



LASOONA
Relief and Development Organization

Training Manual

For Various Target Groups on Preventive Measures to Cope with the Negative Impacts of Climate Change





Training Manual

**For Various Target Groups on Preventive
Measures to Cope with the Negative
Impacts of Climate Change**

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Preface

We are thrilled to introduce the training manual designed for organizing one-day training workshops aimed at community leaders, focusing on “implementing preventive measures to navigate the adverse impacts of climate change.” This training endeavor is designed to furnish participants with indispensable knowledge and skills, enabling them to confront the urgent challenges presented by climate change. As stewards of communities affected by climate change, the role of community leaders is pivotal in implementing preventive measures to alleviate the detrimental effects of climate change. The training workshop is complemented by this training manual, which will unfold across four comprehensive sessions, each concentrating on crucial aspects of climate change and disaster risk reduction.

In Session 1, the manual will thoroughly explore the fundamentals of climate change, fostering a profound comprehension of its mechanisms and implications. Session 2 will shed light on the principles of disaster risk reduction, equipping community representatives with practical insights to fortify community resilience. The interrelation between climate change and disasters will be scrutinized in Session 3, underscoring the interconnected nature of these phenomena. Finally, Session 4 will showcase the pivotal organizations dedicated to disaster risk reduction and climate change initiatives in Pakistan. The active engagement of community leaders is integral to ensuring the success of these training workshops, and we are confident that the acquired knowledge will empower them to guide their communities toward a more resilient and sustainable future. Together, let us embark on this journey to effect positive change for the well-being of our communities and the environment.

Acknowledgment

We extend our sincere appreciation to everyone involved in the development of this training manual. Our gratitude begins with the dedicated efforts of community representatives from project villages in Rahim Yar Khan and Rajanpur Districts.

We want to recognize the invaluable cooperation and contribution of the PM LASOONA-Punjab, during review, comments and suggestions of this manual finalization. Field team's support in coordinating community gatherings and facilitating focus group discussions has been instrumental.

Last but certainly not least, our thanks go to the LASOONA Head Office team in Swat, whose critical review and valuable comments were crucial in the finalization of the training manual. Their insights have enabled us to develop a more contextual training manual.

Introduction to the partner organizations

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), as technical and financial lead

Since 1961, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) has been operating in Pakistan on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). The GIZ is actively involved throughout the country, providing support through financial, technical, and capacity-building initiatives. Aligned with the United Nations Sustainable Development Goals, the organization focuses on key areas, including climate change and energy, social protection, and local governance. Moreover, GIZ plays a crucial role in supporting Afghan refugees and host communities while also contributing to the promotion of sustainable economic development, vocational education, and training.

LASOONA as implementing partner

LASOONA: RELIEF and DEVELOPMENT Organization is a non-profit organization of national scope, characterized by a multidisciplinary approach with a primary focus on development. Founded in 1997, LASOONA is dedicated to promoting human and natural resource development in various vulnerable and impoverished regions across the country. Registered as an NGO under the Societies Registration Act of 1860, LASOONA holds certification/accreditation from the Pakistan Center for Philanthropy, and enjoys tax-exempt status from the Federal Board of Revenue, Government of Pakistan, by Section 2(36) of the Income Tax Ordinance 2001. Over the years, LASOONA has emerged as a model institution, acknowledged for its groundbreaking efforts in conserving, promoting, and sustainably managing natural resources at the community level, thereby fostering livelihood security. The organization has also showcased leadership in Disaster Risk Management and Climate Change, addressing these themes to mitigate the risk of future calamities, whether natural or human-made. Throughout its 25 years of active implementation, LASOONA has worked tirelessly and inclusively, transcending gender, caste, and creed, to serve humanity.

Introduction to the project

LASOONA, with the funding support of GIZ Pakistan, is implementing a 27-month development-oriented project titled “Changing Minds for Climate Resilience through Awareness Raising and Local Capacity Measures” in selected villages of District Swat and Lower Dir of Khyber Pakhtunkhwa, and District Rahim Yar Khan and Rajanpur of Punjab provinces. The project focuses on strengthening the resilience of vulnerable communities, with particular attention given to women, individuals with disabilities, youth, and children through a series of awareness-raising initiatives and capacity-building endeavors. The ultimate aim of the project is to enhance the resilience and adaptability of the designated beneficiaries, enabling them to more effectively manage the repercussions of climate change and reduce their overall vulnerabilities.

