusive.

This approach recognized that different settings-urban neighborhoods, rural villages, informal settlements (slum areas), coastal areas, drought-prone areas, and mountainous terrains-face unique climate challenges and require tailored responses. In the subsequent sub-sections, we will discuss in detail how CCA is applied in each of these contexts.

6.2.2. Urban communities

In urban communities, residents can take a central role in adapting to climate change by forming neighborhood-level climate action groups. These groups can lead local initiatives, such as rooftop gardening, rainwater harvesting, and urban greening, while also advocating for eco-friendly policies, including sustainable zoning laws and improved public transportation, to reduce greenhouse gas emissions.

6.2.2.1. Approach of community-based adaptation in urban communities

Urban elders can share indigenous knowledge, such as how tree cover and ponds once created cooler weather, which can guide today's greening efforts. Inclusive, participatory planning is essential, ensuring that slum dwellers, youth, and women are involved in designing climate solutions. Adaptation strategies should be solution-specific, such as installing porous pavements in flood-prone areas and utilizing solar-powered street lighting in low-income neighborhoods.

6.2.2.2. Examples of urban communities

The rooftop rainwater harvesting in Karachi to address flooding and water shortages, collaboration between urban poor and NGOs in Lahore to install bio-toilets and composting systems, and cool roofing initiatives in Islamabad to combat the urban heat island effect. In urban communities, initiatives such as the development of green belts, rooftop gardens, and restored wetlands help reduce heat and manage flooding. Planting native trees and using permeable pavements enhance urban water management, while eco-walks and biodiversity trails offer city-based eco-tourism opportunities.

6.2.3. Rural communities

Rural communities can play a leading role in climate adaptation by adopting climate-smart agriculture practices, diversifying their crop choices, and participating in reforestation efforts. Local farmers' cooperatives can facilitate knowledge sharing, pool resources, and strengthen market linkages to support sustainable livelihoods.

6.2.3.1. Approach of community-based adaptation in rural areas

Indigenous knowledge, such as traditional planting calendars and water-saving practices, remains essential for making timely agricultural decisions. Participatory planning ensures that adaptive farming systems are co-designed by villagers, NGOs, and local governments. Solutions must be tailored to local needs; for example, using drought-resistant seeds in arid regions, raised-bed farming in flood-prone areas, and solar-powered irrigation where electricity is scarce.

6.2.3.2. Examples of rural areas

In Punjab, farmers are shifting from water-intensive rice to more resilient crops like millets and pulses. In Sindh, communities have organized canal clean-ups and water-sharing systems to better manage irregular rainfall. In Balochistan, women's groups are promoting kitchen gardening through efficient drip irrigation methods. In rural areas (general), farmers can adopt agroforestry and regenerative agriculture to improve soil health and restore degraded lands. EbA strategies like conserving riverbanks protect farmlands, while farm stays and eco-tourism promote rural livelihoods.

6.2.4. Arid and drought-prone areas

In arid and drought-prone areas, community leadership is essential in adapting to the harsh effects of climate change. Local groups, particularly women and herders, can take charge of water conservation through traditional rainwater harvesting techniques, restore degraded lands, and collectively manage grazing zones to prevent overuse.



Rainwater harvesting (Photo: IWMI)

6.2.4.1. Approach of community-based adaptation in arid regions

The floodwater farming and sand dune stabilization methods can be revived for sustainable land and water use. Participatory planning is crucial, where pastoralists and farmers work together with authorities to develop drought preparedness strategies. Customized solutions such as building community water tanks, establishing drought-resistant fodder banks, and installing community-owned solar-powered borewells can significantly improve resilience.

6.2.4.2. Examples of an arid region

The restoration of rainwater tanks in Tharparkar, the formation of grazing committees by herders in Cholistan to regulate pasture use, and the innovative use of solar dryers by women in Balochistan to preserve food for dry seasons. In arid and drought-prone regions such as Tharparkar and Cholistan, communities can restore sand dunes, harvest rainwater naturally, and manage rangelands with drought-tolerant species. Eco-tourism



Plantation (Photo: GYM Club - IMS)

centered on desert culture and heritage lodges can provide alternative income sources.

6.2.5. Mountainous communities

In mountainous regions, local communities play a crucial role in climate adaptation by monitoring glacial lakes, establishing early warning systems, and managing forests. Villagers, including youth and elders, can track weather changes and contribute valuable data for local risk mapping.



Vegetation for landslide risk management (Photo: UNDP - GLOF)

6.2.5.1. Approach of community-based adaptation in mountainous areas

The traditional seasonal migration routes and weather predictions based on animal behavior remain relevant for anticipating climate patterns. Participatory planning ensures that the voices of villages vulnerable to glacial GLOFs are considered in national adaptation initiatives. Solution-specific actions include slope stabilization through tree planting, building climate-resilient bridges, and training community members in emergency response.

6.2.5.2. Examples of mountainous areas

The establishment of community-led GLOF monitoring teams in Gilgit-Baltistan, the revival of terracing and mixed cropping in Chitral to reduce soil erosion, and successful agroforestry programs in AJK, where locals now actively protect forests and replant native tree species. For mountainous communities in Gilgit-Baltistan, Chitral, and AJK, reforestation and wetland protection are crucial to stabilize slopes and secure water supplies. Practices like terracing and forest co-management reduce erosion, while guided eco-tours and homestays highlight local ecology and culture.

6.2.6. Coastal Communities

Coastal communities, particularly in southern Pakistan along the coasts of Sindh and Balochistan, are on the front lines of climate change impacts, including rising sea levels, coastal erosion, storm surges, saline intrusion, and declining fish stocks.

6.2.6.1. Approach of community-based adaptation in coastal areas

Community-based adaptation in coastal areas is mainly focused on indigenous knowledge, such as traditional weather forecasting, early warning signals based on marine species behavior, and centuries-old mangrove planting practices, which can guide nature-based solutions. Participatory planning that involves fisherfolk, women, and youth in identifying priorities (e.g., restoring creeks, building storm-resilient housing, or establishing fish nurseries) ensures that solutions reflect local realities. Communities can also construct raised storage platforms for safe drinking water in flood-prone areas, promote salt-tolerant crops in

salinized fields, and develop small-scale aquaculture systems to supplement income and food security.

6.2.6.2. Examples of coastal communities

Coastal communities in Thatta and Badin are rehabilitating mangrove forests with support from local NGOs and government programs, recognizing mangroves' role in storm protection and fishery health. In Gwadar, fisher cooperatives are managing no-fishing zones to allow fish stocks to recover, while also participating in coral reef monitoring and cleanup drives. In Keti Bunder, families affected by salinity have shifted from traditional rice farming to cultivating salt-tolerant vegetables and practicing integrated fish farming. Moreover, some communities are reviving traditional wooden boat-making and eco-tourism ventures to diversify income while preserving coastal heritage.

6.2.7. Slum Communities

In slum communities, residents can play a leading role in tackling climate challenges by organizing localized waste management efforts, improving drainage systems, and building flood-resilient shelters, with support from civil society and local authorities.

6.2.7.1. Approach of community-based adaptation in slum communities

Slum dwellers often have a better understanding of flood-prone areas and unsafe zones than officials. Participatory planning ensures these communities are involved in municipal climate resilience strategies, making the interventions more effective and locally relevant. Solution-specific measures, such as small-scale flood barriers, mobile health units, and portable water purification kits, can significantly enhance resilience.



Mangroves forest. Karachi (Photo: Express)

6.2.7.2. Examples of slum communities

Slum communities in cities like Karachi and Lahore can use community gardens and rooftop greenery to combat pollution and heat. Locally led efforts to stabilize flood-prone areas with vegetation and composting waste reduce climate risks. Additionally, community-driven storytelling, art, and neighborhood tours can turn informal settlements into powerful examples of urban resilience and cultural richness.

Case Study 3: Community-Based Climate Adaptation in Tharparkar, Sindh

Tharparkar, located in Sindh province, is one of Pakistan's most drought-prone and climate-vulnerable regions, where livelihoods are highly dependent on rain-fed agriculture and livestock. Recurring droughts, erratic rainfall, and water scarcity have exacerbated food insecurity, poverty, and migration. In response, local communities, supported by NGOs such as Thardeep Rural Development Programme (TRDP) and HANDS, have revived indigenous water management systems, particularly taankas (traditional underground rainwater storage tanks). These taankas collect and store rainwater, providing households with a critical water source during prolonged dry spells.

In addition to water harvesting, community-led initiatives have encouraged the cultivation of drought-resistant crops and promoted kitchen gardening by women's groups. At the same time, rangeland management committees have helped regulate grazing, thereby reducing land degradation. Women, in particular, play a central role in water management and food preservation practices, enhancing household resilience to drought. Training on solar dryers has also enabled them to preserve vegetables and fruits, ensuring food availability during periods of scarcity.

This bottom-up approach, rooted in traditional knowledge and community participation, demonstrates how gender-responsive and nature-based solutions can strengthen resilience against climate risks. It also shows how integrating indigenous practices with modern innovations enhances long-term sustainability.

Self-Assessment / Key Questions & Answers

Q1. Given Scenario: If a low-income neighborhood in Karachi adopts rooftop rainwater harvesting to tackle flooding and water shortages, how could community participation and indigenous knowledge ensure the long-term success of this initiative?

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Q2. Given Scenario: If slum dwellers in Lahore design localized waste management and drainage improvements, how can inclusive, participatory planning with women, youth, and NGOs enhance the sustainability of their climate adaptation solutions?

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Session 6.3: Community-Based Early Warning System

Session Objectives

By the end of the session, participants will be able to:

- Explain the concept, purpose, and core components of a community-based early warning system
- Identify the roles and responsibilities of CBEWS committees and key stakeholders involved in early warning dissemination.
- Demonstrate effective communication strategies for disseminating early warning messages in community settings.

Duration

01 hour 30 minutes

Facilitation Methodology

Group Work, Interactive Lecture, Probing Questions for Discussions, and Q/A

Training Aids Required

- Meta cards in four different colors (pink and yellow)
- Whiteboard
- Multi-color markers
- Multimedia with laptop and screen
- Masking tape
- Session handouts

Training Approach

1. The facilitator begins by introducing the participants and explaining that early warning is not only the receiving of information but also facilitates communities to take the necessary steps to save lives, livelihoods, and property.

   Probing question: The facilitator can introduce the session by asking the following provocative question: *"How many of you have received a disaster warning personally, and how does the community react to it?"* This helps participants relate the topic to their own experiences.

2. The facilitator then presents the concept of early warning systems with the distinction between the technical and top-down warning service and the people-centered system, which is community-based.
3. The facilitator should highlight examples from Pakistan and other countries that are already good models. CBEWS helps communities to take preventive measures and minimize losses.

Probing question: The second probing question to be asked here is: *"Why do you believe that warnings do not always find their way to the people who most require them?"*

4. Then the facilitator discusses how and why CBEWS committees are formed. Participants are guided through the roles of committee members, which include monitoring threats, translating technical information into local languages, and utilizing multiple channels of communication, such as mosque announcements, posters, radios, and community boards. To make this part more interesting, the facilitator can pose questions as follows: In case you were part of the CBEWS committee, what would be the local approach you would adopt to ensure that everyone in your village was warned in a short period?

Group Work: Before proceeding further with the session, conduct a group exercise among four groups by giving the following questions for discussions and presentations.

Group Exercise Questions

Group One: Message Receiving

- *Who in the community should be responsible for receiving early warning messages from official sources?*
- *What challenges might they face in receiving these messages on time?*

Group Two: Information Filtering

- *How should the committee verify and filter information before sharing it with the community?*
- *What steps can be taken to avoid spreading rumors or false alarms?*

Group Three: Warning & Dissemination

- *What are the most effective ways to warn the community to give them a warning for an evacuation?*
- *How can the committee ensure that vulnerable groups (women, the elderly, differently abled people) receive timely warnings?*

Group Four: Evacuation Support

- *What roles should committee members play in helping families evacuate safely?*
- *How can the committee coordinate with local authorities and resources (e.g., transport, shelters)?*

5. Gave them 30 minutes for group work, and 5 minutes to each group for presentations and Q/A session.
6. After the group presentations, the facilitator shall continue his/her session. The facilitator describes the key characteristics of CBEWS, including inclusiveness,

accessibility, credibility, clarity of roles, and validated data, following the group exercise.

7. The session ends with a wrap-up where the facilitator summarizes some crucial insights:
8. To conclude, the facilitator should ask a final probing question: “What can you do in your own community in a straightforward step to empower early warning?”. This stimulates self-reflection and ownership.

Background Material of the Session

6.3.1. What is an early warning system?

Early Warning System (EWS) is an initiative that focuses on systematic data collection, analysis, and formulation of recommendations, including disaster risk assessment and information sharing, whether qualitative, quantitative, or a blend of both. Key stakeholders involved in the EWS are communities themselves, local, provincial, and national governments, regional institutions and organizations, international bodies, non-governmental organizations, the science and academic community, and the private sector.

The objective of EWS must be people-centred to:

- Empower individuals and communities threatened by hazards to act in sufficient time and an appropriate manner;
- Systematically collecting data and undertaking risk assessment;
- Developing hazard monitoring and early warning services;
- Communicating risk information and early warnings;
- Building community response capacities.

6.3.2. Community-based early warning system

Community-Based Early Warning Systems (CBEWS) are rooted in the communities and managed by them. Early warning systems empower individuals and communities threatened by hazards to perform in sufficient time and in an appropriate manner, thereby reducing the possibility of personal injury, loss of life, damage to property and the environment, and loss of livelihoods. It is based on a *"people-centered"* approach that empowers individuals and affected communities to take appropriate action to protect their belongings. Furthermore, CBEWS helps reduce economic losses by enabling people to better protect their assets and livelihoods.

CBEWS suggests that people within a community can be capable, and it empowers them to protect and prepare themselves, making them resilient against the disastrous effects. The communities are in the best position to undertake preparedness measures and anticipatory actions against disasters. The basic requirements of CBEWS are that individuals and institutions are aware of what threatens them, that people can communicate changes in threats, and that they are in a position to respond.

6.3.3. Formation of the CBEWS committee

It is crucial for communities to be well-prepared by establishing an internal early warning system committee under the UCDMC/VDMC that is adequately trained and connected with the local government and other relevant stakeholders. The committee can further assign primary and secondary roles and responsibilities to individuals and groups. The committee members should be adequately trained with enough knowledge and awareness about the stakeholders from whom the information about impending hazards can be obtained.

Besides, it has been commonly observed that technical jargon is used to disseminate EWS information once it is transmitted from the responsible sources. The CBEWS committee's role is to communicate the information in a local, user-friendly language.

It is also suggested to utilize multiple communication sources used for warning dissemination (e.g., community meetings, notices, posters, verbal or pictorial messages, Radio/TV, local newspapers, and other indigenous means).

For larger dissemination of the message/warning updates, "Information Boards" can be placed at various vital locations in the communities, such as:

- Schools or government buildings
- Stores/bazaars
- Bus/wagon stands
- High-rise places of a particular community
- Outside mosques or any other religious places

Note: In the next session, there will be a detailed discussion on the use of digital tools for delivering early warning to the general public.

6.3.4. Essential features of the community-based early warning system

- All community members, especially the vulnerable groups, should be involved at all stages of the CBEWS, from designing to operating the systems, receiving the warning messages, and responding to the warning.
- Measures taken should be based on the needs of everyone in the community, including the most vulnerable segments of the community.
- Designed with the needs, capacities, and cultural context of the community in mind, ensuring accessibility for all, including vulnerable groups.
- Ensure that people with mobility challenges, sensory impairments, or low literacy levels can still receive and understand the warnings.
- CBEWS measures will enhance the capacity of the community members to deal with their situation.
- Clear assignment of tasks for who monitors, who communicates, and who coordinates during an alert.

- Uses verified and trustworthy data sources to prevent false alarms and maintain community trust.
- Meaningful participation in the decision-making process of EWS.

Case Study 4: Empowering Communities through Advanced Early Warning Systems in Ghizer

The Aga Khan Agency Habitat-Pakistan has established an Early Warning System in Sherqilla, Ghizer, which has proven to be a lifesaver for the communities. The system enables residents to save significant time, and warnings issued based on real-time data can be shared among residents, allowing them to evacuate to safer ground before disasters occur. Not only does it save lives, but it also causes less damage to personal property, crops, and livestock in this area, where most disasters strike.

In Pakistan, especially in mountainous regions, the deployment of the latest tools in community-based EWS is crucial, as sudden-onset threats such as flash floods, glacial lake outburst floods, and landslides may occur. It is no longer possible to apply traditional knowledge to this end; nowadays, we observe that climate-induced disasters are becoming more frequent and more severe than before. The incorporation of recent technologies, such as automatic weather stations, river gauge sensors, cell phone-based alert communication, and GIS to monitor, helps position local areas so they are prepared in time to act.

Advanced EWS improves trust participation at the community level. Residents who have been trained in alerts and evacuation procedures feel more confident to act when alerts and emergency evacuation procedures are undertaken. Women, youth, and volunteers involved in monitoring stations and disseminating warnings contribute to inclusive risk reduction, ensuring that no one is left behind. Moreover, in combination with community mobilization activities, including drills and simulation exercises, as well as community education, these tools enable early warnings to become early action.

The case study of Sherqilla highlights the potential of combining the impact of modern technologies with community ownership as a viable form of resilience. It illustrates that investments in localized EWS are not only about technology but also enable communities to be empowered in making informed and timely decisions to save lives and protect livelihoods.

Self-Assessment / Key Questions & Answers

Q1. Long Question: Explain the essential features of a community-based early warning system. In your answer, discuss inclusiveness, accessibility, trust, and community participation.

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Q2. Long Question: Describe the formation and roles of a CBEWS committee. How should it assign responsibilities, communicate warnings in simple language, and use different communication methods to reach all segments of the community?

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Q3. Where can community "Information Boards" for early warning updates be placed?

a) Inside committee offices only
b) At national government offices
c) High-rise buildings, schools, bus stands, and religious places
d) Private houses only

Correct Answer: C

Q4. What is the main purpose of a Community-Based Early Warning System?

a) To replace the role of national early warning systems
b) To only monitor weather patterns for research purposes
c) To rely on government aid after a disaster
d) To empower communities to act in time and reduce disaster impacts

Answer: D

Q5. Which of the following is a key role of the CBEWS committee?

a) Communicating technical information using complex scientific terms
b) Relying only on international agencies for information
c) Translating and sharing warnings in a local, user-friendly language
d) Developing new hazard models at the national level

Answer: C

References

- International Institute for Disaster Risk Management, article published on *"Early Warning and Early Warning Systems"*.
- Save the Children UK experiences on piloting Community Based Early Warning Systems in 3 districts of Somali and Afar Regions of Ethiopia *"What worked and what didn't"* by Abdurrahman Ali Issack and Ahmed Yusuf, Consultants, 2010.
- United Nations Strategy for Disaster Risk Reduction, DKKV. (2006), "*Early Warning - From concept to action".*



Session 6.4: Digital Preparedness and Mobile-Based Early Warning

Session Objectives

By the end of this session, participants will be able to:

- Explain the concept of digital preparedness and the role of mobile-based systems in early warning and disaster response.
- Identify accessible and community-appropriate digital tools for early warning dissemination.
- Demonstrate how mobile phones, megaphones, FM radios, and solar-powered devices can strengthen early warning systems, particularly in remote or vulnerable communities.
- Explore how printed community boards, radio, and app-based alerts can complement traditional warning methods.
- Highlight the value of community training, mock drills, and inclusive engagement (especially youth, differently abled people, women, and elders) in the success of digital early warning systems.

Duration

01 hour

Facilitation Methodology

Group Work, Interactive Lecture, Probing Questions for Discussions, and Q/A

Training Aids Required

- Meta cards in four different colors (pink and yellow)
- Whiteboard
- Multi-color markers
- Multimedia with laptop and screen
- Masking tape
- Session handouts

Training Approach

1. The facilitator begins by introducing the session objectives and insists on listening carefully, as this is a crucial session embedding new concepts and tools used in disaster risk reduction.

   Probing question: The facilitator can begin the discussion by asking the following question: *"What was the last time you got a warning message on your phone, radio, or some other medium?". How did you respond to it?"* This helps participants relate the topic to their own lives.

2. The session proceeds to define digital preparedness- the capacity of communities to access digital applications, mobile devices, and communication systems to provide

early warnings and respond to disasters. When the facilitator emphasizes that having devices is not enough, but knowing how to use them effectively is, the focus shifts to utilizing devices in the event of an emergency.

Probing question: The facilitator can use the following question to get people to reflect: *"Why do you think that some warnings are received by communities late, despite the availability of the technology and expertise?".*

3. After a fruitful discussion on the above questions, the facilitator shall discuss the use of mobile phones as the most convenient tool of early warning that is backed by megaphones, FM radios, solar-powered chargers, and community boards. Real-life examples are provided, such as the use of mosque loudspeakers and WhatsApp messages, as well as FM radios with messages in rural communities.

Probing question: One of the probing questions in this case would be: *"In your community, which would work best in reaching everybody the fastest and most reliable tool would be a mobile phone, radio, or even a megaphone?".*

4. After continuing the discussion on the above question. The facilitator then presents a brief group activity to further engage the participants in the session.

Group Work: Participants are divided into four groups, where they are instructed to imagine that their community has received a flash flood warning. Every group is to identify:

1. *What digital media would they use to disseminate the warning?*
2. *Their way of making sure that helpless groups of people like women, the elderly, and differently abled people receive this message.*

5. Ten minutes are allocated to groups discussing and making one or two points each. The group will then present their point of view, while the facilitator will summarize the discussion. This exercise strengthens the practical thinking and emphasizes inclusivity in digital preparedness.
6. After the exercise, the facilitator explains how the use of printed community boards and dashboards at PEOCs/DEOCs could be used to supplement digital systems to ensure they have visibility all the time.
7. The session also highlights the need for community training, mock drills, and their inclusive participation, particularly of youth, women, and elders.

Probing question: The facilitator summarises the tools discussed and their advantages, then finishes with a reflective question: "*What is one single thing your community can do this month to strengthen its digital early warning system?"* This guarantees that the participants go home with something to do.

Useful Tips for the Facilitator

- Invite a real-life example or recent disaster event in which mobile-based warnings saved lives or where they failed, because of communication gaps.
- Asking probing questions: Regular probing questions help keep the conversation going without protracted discussions.

- Put their answers on the board or flip chart of the participants to confirm their contribution.
- Remain very energetic through the use of different tones, body language, and visual attention.

Background Material of the Session

6.4.1. Introduction of digital preparedness and MbEW

Over the past several years, communities worldwide—especially in disaster-prone countries like Pakistan—have faced an increase in the frequency and intensity of disasters, including riverine and flash floods, wind and snow storms, heatwaves, and earthquakes. This rising threat has underscored the critical importance of early warning systems that are not only accurate but also timely, accessible, and effective. Traditionally, communities relied on methods such as mosque loudspeakers, mechanical megaphones, drum beating, sirens, and informal word-of-mouth warnings to raise alerts. While these methods continue to hold value, they often fall short in terms of speed, clarity, and reach.

With the growing access to mobile phones, internet connectivity, and digital tools, a new opportunity has emerged. Digital preparedness and mobile-based early warning systems now offer more effective and inclusive solutions for disaster communication. These modern tools are not meant to replace conventional practices but to strengthen them by adding reliability, broader coverage, and faster information flow.



Conventional practices for early warning in flood prone areas

6.4.2. Understanding digital preparedness

Digital preparedness refers to a community's capacity to use digital platforms, mobile devices, and communication technologies as part of their early warning, disaster preparedness, and response strategies. It extends beyond the availability of devices and networks; it also involves

the knowledge, confidence, and skills of community members to use those tools effectively in a crisis.

When digitally prepared, a community can receive alerts as soon as a threat is detected, interpret weather forecasts and hazard maps, communicate quickly with local officials and volunteers, report damage and needs during emergencies, and organize response efforts efficiently. This preparedness enables a more proactive and coordinated response, ultimately reducing the impact of disasters and improving recovery outcomes.

6.4.2.1. Mobile phones as the foundation of early warning

Among the many digital tools available, mobile phones stand out as the most widespread and accessible technology, even in remote or low-income areas. In countries like Pakistan, where mobile penetration is relatively high, these devices have become a foundation for early warning dissemination.

People can receive early alerts through text messages, automated voice calls, WhatsApp notifications, or even app-based forwarded messages.

Unlike more advanced systems that may require internet access or specialized knowledge, basic mobile-based alerts can be understood and accessed by a wide range of users. They work well on feature phones and do not always rely on mobile data. Moreover, mobile alerts can be adapted to local languages, making them understandable to the community, and in some cases, they even allow two-way communication for feedback or confirmation of receipt.

6.4.2.2. Digital tools and equipment suitable for community use

While highly technical systems such as satellites, radar networks, and advanced modelling tools are essential for national-level monitoring, they are generally inaccessible to local communities. However, there are several practical, low-cost, and user-friendly tools that communities can effectively use for local early warning and preparedness.