Purpose and use of the training manual

Developing training manuals on climate change adaptation for affected communities is of extreme importance in addressing the challenges posed by climate change. This training

manual will serve as an invaluable tool in empowering communities with the knowledge and skills necessary to navigate and respond to the impacts of climate change. Below have been mentioned some of the narrated facts that highlight the importance of developing such types of training manuals:

- » The manual will empower affected communities by providing them with a comprehensive understanding of climate change, its local implications, hazards posed by climate change, and doable interventions required for the adaptation. This knowledge equips individuals to make informed decisions and take proactive measures to protect their livelihoods and well-being.
- » The manual will further contribute to the capacity building of community members, enhancing their ability to assess, plan, and implement effective adaptation strategies. This, in turn, fosters a sense of self-reliance and resilience in the face of changing environmental conditions.
- » The process of developing and disseminating training manuals encourages community engagement and participation. It promotes a collective understanding of climate change issues and fosters a shared commitment to implementing adaptive practices, creating a united front against environmental challenges.
- » Lastly the training manual will facilitate the transfer of knowledge from community elders to other members of the community. This knowledge transfer ensures that communities can independently sustain and evolve their adaptive strategies over time, fostering a continuous learning process.

To summarize, the development of a training manual on climate change adaptation for affected communities is an essential investment in building resilience, fostering community empowerment, and promoting sustainable practices. The training manual will stand as a valuable resource that contributes to the well-being of communities facing the profound challenges of a changing climate.

Objective of Developing the Training Manual

The overarching objective is to strengthen skills and deepen the knowledge of participants, enabling them to actively contribute to addressing the adverse effects of climate change within their respective communities.

Target Audience

Tailored specifically for community leaders, this training manual is designed to empower them to take the lead in awareness raising and further enhancing the community's understanding of climate change-related issues and the hazards they pose. Additionally, the manual holds value for members of other climate-affected communities. The objective is to make the manual accessible to a broader audience, enabling them to glean valuable insights. This, in turn, will augment their understanding and facilitate the adoption of measures to adapt to the challenges brought about by climate change.

Agenda for one-day training workshop

Time	Name of session	Facilitation techniques
0845-0900	Registration of participants	Filling up registration forms
0900-0930	Session 0: Welcome and Introduction	<ul style="list-style-type: none"> » Informal inaugural ceremony » Welcome by the organizer and facilitator » Training Orientation
0930-1030	Session 1: Understanding Climate Change	<ul style="list-style-type: none"> » Interactive presentation » Group work » Group presentations » Video shows » Q&A and discussion
1030-1045	Working tea	
1030-1130	Session 2: Understanding the Disaster Risk Reduction	<ul style="list-style-type: none"> » Interactive presentation » Group work » Group presentations » Video shows » Q&A and discussion
1130-1230	Session 3: Linking Climate Change and Disasters	<ul style="list-style-type: none"> » Interactive presentation » Group work » Group presentations » Q&A and discussion
1230-1300	Session 4: Dealing Organizations for Disaster Risk Reduction and Climate Change in Pakistan	<ul style="list-style-type: none"> » Interactive presentation » Q&A and discussion
1300-1400	Lunch break	
1400-1500	Session 5: Need for developing a climate adaptation plan at local levels	<ul style="list-style-type: none"> » Interactive presentation » Group work » Group presentations » Q&A and discussion
1500-1515	Working tea	
1500-1530	Session 0: Closing session, including workshop evaluation, participants' feedback, and recap of key takeaways	<ul style="list-style-type: none"> » Workshop evaluation forms distribution » Informal ceremony » Concluding remarks by the organizer and facilitator



0
Session
Welcome and Introduction

A: Session plan

Session Objective

- » Explain the training workshop objectives and capture the expectations of workshop participants
- » Introduce participants
- » Give each session overview with the possible outcomes
- » Define the ground rules for conducting a smooth workshop

Duration of session

30 minutes

Facilitation techniques

- » Informal inaugural ceremony
- » Welcome by the organizer and facilitator
- » Interactive discussion

Material required

- » Agenda photocopies
- » Flip charts
- » Markers for flip charts
- » Flip Stand
- » Masking tapes
- » Small Scissors

B: Process follows

Informal inaugural ceremony (05 minutes)

At the workshop's commencement, the organizer will extend a warm welcome to both participants and facilitators. Additionally, the organizer will elucidate the workshop's objectives, acquaint participants with the anticipated outcomes, and provide an orientation to the project background.