- **Mobile phones**, both basic and smartphones, remain the most versatile tool for receiving warnings, sharing updates, and coordinating responses. They are already present in most households and require little to no technical training to use.
- **Megaphones** and public address systems play a crucial role, particularly when quick verbal warnings are needed in open or crowded areas. These tools are simple, affordable, and effective, especially for reaching elderly or illiterate members of the community.
- In areas with unreliable electricity, **solar-powered chargers** are becoming essential. They help ensure that mobile phones and radios remain charged during power outages, maintaining connectivity during emergencies.



Megaphone is powerful tool to inform villagers during a flood emergency

- **FM radios or community radio stations** continue to be vital in rural areas. They can broadcast early warnings, safety instructions, and real-time updates in local languages and are particularly helpful for populations with low literacy levels. Radios can run on batteries or solar power, making them highly adaptable during emergencies.

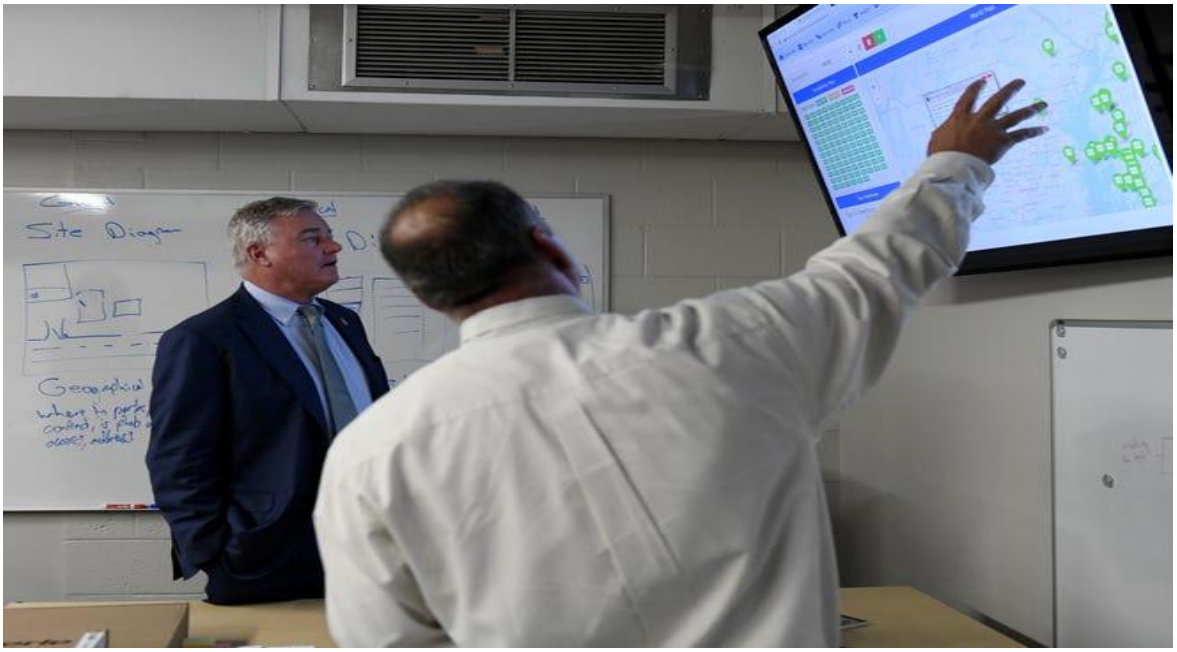


FM radio is one of most common sources of information in rural areas

- The **interactive voice response system** is very useful tool for those without smartphones or internet access. People can call a local or toll-free number to hear recorded early warning messages in their local languages.
- Several **mobile-based applications** have also emerged, such as those provided by national meteorological departments or disaster management authorities. These apps offer real-time weather alerts, forecasts, and safety guidelines. They are handy for smartphone users in urban and semi-urban areas.
- Another innovative yet simple tool is the use of printed **community information boards**. These can display warning messages, evacuation plans, or even QR codes linking to real-time updates online. When placed at prominent locations—such as schools, mosques, markets, or transportation hubs—they serve as constant reminders and access points for disaster information.
- Nowadays, many PDMAs and DDMAs have established **centralized dash board** to monitor hazards, track weather patterns, assess evacuations progress, and oversee relief operations. While these systems are primarily designed for operational use, they can offer significant value to general public if adapted accordingly. For example, integrating the dashboard with social media channels ensures that updates are automatically shared through platforms like Facebook, X/Twitters, WhatsApp community groups, and community information boards, significantly widening the reach of early messages.

6.4.3. Building capacity through training and community engagement

Introducing digital preparedness and mobile-based warning systems must go hand in hand with training and awareness-raising efforts. Communities need to be familiar with how these tools work and confident in using them during emergencies. Youth, women, volunteers, and disaster management committee members should be trained to operate mobile phones and radios, understand warning signals, forward messages, and take appropriate actions.



The use of Dash Board in PEOC/DEOC is powerful tool to display information for the general public

Training sessions should also involve practical drills and demonstrations. Community meetings, school sessions, and mosque gatherings can serve as platforms for spreading awareness. Encouraging local health workers, teachers, and religious leaders to participate helps to foster trust and acceptance, especially among more vulnerable or isolated members of the community.

Self-Assessment / Key Questions & Answers

Q1. What is meant by "digital preparedness" in disaster management?

a) The community's ability to use digital tools for early warning, preparedness, and response
b) Having access only to national-level satellite data
c) The exclusive use of smartphone apps for forecasts
d) Relying only on traditional warning methods like drum beating

Correct Answer: A

Q2. Which of the following tools is most widely accessible for mobile-based early warning in Pakistan?

a) Dashboards at the provincial level
b) Megaphones
c) Smartphones with internet only
d) Basic mobile phones (through SMS or voice calls)

Correct Answer: A

Q3. Why are solar-powered devices important in digital preparedness?

a) They are cheaper than mobile phones
b) They help ensure communication devices remain functional during power outages
c) They can replace radios completely
d) They are only needed in urban areas

Correct Answer: B

Q4. Given Scenario: Imagine a rural community where electricity frequently goes out during floods. Mobile phones often run out of charge, and people cannot receive timely alerts. As a CBEWS committee member, what low-cost digital tools or strategies would you suggest to ensure early warning messages still reach everyone?

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Q5. Long Question: In an urban neighbourhood, people have access to smartphones and the internet, but often ignore formal warnings. If you were leading the community's digital preparedness training, what steps would you take to make sure early warning messages are received, trusted, and acted upon quickly?

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References

- Karen. Me (2023), "*Warnings Briefing Note: Mobile-based Early Warning Systems for Effective and Inclusive Alerting".* Preparecenter.org
- International Telecommunication Union (2023), *"Digital transformation and early warning systems for saving lives".*
- GSM Association (2024), *"Mobile-Enabled Early Warning Systems: The GSMA and the Early Warnings for All Initiative".*



Session 6.5: Gender and Child Protection in Emergencies

Session Objectives

By the end of this session, participants will be able:

- Highlight the risks faced by women, girls, and children during disasters due to the existing gender inequalities and lower participation.
- Explain the need for inclusive planning and targeted interventions for gender and child protection in all phases of disaster risk management, including mitigation, preparedness, response, and recovery.
- Apply knowledge of gender and child protection in line with the humanitarian standards during emergency responses.

Duration

45 minutes

Facilitation Methodology

Interactive Lecture, Probing Questions for Discussions, and Q/A

Training Aids Required

- Whiteboard
- Masking tape
- Session handouts
- Multi-color markers
- Multimedia with laptop and screen

Training Approach

1. The facilitator introduces the session by welcoming the participants and presenting the goals of the session, and the increased risk of women, girls, and children during an emergency because of the existing inequalities.

   Probing Question: To create interest, the facilitator can pose a question: *"Why are women and children usually more affected in the case of disasters than other groups of people?"* This prompt is to consider lived experience and local reality.

2. The session continues with the explanation of the risks exposed to women, girls, and children during emergencies and includes gender-based violence, exploitation, neglect, and obstacles to accessing services. Pakistan can serve as an example of situations where difficulties arise in distributing relief or in ensuring sufficient safety in shelters.
3. The facilitator underlines the fact that in most cases, emergencies exacerbate gender inequalities.

Probing Question: The facilitator can follow the discussion by asking a second question: *"What can you recall as some examples of gender or child protection issues that you have witnessed in your own district or community during emergencies in the past?".*

4. The next concept that the facilitator presents is inclusive planning and specific interventions. This involves secure shelters, gender-sensitive risk assessment, child-friendly services, and gender-based violence prevention mechanisms. One can refer to humanitarian standards such as the Core Humanitarian Standard, Sphere Protection Principles, and the Child Protection Minimum Standards.
5. The session is then used to describe how gender and child protection can be mainstreamed in DRM- preparedness and response to recovery and mitigation. Examples are women and children's safe spaces, preparedness drills in schools, and psychosocial support programs.

Probing Question: To foster the reflection, the facilitator can pose the following question: *"What is one simple yet effective thing that can be done to make shelters safer for women and children?"*

6. After the discussion, the facilitator draws attention to the importance of policies, resources, and accountability mechanisms. This involves protection budgeting, training for humanitarian staff, codes of conduct, and leadership development for women and children.
7. The facilitator may use a reflection question to conclude the session: In your position, what can you personally do to facilitate gender and child safety in managing disasters?
8. The facilitator wraps up the session with the summation of three essential messages:
   a) *Emergencies disproportionately affect women, girls, and children.*
   b) *Proper protection and planning should be inclusive at all levels of DRM.*
   c) *Humanitarian standards offer concrete guidance to achieve dignity, safety, and rights.*

Background Material of the Session

6.5.1. Gender and child protection in emergencies

Disasters and emergencies disproportionately affect women, girls, and children due to existing inequalities and weakened protection systems in Pakistan. These groups face heightened risks such as gender-based violence, exploitation, neglect, and lack of access to essential services. To address this, gender and child protection must be integrated into all phases of disaster risk management, including preparedness, response, recovery, and mitigation.



Women and girls have limited access to relief distribution

This involves gender-sensitive risk assessments, inclusive planning, safe and accessible shelters, child-friendly services, and effective protection mechanisms. Training responders and ensuring supportive policies and budgets are also critical. Ultimately, safeguarding women and children in emergencies is a humanitarian priority that strengthens the overall resilience and inclusiveness of disaster responses.

According to the Core Humanitarian Standard Commitment 1, humanitarian responses must be appropriate and relevant to the needs of affected populations, particularly the most vulnerable. The Sphere Protection Principles also emphasize that humanitarian actors must prevent further harm and prioritize the dignity, rights, and safety of affected people.

6.5.2. Addressing special risks, vulnerabilities, and protection needs

In disasters and emergencies, women, girls, and children face unique vulnerabilities due to pre-existing social, economic, and gender inequalities. These groups are at increased risk of harm, particularly gender-based violence, exploitation, and neglect. Emergencies often dismantle protective systems and force coping strategies such as early marriage or child labor. Children separated from families are especially vulnerable to trauma and abuse, while pregnant women, adolescent girls, and differently abled children face further barriers to healthcare and support. Cultural norms can limit their ability to seek help. Addressing these challenges requires inclusive disaster preparedness and response efforts that prioritize protection, access to services, and participation of affected groups.

6.5.2.1. Gender gaps and social norms

Emergencies often worsen existing gender inequalities and harmful social norms, increasing the vulnerability of women, girls, and children to violence, exploitation, and neglect. Limited mobility, lack of decision-making power, and cultural taboos can prevent them from accessing help and essential services. This exclusion increases their exposure to risks, including gender-

based violence and harassment, while children may face early marriage, child labor, or recruitment into armed groups.

6.5.2.2. Mainstreaming gender and child protection in DRM

Incorporating gender and child protection into every stage of DRM ensures inclusive, equitable, and effective emergency responses. Risk assessments must be gender-sensitive and child-focused to identify vulnerabilities. In preparedness, measures like safe spaces, targeted training, and early warning access for all are crucial. During response, services must ensure safety through secure shelters, sanitation, and a complaint redressal mechanism. Recovery efforts should address pre-existing inequalities by supporting inclusive livelihoods, psychosocial care, and access to education. Policy and advocacy must institutionalize protection through budgeting, representation, and legal safeguards.



School level regular drills to enhance preparedness for Tsunami hazard in District Gwadar

Key Humanitarian Standards are aligned explicitly with Gender and Child Protection in Emergencies.

Core Humanitarian Standard (CHS)

- **CHS 1 – Appropriateness and Relevance**: Gender and child protection needs must be identified and prioritized through inclusive and disaggregated needs assessments.
- **CHS 2 – Effectiveness and Timeliness**: Programs must deliver timely services that reduce risks for women, girls, and children.
- **CHS 3 – Strengthening Local Capacities and Avoiding Harm**: Support community-based protection systems and ensure interventions do not reinforce harmful norms.
- **CHS 4 – Participation and Inclusion**: Women, girls, and children must be actively involved in all decision-making processes and DRM planning.
- **CHS 5 – Accountability and Complaints**: Safe, confidential, and accessible complaint mechanisms must be in place for GBV and child protection concerns.

- **CHS 6 – Coordination and Complementarity**: Collaborate with protection actors, women's organizations, and child protection agencies.
- **CHS 7 – Learning and Adaptation**: Gender and child protection needs should inform program adjustments and lessons learned.
- **CHS 8 – Competent and Well-Managed Staff**: Humanitarian workers must be trained on gender equality, child safeguarding, and GBV prevention.
- **CHS 9 – Resource Management**: Allocate specific budgets and resources for gender and child protection activities.

Sphere Protection Principles

- **Principle 1 – Avoid exposing people to harm**: Design shelters, services, and aid in ways that prevent GBV and child abuse.
- **Principle 2 – Ensure access to impartial assistance**: All individuals, especially women and children, must have equal access to services.
- **Principle 3 – Protect from physical and psychological harm**: Establish safe spaces, protection referral pathways, and PSS support.
- **Principle 4 – Support rights claims and recovery**: Empower women and children to exercise their rights and access legal, health, and social support.

Minimum Standards for Child Protection in Humanitarian Action

- **Standard 1 – Coordination**: Child protection must be a dedicated component of humanitarian coordination.
- **Standard 4 – Child Protection Monitoring**: Monitor risks such as family separation, early marriage, and child labor.
- **Standard 8 – Sexual and Gender-Based Violence**: Integrate GBV prevention and response into all sectors.
- **Standard 9 – Sexual Exploitation and Abuse**: Enforce codes of conduct and complaint mechanisms for affected children.
- **Standard 11 – Children Associated with Armed Forces**: Prevent recruitment and support reintegration.
- **Standard 17 – Community-Based Mechanisms**: Support local actors to protect children through community-led initiatives.

IASC Gender Handbook

- **Gender analysis** must be conducted at every DRM phase to ensure appropriate interventions.
- **Sex- and age-disaggregated data (SADD)** should guide program design.
- **Life-saving responses** (food, shelter, WASH, health) must be tailored to reduce gendered risks.
- **Leadership and voice**: Women and adolescent girls should be supported to lead and participate in emergency response.

Self-Assessment / Key Questions & Answers

Q1. Given Scenario: If a flood forces women and children into temporary shelters, how can gender-sensitive facilities and child-friendly services prevent exploitation and neglect?

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Q2. Given Scenario: If cultural norms restrict women's mobility during a flood emergency, what inclusive strategies could ensure their access to relief and protection services?

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References

- National Disaster Management Authority, Government of Pakistan, *"Gender and Child Cell Guidelines".*
- United Nations Office for Disaster Risk Reduction (2015), *"Disability-Inclusive Disaster Risk Reduction: Toolkit".*
- World Health Organization (2013), *"Guidance Note on Disability Inclusion in Emergency Risk Management."*
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- Asia-Pacific Development Center on Disability (APCD), *"Mainstreaming Disability in DRR".*
- International Federation of Red Cross and Red Crescent, *"All Under One Roof: Disability-Inclusive Shelter and Settlements in Emergencies".*
- United Nations Office for Disaster Risk Reduction, *"Policy Guidance: Gender and Disaster Risk Reduction".*
- UNWomen, *"Toolkit on Gender-Responsive Disaster Risk Reduction".*



Session 6.6: Promotion of the CBDRM Approach Among the Coastal Communities

Session Objectives

By the end of this session, participants will be able to:

- Explain the process of the CBDRM approach that addresses coastal hazards such as cyclones, sea-level rise, and coastal flooding.
- Apply knowledge of community-specific early warning systems for coastal hazards to ensure timely and community-led emergency actions.

Duration

01 hour and 15 minutes

Facilitation Methodology

Group Work, Interactive Lecture, Probing Questions for Discussions, and Q/A

Training Aids Required

- Whiteboard
- Masking tape
- Videos of Cyclones and Coastal Hazards
- Loudspeakers
- Session handouts
- Multi-color markers
- Multimedia with laptop and screen

Training Approach

1. The facilitator introduces them by welcoming the participants, outlining the objectives of the session, and placing the context of why Pakistan is susceptible to cyclones, storm surge, and coastal flooding.

Group Exercise: To start the formal session, conduct the group exercise by making four groups. Please give them the following four questions to all groups to work on and present them after 30 30-minute group discussions.

1. *What are the major hazards and risks faced by coastal communities? How do these affect lives, livelihoods, and infrastructure?*
2. *How can local communities actively contribute to disaster preparedness and response under the CBDRM approach? Give examples from your own coastal context.*
3. *What challenges or barriers do coastal communities face in adopting CBDRM practices?*
4. *What practical steps can strengthen the CBDRM approach among coastal communities?*

2. After the group work and presentations of all four groups, summarize the key points that each group discussed in the plenary.
3. The facilitator starts showing PPT slides and first states how the CBDRM strategy enhances resilience in the coastal communities by the use of participatory risk assessment, preparedness, early warning, and robust infrastructure.

   Probing Question: Here, the facilitator may pose the question: "*What makes communities living on the coast be the first to be affected in times of cyclones?".*
4. The session goes on to explain essential weaknesses of coastal communities. These include inadequate housing, ineffective infrastructure, delayed early warning messages, and a reliance on fishing and farming as a livelihood.

   Probing Question: The facilitator can emphasize the impact of increasing sea levels and the intrusion of salinity on agriculture, as well as the displacement of families. A question to ask here would be: *"Which do you think is the worst impact of climate change on livelihood in the coastal area: fishing, farming, or trade? Why?"*
5. The facilitator then presents CBDRM approaches to coastal hazards. They can be mangrove restoration to protect the coastlines, houses robust against cyclones, raised community shelters, embankment, drainage maintenance, and community-based evacuation plans.
6. The facilitator can provide a case study of Keti Bunder, where communities conducted risk assessments, planted mangroves, and received early warnings through announcements at the mosque and mobile phone services.

   Probing Question: To further reflect on the point, the facilitator can pose the question: *"Which of these strategies do you think would be the least difficult to implement by your community, and which the most difficult?"*
7. The facilitator continues to highlight the importance of community-based early warning systems. They are based on local languages, mosque announcements, megaphones, and trained volunteers to ensure timely and inclusive warnings.
8. The lively discussion of livelihood resilience and institutional linkages follows this. The communities living along the coasts are advised to diversify with salt-resistant crops, eco-tourism, and sustainable fish farming. Meanwhile, local disaster committees will need to connect to PDMAs, DDMAs, and NGOs to receive technical support and funding.
9. Finally, the facilitator can pose one last reflective question:

   Probing Question: *"What can your community do to mitigate the dangers of coastal disasters ahead of the next monsoon season?"*
10. This guarantees that participants go away with a practical comment to make.

Useful Tips for the Facilitator

- The facilitator should download the videos on the significant cyclones that occurred in the past in Pakistan. While showing a video during the session, the facilitator may ask questions to provoke discussion.

- Confirm the contributions of the participants by writing down key words on the board or flip chart.
- Probing questions must be used regularly to promote reflection, and no formal group work.

Background Material of the Session

6.6.1. CBDRM in coastal communities

CBDRM strengthens the resilience of coastal communities in Pakistan through inclusive, participatory DRR and CCA strategies. Key components include mobilizing communities, conducting participatory risk assessments, participatory planning, and implementation. Strengthening early warning systems and improving cyclone-resistant infrastructure further reduces the impact of disasters.



Promoting CBDRM approach among coastal communities

6.6.2. Key vulnerabilities of coastal communities in Pakistan

Coastal districts such as Thatta, Sujawal, and Badin in Sindh, along with Gwadar and Lasbela in Balochistan, are geographically located in low-lying areas that are highly exposed to storm surges and cyclonic winds, making them particularly vulnerable to natural hazards. The situation is exacerbated by poor infrastructure, including the lack of paved roads, durable housing, and resilient shelter structures in many coastal villages, which leaves them highly susceptible to damage during disasters. Additionally, limited early warning systems mean that communities often do not receive timely or understandable alerts, especially in local languages, which hampers safe evacuation and swift response. Livelihood vulnerability is also a significant concern, as many residents depend on fishing, farming, and climate-sensitive occupations that are easily disrupted by cyclones, flooding, or salinity intrusion.

6.6.3. Relevance of CBDRM in coastal hazard context

6.6.3.1. Cyclone preparedness and local response

The Arabian Sea is witnessing increasing cyclonic activity, posing significant threats to coastal communities in Pakistan. Recent cyclones, such as Yemyin in 2007, Phet in 2010, and Biparjoy in 2023, have highlighted the lack of local preparedness and response mechanisms. In this context, CBDRM plays a vital role in strengthening community resilience. It equips coastal populations with the necessary skills and systems to effectively monitor early warning signs, interpret weather forecasts, activate community-based evacuation plans, and mobilize trained local response teams for first aid and search-and-rescue operations.

6.6.3.2. Sea-level rise and coastal erosion

Rising sea levels have resulted in land submergence, salinity intrusion, and coastal erosion in vulnerable districts such as Thatta, Badin, and Gwadar. These environmental changes threaten

the livelihoods and habitats of coastal communities. To address these challenges, CBDRM strategies play a crucial role by promoting participatory risk assessments that help communities map and monitor the changing coastlines. They also support community-driven mangrove restoration, which serves as a natural safeguard against storm surges and erosion.

6.6.3.3. Storm surge risk reduction

Storm surges associated with tropical cyclones pose severe threats to low-lying coastal settlements, often leading to widespread displacement, loss of life, and destruction of property. CBDRM addresses these challenges by promoting the construction and maintenance of elevated community shelters and cyclone-resilient housing that can withstand extreme weather events. It also recommends the development of embankments and sea walls, designed with community input to ensure they meet local needs and conditions.

6.6.3.4. Flood risk management

Both riverine and urban flooding significantly impact coastal areas during the monsoon season, disrupting daily life, damaging infrastructure, and threatening livelihoods. CBDRM helps address these risks by ensuring that flood-prone zones are identified through participatory risk mapping, allowing for targeted preparedness and mitigation efforts. Additionally, local drainage systems are regularly monitored and maintained by trained community members, reducing flood risk and ensuring a swift recovery following inundation.

6.6.3.5. Tsunami awareness and preparedness

The coastal areas of Gwadar, Pasni, Ormara, Lasbella, and Karachi were struck by a devastating tsunami disaster in 1946, causing widespread damage to coastal communities. There is a probability of tsunami risk due to the Makran subduction zone in the Pakistan territorial sea coast. Given the short lead time between offshore seismic events and coastal impact, preparedness at the community level is critical.

CBDRM offers a significant approach for raising awareness and strengthening preparedness for tsunamis in coastal areas. While considerable efforts have recently been made to educate coastal communities in Sindh and Balochistan, maintaining vigilance requires regular drills, simulation exercises, and training programmes. Such activities help ensure that the general public remains alert, informed, and ready to respond swiftly to tsunamis and earthquakes in the coastal areas of Pakistan.

6.6.4. Tools for coastal hazard and risk assessment

CBDRM in coastal areas employs a variety of tools to strengthen local resilience and reduce disaster impacts. Participatory risk assessment tools such as risk mapping engage communities in identifying vulnerable locations, hazard-prone zones, and safe areas, guiding informed land-use and evacuation planning. Vulnerability and capacity assessment help determine which physical, social, economic, and environmental assets are most at risk, while also mapping out local resources and coping skills. The use of both secondary and primary data will help to identify the disaster-prone areas and various elements at risk.

6.6.5. DRR measures for coastal communities

- Anticipatory action planning involves the creation of local action plans detailing roles, responsibilities, evacuation routes, shelter sites, and communication protocols,

supplemented by mock drills and simulations to enhance readiness and reduce panic during real emergencies.

- Early warning systems are strengthened through community-based dissemination methods, including mobile alerts, mosque announcements, megaphones, flags, and trained volunteers, ensuring timely, accessible, and understandable alerts in local languages such as Sindhi and Balochi.
- Safe shelter and infrastructure planning promote the construction of resilient housing, including elevated plinths, cyclone-resistant roofs, and proper drainage systems. It also involves identifying and upgrading multi-purpose community shelters for emergency use.
- Livelihood resilience tools support climate-smart agriculture, such as salt-tolerant crops and raised-bed farming, and encourage sustainable fishing.
- Awareness and capacity building initiatives include regular community training, school-based education, and public campaigns on disaster preparedness, hygiene, first aid, and early warning interpretation.
- Institutional linkages and advocacy ensure that coastal disaster committees are connected to district disaster management authorities/units and NGOs, enabling advocacy for localized disaster risk management policies, funding allocations, and technical support to reinforce community resilience.

Case Study 5: Community-Based Disaster Risk Management in Keti Bunder, Sindh

Keti Bunder, located in the district of Thatta, Sindh, is one of the most climate-vulnerable coastal settlements in Pakistan. The community faces recurring threats from cyclones, storm surges, salinity intrusion, and sea-level rise, which disrupt livelihoods dependent on fishing and small-scale farming. Weak infrastructure and limited early warning dissemination in local languages further exacerbate the impacts of disasters.

To address these challenges, NGOs such as Pakistan Fisherfolk Forum (PFF) and WWF-Pakistan have promoted Community-Based Disaster Risk Management (CBDRM) strategies. These include the establishment of Village Disaster Management Committees (VDMCs) that conduct participatory risk assessments, identify evacuation routes, and organize mock drills. Local volunteers have been trained in disseminating early warnings through mosque announcements, megaphones, and mobile alerts in Sindhi, ensuring timely action.

Communities have also participated in mangrove restoration, planting thousands of saplings to act as natural buffers against coastal erosion and storm surges. Elevated community shelters and cyclone-resilient housing prototypes have been developed with local input to provide safer evacuation options. Women's groups play an active role in food preservation and awareness campaigns on hygiene, health, and disaster preparedness, ensuring a gender-responsive approach.

The Keti Bunder initiative shows how CBDRM empowers local communities to lead in resilience-building by combining indigenous knowledge (e.g., traditional weather forecasting and boat-making) with modern tools such as community mapping and mobile-based alerts. These strategies have reduced vulnerability, strengthened disaster preparedness, and provided climate-resilient livelihood alternatives such as eco-tourism and sustainable fisheries.

Self-Assessment / Key Questions & Answers

Q1. Which of the following is a key vulnerability of coastal communities in Pakistan?

a) Abundant cyclone shelters and paved roads

b) Limited early warning systems and poor infrastructure

c) Lack of access to international aid only

d) Over-dependence on technology for forecasting

Correct Answer: B

Q2. How does mangrove restoration contribute to CBDRM in coastal areas?

a) By providing wood for construction

b) By acting as a natural buffer against storm surges and erosion

c) By reducing the need for evacuation shelters

d) By eliminating the risk of tsunamis

Answer: B

Q3. What was one of the major lessons learned from the Keti Bunder case study?

a) Communities cannot lead resilience-building without government support

b) Reliance on external aid is more effective than community action

c) Combining indigenous knowledge with modern tools strengthens resilience

d) Digital tools are unnecessary in coastal disaster preparedness

Correct Answer: C

Q4. Given Scenario: If a flood forces women and children into temporary shelters, how can gender-sensitive facilities and child-friendly services prevent exploitation and neglect?

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Q5. Long Question: In your coastal community, sea-level rise and salinity intrusion are destroying farmlands and affecting fishing livelihoods. As a local leader, how would you apply the CBDRM approach to protect livelihoods, promote resilience, and engage vulnerable groups such as women and youth?

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Session 6.7: Disability Inclusive DRR

Session Objectives

By the end of this session, participants will be able to:

- Define who is considered a differently abled people in the context of DRR.
- Explain the peculiarities, risks, and specific needs of differently abled people during disasters.
- Identify common barriers that restrict the participation of differently abled people in preparedness and response activities.
- Explore inclusive approaches for early warning systems, evacuation planning, and community-based disaster management.
- Recommend practical steps to ensure full inclusion of differently abled people in CBDRM processes and functions.

Duration

01 hour

Facilitation Methodology

Interactive Lecture, Probing Questions for Discussions, and Q/A

Training Aids Required

- Whiteboard
- Masking tape
- Session handouts
- Multi-color markers
- Multimedia with laptop and screen

Training Approach

1. The facilitator will begin by welcoming the participants and setting the subject.

   Probing Question: To initiate the discussion, the facilitator can ask a fundamental introductory question, such as, *"What challenges do differently abled people encounter during emergencies in your community?"*

2. This will help them begin to think about the matter from their own perspective. The objectives of the session will then be distributed.
3. In the following PPT slides, it will be discussed who qualifies to be treated as a differently-abled person in terms of DRR. The facilitator can indicate that disability is not inability and that differently abled people can bring in practical knowledge and resilience. They will provide examples of physical, sensory, and cognitive impairments, as well as the interplay between these and environmental and social barriers, which can increase the population's vulnerability in the event of disasters.

4. Afterward, the facilitator will highlight inclusion strategies of CBDRM, following the already prepared slides. To involve participants, divide them into small groups and request that they specify two practical measures that their communities could undertake to make disaster response more inclusive. The plenary session will result in each group presenting its ideas.
5. In the last slides, the facilitator will emphasize the significance of disability-disaggregated information, response-training of the respondents on disability etiquette, and developing partnerships with disabled persons organizations.

> **Probing Question:** In conclusion, the members will be asked to consider one question: the closing question – *"What is one thing you can do within your community to make sure that not a single differently abled person is left behind in case of disasters?"*

6. Encourage less talkative participants to share their views, and motivate them by giving a round of applause when they contribute.
7. Conclude the session by describing the key takeaways

Useful Tips for the Facilitator

- Make sure that differently abled people are part of the training. Involve such participants in the discussion and have them share their experience.
- While delivering the presentation, try to relate the discussion to recent floods, earthquakes, or other emergencies that have occurred in recent times, and how differently abled people were affected and coped through community support.
- Use pictures, audio, and role-play or case studies to explain inclusive practices.

Background Material of the Session

6.7.1. Introduction of a differently abled person

A differently abled person is someone who has long-term physical, mental, intellectual, or sensory impairments that, in interaction with various attitudinal or environmental barriers, may limit their full and effective participation in society on an equal basis with others. These impairments can affect mobility, vision, hearing, speech, cognitive ability, or emotional regulation. It is essential to recognize that disability does not mean inability—differently abled people possess knowledge, resilience, and experiences that are vital for building safer and more inclusive communities.

6.7.2. Peculiarities and needs of differently abled people in disaster situations

The differently abled people often face heightened exposure to disaster risks. However, this increased vulnerability is not solely due to their physical, sensory, intellectual, or psychosocial impairments. Rather, it stems from the systemic inaccessibility of disaster risk management mechanisms and services. In the face of emergencies, differently abled people may not receive early warning messages in formats they can understand, such as sign language, Braille, or audio alerts tailored to their needs. Evacuation can become highly challenging for many, especially when physical infrastructure lacks accessibility features like ramps or handrails. In

many cases, emergency response mechanisms overlook the specific needs of differently abled people, leading to their exclusion from evacuation plans, relief distribution, and shelter arrangements.

6.7.2.1. The urgent need for inclusive disaster preparedness and response

These concerns highlight the critical need for a disaster preparedness and response system that is both inclusive and responsive to the unique requirements of differently abled people. An effective and inclusive system ensures that early warning messages are accessible through various modes such as Braille, audio, sign language, and visual alerts, thereby reaching all individuals regardless of their disability. Infrastructure must be free of physical barriers, with facilities such as wide entrances, ramps, accessible toilets, and safe shelter spaces designed with universal access principles in mind. Furthermore, the availability of assistive devices, mobility aids, and support persons is essential to facilitate safe evacuation and movement. Inclusion must also go beyond physical needs—differently abled people should be involved in community DRR committees, planning exercises, and monitoring mechanisms, ensuring their voices are part of every phase of the disaster management cycle. Upholding the dignity, safety, and rights of differently abled people throughout all disaster phases is not just a moral obligation but a fundamental element of effective risk governance.

6.7.2.2. Making DRR planning, response, and recovery more inclusive

Inclusion must be embedded as a foundational value in all CBDRM strategies. This means actively involving differently abled people in risk assessments, preparedness planning, evacuation simulations, emergency response activities, and post-disaster recovery efforts. An inclusive approach to DRR starts with adopting universal design principles in infrastructure and communication systems. Early warning systems should be multi-sensory—incorporating visual cues, audio signals, and vibration alerts to ensure comprehensive outreach. To enhance the response capacity of local actors, responders should be trained on disability etiquette and techniques for assisting people with varying impairments. Moreover, establishing local support networks or buddy systems can ensure that no individual is left behind during evacuations. Communication materials used for disaster awareness should be designed to cater to all audiences—this includes pictorial messages, Braille leaflets, sign-language-supported videos, and easy-to-read formats. Collecting disability-disaggregated data is crucial for guiding effective planning and resource allocation. Finally, partnerships with Differently Abled People Organizations and their formal inclusion in planning and review processes help foster more grounded and context-specific responses.

6.7.2.3. Barriers to participation and pathways to inclusion



Physical barriers in disasters

Despite growing recognition of the importance of inclusive disaster resilience, numerous barriers continue to hinder the participation of differently abled people in DRR activities. Physical barriers such as steep stairs, narrow doorways, or inaccessible terrain can prevent individuals from reaching evacuation sites or accessing relief services. Communication barriers often exist in the form of inaccessible warning messages or the absence of interpretation services for those with visual, hearing, or cognitive impairments. Social barriers, including deeply rooted discrimination, societal misconceptions about disability, and overprotective attitudes, further limit the autonomy and agency of differently abled people. Institutional barriers are also significant—many DRR frameworks still lack concrete policies, trained personnel, and mechanisms to ensure the participation of differently abled people in decision-making.

Overcoming these challenges requires a deliberate and sustained effort. Communities must begin with inclusive risk mapping exercises that identify households with members who have disabilities and assess their specific needs. Emergency plans should be flexible and allow differently abled people to take on roles based on their individual strengths and capacities, rather than being viewed solely as aid recipients. Disability-inclusive components should be integrated into community drills and emergency simulations to test and refine inclusive response strategies. Regular awareness and sensitization sessions are essential to shift community attitudes, reduce stigma, and promote empathy. These efforts, when taken together, pave the way for a more equitable and resilient disaster risk management system—one that recognizes diversity as a strength and prioritizes the safety and dignity of all its members.

Self-Assessment / Key Questions & Answers

Q1. What is the definition of differently abled people in DRR?

a) just the physically impaired ones.

b) Long-term impairment that restricts participation because of attitudinal or environmental constraints.

c) Temporarily injured people in the case of a disaster.

d) registered with a Differently Abled People Organization.

Correct Answer: B

Q2. Which one of the following is a primary cause of differently abled people' greater vulnerability in disasters?

a) Inaccessibility of the mechanisms and services of disaster risk management on a systemic basis.

b) differently abled people unwillingness to be part of the community.

c) Lack of education

d) Their impairments alone

Correct Answer: A

Q4. Given Scenario: During the monsoon season, heavy rainfall causes widespread flooding in Sindh. In one affected village, 12 families include members with different disabilities—some with mobility impairments, others with hearing or visual impairments. The community early warning message was announced through mosque loudspeakers and text messages, but several differently abled people did not receive or understand it. The floodwaters are now rising, and the evacuation route has a narrow bridge with no railing.

- *What specific inclusive measures should the Village Disaster Management Committee take to ensure that these families evacuate safely?*
- *How can early warning dissemination be improved so that all* differently abled people *receive and understand alerts in future floods?*
- *What role can community volunteers and support networks play in this emergency?*

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Q5. Given Scenario: In a mountainous district, sudden flash flooding forces a community to evacuate across a river using boats provided by the DDMA. Among the evacuees are children with autism, two people with wheelchairs, and one person with partial hearing loss. The boats are overcrowded, volunteers are untrained in assisting differently abled persons, and panic is spreading among the community.

- *What actions should the community take to ensure the safe evacuation of* differently abled people *during the river crossing?*
- *How should roles and responsibilities be assigned to ensure no one is left behind?*
- *Looking ahead, what preparedness steps could be taken in advance (e.g., infrastructure, training, or protocols) to make river evacuation safer for* differently abled people*?*

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Session 6.8: Promotion of the CBDRM Approach Among the Drought-Prone Areas

Session Objectives

By the end of this session, participants will be able to:

- Explain the nature, causes, and types of drought affecting different regions of Pakistan.
- Examine the impact of droughts on water availability, agriculture, food security, and livelihoods in vulnerable areas.
- Analyze how the slow onset of drought can be addressed through early warning systems and long-term preparedness.
- Explore the role of CBDRM in enhancing community resilience to drought through local participation and adaptive practices.
- Identify appropriate community-led mitigation and preparedness measures for drought-prone regions.

Duration

01 hour 30 minutes

Facilitation Methodology

Interactive Lecture, Group Work, Probing Questions for Discussions, and Q/A

Training Aids Required

- Whiteboard with multi-color erasable markers
- Session handouts
- Flip Charts in different colors
- Permanent markers for flip charts
- Masking tape for pasting flip charts
- Multimedia with laptop and screen

Training Approach

1. First, welcome participants to this new session and introduce session objectives. To kick start, provoke discussion by asking the first question, which may include:

   Probing Question: *"What do you notice in your own community during drought years?"* This will motivate them to relate the subject to their personal life experiences.

2. After having a comprehensive discussion on the above question, start showing PPT slides and discuss the comprehension of droughts and their effect. The facilitator will describe the various categories of droughts, including meteorological, agricultural, hydrological, and socio-economic, and discuss the impact of each on water availability, agriculture, food security, and livelihoods.

3. The facilitator can ask participants to give examples against each category and write them down on the whiteboard. After participants provided different examples for each category, the facilitator can further ask for additional examples.
4. The participants will be reminded that drought is a creeping hazard, which is usually ignored until it affects people seriously. Hence, the impact will not be realized soon until it reaches its peak level of threat.
5. The impacts of drought on communities are going to be discussed in the following slides and shared with the participants.
6. The facilitator shall provide examples of how water scarcity, crop failure, food insecurity, livestock loss, and rural-urban migration can impact households.
7. Involve participants in considering the connections between these problems and poverty, malnutrition, and long-term resilience.
8. After the detailed discussions on the impacts, discuss the main point of this session, outlining the use of the CBDRM approach for drought risk reduction. The facilitator will describe how communities can form early warning through integrating meteorological forecasts and indigenous knowledge, and how local preparedness, including rainwater harvesting, Rodkohi systems, and drought-tolerant crops, can build resilience. Emphases will also be made on adaptive livelihood strategies, such as handicraft, alternative income, and climate-smart agriculture.

Group Work: After the presentation, conduct a group work exercise to make the session interactive. Make four groups as usual. The groups will discuss and present their findings on the following questions, making brief presentations at the plenary session. Give 30 minutes for discussion. The guiding questions that are suggested are:

1. *How do your community's water, food, and livelihoods primarily feel the impact of drought?*
2. *What can communities do to get indigenous knowledge and local practices to monitor and respond to drought?*
3. *What are the preparedness actions that can be encouraged on the household and community scale to minimize risks of drought?*
4. *What can CBDRM do to support alternative livelihoods and resilience to droughts in the drought-prone regions?*

9. Once the group discussions are over, each team will present the main points for 20 minutes, with 5 minutes for each team. The findings will then be summarized by the facilitator and associated with the session's objectives.
10. As the last question, the facilitator can put forward and after taking points, summarize their points of view, as well as summarize the session with thanks. The question is as follows:

Probing Question: *"What one thing can your community do to be better prepared when it comes to drought?"*

Useful Tips for the Facilitator

- The facilitator is suggested to find examples in advance about drought-susceptible regions in Pakistan (e.g., Tharparkar, Awaran, or Cholistan, even cold desert like Skardu) to enable the discussion to be more relevant. Try to gather as much information as possible about these regions.
- All members of the group should have an opportunity to speak, even women, young people, and marginalized groups.
- Check on group work and presentations so that no question is left out and the session is not overrun.

Background Material of the Session

6.8.1. Types of droughts

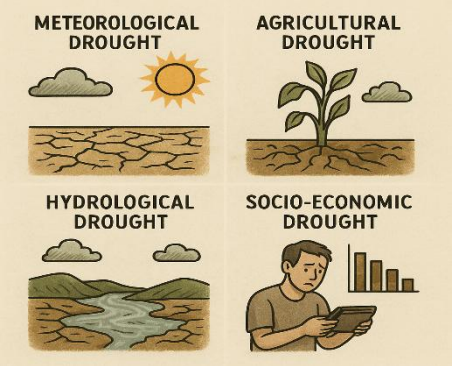
Droughts are classified into several types depending on their causes and impacts. Understanding these distinctions is essential for adequate early warning, planning, and response.

6.8.1.1. Meteorological drought

This type of drought occurs when there is a prolonged period of below-average precipitation in a region. It is usually the first stage in the drought cycle and is defined relative to the normal rainfall patterns of a specific area. For example, if a region typically receives 300 mm of rainfall in a season but only receives 100 mm, it would be classified as a meteorological drought. This is often the earliest sign of drought onset, but it does not always immediately impact crops or water availability.

6.8.1.2. Agricultural drought

Agricultural drought happens when there is insufficient soil moisture to meet the needs of crops during the growing season. It typically follows meteorological drought and directly affects crop yields, food security, and farmers' livelihoods. It depends not only on rainfall but also on soil type, cropping patterns, and land management practices. In regions dependent on rain-fed agriculture—like parts of Tharparkar in Sindh or Awaran in Balochistan—agricultural drought can quickly escalate into a humanitarian crisis.



Types of drought

6.8.1.3. Hydrological drought

This occurs when water reserves in lakes, rivers, reservoirs, and aquifers fall below average levels. It reflects long-term precipitation shortfalls and is often the result of an extended meteorological drought. Hydrological drought has severe implications for irrigation, drinking water supply, hydropower generation, and ecosystem health. The effects are usually observed months after the onset of meteorological drought, and recovery can take a long time even after normal rainfall resumes.

6.8.1.4. Socio-economic drought

This type of drought arises when the water demand exceeds supply, and it begins to affect the economy and human well-being. This can include increased food prices, water rationing, migration, malnutrition, and conflicts over water resources. Socio-economic drought is a reflection of the interaction between natural drought conditions and human systems, including governance, infrastructure, and market systems.

6.8.2. Impacts of drought on communities

Droughts profoundly disrupt community life, particularly in regions dependent on agriculture and natural water sources. The most immediate impact is on water resources. Wells, ponds, Rodkohi, and seasonal streams begin to dry up, and the natural recharge of groundwater is significantly reduced, exacerbating the scarcity of potable and irrigation water. This water shortage further cascades into agricultural distress, with rain-fed farming zones experiencing crop failures, soil degradation, and drastic drops in agricultural productivity.

For communities reliant on agriculture and livestock, such disruptions directly undermine their livelihoods. The scarcity of water and fodder often results in the loss of livestock, further decreasing household incomes and pushing families into cycles of debt or forcing them to migrate in search of alternative means of survival. This leads to increased rural-to-urban migration, putting pressure on urban infrastructure and services.

Food security also deteriorates in the wake of drought. With crop losses and declining agricultural outputs, the availability of food in local markets diminishes, causing a rise in food prices. Poorer households, already vulnerable, find it increasingly difficult to afford nutritious food, resulting in widespread food insecurity and malnutrition. Health concerns grow as the lack of clean water and poor sanitation practices facilitate the spread of water-borne diseases, compounding the existing burden on healthcare services in drought-affected areas.

6.8.3. Stages of drought based on severity

Understanding drought intensity helps in defining its scale of impact, guiding both anticipatory action and resource mobilization. These stages are generally assessed using indicators such as rainfall deviation, soil moisture content, crop conditions, water reservoir levels, and socioeconomic parameters.

6.8.3.1. Mild/initial drought

This is the onset phase of drought, where early warning signs begin to appear. There may be a slight deficit in rainfall, delayed planting, and minor stress on vegetation. Soil moisture levels begin to drop, but the impact on crops, water resources, and communities is minimal. This phase is often overlooked, making early detection through indigenous and meteorological signals crucial.

6.8.3.2. Moderate drought

At this stage, agricultural activities are visibly affected. Rain-fed crops start to wilt, and groundwater recharge slows down. Water bodies like wells and ponds begin to shrink, while communities may face limited access to irrigation water. Livestock may experience difficulty in accessing water and fodder. Food prices begin to rise locally due to declining yields. This stage requires immediate community preparedness and resource planning.

6.8.3.3. Severe drought

This is a critical stage where the impacts are wide-ranging and intensely felt across sectors. Major crop failure occurs, water resources are severely depleted, and food and livelihood security are deeply compromised. Livestock mortality may increase, and households are forced into migration, asset liquidation, or reliance on external relief. Malnutrition and disease risks rise. Government and humanitarian response are usually activated at this stage.

6.8.3.4. Extreme drought / prolonged drought

Also referred to as "protracted drought", this stage is characterized by long-term, deep impacts. Reservoirs may dry up completely, wells collapse, and agriculture becomes nearly non-viable. School dropout rates, conflict over water, and distress migration increase. Social systems begin to break down, and full-scale emergency interventions are needed. Recovery may take years without systemic efforts to build resilience.

6.8.4. Drought intensity tools in use

In Pakistan, drought intensity is often measured using tools such as the Standardized Precipitation Index (SPI), Vegetation Condition Index (VCI), and Soil Moisture Index (SMI). Combining these with community observations (e.g., rainfall delays, crop performance, water source drying) creates a comprehensive picture of the drought phase and informs timely and localized interventions.

6.8.5. Role of communities in drought risk reduction

Community-based disaster risk management empowers communities to play a proactive role in reducing drought risks by leveraging local knowledge and organizing collective actions. One of the critical components of this approach is the establishment of community-led early warning systems. These rely not only on meteorological forecasts such as those provided by the Pakistan Meteorological Department, but also on indigenous knowledge systems. Communities closely monitor rainfall patterns, delayed crop germination, the drying of water points, and changes in livestock behavior. They use these signs to issue timely alerts through locally trusted communication channels, such as mosque announcements, mobile messaging groups, or community radio, enabling faster and more effective preparedness responses.

Preparedness measures are equally vital. Communities adopt various water conservation techniques, such as constructing water storage ponds, utilizing traditional floodwater harvesting channels (Rodkohi systems), installing underground water tanks, and building small dams. Households and farmers are encouraged to harvest rainwater for domestic use, livestock, and agricultural needs. To improve soil water retention, practices like mulching, composting, and contour plowing are adopted. Furthermore, promoting crop diversification and the use of drought-resistant seeds helps mitigate the impact of unpredictable rainfall and ensures some level of agricultural output even during dry periods.

In terms of long-term resilience, adaptive livelihoods and local planning play a crucial role. Communities are encouraged to shift towards drought-tolerant crops such as millet, guar, and pulses that require less water. In high-risk zones, efforts are made to establish livestock shelters and fodder banks to ensure continuity in animal husbandry. Moreover, training programs are introduced to provide community members with skills in alternative livelihoods like handicrafts, solar panel installation, and mobile phone repair, helping reduce their overdependence on agriculture. Community-based drought risk maps are developed through participatory approaches to guide local decision-making, ensure the equitable allocation of resources, and support targeted investments in infrastructure and services that enhance drought resilience.



Promoting Rodkohi System in drought prone areas

Through such integrated approaches, communities not only reduce their vulnerability to drought but also enhance their overall capacity to adapt to climate variability and future shocks.

Self-Assessment / Key Questions & Answers

Q1. Long Question: Discuss the various forms of drought (meteorological, agricultural, hydrological, and socio-economic) and address their ripple effects on water supplies, agriculture, food security, and livelihoods of the community in drought-affected areas of Pakistan. Provide relevant examples.

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Q2. Given Scenario: In Tharparkar's desert villages, severe water shortage is a daily struggle. A drought relief project proposed water trucking to deliver safe drinking water. However, trucks often got stuck in the sand, delaying supplies. Community members suggested alternatives such as water wheel gallons for fetching water from nearby sources. The VDMC,

however, insisted on constructing a small water point near their settlement to ensure more reliable access and reduce dependency on external deliveries.

- *If you were part of the VDMC in Tharparkar, how would you help the community and project team assess whether constructing a local water point is the most practical and sustainable solution in desert conditions?*
- *In such a setting, what key factors should be considered for storing and maintaining water safely at the community level (e.g., water quality, storage structures, protection from contamination, community management)?*
- *If your VDMC wanted to compare over time whether water trucking, water wheels, or a local water point worked best, what steps would you take using Participatory Monitoring & Evaluation (PM&E)?*

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Q3. Given Scenario: In Kharan (Balochistan), reliable forecasts warn of no significant rainfall for the next 4 months. Local herders fear that their livestock will die due to a lack of water and fodder. Many families rely almost entirely on goats and sheep for their livelihoods.