Participant's introduction (10 minutes)

The participants will innovatively introduce themselves. The participants will be divided into two-person pairs and will be given 5 minutes to get more information about his/her co-participants. They can get information like name, qualification, job, marital status, one bad and one good habit. After 5-minute breaks, all pairs will individually introduce their co-participants.

Explaining the workshop overview (05 minutes)

The facilitator will provide participants with an orientation on the sessions one by one and shall clarify the objectives of each session.

Setting ground rules for conducting a smooth workshop (10 minutes)

For this activity, the facilitator will invite any willing participant to use markers and write on the flip charts. Meanwhile, the facilitator will engage the participants in discussing their ideas for implementing ground rules, aiming for an interactive and lively training workshop. Participants will offer their suggestions sequentially, with the participant recording them on the flip charts. After five minutes, the facilitator will instruct participants to affix the flip charts to a noticeable area on the wall using masking tape. Upon concluding the activity, the facilitator will remind participants to adhere to the established ground rules for a successful workshop.



1 Session

**Understanding the
Climate Change**

A: Session plan

Session objective

- » To develop an understanding of climate change and other related terms.
- » To explore the root causes and consequences of climate change.
- » To guide participants in understanding the national and local implications of climate change, highlighting observable impacts at the community levels.

Duration of session

1 hour and 15 minutes

Facilitation techniques

- » Interactive presentation
- » Group work
- » Presentations by the group members
- » Video shows
- » Questions/answers session and discussion

Material required

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

B: Process follows

Initiate the presentation by outlining the session objectives. Further elaborate on the key activities that will be conducted during the delivery of the session, emphasizing to explain the climate change phenomena and its impact that have been observed in Pakistan and specifically in the area where the training workshop is organized.

Group work (30 minutes)

To begin, the facilitator will divide participants into four different groups and instruct them to work and discuss together to respond to the following questions:

- » What is your understanding about the climate change?
- » What is the difference between weather and climate?
- » Identify the various impacts observed in your village and concerned districts.
- » Identify the most vulnerable groups.

Each group will be provided with flip charts and markers, and they should be given 20 minutes to deliberate on these questions. Following group work, all four groups will present their findings in 10 minutes. After the group discussions, the facilitator will request each team to display their flip charts prominently in the training room.

Presentation by the facilitator (30 minutes)

Following the group activity, the facilitator will systematically elucidate each slide, posing questions and encouraging participants to brainstorm as they contemplate climate change and potential consequences in the upcoming years. Throughout this presentation, the facilitator will engage participants in thoughtful discussions.

NOTE: Numerous Urdu videos are available on YouTube that provide explanations about global warming and climate change phenomena. The facilitators are advised to download these videos in advance that can be shown during the session delivery. These videos illustrate the potential impacts of climate change on individuals and propose various options for climate change adaptation, aiding in adapting to the changes brought about by climate change.

Useful tips for facilitators

The interruption of electricity is a significant concern in rural areas of Pakistan, and hence, there is a likelihood of power outages during the training workshop. Consequently, the facilitator is recommended to mentally prepare for such situations and have ready-to-use flip charts and models. This preparation ensures that in the event of a power failure, the session can seamlessly continue with the support of flip charts and models.

Questions & answers session (15 minutes)

Invite participants to share their comments and questions regarding the session. In the absence of participant questions, the facilitator should initiate queries for the participants to respond to. Conclude the question-and-answer session by expressing gratitude to the participants for their active engagement.

C: Supported reading material for the workshop's participants

1.1. Explaining the basic terms

1.1.1. What is atmosphere

The atmosphere is the layer of gases that surrounds a celestial body, such as a planet or moon. On Earth, the atmosphere is the envelope of air that extends outward from the planet's surface. It consists of a mixture of gases, primarily nitrogen (about 78%) and oxygen (about 21%), along with trace amounts of other gases such as carbon dioxide, argon, and water vapor.

Figure 1: Understanding the global warming concept from this model



The atmosphere plays a crucial role in supporting life on Earth by providing the necessary gases for respiration and regulating the planet's temperature through the greenhouse effect. It is divided into several layers, including the troposphere (closest to the Earth's surface), stratosphere, mesosphere, thermosphere, and exosphere, each with distinct characteristics and functions.

1.1.2. What is Global Warming

Global warming is the long-term increase in Earth's average surface temperature, primarily due to human activities releasing greenhouse gases into the atmosphere.