- *If you were advising the community, what traditional or indigenous strategies (fodder storage, migration routes, drought-tolerant livestock) would you recommend to help them sustain their herds?*
- *Faced with this crisis, how would you encourage households to diversify their livelihoods beyond livestock?*
- *What role should the VDMC play in coordinating collective preparedness actions such as fodder banks, water storage, or mutual aid systems?*

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Q4. Given Scenario: During a CBDRM training in a drought-prone village, participants were asked how they would respond if a fire started due to extreme heat. The villagers suggested creating a human chain to carry buckets of water from a pond located 2 km away. The facilitator pointed out that sand from their own courtyards could be a quicker and more effective first response.

- *As a VDMC member, what immediate action would you take in this fire emergency, given the community's limited knowledge of local resources?*
- *How could you guide the community to integrate resources like sand, soil, or ash into their fire response plan?*
- *What training or awareness activities would you prioritize so the community moves from reactive coping to proactive preparedness?*

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References

- Pakistan Meteorological Department, *"Seasonal Drought Outlooks".*
- Food and Agriculture Organization, *"Drought Preparedness Toolkit for South Asia".*
- IOM & UNDP Pakistan, *"Reports on Community-Based Water Solutions in Balochistan".*
- UNDP/AKAH Pakistan, *"CBDRM Manuals for Arid and Semi-Arid Zones".*
- Sustainable Development Policy Institute, Islamabad, *"Briefs on Drought-Resilient Livelihoods in South Punjab."*



Session 6.9: Participatory Approaches for Promoting Nature-Based Solutions

Session Objectives

By the end of this session, participants will be able to:

- Define nature-based solutions and explain their role in strengthening community-based DRR and CCA.
- Identify and illustrate NbS examples relevant to different geographic contexts such as mountainous, riverine, coastal, drought-prone, and urban settings.
- Describe sector-specific applications of NbS in agriculture, infrastructure, and water resource management.
- Analyze how communities can plan, adapt, and implement NbS using local knowledge, natural assets, and participatory approaches.

Duration

01 hour 30 minutes

Facilitation Methodology

Interactive Lecture, Group Work, Probing Questions for Discussions, and Q/A

Training Aids Required

- Whiteboard with multi-color erasable markers
- Session handouts
- Flip Charts in different colors
- Permanent markers for flip charts
- Masking tape for pasting flip charts
- Multimedia with laptop and screen

Training Approach

1. The facilitator will begin with an introduction and welcome the participants to the session, explaining the purpose of the session. As a first instance, ask a question to develop interest in the topic, like:

   Probing Question: *"What have you observed as examples of using nature to solve problems in your community?"* The initial question will help them connect NbS to their realities.

2. After a fruitful discussion, the facilitator will define NbS as the efforts that utilize ecosystems, such as forests, wetlands, mangroves, and rivers, to mitigate the risks of disasters and adapt to climate change. Cases such as planting trees to prevent erosion, restoring wetlands to control floods, or harvesting rainwater to help during drought will be presented.

3. The reasons why NbS are essential at the community level will then be discussed. The participants will be educated on the fact that NbS are cost-effective, sustainable, and offer numerous advantages, including saving lives, increasing food security, enhancing livelihoods, and preserving biodiversity.
4. Further mention of the role of sector-specific applications in agriculture, infrastructure, and water management will also be made. At this stage, the facilitator may ask participants to provide sector-specific examples if they are familiar with them.
5. While giving examples, the facilitator shall use illustrations of other geographic settings, such as mountainous, riverine, coastal, drought-prone, and urban, to demonstrate how communities can map hazards and risks, choose the right NbS, and enshrine them in local disaster and development plans.

Group Work: Afterwards, the participants will work in different groups to make the session interactive. They will be separated into small groups and told to discuss such guiding questions as:

1. *Which are the key environmental risks that your community is exposed to, and how NbS can mitigate them?*
2. *What NbS practices do you already see in your locality in non-modernized or indigenous ways?*
3. *What can community involvement do to reinforce the NbS planning and implementation?*
4. *What are the obstacles to communities adopting NbS, and how can these be addressed?*

6. Give them 5 minutes for each group for the presentation. After presentations of all four groups, open Q/A discussions on the group work.
7. The facilitator shall then present an overview of essential findings, which would be connected to the objectives.

Probing Question: The final reflection question that will be used to close the session is as follows: *"What is a basic NbS thing that you can start in your own community?"* This will promote ownership and pragmatic use.

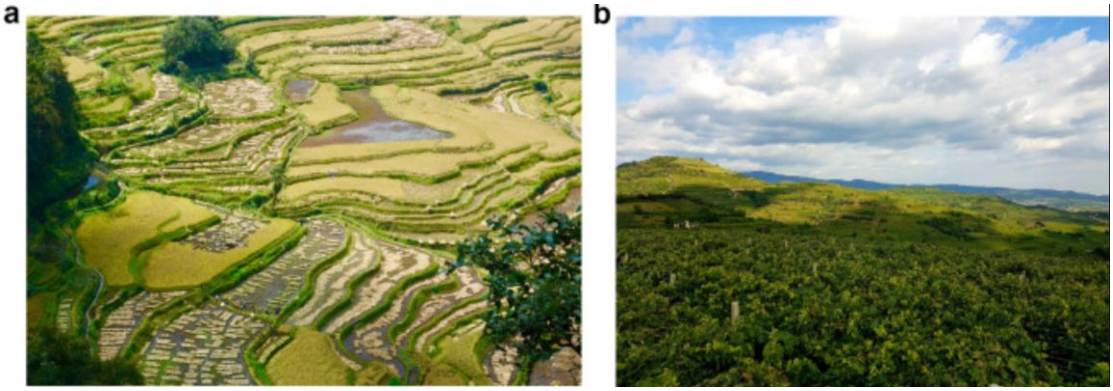
Background Material of the Session

6.9.1. Understanding nature-based solutions

Nature-Based Solutions are actions that work with and enhance natural ecosystems to help communities reduce the impacts of disasters. Instead of relying only on concrete walls, dikes, or machines, NbS uses natural resources like forests, wetlands, vegetation, and rivers to protect people from floods, landslides, droughts, and heatwaves. These solutions are affordable, sustainable, and can improve both the environment and the lives of local people. For example, planting trees along steep slopes, building small wetlands, or harvesting rainwater are all NbS that benefit communities, especially in hazard-prone areas like mountains, riversides, and urban neighborhoods.

6.9.2. Why nature-based solutions matter at the community level

At the community level, NbS offers simple but powerful tools to reduce disaster risks and support everyday needs. In mountain areas, communities can protect themselves from landslides by planting trees, setting up terraced farming, and avoiding construction in steep or unstable zones. Tree roots help hold the soil together, while terracing slows down water runoff, making farming safer and more productive.



Terracing and developing wetlands in riverine areas

In lowland and riverine communities, like those in Khyber Pakhtunkhwa and Punjab, creating wetlands and floodplains gives water a safe place to go during heavy rains. These wetlands also store water for dry periods and support fish, birds, and other wildlife. In areas that depend on agriculture, simple practices like rainwater harvesting, growing cover crops, and building small check dams can protect fields during floods and provide water during droughts. In places like Sindh and southern Punjab, Rod Kohi (rain-fed farming) channels can be restored to catch and store seasonal rains for animals and crops—an approach that has supported traditional farming for centuries.

Communities can also adopt rooftop rain harvesting systems to collect and store water for household use. Planting native trees in home gardens, along roads, and around schools helps reduce heat, prevent erosion, and offer shade. Avoiding settlements in low-lying or flood-prone areas—especially near rivers—is another life-saving but straightforward nature-based strategy that communities can adopt through participatory planning and hazard mapping.

9.6.2.1. Community-level NbS actions by sectors

In agriculture, communities can adopt climate-smart practices like mulching, composting, crop rotation, and using drought-tolerant seeds. Terraced farming and contour bunding in hilly regions help conserve soil and water, reducing erosion and landslide risks. Wetland construction, especially in floodplains, supports both biodiversity and water management.

For infrastructure, integrating nature into planning means using vegetative fencing, bioswales, or green buffers around homes and roads to absorb water and prevent flash floods. Schools and public buildings can include rooftop gardens or green spaces to reduce heat and manage rainwater.

On the water side, rainwater harvesting systems—like rooftop tanks or underground storage—can be built at the household or community level. In drought-prone regions, small earthen dams, percolation tanks, and Rod Kohi channels help store water for livestock and irrigation. These low-cost, locally managed systems are being successfully revived in Sindh and Punjab.

In coastal areas, communities can grow mangroves to protect against cyclones and sea-level rise. Constructed wetlands serve as both natural barriers and water filtration systems. Sand dunes and coastal vegetation also reduce the force of ocean waves before they hit inhabited areas.

9.6.2.2. NbS recommendations for specific geographic contexts

Urban Areas (e.g., Karachi, Lahore): Cities face risks such as urban flooding, heatwaves, and pollution. In Karachi, NbS can include restoring natural drainage channels, planting trees in urban parks, using rooftop gardens, and promoting rainwater harvesting in schools and homes. In Lahore, where urban heat and waterlogging are growing concerns, greening schoolyards, building small wetlands, and discouraging construction in flood-prone plots are key actions.

Coastal Areas (e.g., Thatta, Badin): In the coastal belts of Sindh and Balochistan, communities should focus on restoring mangroves, establishing wetland buffers, and preserving sand dunes. These natural defenses help reduce the impact of cyclones and tidal surges while also supporting fisheries and biodiversity.



Source: Illustration by John Wamagata Nduru/WRI, adapted from World Bank 2021.

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Riverine Areas (e.g., Khyber Pakhtunkhwa, Punjab): Communities living near rivers should avoid building homes in natural flood zones. Reforestation along riverbanks, recharging aquifers through wetlands, and managing floodplains as community grazing areas during dry seasons can reduce flood impacts. In KP's riverine districts, especially near Nowshera and Dera Ismail Khan, flood-safe settlement planning is crucial.

Mountainous Areas (e.g., Lower and Upper Chitral, Gopis, Gilgit-Baltistan, AJK, and Balochistan): Mountain communities face recurring risks of landslides, GLOFs, and flash floods. Recommended NbS include slope stabilization through tree planting, terracing, glacier

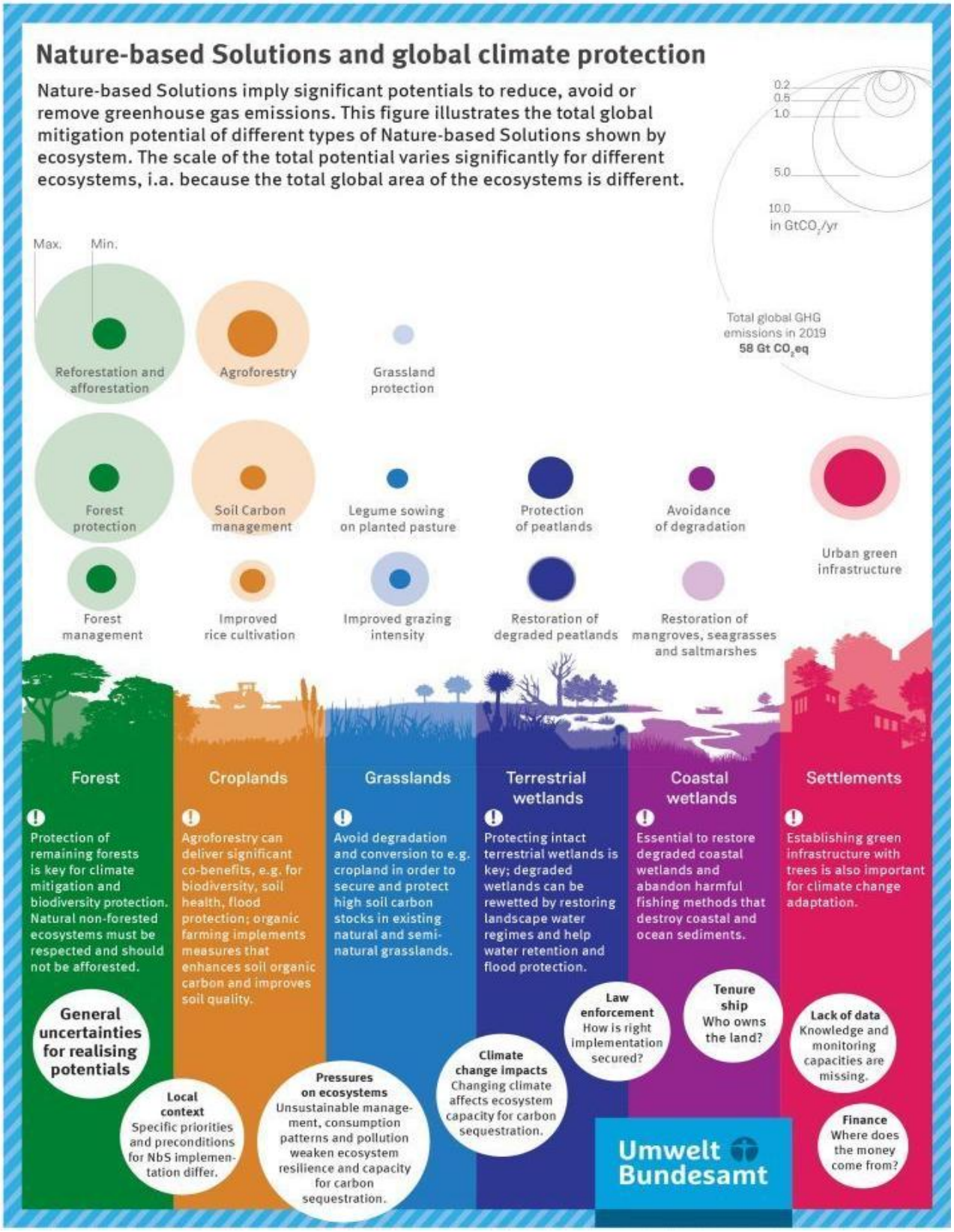
monitoring, and the use of stone bunds to redirect water flows. Restoring degraded rangelands and reducing open grazing also helps maintain slope stability.

Drought-Prone Areas (e.g., Thar, D.G. Khan, Tank, and Cholistan): In areas with little rainfall, community rainwater harvesting systems, Rod Kohi water channels, underground tanks, and planting drought-resistant trees (like acacia or neem) can increase resilience. These techniques have been traditionally used in Sindh and Punjab and can be enhanced with modern techniques.

9.6.2.3. Nature-based solutions for building resilient communities

To create disaster-resilient communities, nature-based Solutions must be locally owned, culturally appropriate, and integrated into village development and disaster plans. Communities should be involved in identifying hazards, mapping green areas, and selecting sites for rainwater harvesting, tree plantations, or wetland development. Women, youth, and indigenous knowledge holders must engage in climate protection & NbS.

Resilience is not just about surviving disasters but thriving between them. NbS helps ensure access to water, food, shade, and clean air even during hard times. They promote biodiversity, protect ecosystems, and offer income opportunities through community nurseries, ecotourism, or agroforestry. Above all, they connect people back to nature, reinforcing the idea that working with nature—not against it—is the strongest foundation for lasting safety, dignity, and sustainability.



Nature based solution for building resilient communities

Case Study 6: Nature-Based Solution in Mountain Communities – Community Forest & Watershed Management

Mountain regions such as Gilgit-Baltistan, Chitral, the Hindu Kush Himalaya, and other highland areas across the world remain highly vulnerable to natural hazards, including landslides, flash floods, and Glacial Lake Outburst Floods. These risks are further aggravated by deforestation, unplanned construction, and the growing impacts of climate change. Conventional complex infrastructure solutions, such as retaining walls and embankments, often fail to provide durable protection in such steep and unstable terrains, proving both costly and short-lived. In contrast, communities have increasingly turned to forest restoration and watershed management as practical, nature-based solutions that not only strengthen resilience against disasters but also enhance local livelihoods.

In many mountain settings, villagers have collectively embraced forest and watershed management practices, working together to restore degraded ecosystems. Tree plantations using deep-rooted native species such as bamboo, alder, and acacia have helped stabilize slopes and reduce erosion. Terracing and agroforestry have transformed steep lands into productive terraced fields, combining crops and trees to reduce water runoff and strengthen food security. For landslide control, bioengineering measures such as brush layering, grass slips, and vegetative check-dams have been adopted in place of costly concrete structures. Communities have also invested in watershed protection by rehabilitating natural springs, constructing small ponds, and reforesting catchment areas to regulate water flows and recharge aquifers.

These collective interventions have had a wide-ranging impact. Stabilized slopes and reduced sedimentation have minimized landslide and flood risks, protecting both villages and agricultural land. Revived springs and ponds have improved water security by ensuring year-round availability for drinking, irrigation, and livestock. At the same time, communities have gained sustainable access to fuelwood, fodder, fruits, and non-timber forest products, which not only support household needs but also provide income opportunities, reducing poverty. Notably, the inclusion of women, youth, and marginalized groups in forest user committees has promoted social equity, strengthened collective ownership, and deepened community resilience.

Several key lessons can be drawn from these experiences. Working with nature in fragile mountain environments proves to be more cost-effective and durable than traditional, complex infrastructure. The success of such initiatives depends on community participation and ownership, which ensures sustainability and long-term maintenance. Nature-based solutions also deliver multiple co-benefits, simultaneously addressing disaster risk reduction, climate change adaptation, biodiversity conservation, and livelihood improvement. The approach has strong potential for scaling and replication across mountain regions such as Gilgit-Baltistan, Chitral, Nepal, and other parts of the Himalayas, where ecosystems and community dependence on natural resources are similar.

Self-Assessment / Key Questions & Answers

Q1. What of these farm practices is based on a nature-based solution?

a) Overuse of chemical fertilizers.

b) Terracing, crop diversification.

c) Increasing development of floodplains.

d) Wetland drainage to farmland.

Correct Answer: B

Q2. Which one of the following would be considered NbS on coastal territories?

a) Construction of multi-story buildings in close proximity to the shore.

b) Planting mangroves and conservation of sand dunes.

c) Early warning sirens alone.

d) Seawalls alone.

Correct Answer: B

Q3. What is the point of Nature-Based Solutions (NbS) in disaster risk reduction (DRR)?

a) To develop natural ecosystems to increase their capacity to reduce the effects of disasters.

b) To make forests out of all the old-fashioned infrastructure.

c) To build more urban construction in hazard-prone regions.

d) To construct concrete embankments against floods.

Correct Answer: A

Q4. Long Question: Demonstrate how Nature-Based Solutions (NbS) can be implemented in various geographic settings (mountainous, riverine, coastal, urban, and drought-prone areas) in Pakistan. Give concrete examples of how communities can minimize risks of disasters while enhancing livelihoods.

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Q5. Given Scenario: Following repeated glacier lake outburst floods (GLOFs) and flash floods, the community of Brep in Upper Chitral has relocated to Koragh, a safer settlement. However, the new area faces risks of slope erosion, reduced irrigation water availability, and exposure to heatwaves. The community wants to integrate *Nature-Based Solutions* into their CBDRM plan.

- *What NbS measures can the community adopt in Koragh to stabilize slopes, secure water resources, and reduce heat stress?*
- *How can indigenous knowledge of the Brep community (before relocation) be applied in planning NbS at the new site?*
- *What role should women and youth play in sustaining these NbS interventions?*

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Q6. Given Scenario: In the Gizer valley near Gahkuch, local farmland is under threat due to irregular water flows, land degradation, and seasonal flooding. Community elders propose reopening traditional natural waterways and developing terraced fields to conserve soil and water. They also want to restore degraded rangelands to improve livestock fodder.

- *How can restoring traditional water channels and terracing serve as Nature-Based Solutions for disaster resilience and food security?*
- *What risks might emerge if the community ignores these NbS approaches and relies only on short-term engineering fixes (like concrete barriers)?*
- *How can the community combine scientific knowledge with local practices to design a sustainable NbS plan?*

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References

- World Bank, *"What You Need to Know About Nature-Based Solutions to Climate Change".*
- International Union for Conservation of Nature, *"Nature-Based Solutions".*
- United Nations Environment Programme, *"Overview of Nature-based solutions".*
- Esther Choi, Radhika Rao, and Roman Paul Czebiniak (2023), "*What Exactly Are: Nature-Based Solutions?"*, World Resources Institute.



Session 6.10: Livelihood Protection and Recovery

Session Objectives

By the end of this session, participants will be able to:

- Explain how disasters impact different types of livelihoods and contribute to long-term economic insecurity, particularly for vulnerable households.
- Identify practical, community-based measures for protecting existing livelihoods—such as livestock, crops, and small businesses—before disasters occur.
- Explore key strategies for supporting the rapid recovery of livelihoods after disasters, including replanting, repairing tools, and distributing recovery inputs.
- Promote diversified and alternative livelihood options that reduce future risk and minimize reliance on external aid.
- Analyse real-life, community-led examples from across Pakistan that demonstrate proactive livelihood planning and resilience-building.

Duration

01 hour

Facilitation Methodology

Interactive Lecture, Probing Questions for Discussions, and Q/A

Training Aids Required

- Whiteboard
- Masking tape
- Session handouts
- Multi-color markers
- Multimedia with laptop and screen

Training Approach

1. At the start of the session, the facilitator will emphasize the fact that disasters are interfering with livelihoods, how communities can safeguard them, and how recovery and diversification plans can enhance long-term resilience.
2. To relate the topic to the experiences of participants, one can ask a straightforward probing question:

   Probing Question: *"What are the most vulnerable sources of livelihoods in your community in the event of a disaster?* The participants will be invited to give fast examples.

3. After the discussion, the session will touch upon the concept of livelihood related to DRR. The facilitator will illustrate that livelihoods not only provide income but also

dignity, food security, and social well-being. Samples of farming, stock rearing, fishing, small businesses, and daily wage labor will be mentioned, with special focus on how floods, droughts, and earthquakes affect them.

4. This session will then proceed to cushion livelihoods before the disasters occur. Practical steps, such as relocating livestock to an elevated area, harvesting crops early, properly storing seeds and food, and exploring alternative sources of income, will be clarified.

   Probing Question: To promote thinking, the facilitator can use the following question: "*What would your family or community do, daily, to safeguard your sources of income, had you a flood warning today?*

5. Then, the issue of livelihood recovery in the wake of calamities will be discussed. Some examples include replanting short-cycle crops, repairing tools, distributing seeds and feed, and prioritizing vulnerable populations in recovery. One of the probing questions may be: What are some fast responses that would allow families to resume their income following a disaster?

6. The next part of the presentation will present livelihood diversification as the risk-reducing strategy. Examples provided by the facilitator will include kitchen gardening, poultry, tailoring, handicrafts, and youth vocational training.

   Probing Question: The facilitator can again pose the following question to encourage participants to consider more: *"What are some of the other skills or small businesses that provide a backup income within your community?"*

7. To demonstrate how communities can already apply anticipatory action and recovery planning, the session will end with real-life examples of how women in Sindh (saving groups), people in Balochistan (grain storage practices), and people in Multan (youth skills training) are implementing anticipatory action and recovery planning. It will be concluded with a question:

   Probing Question: *"What is one thing you could do to diversify or save your livelihood before the next calamity?"*

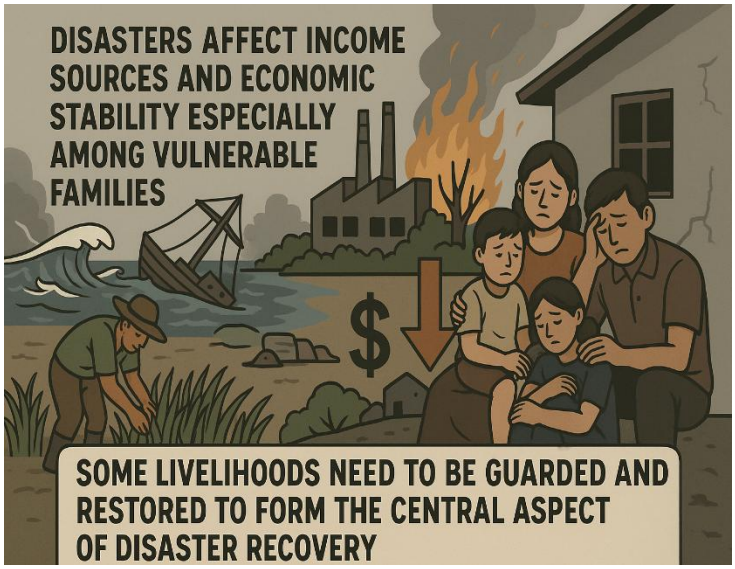
Useful Tips for the Facilitator

- The facilitator should engage participants in collecting local stories and examples, which will be necessary because participants need to see how the protection of livelihoods is relevant to their own situations.
- Ensure equal participation, where women, youth, and vulnerable groups are given a voice in discussions.
- Summarize the main lessons at the end of each probing question to refer to the objectives of the sessions.

Background Material of the Session

6.10.1. What is livelihood?

Livelihood refers to the ways people earn their living and support their families. Across Pakistan's rural and urban settings, livelihoods are shaped by farming, livestock rearing, fishing, small-scale shops, daily wage labor, home-based businesses, and various informal



Disasters disrupt people sources of livelihood, thus further increasing their vulnerabilities

activities. These are not just sources of income—they are linked to food security, dignity, family well-being, and social cohesion.

Disasters such as floods, droughts, earthquakes, and cyclones can severely disrupt these income sources. Crops may be destroyed, livestock lost, tools and shops damaged, and employment opportunities eliminated. For already vulnerable families, this leads to deeper poverty, food insecurity, and a prolonged recovery period. Protecting and restoring livelihoods, therefore, is not just an economic concern—it is a cornerstone of community disaster resilience.

This session focuses on practical, locally driven actions that help communities safeguard their livelihoods, restore them after a crisis, and diversify their income sources to better withstand future shocks.

6.10.2. Protecting livelihoods before disaster

Disaster preparedness goes beyond life-saving—it also means protecting the economic foundations of community life. With early warnings and proper planning, communities can take **anticipatory actions** to reduce losses to their income sources.

- **Livestock-Keeping Families:** Families can identify dry, elevated ground to relocate animals before floods or cyclones hit. These designated spots can serve as community livestock shelters. Organizing community herding groups reduces theft and ensures safer animal movement. These measures protect critical assets and stabilize household economies during emergencies.

  In villages where elevated dry grounds are not available—particularly in mountainous regions—alternative safe locations should be identified for livestock protection. Families can work together to identify suitable high ground or other secure spaces to relocate their animals ahead of floods or cyclones. These designated areas can function as community-managed livestock shelters. Establishing community herding groups also helps prevent theft and ensures the safe movement of animals. Such arrangements protect valuable household assets and help maintain livelihoods during emergencies.

- **Farming Households:** When the Pakistan Meteorological Department issues flood or heavy rainfall alerts, farmers can plan for early harvesting of vulnerable crops. The use of raised platforms and airtight hermetic bags ensures that food and seed storage remains safe from water damage and pests. Collective action—such as embankment strengthening or field drainage—also reduces the risk of total crop loss.

- **Traders and Daily Wage Workers:** Local leaders and CBDRM committees can help identify alternative temporary income sources in advance and guide the safe storage of trade tools or merchandise. This minimizes downtime for shopkeepers and daily laborers after a disaster.

These practical actions not only preserve livelihoods but also promote local innovation and collective preparedness.

6.10.2.1. Supporting livelihood recovery

Once a disaster strikes, communities must act quickly to restart livelihoods, ensuring families can recover with dignity and without relying entirely on external aid. Efforts can include:

- Replanting short-cycle or fast-growing crops to restore food production.
- Repairing tools, market stalls, or small businesses through community-driven recovery initiatives.
- Distributing seeds, livestock feed, or livelihood toolkits through transparent local committees, ensuring vulnerable groups—such as widows, differently abled people, landless laborers, and women-headed households—are prioritized.

Inclusive and rapid recovery not only reduces suffering but also strengthens social solidarity and community resilience.

6.10.2.2. Promoting livelihood diversification

Overreliance on a single income source increases risk. Building livelihood diversity helps communities withstand disasters and adapt to climate or market-related shocks. Some practical and proven diversification strategies include:

- Kitchen gardening, poultry rearing, and fish farming near homes for food and income.
- Home-based micro-enterprises such as tailoring, embroidery, handicrafts, or basket weaving.
- Vocational training for youth and adults in areas like solar panel repair, carpentry, plumbing, digital skills, or mobile phone repair.

These diversified income sources provide flexibility and long-term security, allowing families to continue earning even when one livelihood stream is disrupted.

6.10.3. Community examples from across Pakistan

Across the country, communities are already taking initiative to protect and rebuild livelihoods through low-cost, locally relevant solutions:

- **Lower Sindh – Post-Cyclone Recovery:** Women's savings groups revived kitchen gardens, restoring access to nutritious food and additional income after a cyclone.
- **Balochistan – Traditional Knowledge for Resilience:** Farmers used traditional grain storage bins to preserve seeds and food stocks, protecting their assets during both floods and droughts.
- **Chitral – GLOF Preparedness:** Community shepherds established livestock relocation SOPs and used highland grazing areas during months when Glacial Lake Outburst Floods (GLOFs) were likely.

- **Sohbat Pur – Anticipatory Livelihood Actions (2022 Floods):** Small-scale shopkeepers—including women and youth—took early steps to secure their stores and home-based businesses, while farmers reinforced embankments and improved field drainage. Families also stored fodder in advance to keep dairy animals alive and productive. These efforts demonstrate how anticipatory action and local coordination minimize losses and expedite recovery.
- **Multan – Youth Skill Recovery:** Young people affected by floods were trained in mobile phone repair and supported by microcredit groups to launch small enterprises.
- **Gilgit-Baltistan – Forecast-Based Early Action:** In mountainous GB, communities closely monitor weather warnings for snowstorms, avalanches, or GLOFs. Families take protective measures—storing firewood and food, safeguarding livestock, and shifting to indoor income-generating work such as jam-making or wool weaving. These actions demonstrate how local preparedness builds adaptive capacity.

6.10.4. Building resilient livelihoods together

By combining anticipatory planning, inclusive recovery efforts, and livelihood diversification, communities can protect their economic foundations and become more resilient in the face of future disasters. These strategies are not dependent on high budgets or external support—they rely on local knowledge, cooperation, and the will to act before it's too late.



Proactive measures to secure livelihood sources

As Community Master Facilitators and participants, your role is to promote shared learning, encourage practical action, and support community members in recognizing their own capacity to protect and rebuild their livelihoods.

Self-Assessment / Key Questions & Answers

Q1. What is the central cause of the long-term economic insecurity of vulnerable households due to disasters?

a) External aid is never on time.

b) Since they obstruct the significant source of livelihoods like crops, livestock, and small businesses.

c) The communities rely solely on government recovery packages.

d) Since the disasters lower access to education.

Correct Answer: B

Q2. Which of the following can be used as an example of safeguarding livelihoods in advance of disasters?

a) Replanting of fast-growing crops following a disaster.

b) Waiting to obtain help following a flood.

c) Keeping the harvest in hermetic bags and moving the livestock to the heights.

d) Youth training on cell phone repair.

Correct Answer: C

Q3. Long Question: Explain the major understanding of how to fund livelihood recovery and diversification following disasters. To explain your response, use examples of Pakistani communities (women's savings groups in Sindh, traditional grain storage in Balochistan, anticipatory responses to the 2022 floods, or skills training of youth in Multan).

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Q4. Given Scenario: District Tank is highly drought-prone, with many families depending on livestock and small-scale farming. Recently, a prolonged dry spell has reduced water availability, and grazing lands are shrinking. Many households are worried their animals will not survive if the drought continues. The Village Disaster Management Committee is considering options such as storing dry fodder, digging small community ponds, or shifting to drought-tolerant livestock breeds.

1. *If you were part of the VDMC in Tank, which practical preparedness measures would you prioritize to protect livestock before the drought worsens?*
2. *What indigenous knowledge or traditional practices could the community use to sustain their herds during such prolonged dry spells?*
3. *If the drought continues, how could the community diversify livelihoods to reduce reliance on livestock?*

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Q5. Given Scenario: Shangla is a mountainous region highly prone to landslides and heavy rainfall. After a recent monsoon, landslides blocked roads and destroyed small shops, cutting families off from markets. Farmers lost access to sell their produce, and daily wage workers lost their income sources. To recover, the community is exploring options such as repairing tools and stalls, promoting home-based enterprises (including tailoring, embroidery, and honey processing), and training youth in skills like solar panel repair.

- *If you were part of the Shangla community, what immediate livelihood recovery steps could be taken to restore income for shopkeepers, farmers, and daily wage workers?*
- *How can livelihood diversification (such as home-based businesses or youth vocational training) reduce long-term risk in a disaster-prone area like Shangla?*
- *What role should the local VDMC play in ensuring that the most vulnerable groups (widows, landless families, differently abled people) are included in recovery and diversification plans?*

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References

- Food and Agriculture Organization, *"Guidelines on Livelihood Protection in Emergencies".*
- National Disaster Management Authority, Government of Pakistan (2022), *"Pakistan Flood Response Livelihood Recovery Toolkit".*
- United Nations Development Programme Pakistan, *"Livelihood Diversification Case Studies".*
- Sphere Standards, *"Chapter Seven on Livelihoods".*



Session 6.11: Gender and Social Inclusion in the CBDRM Process

Session Objectives

By the end of this session, participants will be able to:

- Explain how disasters differently impact women, children, elderly people, differently abled people, and marginalized groups.
- Emphasize the importance of integrating gender and social inclusion into community-based disaster risk management.
- Identify key strategies for collecting and using disaggregated data in risk assessments.
- Apply inclusive indicators and participatory approaches to ensure equal representation in all stages of the CBDRM process.
- Promote the leadership and meaningful participation of underrepresented groups in community resilience efforts.

Duration

01 hour

Facilitation Methodology

Interactive Lecture, Probing Questions for Discussions, and Q/A

Training Aids Required

- Whiteboard
- Masking tape
- Session handouts
- Multi-color markers
- Multimedia with a laptop and a screen

Training Approach

1. The facilitator will commence by introducing the participants through welcoming and informing them of the objectives of the session.

   Probing Question: To establish the mood, the facilitator can pose the question, such as: *"Who do you think in your community is the most affected in the event of a catastrophe, and why?"* This question will prompt participants to consider the unequal effects of disasters.

2. This question will prompt participants to consider the unequal effects of disasters. Take comments from different participants and note them down on flip charts for further hanging up on the wall at prominent places.
3. The first part of the presentation will discuss various impacts of disasters that are differentiated. The facilitator will state that social structures, the inability to move freely, and the absence of representation in decision-making expose women, children, elderly people, differently abled people, and marginalized groups to an increased risk.

Probing Question: To enhance engagement further, the facilitator can pose another question: *"How can you give an example in which women, elderly people, and* differently abled people *were left behind in the response to a disaster?"*

4. Do the same as you did for the first question and paste the flip charts on the wall.
5. The next step of the session will be the significance of disaggregated data. The participants will be informed about the importance of disaggregating information by sex, age, disability, and other relevant groups to design equal interventions. One possible probing question would be: Why do you suppose the needs of some of these groups are not always met by the disaster plans, and what role can be played by better data?
6. The next point that is going to be discussed is inclusive planning and risk assessment. The facilitator will emphasize the importance of engaging various groups in the process of vulnerability mapping, early warning systems, and disaster committees.

Probing Question: Participants will be questioned: *"If you were establishing a disaster management committee in your community, what would you do to ensure that women, youth, and marginalized groups are well represented?"*

7. The session will be completed with the ways of encouraging inclusivity. This will involve quotas for women and the less privileged, capacity building, gender sensitivity, availability of communication materials, and provision of safe spaces in shelters.

Probing Question: A closing question can be asked: *"What is the easiest thing you can do in your community to make disaster planning more inclusive?"*

Useful Tips for the Facilitator

- Be considerate to make women and marginalized participants feel free to share their views.
- Take local disaster examples in Pakistan to make the challenges of inclusion tangible and relevant.
- Restatement of essential learning points and connecting them to the session objectives.

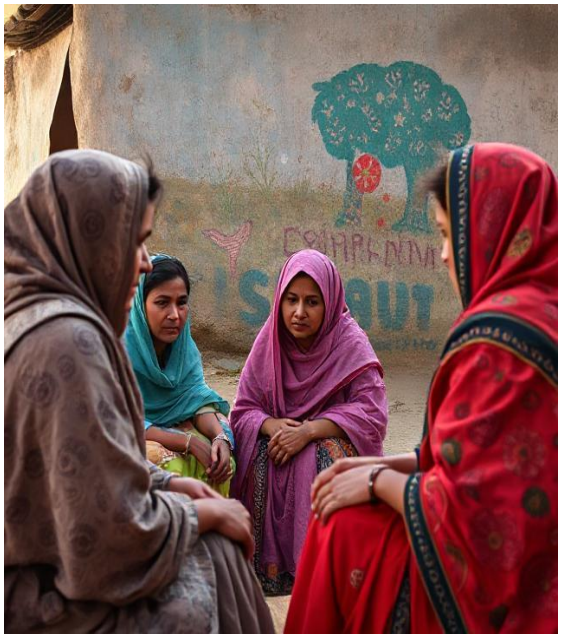
Background Material of the Session

6.11.1. Gender and social inclusion

Disasters do not affect all individuals equally. While hazards themselves may be impartial, their impacts are shaped by existing social structures and inequalities. Gender roles, age, disability, caste, ethnicity, and economic status influence who is most vulnerable, who receives support, and who gets a voice in decision-making. Historically, women, children, elderly people, differently abled people, and socially marginalized communities have been underrepresented or overlooked in disaster risk management and recovery efforts.

By adopting a gender-responsive and inclusive approach, communities can ensure that the diverse needs, capacities, and contributions of all members are reflected in planning, implementation, and evaluation—ultimately leading to more equitable and effective disaster resilience.

6.11.2. Differentiated impacts of disasters



Ensure gender participation in planning process

The effects of disasters are not experienced uniformly across populations. Women and girls, for instance, often face heightened risks of gender-based violence and threats to their reproductive health in emergency settings. Their involvement in leadership and decision-making is frequently limited, reducing their ability to shape responses that meet their specific needs. Children and older adults are particularly vulnerable to injury, psychological trauma, and neglect when crises occur, given their dependency and limited mobility. The differently abled people encounter systemic exclusion due to physical and communication barriers, such as inaccessible early warning systems, unsuitable shelter designs, and inadequate evacuation support. Furthermore, marginalized groups—including ethnic and religious minorities, informal settlers, transgender individuals, and others—often experience discrimination or are overlooked during response and recovery efforts. These differentiated impacts underscore the importance of tailored and inclusive approaches in DRR programming.

6.11.2.1. Importance of disaggregated data

To craft effective and equitable disaster interventions, it is critical to gather and analyze disaggregated data. This means breaking down information by sex, age, disability, ethnicity, and other relevant identity markers. Such detailed data allows planners and humanitarian actors to develop interventions that are based on the actual needs of different groups within a community. It helps identify who may be at risk of exclusion and enables continuous monitoring to ensure that resources and opportunities are being distributed fairly. Disaggregated data is not only a technical necessity but also a foundation for accountability and inclusive recovery.

6.11.2.2. Inclusive risk assessment and planning

During this session, participants will delve into practical strategies for ensuring inclusion in risk analysis and emergency planning at the community level. Effective inclusive planning begins with the active involvement of diverse groups—such as women, differently abled people, youth, elderly people, and minorities—in the entire DRR process, including risk mapping and vulnerability assessments. Their participation ensures that the risks and capacities of all segments of the population are acknowledged. Engaging with local women's organizations, elders, and minority representatives in disaster management committees can further enrich the planning process by bringing grassroots perspectives and context-specific insights. Additionally, inclusive communication practices—such as the use of gender-sensitive language, accessible visuals, and culturally relevant messages—are vital in ensuring that early warning systems and emergency simulations resonate with and reach everyone in the community.

6.11.2.3. Pathways for promoting inclusion

Institutionalizing gender and social inclusion within CBDRM requires deliberate, systemic action. One effective strategy is to establish minimum representation quotas for women and marginalized groups in disaster risk reduction planning bodies, thereby ensuring their voice and influence in key decisions. Capacity-building efforts must extend to both men and women, focusing on gender sensitivity, protection, and inclusive leadership. Information, education, and communication (IEC) materials should reflect the diversity of the population and be made available in local languages to ensure accessibility and relevance. Furthermore, it is essential to create and maintain safe spaces—particularly in shelters and displacement camps—that protect the dignity and well-being of vulnerable individuals, including survivors of gender-based violence. These steps, when implemented consistently, contribute to building an inclusive disaster risk governance system that leaves no one behind.

Self-Assessment / Key Questions & Answers

Q1. Given Scenario: In the case of evacuation due to flooding in a rural area, women and children seem hesitant to attend shelters due to inadequate privacy and the fear of being victims of gender-related violence.

- *What are the gender and social inclusion gaps that are identified in this situation?*
- *Recommend two ways to respond to make shelters safer and more welcoming to women and children.*

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Q2. Given Scenario: In Dadu District (KN-Shah Taluka), ACTED Pakistan, in collaboration with WFP, has constructed Multipurpose Emergency Evacuation Centers (MPEECs) in three villages. Each center can only accommodate 40 families during major floods. After heavy rains, hundreds of families are displaced, and the VDMC is tasked with selecting which 40 families will take shelter in the MPEECs. Among the flood-affected are widows with children, elderly couples, families with differently abled people, landless laborers, and households belonging to marginalized castes.

1. *If you were part of the VDMC in Dadu, what criteria and process would you use to ensure fair and inclusive selection of 40 families for the MPEECs, while addressing the needs of the most vulnerable groups?*

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Q3. Given Scenario: In Khairpur District, an organization is rolling out Anticipatory Action with digital cash transfers. Beneficiary households are being registered through assessments, and e-wallets are created for them. During the registration process, the team encounters transgender individuals, migrant laborers, and families who lost their CNICs during the floods. Many are at risk of being excluded from AA support because they do not meet traditional beneficiary criteria or face documentation barriers.

2. *If you were advising the organization in Khairpur, how would you ensure that transgender people, migrants, and families without CNICs are not excluded from the AA beneficiary list, while still maintaining accountability and transparency in cash assistance?*

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Q4. Why should we gather disaggregated data in disaster management?

a) To comply with donor reporting only.

b) To determine cohort groups that are left out and to distribute the resources equally.

c) To substitute the community involvement in planning.

d) To make surveys more economical.

Correct Answer: B

Q5. What is the target audience that will be most vulnerable to the obstacles of unavailable early warning systems and inappropriate shelter design in case of a disaster?

a) Differently abled people

b) Traders and daily wage earners

c) Local leaders

d) Youth volunteers

Correct Answer: A

References

- International Federation of Red Cross and Red Crescent Societies (IFRC). (2022). *"Protection, Gender and Inclusion approach: Minimum standards for PGI in emergencies".*
- Child Protection Working Group. (2019). "*Minimum standards for child protection in humanitarian action"*. The Alliance for Child Protection in Humanitarian Action.
- World Health Organization Regional Office for the Eastern Mediterranean (2023). *"Child and adolescent health in humanitarian settings: Operational guide."*



Session 6.12: Community-Based Urban Disaster Risk Management

Session Objectives

At the end of this session, the participants will be able to:

- Highlight the growing urban disaster risks in Pakistan due to unplanned development and substandard infrastructure.
- Explain CBDRM strategies to address urban hazards such as building collapse, urban fires, and urban flooding.

Duration

01 hour 30 minutes

Facilitation Methodology

Interactive Lecture, Probing Questions for Discussions, and Q/A

Training Aids Required

- Whiteboard
- Masking tape
- Session handouts
- Multi-color markers
- Multimedia with a laptop and a screen

Training Approach

1. In a short description, explain the nature of increased disaster risk associated with building collapses, fires, and flooding, which has been brought about by rapid and unplanned urbanization in Pakistan. Make the session objectives clear to participants so they understand what to expect.
2. It is suggested to download a few videos in advance, showing how the urban infrastructure is heavily affected by the frequent disasters, to show at the beginning of the session.
3. After showing videos, put a probing question to provoke discussion and take input from the participants.

   Probing Question: *"What are the first types of disasters that occur in cities such as Karachi, Rawalpindi, or Lahore, and why?*

4. Demonstrate what particular urban hazards Pakistan is exposed to: collapsing buildings as a result of poor standards of construction, urban fires as a result of poor standards of safety, and floods as a result of unplanned development and ineffective drainage. Give examples of fire incidents of the Baldia Town factory in Karachi, Ghakara Plaza in Rawalpindi, the Earthquake 2005 in Balakot, Muzaffarabad, and Islamabad, and the latest floods of 2025.
5. At this stage, put another probing question from participants.

Probing Questions: *How are disasters in cities usually more severe than in rural contexts?"*

"What do you consider to be the most threatening hazard (building collapse, fire, or flooding) in your own city or town? Why?"

6. After elaborating the discussion, the facilitator shall describe the implementation of CBDRM strategies like participatory risk assessment, incorporating DRR in local plans, and the use of technology (mobile applications, GIS, social media) to provide early warning and generate a database. Discuss the way in which safety measures may be enforced by involving private sector partners as well.
7. Ask a question again to generate discussion.

Probing Question: *"How can the engagement of the local communities in urban disaster planning be any different than top-down government-based approaches?"*

8. Preferably, introduce the case study on Lyari where NGOs and community groups minimized the risk of disaster through participation-based mapping, mobilizing youths and women, and utilizing WhatsApp groups to send early warnings. Emphasize that it is the collective effort that may help resource-poor communities to develop resilience.

Probing Questions: *What can be learned in Lyari and applied to other cities in Pakistan?"*

"How do you think that youth and women should be incorporated in enhancing the preparedness to disasters in urban areas?"

9. Take maximum output from those who were not participating to encourage their participation.
10. After having a meaningful discussion, thank participants with a round of applause and close the session with concluding remarks.

Background Material of the Session

6.12.1. Urban disaster risk management

Pakistan's urban landscape is undergoing rapid transformation. Cities like Karachi, Lahore, Peshawar, Rawalpindi, Multan, and Faisalabad are expanding at unprecedented rates due to population growth, rural-to-urban migration, and unregulated development. However, this urban expansion often outpaces planning and infrastructure, creating new layers of vulnerability for millions living in congested, hazard-prone environments. In this context, community-based urban disaster risk management has emerged as a vital approach to reducing disaster risk and strengthening resilience from the ground up.

6.12.2. Urban-specific risks in Pakistan

Pakistan's urban areas face a range of disaster risks that are distinct from rural contexts due to high population density, unregulated development, inadequate infrastructure, and weak enforcement of building and safety codes. Among the most pressing urban-specific risks are building collapse, urban fires, and flooding, which cause significant loss of life, displacement, and economic damage each year. Understanding the following risks is essential for developing effective urban disaster risk reduction strategies.

6.12.1.1. Building collapse

Building collapses are a serious and recurring hazard in Pakistan's urban areas, driven by poor construction practices, substandard materials, and weak enforcement of building codes. Unauthorized structural modifications and lack of maintenance further increase the risk, particularly in earthquake-prone regions. These collapses often result in significant casualties and injuries, with emergency response efforts hindered by access challenges. Survivors face long-term trauma and displacement, as seen in notable incidents like the 2005 earthquake-induced Margalla Tower disaster and the 2025 Liyari-Karachi building collapse, resulting in at least 27 deaths due to a multi-story building collapse.

6.12.1.2. Urban fires

Urban fires are a common and deadly threat in Pakistani cities, especially in informal settlements, commercial hubs, and industrial zones. Flammable building materials, poor fire safety standards, overloaded electrical systems, and a lack of awareness and preparedness fuel these fires. Emergency response is often delayed due to congested streets and inadequate infrastructure. Major incidents like the 2012 Baldia Town factory fire and repeated market fires in Lahore and Islamabad highlight serious gaps in fire prevention and response measures.

6.12.1.3. Urban flooding

Urban flooding is a major and recurring hazard in Pakistani cities, intensified by encroachments on waterways, poor drainage systems, and unplanned urbanization. The lack of natural water absorption due to excessive paving worsens water accumulation during monsoons. This leads to severe disruptions in transportation, widespread property damage, health risks, and economic losses, especially in low-income areas. Cities like Karachi, Lahore, and Rawalpindi face regular flooding, with a particularly devastating event in July 2025. Pakistan floods: widespread flooding caused 180+ deaths, urban disruption in Rawalpindi, Lahore, and Islamabad.

6.12.3. Rising urban vulnerabilities in Pakistan

Unplanned urban growth in Pakistan has significantly increased disaster risks in cities and towns. One major consequence is the proliferation of informal settlements, or slums, which are often situated in high-risk areas such as floodplains, unstable slopes, and near industrial zones. These locations expose residents to multiple hazards, including flooding, landslides, and industrial accidents. Additionally, inadequate drainage systems, poor solid waste management, and encroachments on natural waterways have worsened urban flooding, particularly during the monsoon season.

6.12.4. Strengthening urban resilience through inclusive and risk-informed approaches

To address the rising disaster risks in urban areas, it is critical to promote resilience through inclusive, planned, and risk-informed urban development. Strengthening urban communities involves a shift from reactive to proactive measures—ensuring that infrastructure, governance, and community preparedness are aligned with the evolving challenges of climate change, unplanned growth, and socioeconomic inequalities. Building urban resilience requires a combination of localized risk assessments, multi-stakeholder engagement, smart technologies, and private sector collaboration to ensure that cities are not only safer but also

more livable and sustainable for all residents, including those in informal settlements and hazard-prone areas.

6.12.4.1. Establish multi-stakeholder urban DRR platforms

Establishing multi-stakeholder urban DRR platforms is essential for fostering collaboration among government bodies, civil society organizations, the private sector, and local communities. These platforms enable joint planning, resource sharing, and coordinated responses to urban disaster risks. By bringing diverse stakeholders together, they help create inclusive, sustainable, and resilient urban environments.

6.12.4.2. Conduct participatory urban risk assessments

Participatory risk assessments help in developing doable DRR plans with the real-life experiences of urban communities. Involving residents through tools like hazard mapping and risk ranking identifies localized threats such as flooding, fire risks, and unsafe structures. This approach builds community ownership and ensures practical, locally relevant solutions.

6.12.4.3. Integrate urban DRR into local development planning

Urban DRR should be integrated into city development plans to ensure resilience is built into everyday growth. This includes enforcing hazard-based zoning, improving drainage in infrastructure projects, and adopting climate-resilient designs. Embedding DRR into planning aligns risk reduction with sustainable urban development goals.

6.12.4.4. Use technology for community engagement and early warning

Technology plays a vital role in enhancing urban disaster preparedness and communication. Tools like mobile phones / social media, GIS mapping, and FM radio can support early warnings, risk awareness, and community engagement. Apps and SMS alerts enable real-time reporting and targeted responses, fostering a proactive, informed, and connected urban population.

6.12.4.5. Partnerships with the private sector

The private sector, including businesses, market associations, and construction firms, has a vital role in enhancing urban safety. Their involvement in DRR planning can support fire safety enforcement, building retrofitting, and preparedness through CSR initiatives. Partnerships with these stakeholders help pool resources, promote compliance, and foster shared responsibility for urban resilience.

Case Study 7: Community-Based Urban DRR in Lyari, Karachi

Lyari, one of Karachi's oldest and most densely populated settlements, faces severe urban disaster risks including flooding, building collapses, and urban fires. Rapid, unregulated construction, encroachments on drainage channels, and a lack of fire safety infrastructure make the community highly vulnerable. Poverty and overcrowding further amplify risks, as many residents live in substandard multi-story housing built without adherence to building codes.

In response, local organizations such as the Urban Resource Centre (URC) and NGOs like Shirkat Gah and HANDs Pakistan have piloted CBDRM initiatives. These included participatory risk mapping with community members to identify high-risk zones, unsafe structures, and fire hazards. Youth groups were trained in basic disaster preparedness, including fire safety, evacuation planning, and first aid. Women's groups were actively engaged in hygiene promotion, waste management, and flood preparedness awareness campaigns.

To address urban flooding, residents organized community-led drainage clearance campaigns before the monsoon season, significantly reducing waterlogging. For building safety, advocacy efforts were launched in collaboration with the Karachi Metropolitan Corporation to monitor unsafe buildings and encourage incremental retrofitting. Technology was also utilized, with WhatsApp groups and SMS alerts established for early warning dissemination in the event of heavy rainfall or fire outbreaks.

These interventions demonstrated how CBDRM empowers marginalized urban communities to reduce risks even with limited external support. By combining participatory planning, community mobilization, and partnerships with municipal authorities, Lyari residents strengthened their resilience against recurring urban hazards.

Self-Assessment / Key Questions & Answers

Q1. Given Scenario: Flooding in Lahore is frequent, as homes and transport are destroyed during the monsoon season due to inadequate drainage systems.

3. *What are the root causes of this issue?*
4. *Name two community-based and low-cost activities that may help mitigate the possible risks of urban flooding.*

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Q2. Given Scenario: Providing a highly populated settlement in Karachi, there is a high frequency of building collapses and fire risk caused by bad building construction and overloaded electrical systems.

5. *What are the short-term dangers to the residents, in this case?*
6. *What local and community-based measures may mitigate these risks to enhance long-term safety?*

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Q3. Given Scenario: If a densely populated area like Lyari faces simultaneous risks of flooding and building collapse, how can community-based urban DRR platforms ensure timely coordination and risk reduction?

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Q4. Given Scenario: If urban flooding in Lahore disrupts transportation and causes widespread health risks, how might participatory risk assessments and early warning systems reduce future impacts?

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References

- Niaz, U., Rauf, A., & Qureshi, S. (2019), *"Impact of cool roof interventions on urban microclimates in Pakistan. Building and Environment".*
- Hashmi, S. (2020), *"Transforming sanitation in slums: Case studies from Lahore",* LUMS Working Paper, Lahore University of Management Sciences.
- LEAD Pakistan. (2016). "*Vulnerability Assessment of Pakistan's Urban Slums in the Face of Climate Change*".
- Hasan, A., & Raza, M. (2015). *"Urbanization, Disaster Risk Management, and the Role of Community-Based Initiatives in Karachi".* International Institute for Environment and Development.



Session 6.13: Evacuation Management at the Community Level

Session Objectives

At the end of this session, the participants will be able to:

- Explain the basic concepts, types, and five stages of evacuation.
- Demonstrate understanding of inclusive evacuation management by identifying the unique needs of women, children, the elderly, pregnant women, and differently abled people, and discussing appropriate measures to ensure their safe and dignified evacuation.
- Apply evacuation planning principles in practical situations by analyzing real-life scenarios, identifying community roles and responsibilities—especially those of the evacuation committee—and recommending coordinated actions that strengthen preparedness and response.

Duration

01 hour

Facilitation Methodology

Interactive Lecture, Group Activity, Probing Questions for Discussions, and Q/A

Training Aids Required

- Flip charts
- Metacards
- Whiteboard
- Multi-color markers
- Multimedia with laptop and screen
- Masking tape
- Session handouts

Training Approach

1. Welcome participants and briefly introduce the importance of evacuation as a life-saving action.
2. Refer to the session objectives and explain that the session will include, short interactive exercise, a group activity with presentation, formal lecture and open discussion and Q/A.
3. Begin the session by asking the following questions to gather participants' reflections

Probing Question 1: *"Have you or your community ever faced a situation where evacuation was needed? What challenges did you observe?"*

Probing Question 2: *"What local barriers prevent timely evacuation, and how can the committee overcome them?"*

4. Record 4–5 key reflections on the whiteboard and put your input in summary form.
5. After the brief discussion on the above question asked, conduct a short activity to set the stage. Distribute five metacards with short situations among five separate groups. The metacards shall indicate the following messages:
    i. People receive SMS alerts of rising river water
    ii. Volunteers escort elderly women to the assembly point
    iii. Families settle in a school building temporarily
    iv. Authorities announce return after safety assessment
    v. Flash flood begins suddenly; people rush to higher ground
6. Ask participants to identify which evacuation stage each situation represents. Encourage quick group responses to energize the session.
7. After a fruitful discussion, divide participants into three groups and give them the following task. Each group receives one scenario related to evacuation:

Scenario for Group 1 (Immediate Evacuation): A flash flood started due to a heavy cloudburst. Elderly residents live closest to the riverbank. *Identify actions and challenges.*

Scenario for Group 2 (Pre-Warned Evacuation): A cyclone alert is issued 48 hours before expected landfall. Some families refuse to leave. *Plan warning, persuasion, logistics, and prioritization.*

Scenario for Group 3 (Shelter Management): A school building is designated as a temporary shelter. Water and sanitation are inadequate. *Organize shelter setup, privacy, and safety for women and children.*

8. Gave them 15 minutes for group discussion, followed by a plenary presentation by each group.
9. After group presentations, begin the formal lecture using slides.
10. Cover key concepts, drawing directly from the below evacuation-related material.
11. Close your session with a further questions/answers session, if time permits.

Background Material of the Session

6.13.1. Introduction to Evacuation Management

6.13.1.1. What is Evacuation?

Evacuation can be described as the temporary but rapid removal of people from a building or a hazard-prone area as a rescue or precautionary measure to safer areas. District administration officials evacuate people and their belongings as a protective action to help save lives in certain emergencies. Because of their complex nature, a safe and efficient mandatory evacuation depends on the efforts of both authorities and evacuees themselves.

Depending upon the severity of disasters, the evacuation process might vary from a few days to more than a few months or become permanent. In such a situation, it is called Relocation.

6.13.1.2. Types of Evacuation

There are two types of evacuation

- *Immediate Evacuation*

An evacuation resulting from a hazard impact that forces immediate action with little or no warning and limited preparation time, e.g., in case of an earthquake, flash flooding, and forest/urban fires, etc.



If evacuation is poorly organized or unsafe, it can worsen the situation and trigger new risks.

- *Pre-warned Evacuation*

During some of the emergencies like river flooding, drought, IDPs, and cyclones, etc., a pre-warned evacuation is possible that provides adequate warning time for the evacuee and government to take precautionary measures and take shelter in safer areas.

6.13.2. Stages of Evacuation Process

There are five stages involved in the evacuation process;

- Decision to evacuate
- Warning the target communities
- Withdrawal of the target communities
- Shelter and
- Return

6.13.2.1. Decision to evacuate

Being evacuated can be a disturbing experience for all involved. For a significant proportion of people, such as women, pregnant women, children, older people, and people with special needs, the experience can be potentially very serious because it removes them from established support mechanisms or exposes particular vulnerabilities.

Therefore, it is a very crucial stage to make a decision whether to evacuate or not to evacuate, and it should be dealt with very carefully.

It depends upon the availability of timely and relevant information. In case of flash floods, there is a need for immediate evacuation, but in case of drought, the people and the dealing organization have enough time to decide about the evacuation.

It has been observed during many disasters in the country that relevant organizations and even the affected communities are always hesitant or cannot make a decision to evacuate or not. If the decision to evacuate is made too late, the affected communities may be forced to evacuate under high-risk conditions or to take shelter in unsafe areas, or in other words, they might face the effects of the hazard impact.

If the decision to evacuate is made too early and the hazard recedes, the evacuated community may have been exposed to unnecessary risk, inconvenience, and costs may

sometimes be involved. In such a case, the dealing organization loses its trust and sometimes faces severe criticism by the media and the general public.

6.13.2.2. Warning the target communities

Warning is the 2nd stage of the evacuation process, which means to inform the general public in the form of advice or direction about the impending hazards and readiness for taking appropriate action.

Below are some of the methods to be employed for effective dissemination of information;

- To reach the maximum people possible in the shortest time, more efficient and effective methods should be used rather than a single method, i.e., use of cell phone, sms text messages among government key stakeholders, non-government organizations, community-based organizations, community leaders, volunteers, mosque loudspeaker, door-to-door knocking, drum beating, and use of mechanical siren, etc. However, the employed methods depend on the time frame available for the warning.
- Some methods are very appropriate in reaching a large number of the general public but with only relatively simple or generalized information, e.g., radio and television, although they depend upon the availability of these gadgets in the communities. It played a very important role during the Phet Cyclone in the coastal areas of Sindh and Baluchistan Province during 2010, when it led to early warning being received and, at the appropriate time, made it possible for the government machinery to save lives and properties.
- Use of the standard emergency warning signal, i.e, sirens, mosques' loudspeakers, etc, can enhance the effectiveness of electronic media warnings by alerting listeners to an urgent safety message to follow.

6.13.2.3. Withdrawal of the target communities

3rd stage of the evacuation process is withdrawal from the hazard-affected areas to safer areas and shelter places. It is essential that all community members, volunteers, and committee members involved have a clear understanding of their roles and responsibilities. Below are some of the considerations for effective withdrawal;

- Need clear-cut roles and responsibilities and coordination among all team members, committees, and responsible organizations/authorities.
- Who to evacuate first, when, and where to evacuate. Evacuations to be disciplined by phasing.
- What resources are available and what would be needed.
- To be identified, clearly marked, and controlled.
- Assembly areas are temporary stopping points prior to evacuating evacuees.
- Plan for those who may need special attention in the evacuation process.
- Confidence of the evacuees and to prevent looting. Volunteers and shelter committees should have a more dominant role.

To perform satisfactorily and well-disciplined withdrawal, regular drills/exercises and training are the key elements to achieve its success. Table-top or discussion-based exercises can also take place, which are particularly useful for practicing and scaling up plans. In both cases, all important stakeholders, including DDMA, local government, police, and affected communities, should be involved and actively participate. Exercise programmes should, where possible, seek to address recovery as well as response issues and, over time, test the full range of capabilities and responders who might be involved in a range of evacuation scenarios. It is further suggested that a peer review should be conducted by other planners or teams to check the quality of the exercise. It is essential that lessons identified from exercises, reviews, and actual events are captured, recorded, and implemented through a formal review process.

6.13.2.4. Shelter/camp management

It is the 4th stage, which involves the provision of the basic needs for affected people who have settled temporarily in the shelter places. Below are some of the considerations for shelter places;



Evacuation/Shelter Places

- Based on safety, availability, Identification of appropriate shelter areas of facilities, capacity, and numbers.
- The shelter places can be school buildings, community centers, open but raised platforms, sports complexes, or private buildings.
- Possible sites should be identified in the planning stages. Not too far from the affected areas, but should be located in a safe area.
- Vehicular access and outlet must be planned.
- Additional transport facilities. List out the vehicles in the nearby district, union council, villages, etc. Important names, designations, and cell numbers of the concerned officials should be available at hand.

Existing facilities and utilities at the shelter place—These must provide for:

- *Water*
- *Electricity*
- *Communications (for example, telephone, faxes, walky talky etc)*
- *Storage*
- *Catering services*
- *Medical support—this should include first aid and medical advice, etc*
- *Security at the place*
- *Registration of affectess.*

6.13.2.5. Safe return

It is the last and 5th stage of the evacuation process. Once the hazard no longer exists, return can be considered. There are a number of considerations that need to be taken into account in planning this stage. Before returning, it is necessary to assess the disaster area to determine if return is possible and identify any special conditions that may need to be imposed. As the return process is complex and may be prolonged, it is imperative that the plan clearly identifies the roles and responsibilities of the many agencies involved, including the civil authorities, volunteers, CSOs, NGOs, and individuals themselves.

6.13.3. Formation of the evacuation committee and its main task

It is essential to have a committee that will be responsible for evacuating all the affected people in an orderly manner. Such a committee can be formed at UC or even at the village level in close liaison with the DDMU of the concerned district. Their main responsibilities can be;

6.13.3.1. Pre-evacuation stage

- Conduct risk assessment and prepare evacuation plan.
- Identify the safe areas for safer evacuation. Maps should be available for the areas.
- Close liaison with the authorities responsible for issuing a warning.
- Organize training and education for the concerned staff and even for the committee under threat.
- Regular drills and simulation exercises on evacuation.
- Identify and prepare logistical requirements for evacuation.
- Coordination and mobilization of resources for the purpose of evacuation.

6.13.3.2. During evacuation

- Give the order to move.
- Manage logistics of the evacuation.
- More focus on evacuating vulnerable individuals first.
- Arrange ambulance/wheelchairs for people in need.
- Ensure orderly evacuation.

- Incident commander or committee head should act as marshals/guides during evacuation.
- Organize search and rescue and take support from the Rescuee 1122 and other civil defence authorities and volunteers.

6.13.3.3. At the evacuation center

- Coordinate with the health, food, sanitation, security, and information committees.
- Manage relief operations while in the evacuation center.
- Organize networking, public information, and resource generation activities.

Self-Assessment / Key Questions & Answers

Q1. Given Scenario: Heavy rainfall has caused sudden flash flooding in your area. The water level is rising quickly, and people have only 20 minutes to evacuate. Many elderly people live in the lower end of the village.

1. *Which type of evacuation is required?*
2. *What should the evacuation committee do first?*
3. *What actions are critical for protecting the elderly and children?*

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Q2. Given Scenario: A cyclone warning has been issued 48 hours before landfall. The village is informed through mosque loudspeakers and SMS alerts. Some families refuse to leave their homes.

1. *Which stage of evacuation is this?*
2. *How should the warning be strengthened?*
3. *What measures can reduce reluctance to evacuate?*

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Q3. What is the target audience that will be most vulnerable to the obstacles of unavailable early warning systems and inappropriate shelter design in case of a disaster?

a) Differently abled people

b) Traders and daily wage earners

c) Local leaders

d) Youth volunteers

Correct Answer: A

Q4. Which of the following is the first stage of the evacuation process?

e) Warning

f) Shelter

g) Decision to evacuate

h) Return

Correct Answer: C

Q5. Immediate evacuation is required when:

a) A cyclone is predicted 3 days earlier

b) A flood warning is issued through SMS

c) Earthquake or flash flood impact occurs suddenly

d) A drought situation is slowly worsening

Correct Answer: C

Q6. Which of the following is NOT a responsibility of the evacuation committee during evacuation?

a) Managing logistics

b) Arranging assistance for vulnerable people

c) Conducting search and rescue

d) Building permanent shelters

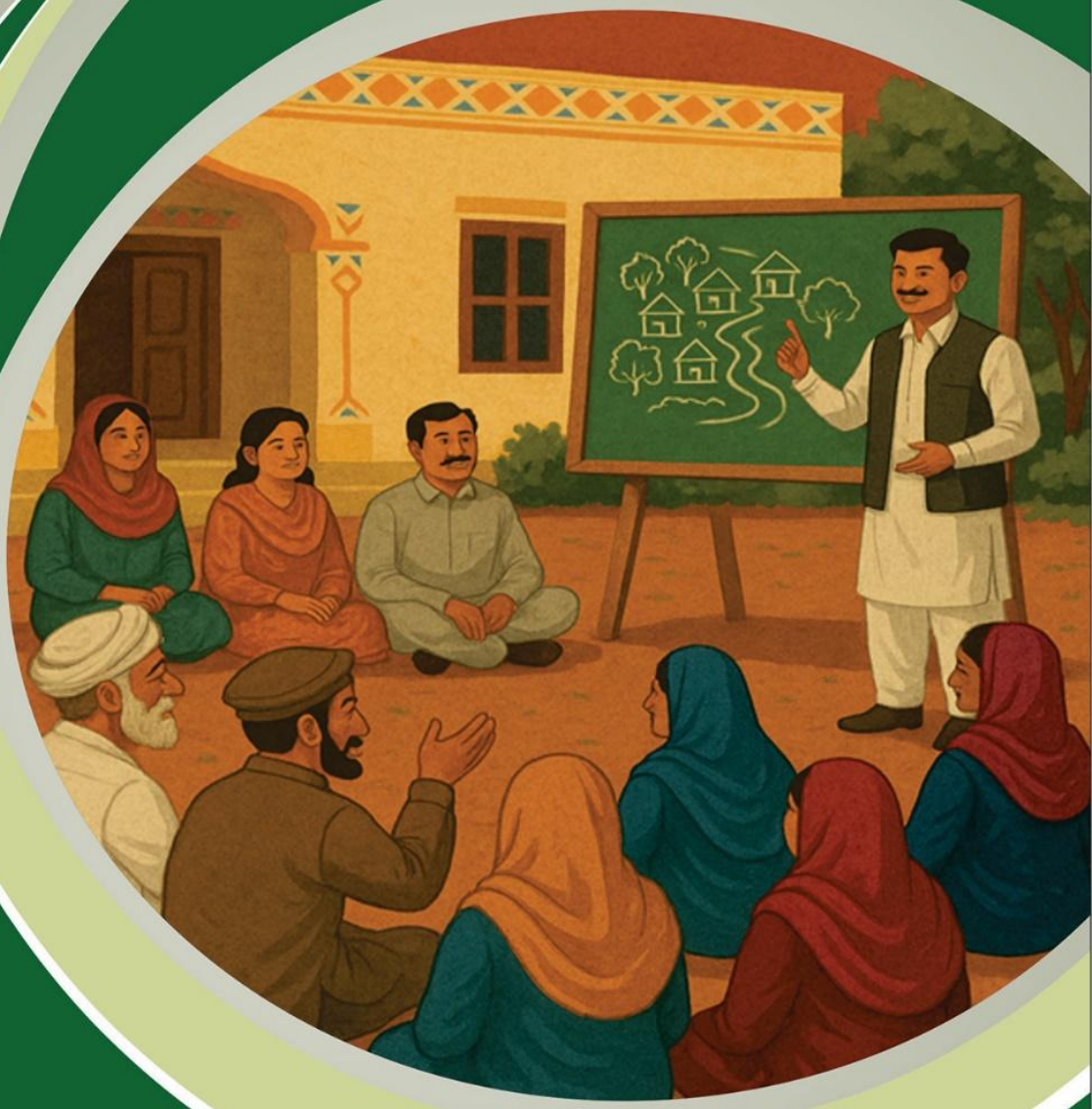
Correct Answer: D



Notes

Module Seven:

Institutionalization and Sustainability of CBDRM



Module Seven: Institutionalization and Sustainability of CBDRM

Objectives

By the end of this module, participants will be able to:

- ⇒ Enhance operational capacities of disaster management committees through training and simulation exercises.
- ⇒ Establish and maintain effective linkages between community structures, government organizations, and humanitarian actors.
- ⇒ Design and apply participatory monitoring and evaluation frameworks to assess DRR initiatives.
- ⇒ Create mechanisms for local resource mobilization, including the establishment of community disaster risk reduction funds.
- ⇒ Promote the long-term sustainability of CBDRM processes through advocacy, integration, and local ownership.

- ❖ Credit hours covered:
- ❖ Time required for this module: Five hours

Sessions to be covered in this module

Session 7.1: Enhancing Capacities of the Disaster Management Committees through Training, Drills, and Simulation Exercises

Session 7.2: Sustainability Framework for Local Disaster Management Committees

Session 7.3: Participatory Monitoring and Evaluation for Implementation of the CBDRM Projects

Session 7.4: Establishing Community DRR Funds and Resource Mobilization

Proposed Agenda of Module Seven

Time	Duration	Title of the Session	Facilitation Methodology
9:00 AM – 9:30 AM	30 minutes	• Registration and introduction • Training objectives and overview	• Formal session • Formal ceremony • Welcome by organizers • Announcement of administrative arrangements • An overview of the training
9:30 AM – 11:00 AM	1 hour 30 minutes	**Session 7.1:** Enhancing Capacities of the Disaster Management Committees through Training, Drills, and Simulation Exercises	• Interactive lecture, • Probing questions to facilitate discussion • Q/A
11:00 AM – 11:15 AM	***15 minutes***	***Tea Break***	
11:15 AM – 12:15 PM	1 hour	**Session 7.2:** Sustainability Framework for Local Disaster Management Committees	• Interactive lecture • Probing questions to facilitate discussion • Q/A
12:15 PM – 1:15 PM	***60 minutes***	***Lunch Break***	
1:15 PM – 2:45 PM	01 hour 30 minutes	**Session 7.3:** Participatory Monitoring and Evaluation for Implementation of the CBDRM Projects	• Interactive lecture • Group work • Interactive discussion • Q/A
2:45 PM – 3:45 PM	01 hour	**Session 7.4:** Establishing Community DRR Funds and Resource Mobilization	• Interactive lecture • Probing questions to facilitate discussion • Q/A
3:00 PM – 3:15 PM	***15 minutes***	***Working Tea***	
3:45 PM – 4:00 PM	15 minutes	Training evaluation	
4:00 PM – 4:15 PM	15 minutes	Closing ceremony Certificate distribution	



Session 7.1: Enhancing Capacities of the Disaster Management Committees through Training, Drills, and Simulation Exercises

Session Objectives

By the end of this session, participants will be able to:

- Demonstrate the significance of capacity-building programmes, training, basic and advanced training of disaster committees, as well as disaster sub-committees.
- Explain what the CBDRM cascading training model is and how the simulation drills contribute to preparedness.
- Identify some thematic capacity-building areas that lead to long-term disaster resilience and sustainability within the community.

Duration

01 hour 30 minutes

Facilitation Methodology

Interactive Lecture, Probing Questions to Facilitate Discussion, and Q/A

Training Aids Required

- Whiteboard with multi-color markers
- Flip stand
- Flip charts with permanent markers
- Multimedia with a laptop and a screen
- Session handouts

Training Approach

1. Start the session with the introduction of the topic and describe the objectives of the session. Discuss that this session aims to learn how capacity-building, training, and simulation exercises can enable disaster management committees to play an effective role in disaster preparedness and emergency response.

   Probing Question: Instead of starting your session, it is better to ask probing questions from participants to debate, i.e., "*How do you suppose that the existence of disaster management committees is important on the community level?*"

2. After a fruitful discussion, start explaining how DMCs are trained on the risk assessment, disaster risk reduction planning, and coordination of the implementation of such plans.
3. The facilitator should further emphasize cascading the CBDRM training, such as developing a pool of master trainers, providing them with Training of Trainers, and

then having the master trainers deliver further training at the union council and village levels. Emphasize the need for specialized training packages and capacity enhancement of emergency response teams and project implementation committees, enabling them to effectively strengthen the DMCs on a sustainable basis.

Probing Question: At this stage, the facilitator might ask questions to participants to generate discussion. *"What do you believe are the problems that DMCs have when they are not trained adequately?".* Take input from a few participants and note it down on the flip charts or whiteboard. Summarize the discussion after a fruitful discussion.

4. Explain through PPT slides how the members of DMC and volunteers should be trained to act promptly during emergencies. Mention the areas of practical training that might include early warning, evacuation management, first aid, search and rescue, fire safety, and shelter management. Emphasize the importance of the concerned organization for further imparting training and approach them to build the capacities of the DMCs committee. Some of these organizations include Rescue 1122, Civil Defence, PRCS, and various NGOs, which can provide support for delivering specialized training.
5. Further present slides highlighting the need to strengthen the capacities of DMC and sub-committee members in areas such as communication skills, leadership management, advocacy, project management, financial management, procurement management, and record-keeping.

Probing Question: During the slideshow, the facilitator can probe by asking, *"What is the potential to enhance disaster committee performance through the use of leadership and communication skills?"*

6. Justify the importance of regular simulation exercises to test preparedness to respond to emergencies. Share how to design the drills during various hazards and age groups, then debrief.

Probing Question: To generate further discussion, ask questions of the participants, *"What do you consider the value of having regular simulation drills in your community?"* Collect comments from a few participants and conclude the discussion.

7. In a summary, enumerate the most important points: the presence of DMCs, capacity building, the need to be able to respond to an emergency, the need to be trained on community skills, and the need to conduct simulation drills. Conclude by restating the argument that resilient communities can be built on strong and well-trained DMCs.

Useful Tips for the Facilitator

- As this session does not have any group work, the facilitator is suggested to probe questions time to time to ensure participants are attentive and participating.
- Special efforts should be made to involve those participants during Q/A session who participate less frequently.
- The facilitator may also invite a volunteer to assist in noting down comments and key points from participants on the whiteboard or flip charts.

Background Material of the Session

7.1.1. Strengthening disaster management committees

Disaster management committees at the community level are trained to have the capacity to carry out disaster risk assessments, prepare disaster management plans, and coordinate their implementation, all geared towards achieving the long-term sustainability of the committee. Using this standard training manual, devised by NIDM, CBDRM courses can be delivered to all disaster-prone districts through cascade CBDRM trainings for disaster-affected communities.

The capacity building is what is expected of the disaster management committees in general, and these subcommittees or teams need specialized and technical training to fulfill the objectives that are assigned to them. Therefore, tailored training packages for community emergency response teams and project implementation committees—focused on emergency response management and community-led skill training—would be valuable for building their capacities.

To ensure the ongoing and long-term sustainability of capacity-building efforts, frequent simulation drills and exercises should be conducted. It is also highly recommended to develop and implement an integrated training package and maintain a comprehensive CBDRM database at both the NDMA/PDMA and DDMA levels.

7.1.2. The community-based disaster risk management cascade training courses

The capacity building of disaster management committees in connection to CBDRM may be carried out with the use of a standard training toolkit in three phases;

7.1.2.1. Phase one

Use the training toolkit; a 5 to 6-day Training of Trainers (TOT) course on CBDRM should be conducted for District/Tehsil Government Officials and CERT members of the non-government organizations to develop a pool of master trainers.

7.1.2.2. Phase two

The selected CBDRM-TOT master trainers at the district and tehsil levels should serve as lead trainers in conducting CBDRM basics to the attendees of Union Council Disaster Management Committees and other community volunteers. While training duration may vary, it is recommended to conduct sessions of at least five days to ensure DMC members are well-trained in the CBDRM process.

7.1.2.3. Phase three

The potential trainers identified by the UC to receive CBDRM training at the UC level are recommended to serve as Assistant Trainers in delivering short-duration CBDRM basic training sessions to members of Village Disaster Management Committee(s) and other community volunteers.

7.1.3. Building capacities in emergency response management

Training DMC members and other community volunteers is essential to help them take the right actions during emergencies, as committees often fail to follow the plan. Consequently, it is recommended to conduct practical training on emergency response to empower local stakeholders in raising early warning, evacuating the vulnerable people, providing basic first aid, conducting search & rescue, and ensuring community-based fire safety.



The trained professionals are conducting hands-on exercises to enhance the capacities of the local DMC members

In this regard, the governmental organizations (such as local Rescue 1122, Civil Defence, and PRCS), as well as non-government organizations, should be engaged to conduct these training sessions.

7.1.4. Building community capacities through skilled training

For effective execution of activities and achievement of the disaster management plan's goals and objectives, the capacity of the DMC and its sub-committees, particularly the Project Implementation Committee, should be strengthened through community-managed skill training, enabling them to effectively fulfil their management responsibilities. Some of the training includes communication skills, leadership training, advocacy skills, project management skills, financial management skills, procurement skills, and record keeping.

7.1.5. Simulation drills and exercises

Periodic simulation drills must be conducted for different age groups within the targeted community as a refresher exercise and to determine the level of preparedness of members of the community and committees. Depending on local conditions, drills can be designed for one or multiple hazard scenarios. The drill's scenario and stages should be clearly explained to participants, and they should be



Women learning and practicing how to use fire extinguishers during firefighting drills

given access to the necessary tools. After the drill, a debriefing session should be held with all participants to review performance and provide feedback for future drills.

7.1.6. Integrated capacity building programme

To build a sustainable and resilient community, an integrated approach must be applied to both capacity building and practical exercises. The reinforcement of the community institutions and their members in disaster management has a positive impact on the entire community. The following are the recommended trainings to be conducted at various levels:

- Conducting School-Based Disaster Risk Management trainings to enhance the capacities of teachers, school administrations, students, and parents.
- Arrange health-oriented CBDRM trainings to Lady Health Workers (LHWs), Lady Health Visitors (LHVs), and other Community Health Workers to strengthen their skills in handling emergencies and disasters.
- Training on disaster risk reduction and livelihood so that the livelihood assets of the community can be augmented and the exposure to the hydro-meteorological hazards can be cut down.
- Regularly organize refresher courses and workshops for relevant local government officials on topics such as rapid need assessment, contingency planning, and proposal development.



Refresher training will further enhance the skills of CERT members by introducing new techniques and expanding their knowledge

Case Study 1: Strengthening UCDMCs for Glacier Lake Outburst Flood (GLOF) Preparedness in Ghizer District, Gilgit-Baltistan

Communities in Gilgit-Baltistan, particularly Ghizer and Hunza, are highly vulnerable to Glacier Lake Outburst Floods (GLOFs), flash floods, and landslides due to fragile mountain ecosystems and climate change impacts. Recurrent disasters between 2010 and 2018 destroyed homes, farmland, and infrastructure, prompting the GLOF-II Project by UNDP, the Ministry of Climate Change, and local NGOs to establish Union Council Disaster Management Committees (UCDMCs).

These committees were formed in valleys such as Gupis and Yasin, with inclusive membership of women, farmers, youth, and religious leaders. They received training in risk assessment, hazard mapping, and early warning dissemination, supported by AKAH (NGO). District Disaster Management Authorities (DDMA) and Rescue 1122 were engaged in simulations, linking community structures with formal institutions. Partnerships enabled early warning systems, protective works, and volunteer-led monitoring of glaciers and rivers.

During the 2018 Ishkoman GLOF, UCDMCs worked with DDMA to evacuate 300 households, reducing casualties. Their inclusion in district contingency planning ensured local risk assessments shaped official strategies, while women's participation enhanced household preparedness and safe evacuation practices. NGO linkages also provided grants for climate-resilient agriculture, aligning disaster risk reduction with livelihoods. However, challenges emerged as many UCDMCs became inactive after donor-funded projects ended due to limited resources, weak recognition, and lack of a National CBDRM Framework. Inconsistent coordination with government departments further limited sustainability.

Self-Assessment / Key Questions & Answers

Q1. Which step is the initial step in the cascade CBDRM training model?

a). Union Council level training.

b). Training of Trainers of officials and CERT members.

c). Village Disaster Management Committees Training.

d). Community volunteer practice exercises.

Correct Answer: B

Q2. What is the use of periodic simulation drills to disaster management committees?

a). They substitute the necessity of training.

b). They entertain society.

c). They check readiness and discover deficiencies in response.

d). They are needed on the national level only.

Correct Answer: C

Q3. What has not been listed among the following skills provided as community-based disaster management skill training within community-managed disaster committees?

a). Communication skills

b). Financial management

c). Procurement

d). Software programming

Correct Answer: D

Q4. Describe the three stages of the cascade CBDRM training model and comment on how the three stages enhance disaster management committees at various levels (district, union council, and village). Include in your response the contribution of this model to long-term community resilience.

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References

- Asian Disaster Preparedness Center, Bangkok, Thailand (2011), "*Participants' Workbook on 'Community Based Disaster Risk Reduction".*
- National Institute of Disaster Management, National Disaster Management Authority, Government of Pakistan (2019), *"Participant's Workbook on Community-Based Disaster Risk Management".*
- PubAdmin.Institute (2023), *"Training and Capacity Building in Disaster Management: Enhancing Preparedness"*
- Vladislav Kovalevski, *"Capacity Building for Disaster Risk Management",* published by the Global Disaster Preparedness Center.



Session 7.2: Sustainability Framework for Local Disaster Management Committees

Session Objectives

By the end of this session, participants will be able to:

- Explain the importance of institutionalizing the LDMCs within government disaster management systems to ensure their sustainability and survival.
- Analyze the challenges and possibilities of the re-cognition of LDDMCs to the local governance and disaster management systems.
- Design the framework for ensuring the sustainability of LDMCs
- Encourage community-level stockpiling by training LDMCs members in warehouse procedures, inventory control, and transparent distribution of relief items during emergencies.

Duration

01 hour

Facilitation Methodology

Interactive Lecture, Probing Questions to Facilitate Discussion, and Q/A

Training Aids Required

- Whiteboard with multi-color markers
- Flip charts with permanent markers
- Flip stand
- Multimedia with a laptop and a screen
- Session handouts

Training Approach

1. Inform participants that the discussion will be on why institutionalization of local disaster management committees is needed, the challenges, and discuss the framework for ensuring sustainability.

   Probing Question: To engage participants, ask a probing question: *"Why do you think that most disaster management committees are dormant once projects are over?" What are the main reasons, and how can we sustain even after the closure of the project?*

2. Describe the challenges that LDMCs often face and why they are not sustained. Despite the sincere efforts of NGOs and communities. Use the PPT slides to support your discussion of these challenges.

Probing Question: At this stage, the facilitator may ask another question to prompt discussion, such as: *"What can happen if local disaster management committees remain project-based and temporary?"*

3. Talk about how the majority of the LDMCs become dysfunctional once donor-funded projects end. They describe themselves as having no resources, ownership, or motivation without formal acknowledgement or integration into the governance systems. It is essential to emphasize that institutionalization is crucial for continuity, as it involves formally registering with the DDMA, local governments, or social welfare departments.

Probing Question: Probe another question for discussion, i.e., "*Who, in your view, should be at the forefront in formally recognizing LDMCs: the government or the NGOs?" Which government-level organization would you recommend for registration?*

4. Afterward, describe how the sustainability of LDMCs relies on sound and constant links with the government and NGOs. Talk about the advantages of institutional recognition, e.g., training access, early warning, and response resources. Include how LDMCs may act locally in planning and decision-making through partnerships with NGOs and INGOs that provide technical assistance, a platform to voice their views, and credibility.

Probing Question: *To further generate discussion, ask how the collaboration between LDMCs and government organizations can enhance disaster preparedness in your community. What further support can they provide to strengthen the DMCs?*

5. Conclude your discussion by asking a question to take further input from the participants.

Probing Question: *"What can be done to make sure that LDMCs are active and effective in your community? What is the one step that can be taken now?"*

6. Encourage participation from those who may feel shy by inviting their input, motivating them to engage further, and concluding the session with a round of applause to appreciate everyone's contributions.

Background Material of the Session

7.2.1. Need for institutionalizing the local disaster management committees

Since the enactment of the National Disaster Management Act in 2010 and the introduction of a disaster risk management framework in the country, significant progress has been made in all aspects of disaster management, including the CBDRM. In this context, non-governing stakeholders have played a vital and supportive role in strengthening DRM systems and structures at the local level through various CBDRM-related initiatives across different disaster-prone districts. It is, however, clear that although these efforts have brought some temporary relief to the communities, they do not have long-term or physically noticeable effects on the livelihood resilience and sustainable development of disaster-resistant communities.

7.2.2. Gaps and challenges in institutionalizing the local-level disaster management committees

Lack of a National CBDRM Framework is one of the major impediments when it comes to the sustainability of the disaster management committees at the community level. This causes non-governmental stakeholders to tend to act and support communities based on their perceptions or project and community needs, thereby creating their own approaches to the community, which are uncoordinated and varied. Despite these substantial efforts, certain gaps still hinder the institutionalization of disaster management committees at the community level. These include:

- The implementing partners have also failed to establish a central digital database of trained community volunteers and master trainers who have undergone different programmes in capacity building.
- Many local disaster management committees formed through various CBDRM projects/programmes to carry out disaster management roles are dissolved once the project is completed.
- Non-governmental stakeholders seldom cooperate with Provincial or District Disaster Management Authorities or any other government bodies and work alone to complete the project targets.
- The government continues to pay limited attention to CBDRM programmes/projects, providing little support for maintaining local disaster management committees, developing a central database for community emergency response, or establishing a legal framework to safeguard these committees.
- The community-based CBDRM interventions have not been effectively linked to the CBDRM efforts at the provincial, national, or global levels.

7.2.3. Framework for the Sustainability of Local Disaster Management Committees

7.2.3.1. Institutional recognitions and legal backing

Most of the Local Disaster Management Committees, i.e., UCDMCs, CERTs, and VDMCs, become dysfunctional after the closure of donor-funded projects, which can be attributed to their lack of ownership or institutionalization. Such committees tend to be formed with a limited budget to establish disaster management committees as one of their project components and outcomes, and do not become an integral part of the local government system. They are never formally incorporated and thus do not receive institutional support, resources, or long-term attention, which



Institutionalization of LDMC within the government system

makes it challenging to utilize. This disassociation causes low motivation and role ambiguity, resulting in dysfunctional and inactive disaster management committees. Typically, LDMCs cannot be involved in the disaster management planning or response processes unless they are registered formally with the district disaster management authorities or the social welfare department or, locally, with the municipalities.

Therefore, it is strongly suggested that such disaster management committees be institutionalized to ensure their long-term effectiveness is achieved, by making them formally accepted and incorporated into local governance, and as permanent rather than project-related entities. This can be achieved by registering them with DDMAs or relevant government departments such as Social Welfare and Local Government. Once registered, PDMAs and DDMAs should issue official notification or recognition letters, thereby legalizing the DMCs as part of the provincial disaster management structure. Furthermore, these committees should be integrated into provincial DRM policies, rules of business, and contingency plans. Such steps will guarantee their continuity and operationalization beyond the lifespan of donor-funded projects.

One of the major hurdles in the formal registration of LDMCs with the DDMAs or PDMAs is that the National Disaster Management Act 2010 does not explicitly recognize the existence or role of local-level committees, nor has their role been clearly defined. It is therefore suggested that NDMA and the respective PDMAs make the necessary amendments to their respective Acts to formally acknowledge these committees as legal entities.

7.2.3.2. Centralized database and knowledge management

Following the devastating 2005 earthquake and the major floods of 2010 and 2022, non-governmental entities have played a vital role in supporting NDMA and PDMAs by strengthening the capacities of disaster-affected communities. They have provided professional training and organized these communities into local disaster management committees to ensure effective service during emergencies. However, a formal centralized database of these committees and trained volunteers does not exist at NDMA or PDMAs. While some information may be available in scattered forms, it is not maintained under a professional data management system that properly records local DMCs and trained community volunteers.

Therefore, there is a need to establish a centralized and regularly updated database management system of community volunteers, UCDMCs, CERTs, and VDMCs, which is crucial for tracking community capacities, ensuring their engagement as a professional community workforce during emergencies, and ensuring the effective deployment of resources during disasters. At the provincial level, a digital database of trained community volunteers, master trainers, and DMC members should be established and maintained by DDMAs, while linking with NDMA's national system. Alongside this, knowledge management must be strengthened by systematically documenting good practices, lessons learned, and hazard maps developed at the community level. These resources should be widely shared to enhance coordination and replication of successful approaches.

7.2.3.3. Resource mobilization and financial sustainability

Sustainable financing mechanisms are essential for the continued functioning of LDMCs. Dedicated budget lines should be allocated at both provincial and district levels to support

committee activities, including training, early warning dissemination, and procurement of basic equipment. The LDMCs should also be enabled to access development funds, social protection schemes, and local government allocations, ensuring financial resilience. In addition, partnerships with the private sector should be actively promoted to mobilize resources and support disaster risk reduction initiatives at the community level.

NOTE: Further detailed discussion has been included on this topic in session 7.4 of this module.

7.2.3.4. Capacity development and technical support

For LDMCs to remain functional and practical, continuous capacity development is vital. Regular refresher training sessions should be institutionalized in collaboration with PDMA, Rescue 1122, Civil Defence, PRCS, NGOs, and UN, ensuring that members remain skilled and up-to-date. Committees should also be provided with access to early warning systems, communication tools, and emergency stockpiles. Furthermore, linking LDMC members with national training institutions such as NIDM for certification and ongoing learning will strengthen their professionalism and enhance their credibility as local-level disaster responders.

7.2.3.5. Engagement strategy of LDMCs on commemoration days

Observing major national and international days, including International Volunteer Day, DRR Day, 8th October Earthquake Day, 3rd October International Shakeout Day, School Safety Day, Humanitarian Day, GIS Day, and Environment Day, is an effective way of maintaining the involvement and motivation of communities, disaster management authorities, and humanitarian partners. Such events provide LDMCs with opportunities to showcase their disaster preparedness efforts, share success stories, and instill a sense of pride and ownership in their communities.

This also gives LDMCs greater visibility and connection with disaster management authorities, other government organizations, I/NGOs, and other stakeholders as a result of such commemorations. Communities can demonstrate resilience efforts, advocate for technical and financial support, and promote inclusive participation among youth, women, and marginalized groups through mock exercises, awareness creation, and exhibitions.

Constant involvement ensures the presence of additional engagement, maintains the pace of preparedness, and aligns local-level activities with national and international resilience objectives. In the case of LDMCs, these observances are not symbolic in their own right but rather catalyze solidarity, renewed devotion, and institutionalized disaster preparedness.

7.2.3.6. Multi-stakeholder linkages and partnerships

Strong networks and partnerships are central to the sustainability of LDMCs. Structured coordination platforms should be established to bring together LDMCs, NGOs, INGOs, and humanitarian agencies for better planning and collaboration. Joint simulation exercises and contingency planning at the tehsil and union council levels will build trust and operational synergy among stakeholders. The LDMC representatives should also be included in District Disaster Management Committees (DDMCs), ensuring two-way communication, better integration of local perspectives, and alignment of community-level actions with district and provincial strategies.

7.2.3.7. Monitoring, accountability, and community ownership

The long-term sustainability of DMCs depends on effective monitoring and active community ownership. Performance indicators such as the frequency of meetings, drills, and participation in response operations should be developed and tracked regularly. DDMAs should be mandated to prepare and submit annual progress reports on the status and functionality of LDMCs. At the same time, fostering community ownership is crucial; this can be achieved by promoting volunteerism, establishing small community savings funds, and implementing resource-sharing mechanisms. Such contributions not only enhance accountability but also create a sense of belonging and responsibility among community members, ensuring that the committees continue to thrive even after external support is withdrawn.

7.2.4. Establishing Community Stockpiling Mechanisms at Village Levels

7.2.4.1. Rationale for community stockpiling

Many communities in remote areas lack adequate resources and the tools needed for deployment during or after a disaster. With fully equipped stockpiles, community members can act as confident first responders until additional help arrives. In this regard, the community-level stockpile management system established by AKAHP in Gilgit-Baltistan and Chitral serves as an excellent model. They have formed community-based emergency response teams equipped with specialized knowledge and skills to respond effectively to disasters in their respective areas. To enhance community coping capacity, AKAHP has established Stockpiles of emergency relief and response items. The community emergency response team is looking after these community assets voluntarily with their respective communities. However, in a few locations, these stockpiles also exist in communal places. To improve the storage system, AKAHP has proposed improvements to the stockpile room.

7.2.4.2. Key Components of a Community-Level Stockpiling

a. Selection of Community Stockpile Room

Room selection for improvement should be coordinated closely with Local Councils. Stockpiles are located in those areas where communities' economic conditions are comparatively weak and cannot be supported through self-help.

b. Location of the Stockpiles

Ideally, it should be situated at a central point of the cluster, which is easily accessible; however, in exceptional cases, the stockpile items may be stored in community centers as a central point for all community members.

c. Ideal Storage or shelving Storage

There must be shelves for storing stockpile items. In case of unavailability, all the items should be at a certain height from the floor and the sidewalls.

- Search and rescue equipment, i.e., Crowbar, Picks, Shovel, Hammers, Torches, and rope must be kept next to the door.

- Next to these items, the first aid box must be placed. All items should be at a certain height from the floor, and sidewalls should be used if shelves are unavailable.

Some of the essential and precautionary measures or guidelines are as follows:

- Shelter items are kept at least two feet away from the floor and two feet away from the side walls to avoid decaying of the items.
- After six months, all items should be checked for moisture. Affected items should be dried in the sunlight
- Usage of preservative material like rat killer medicine and naphthalene balls saves the items for a long time.
- Covering items with tarpaulin saves the material from dust.
- From time to time, apply grease to the chain pulley.
- Keep helmets safe from heat or falling.
- Dispose of the expired and wet first aid items.
- Keep the first aid box in a safe place of storage.

d. Record Keeping

Proper recordkeeping is essential for effective stockpile management and transparency. All stockpiles are required to maintain the following records:

- Stock register
- Stock card for monitoring and inspection
- Ledger
- Register for issue and recovery

Note

- The stock register should always be present in the store so that items can be entered to maintain a complete inventory and ensure a flow of items back and forth.
- The stock card is used for updates and a summary of the stock inspection.
- A sample of stock register, stock cards, and inspection cards is attached to this manual as annexure A, B, and C, respectively.

e. Agreements Between the Community and AKAHP

A mutual agreement is made between AKAHP and the concerned community. The deal requires communities to provide land at no cost for the construction of a stockpile room and to commit to future replenishment as part of the sustainability plan.

f. Role of Community Pre, During, and Post-Disaster Situations

Community members are responsible for maintaining the stockpile properly before, during, and after a disaster. They are also responsible for deploying the required items to the affected areas as and when needed and collecting them back on time. Community members will not receive any rewards or budget for these activities. The community, through its representative, will also contribute to the stockpile in terms of funds and materials, including grains.

7.2.5. Challenges Faced in Stockpiling

Despite its importance, maintaining a community-level stockpile is often challenging, and its effectiveness and operational readiness differ from one community to another. Some of the key challenges are outlined below:

7.2.5.1. Limited funding or community resources

Many villages struggle to maintain a functional stockpile due to insufficient financial resources. Limited funds mean that communities cannot always purchase essential items in adequate quantities or replenish used items on time. In some cases, even basic storage facilities are not available. This financial constraint also affects the community's ability to conduct regular monitoring, maintenance, and transportation of stockpiled goods during emergencies.

7.2.5.2. Theft or misuse of items

Stockpiled items are vulnerable to theft or unauthorized use if proper security measures are not in place. Community members may sometimes borrow items for personal use, assuming they can replace them later, which creates gaps in the stockpile. Inadequate record-keeping and the absence of a clear accountability system can further increase the risk of misuse, especially during periods of social or economic hardship.

7.2.5.3. Poor maintenance or infestation

Improper storage conditions can lead to deterioration of items, especially food stocks, tents, blankets, and ropes. Rat or insect infestations can destroy a significant portion of supplies, reducing the stockpile's reliability during emergencies. Moisture, humidity, and poor ventilation also contribute to the spoilage of materials. Without periodic inspection and maintenance, communities may not be aware of damage until it is too late.

7.2.5.4. Lack of women's participation

Women often play a key role in household management and caregiving, yet they are frequently excluded from stockpile planning and decision-making. Without their input, essential items such as sanitary products, baby food, maternal health supplies, and culturally

appropriate clothing may be overlooked. The absence of women also limits the stockpile's ability to address privacy-sensitive needs during evacuation and sheltering.

Case Study 2: Lessons from the 2005 Earthquake: The Importance of Decentralized Warehousing

The 2005 earthquake in Pakistan revealed severe gaps in the management of disaster logistics and supply chains. The locations of central warehouses were among the most significant problems in the emergency response, as they disrupted the supply chain, and the distribution of relief goods took too long. Most of the warehouses were located far from the earthquake-affected areas, which meant it could take days to deliver relief items to them. Meanwhile, the complex approval process across departments delayed the acquisition and distribution of relief items to disaster victims. Further, once approval was granted, the roads were found to be inaccessible due to broken roads, landslides, and collapsed infrastructure.

The lesson learned was that centralized warehouse systems are ineffective for timely distribution and often lead to significant transportation costs when moving commodities from one area to another. This realizes the importance of adopting a more decentralized and resilient stockpiling approach, particularly in regions with specific disaster-prone priorities.

Based on this, there is a need to ensure that there are various levels of stockpiles at the district, tehsil, and even union councils' levels. The existence of smaller and scattered warehouses, operated in conjunction with local disaster management committees, will ensure that relief supplies are accessible even when the larger central ones are destroyed. Decentralization also reduces reliance on far-flung transportation in case of emergency and ensures that life-saving equipment is readily available in areas near communities impacted by disasters.

Self-Assessment / Key Questions & Answers

Q1. Given scenario: If an LDMC formed during a donor-funded project becomes inactive after the project ends, how could official recognition by DDMAs or municipal bodies ensure its long-term sustainability?

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Q2. Given Scenario. If multiple NGOs establish LDMCs in the same district without coordination, what challenges might arise, and how could a comprehensive sustainability Framework address these gaps?

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References

- National Institute of Disaster Management, National Disaster Management Authority, Government of Pakistan (2019), *"Participant's Workbook on Community-Based Disaster Risk Management".*
- Asian Disaster Preparedness Center, Bangkok, Thailand (2011), "*Participants' Workbook on 'Community Based Disaster Risk Reduction".*
- Provincial Disaster Management Authority, Government of Punjab, (2022), *"Community-Based Disaster Risk Management Programme".*



Session 7.3: Participatory Monitoring and Evaluation for Implementation of the CBDRM Projects

Session Objectives

By the end of this session, participants will be able to:

- Explain the concept of participatory monitoring and evaluation and how important it is during the execution of the CBDRM projects.
- Identify practical tools and approaches that communities can apply to track the progress of the CBDRM projects.
- Examine the role of PM&E in ensuring transparency, accountability, and constant enhancement of local DRR activities.
- Interpret how community-led feedback and complaints mechanism contributes to institutionalizing confidence and ownership.

Duration

01 hour 30 minutes

Facilitation Methodology

Interactive Lecture, Group work, Interactive discussion followed by Q/A session

Training Aids Required

- Whiteboard
- Multi-color markers
- Flip charts
- Flip stand
- Multimedia with a laptop and a screen
- Masking tape
- Scissors
- Cutter
- Session handouts

Training Approach

1. Begin with the introductions and the subject of Monitoring and Evaluation (M&E) concerning Community-Based Disaster Risk Management. Highlight that M&E guarantees accountability, transparency, and ongoing disaster risk reduction activities.

Group Work 1: At the start of the session, organize group work by displaying the following three questions and assigning them to three different groups.

- *What simple tools or methods can communities use to monitor the progress of CBDRM projects*
- *How can feedback from communities—including women, youth, and marginalized groups—be used to improve ongoing disaster risk reduction activities?*
- *What challenges do you think communities face in monitoring and evaluating disaster projects, and how can these challenges be addressed?*

2. Gave them 30 minutes for provoking discussion. Furthermore, allocate 10 minutes each to presentations, followed by an open discussion and participant feedback.
3. Afterwards, start your presentation by discussing first the meaning of monitoring as the regular examination of the activities, both process monitoring (following through on the implementation in comparison to the plans) and effect monitoring (Determining the impacts). Then consider evaluation to be the measurement of achievements, results, and effects- usually done at the conclusion or midway through projects. Provide examples of practical techniques of M&E, such as direct observation, key person interviews, review meetings, and progress indicators.
4. Explain why traditional M&E tends to marginalize communities and how participatory M&E turns the tide and engages community members in all processes, such as indicator development, data collection and analysis, and decision-making. Emphasize that PM&E develops trust, transparency, accountability, and local ownership.
5. Offer user-friendly and straightforward tools like community scorecards, DRR activity trackers, before and after maps, photographs, participatory timelines, and seasonal calendars. Describe how the tools assist the communities in following up on progress, visualizing risks, and updating preparedness actions. Highlight the role of Compliance and Redressal Mechanisms (CRMs), such as suggestion boxes or hotlines, in enhancing accountability.

Probing Question: At this stage, a probing question for discussion: *"Which of these tools, in your opinion, would be most useful in your community, and why?"*

6. Collect input from different participants and summarize the discussion.
7. Concisely explain why M&E and PM&E play an essential role in enhancing CBDRM: accountability, transparency, adaptive learning, and community transformation to become active participants in disaster risk management. Emphasize that these strategies would turn communities into recipients of passive aid and into resilient planners and decision-makers.
8. After fruitful discussion and group work, ask participants if they have any further questions to ask and clarify through discussion. At the end of the close session, thanks to the participants.

Useful Tips for the Facilitator

- While participants are working in groups, the facilitator should carefully monitor the time, particularly the portion allocated for presentations, as these can sometimes become too lengthy and lose participants' interest.

- The facilitator should reorganize and form new group members daily to introduce new members in groups.

Background Material of the Session

7.3.1. What is monitoring?

Monitoring is the process of periodically reviewing activities and assessing progress against planned schedules, as well as the number of achievements realized. There are two types of monitoring: 1) process monitoring, and 2) effect monitoring. In process monitoring, the implementing process is assessed; thus, if it is behind schedule, additional inputs/actions are added to catch up with the timeline. For process monitoring, indicators can be developed at key stages. In the case of effect monitoring, the impacts are assessed. If there are negative impacts, stakeholders are responsible for taking appropriate actions to mitigate the adverse effects.

7.3.2. What is evaluation?

Evaluation is the assessment of achievements, results, and effects, usually conducted at the end of the project, but sometimes it can be done during the implementation phase. Evaluations are conducted to know: how many of the objectives are achieved, how successfully the project contributed to disaster risk reduction, what the effects of the project were on the community, and accountability. If the set objectives are not achieved, additional inputs need to be considered.

7.3.3. Importance of the monitoring and evaluation process

The Monitoring and Evaluation (M&E) process serves as a platform to ensure that disaster risk reduction efforts are effective, relevant, and responsive to community needs, while also providing insights for continuous improvement, accountability, and informed decision-making. It offers communities and stakeholders with the time to assess their progress and see

Method of Monitoring & Evaluation

- **Direct observation by visiting the field:** Conduct on-site visits to observe activities, facilities, and community engagement firsthand. This helps assess whether planned interventions are being implemented as intended and identify any gaps, challenges, or good practices. Field observations also allow for real-time feedback and adjustments.
- **Interviewing survey with the key persons:** Carry out structured or semi-structured interviews with key stakeholders such as community leaders, UCDMC members, government officials, NGO representatives, and beneficiaries. These interviews help gather qualitative insights, understand local perceptions, and identify strengths or weaknesses in project implementation.
- **Conducting review meetings among the stakeholders:** Organize regular review meetings with all relevant stakeholders, including government agencies, NGOs, and community representatives. These meetings provide a platform to discuss progress, share experiences, address challenges, align actions, and make collective decisions to improve implementation.
- **Monitoring with indicators, by reviewing the existing activity reports, progress:** Use predefined performance indicators to track progress against project goals. Review activity

how effective their activities are, allowing them to make any necessary changes in real-time. However, the traditional M&E has consistently placed the responsibility on external stakeholders' analysts in a way that does not involve and does not make the individuals who are most affected by the disasters own it. Participatory Monitoring and Evaluation (PM&E) reverses this situation, involving the community members at all levels of the operation: in developing indicators and collecting data, analysing findings, and making decisions.

PM&E can contribute to the greater accuracy and relevance of monitoring data. Communities are made to believe that it is their duty to learn and improve. PM&E is more than a technical exercise, and it is an instrument in terms of developing trust, transparency, and accountability. It gives the communities the ability to have a glance at what they have experienced, enjoy all that has been going well, and understand what needs to be transformed. This entails another anchoring of local ownership and also establishes the rhythm of ensuring that DRR takes deep roots.

7.3.4. Role of PM&E in the CBDRM process

PM&E is very significant to the framework of the CBDRM process. It allows communities to trace the technical procedure regarding the action plans that are confirmed and pursue the clear-cut indicators of DRR, which depict local interest. In this manner, it would be possible to identify loopholes and faults in the implementation process at an early stage and therefore fix them soon. All in all, transparency is encouraged as disclosure of monitoring outcomes is practiced regularly in all parts of the community. Everything becomes known to everybody regarding what was in the plan, what was achieved, and what issues are still present.

The local accountability of the PM&E is also strengthened since reporting by individuals about their actions can determine their responsibility for taking the action and its accomplishment of the duty. This encourages the accountability of both the leaders within the community and the non-profit-making bodies. Finally, and lastly, a cultural construct of adaptive learning is established by PM&E. It encourages honest evaluation of the successes and even the failures, and societies have succeeded in improving their policies, sharing of resources, and perhaps not falling into the same pitfall at the same time.



7.3.5. Easy and user-friendly tools of PM&E

The mitigation PM&E of the arsenic needs to be simple, feasible, and flexible to the local setting to make the arsenic mitigation PM&E work well and manageable on a large scale. Multiple low-tech tools that the whole community can use without any literacy degree could be adopted. Systems such as the community scorecards, e.g., enable the villagers to give an assessment of their satisfaction with the quality of DRR services, training, and improvement of infrastructure, and are informed directly of their score in a previously recognized format. Similarly, the DRR activity trackers give a simple instrument to contrast the work envisaged in plans with the work extended to inquire whose work it was to implement the guidelines.

Other visual aids, such as before-and-after maps and photographs, will be helpful to the community by helping to monitor observable changes in the extent of risks, infrastructure,

and preparedness. They can be very helpful during the updating of the communities in meetings. Participatory discussions include topics such as the focus group meeting type, which discusses people in groups to capture the contribution of different types of groups, like women, youth, the elderly, and differently abled people. Participatory timelines and seasonal calendars allow communities to formulate their patterns regarding hazards, what to expect in staging seasonal preparedness, and how the DRR activities have unfolded over the course. Such tools will require neither any special technology nor any special knowledge and, consequently, will be suitable for use in the community.

7.3.6. Accountability, transparency, and the work of CRM

The use and role of PM&E can be best described in the realms of strengthening DRR transparency and accountability. Additionally, the results, as presented, allow the community members to know what was intended, what was delivered, and by whom; hence, PM&E makes the community members conscious of the planned, delivered, and provided by whom. This transparency creates trust among the communities and the implementing organizations, and a need to further engage in risk reduction.

As another initiative to strengthen such principles, the Compliance and Redressal Mechanism (CRM) is to be included in the processes of CBDRM. CRM is an organized, secure, and confidential source where the members of the community can express their voices, lodge grievances, or complain regarding DRR activities. These can consist of such problems as denial of aid, service queues, or corruption. An effective CRM defines a clear process of receiving, documenting, analyzing, and responding to feedback with every instance taken seriously and responded to in a timely manner. There might be mechanisms to utilize depending on the local context, e.g., a suggestion box, contacting a particular focal person, phoning a hotline number, or holding monthly forums to take up the complaints. Introduction of such channel's aids in increasing community confidence in the fairness and sensibility of DRR initiatives.

7.3.7. The adaptive learning tool PM&E

Other than accountability, reporting, and PM&E, it is a robust instrument of adaptive learning. It also has the potential to make monitoring a dynamic tool for making choices and solving problems. Making observations can help communities that observe to be ready to update their plans of action once there is an unexpected impact, such as changes in climate or a sudden threat. They can also explore and develop viable strategies, such as appropriate early warning systems or effectively deployed emergency stores of materials, through continuous contemplation. In the meantime, it is possible to address the things that should be improved, such as inadequate conditions of shelters or supplies that are not used.

It does so by placing the community out of the status of passive receivers of aid to risk managers and planners. Communities thus attain resilience beyond the infrastructure, beyond systems, in terms of better capabilities, better collaborations, and collective learning occurring during participatory monitoring and evaluation.

Self-Assessment / Key Questions & Answers

Q1. What is the difference between process monitoring and effect monitoring?

a). The process monitoring checks financial accountability, and the effect monitoring checks transparency.

b). Process monitoring measures implementation progress, whereas the effect monitoring measures impacts.

c). External agencies are involved in process monitoring, and the community in the effect monitoring.

d). Effect monitoring is a mandatory task, and process monitoring is optional.

Correct Answer: B

Q2. Why is such a tool not listed among those of Participatory Monitoring and Evaluation?

a). Community scorecards

b). Seasonal calendars

c). Before-and-after maps

d). Sophisticated statistical modelling software.

Correct Answer: D

Q3. Demonstrate the relevance of Participatory Monitoring and Evaluation in the CBDRM process. What are its contributions to transparency, accountability, and local ownership in disaster risk reduction?

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Q4. Identify at least three tools of PM&E (community scorecards, activity trackers, before-and-after maps, seasonal calendars). Share how these tools can assist communities to track progress, detect gaps, and enhance resilience.

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References

- EvalCommunity, *"Participatory monitoring and evaluation approach with examples"*
- United Nations Development Programme (2021), *"Guidance for Participatory Monitoring, Evaluation and Learning System",* published an effective collaborative action guidance series.
- Asian Disaster Preparedness Center, Bangkok, Thailand (2011), "*Participants' Workbook on 'Community Based Disaster Risk Reduction".*
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Session 7.4: Establishing Community DRR Funds and Resource Mobilization

Session Objectives

By the end of this session, the participants will be able to:

- Explain how it is possible to create community DRR funds.
- Describe ways of resource mobilization and funding opportunities in Pakistan.

Duration

01 hour

Facilitation Methodology

Interactive Lecture, Probing Questions to Facilitate Discussion, and Q/A

Training Aids Required

- Whiteboard with erasable markers
- Flip charts with multi-color markers
- Flip stand
- Multimedia with laptop and screen
- Session handouts

Training Approach

1. Introduce the topic of resilience under the theme of community disaster risk reduction funds. Point out that communities in Pakistan are frequently affected by the recurring disasters, yet they do not always have access to external help on time. Locally controlled DRR funds enable communities to respond quickly, save lives, and build long-term resilience.

   Probing Question: After the background, ask a question to probe the discussion: What is your answer to the question? *"Why do you think communities should not depend solely on outside help in times of disaster?"*

2. Justify how emergency activities like evacuation, first aid, and provision of shelter can be encouraged using DRR funds. It is essential to emphasize how community ownership and involvement in managing these funds enhance accountability, local savings, and preparedness. These funds can, over time, be used to fund more extensive risk mitigation and facilitate sustainable resilience.

   Probing Question: Probe another question for discussion: *"How can community members contribute to establishing the DRR Fund in addition to their generous contribution during any emergency response situation?"* Take the maximum points from the participants and, afterwards, conclude the discussion.

3. Afterwards, discuss the issues that communities encounter when mobilizing and maintaining funds and encompass the following: poverty, financial illiteracy, lack of trust, and weak structures. Pressure that, with no effective accountability and coordination, these funds might not be sustainable.
4. Introduce the options that are open to communities in Pakistan, including community contributions, government support, NGO support, corporate social responsibility (CSR) funds, zakat committees, and the National Disaster Risk Management Fund. Point out how the variety of sources of funding can transform DRR funds into more reliable and sustainable.

   Probing Question: At this point in the discussion, ask a question: *"What do you consider to be the most viable of these sources of funding for your community?"*

5. Give a case study of Sindh, whereby the National Rural Support Programme, PDMA, and UNDP partnered to set up community funds on DRR in flood-prone regions. describe the role of local contributions, topped by government grants, in building village funds that financed emergency rations, family support, and small mitigation projects. Emphasize the need to build capacity, conduct open audits, and integrate districts.
6. Concisely present findings: why community DRR funds are necessary, why they are challenging, what opportunities are there, and why collaborative models help. Consolidate that collective responsibility and shared governance can convert DRR funds into a potent resilience-creating tool.
7. Afterwards, discuss the resource mobilization strategy for sustaining the LDMCs and discuss how provincial, district, tehsil, private, donors, and community sources can help in mobilizing financial resources.
8. As the last point of discussion, ask participants the following questions to examine how they look to contribute to establishing the DRR fund. Collect points and note them down on the flip charts.

   Closing Probing Question: "*What would be the first step to take in establishing a DRR fund in your community, if there were to do so tomorrow?".*

9. After fruitful discussions, summarize the main points and close your session.

Background Material of the Session

7.4.1. Resilience with community DRR funds

In Pakistan, the communities, particularly those living in disaster-prone areas, have very limited means of generating funds due to poverty, limited livelihood sources, and a lack of awareness. Establishing a regular DRR funding mechanism within the DMCs is essential to enable swift emergency response and support long-term resilience. Disasters such as flash floods and earthquakes tend to occur without any warning, and delayed assistance by the external parties hinders expediting the relief. Communities can respond quickly in offering evacuation, first aid, and shelter support through locally managed funds. These funds may be lifesaving in susceptible rural and urban locations. The community participation in the scheme of planning and controlling these funds intensifies ownership, accountability, and preparedness. It will also promote savings at a local level and will make sure that the response

activities are addressed specifically. In the long term, these resources will be used to facilitate larger-scale risk-mitigation activities and promote sustainable, locally driven resilience in all of Pakistan, which is prone to disasters.

7.4.2. Challenges

The establishment of DRR Funds and the effectiveness of resource mobilization in Pakistan are a serious challenge and a promising opportunity. The absence of trust and accountability systems in the community setting is one of the main problems, as it acts as an obstacle to local participation and the involvement of stakeholders. Poor financial literacy, poverty, and household striving also do not allow people to contribute to those funds regularly. The weaknesses in the institutional front, such as ineffective coordination among the local governments and community organizations, and a lack of institutionalization and policy frameworks toward community-based funds, affect their sustainability.

7.4.3. Resource mobilization strategy for sustaining the local disaster management committees

Significant funding opportunities are also available in Pakistan and can serve as a dependable source of support for preparedness, response, and recovery at the community level. Technical assistance and seed funding are other opportunities that arise from the interest of NGOs and development partners in locally led resilience-building initiatives. Thus, it is possible to overcome all these challenges with the help of strategic interventions to transform community DRR funds into an effective tool of sustainable disaster resilience in Pakistan.

Below are some of the funding sources.

7.4.3.1. Provincial government sources

- **Annual Development Programme:** The Planning and Development Department should reserve a separate budget to allocate for the disaster risk reduction and climate change adaptation-related projects. Consequently, the local governments and other stakeholders at the lower-tier levels will have the incentive to prepare technical and financial proposals and initiate programs for the survival of the local disaster management committees. Additionally, the DDMA, Rescue 1122, Civil Defence, Agriculture, Forestry, Livestock, Irrigation, PHE, Health, and Education line departments can align their sectoral development projects by engaging LDMCs.
- **Provincial Disaster Management Authorities:** The PDMAs should make an effort to mobilize resources through the annual development programme and donors for strengthening the local disaster management committees and their sustenance as a local arm of the PDMA to fight against the natural and human-induced disasters.

  There is also a significant opportunity to allocate a dedicated budget from the Provincial Disaster Management Fund for local disaster management committees. Though there are challenges in distributing such a budget from the PDMF, however, necessary amendments in the Act can be made to support the existence of LDMCs. By earmarking financial resources within this fund, the provincial government can ensure a regular and sustainable flow of financing to LDMCs. This will not only strengthen their institutional

capacities but will also enable them to effectively mobilize local resources, implement preparedness measures, and sustain their operations in the long term. Regular financing will help LDMCs become more functional, independent, and capable of responding promptly during emergencies, while also reducing their overreliance on external or ad hoc support.

7.4.3.2. District/Tehsil-level sources

- **District Development Committee:** The DDCs can play a pivotal role in strengthening local disaster management committees by allocating a dedicated budget for major DRR-related projects. This may include funding for capacity-building initiatives, the procurement of emergency response kits, and other essential equipment, as well as financial support for various LDMCs' localized projects.
- **District Level Emergency Fund:** The District Government maintains emergency funds for use during any disastrous situation. A portion of these funds could be allocated to support the LDMCs and other similar planning initiatives.
- **Tehsil Municipal Administration:** TMAs may set aside development funds for projects like engaging LDMCs for flood defenses, repairing drains and streets, and tree plantation.
- **Local Government Grants:** Conditional and unconditional grants from provincial revenue-sharing mechanisms can be used to engage LDMCs for the implementation of community-level DRR interventions.

7.4.3.3. International donor sources

The federal and provincial governments can connect with major international disaster and climate financing mechanisms to have access to international donor funding. These are the UNDRR Fund, Green Climate Fund, the Adaptation Fund, and UNOS-driven climate and disaster risk finance. Additionally, major avenues for obtaining financial and technical assistance to strengthen the LDMCs can also be found in multilateral development banks, such as the World Bank and the Asian Development Bank.

7.4.3.4. Non-governmental and development partners

Although INGOs and UN agencies are the initiators for establishing local disaster management committees, their support should also extend to ensuring the long-term sustainability of these committees. This can be achieved by allocating dedicated resources to maintain regular coordination, facilitate periodic meetings, and organize refresher courses for committee members for a minimum of five years, so communities are fully mobilized and their capacities are enhanced. Additionally, INGOs and UN agencies can assist in conducting drills and simulation exercises to improve preparedness and response capacities. A critical area of support is training LDMCs in establishing linkages with financial institutions, enabling them to mobilize and manage resources independently. Such efforts will foster continuity, enhance local ownership, and build resilient structures that remain functional even after the project life cycles of external partners have ended.

7.4.3.5. Community-level resource mobilization

- **Community Contributions:** Community-based organizations, village development committees, and local fundraising efforts can play an essential role in supporting small-scale grants for the DRR project implementations.
- **Local Entrepreneurs and Philanthropists:** Support in DRR projects might be provided by encouraging people through campaigns, education, or implementation of DRR interventions, which will be done through the local entrepreneurs and personal philanthropists. Additionally, local businesses may donate smaller but regular amounts of money, which can collectively form a community-level emergency fund. This fund can then be utilized to address urgent needs and strengthen preparedness at the grassroots level.
- **Zakat Committees:** Mobilization of religious charity (zakat) through local zakat committees to support disaster preparedness, relief, and rehabilitation efforts.

7.4.3.6. Private sector engagement

- **Financial Institutions and Microfinance:** Banks and microfinance institutions—such as Khushhali Bank and NRSP Microfinance—can contribute by offering customized financial products and providing assistance to LDMCs for the project implementation, capacity building, and survival of the committees.

Case Study 3: CBDRM Fund in Sindh, Pakistan – A Collaborative Model of Government-NGO Support

In the province of Sindh, Pakistan, an effective case study of setting up a CBDRM Fund dealt with both the government and non-governmental organizations to create a project that has the aid of the National Rural Support Programme (NRSP) and the PDMA, with the financial assistance of the UNDP. The project would involve flood-prone areas like Dadu and Thatta, owing to the fact that vulnerable populations experienced delays when they needed to get access to their resources in emergencies. To counter this

NRSP successfully developed Community Disaster Management Committees (CDMCs) and assisted them in creating village funds devoted specifically to DRR. A small contribution toward these funds has been seeded with contributions by the NGO, which was matched with local government grants initially. There are also community members who added savings groups and in-kind resources. These savings were utilized to pre-position key emergency supplies, assist vulnerable households, and fund minor-scale mitigation efforts like lifted platforms and enhanced drainage systems. The PDMA also gave technical facilitation in inserting the community plans in district-level contingency plans so that the policies could be in sync and sustainable in the long run. The biggest success component was the capacity-building aspect: CDMCs were trained in financial aspects, disaster planning, and transparent usage of funds. Held every now and then and conducted by the community, audits led to the development of trust and further contributions. The shared governance strategy not only empowers activities that enhance local preparedness and response capabilities but also shows the way forward, in which collective responsibility between residents and governmental and non-governmental institutions can turn resilience

financing into institutionalization. Experiences of the Sindh exemplify the usefulness of expanding community-led DRR funds to other vulnerable areas of Pakistan.

Self-Assessment / Key Questions & Answers

Q1. What is the rationale of community DRR funds in Pakistan's disaster-prone regions?

a). They, instead of national disaster funds, replace the need.

b). They entertain the communities.

c). They do away with government assistance.

d). They enable communities to be quick to act during emergencies before the arrival of outside aid.

Correct Answer: D

Q2. Which of the following are not enumerated as possible sources of funding for community DRR funds in Pakistan?

a). Earthquake Fund.

b). Corporate social responsibility (CSR) money.

c). Zakat Committees

d). International tourism tax

Correct Answer: D

Q3. Given Scenario: State the Sindh case study of community DRR funds. What is the benefit of the partnership between NRSP, PDMA, NGOs, and community members in enhancing local resilience and responsible fund management?

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Q4. Given Scenario: If a flash flood hits a rural community and external aid is delayed, how could a locally managed DRR fund ensure immediate evacuation and shelter support?

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Q5. Given Scenario: If community members hesitate to contribute due to a lack of trust and accountability, what strategies could strengthen confidence and sustain contributions to a DRR fund?

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Notes





Aga Khan Agency for Habitat