1.1.3. What are Greenhouse Gases (GHG) and their Role in Warming Climate

Greenhouse gases are gases in the Earth's atmosphere that trap heat, leading to the greenhouse effect. These gases include carbon dioxide, methane, nitrous oxide, fluorinated gases, and water vapor. Human activities, such as burning fossil fuels and deforestation, contribute to the increased levels of these gases, enhancing the natural greenhouse effect and causing global warming. These gases trap heat energy from the sun and prevent it from escaping back into space, resulting in a warming of the planet.



Figure 2: Effects of the climate change

1.1.4. What is Climate Change?

Climate change is like Mother Earth's mood swings. It refers to long-term changes in the average weather patterns in a specific area. It happens when the average weather conditions in a specific area, such as temperature, rainfall, and wind, change over many years. These changes can result in more extreme weather events, like heatwaves, drought, floods, etc. The two phenomena that need to be understood are the difference between climate and weather.

Weather	Climate
Weather refers to the short-term atmospheric conditions in a specific location at a given point in time. It encompasses elements such as temperature, humidity, precipitation, wind speed, and atmospheric pressure. The weather conditions can change rapidly and are typically observed over hours, days, or weeks.	Climate represents the long-term average of weather patterns in a particular region over an extended period, typically 30 years or more. It provides a broader perspective on the expected atmospheric conditions in a specific area. The climate is characterized by its long-term stability and patterns, considering seasonal variations and annual averages.
Example: A hot and sunny day, a rainy afternoon, or a cold and windy morning are examples of specific weather conditions.	Example: A region with consistently high temperatures and low rainfall throughout the year would be described as having a desert climate, while a region with moderate temperatures and distinct seasons might have a temperate climate.

1.2. What is the Carbon Footprint

A carbon footprint is a measure of the total amount of greenhouse gases, specifically carbon dioxide and other carbon compounds, that are emitted directly or indirectly by an individual, organization, product, or activity throughout its lifecycle. It encompasses the carbon emissions associated with the production, transportation, use, and disposal of goods and services. Calculating a carbon footprint helps quantify the impact of human activities on the environment and contributes to understanding the extent of one's contribution to climate change. By identifying and mitigating sources of emissions, individuals and entities can work towards reducing their carbon footprint, thus playing a crucial role in promoting environmental sustainability and combatting global warming.

1.3. Major Contributors of Emissions

The major contributors to greenhouse gas emissions can be categorized into several sectors, each associated with specific human activities. The following are the primary sectors responsible for significant emissions:

Energy Production: The burning of fossil fuels (coal, oil, and natural gas) for electricity and heat is a major source of carbon dioxide emissions. Power plants, both stationary and mobile, contribute significantly to greenhouse gas emissions.

Transportation: The combustion of fossil fuels in vehicles releases substantial amounts of carbon dioxide, as well as other pollutants. This sector is a major contributor to greenhouse gas emissions.

Industry: Various industrial processes, such as manufacturing, chemical production, and cement production, release greenhouse gases.

Deforestation and Land Use Changes: The clearing of forests for agriculture and other purposes releases stored carbon and reduces the capacity of ecosystems to absorb carbon dioxide. Land use changes, including deforestation and urbanization, contribute to overall greenhouse gas emissions.

Agriculture: Agricultural activities contribute to emissions through the use of fertilizers, which release nitrous oxide, and through enteric fermentation in ruminant animals like cows, which produce methane. Agricultural practices also impact land use and contribute to deforestation.

Waste Management: Landfills emit methane as organic waste decomposes. Improper disposal of waste, including burning, also releases carbon dioxide and other pollutants.

Residential and Commercial Energy Use: The energy consumed for heating, cooling, lighting, and appliances in homes and commercial buildings contributes to greenhouse gas emissions, particularly if the energy is derived from fossil fuels.

1.4. What are the Impacts of Climate Change on the Planet?

Climate change has wide-ranging and significant impacts on the planet, affecting various

aspects of the environment, ecosystems, and human societies. Some key impacts of climate change include:

- » Rising Temperatures
- » Rising Sea Levels
- » Melting Ice
- » Extreme Weather Events
- » Loss of Biodiversity
- » Shifts of Monsoon Zones and Shift in Weather Conditions
- » Impacts on Agriculture
- » Water Scarcity
- » Health Risks
- » Climate Migration

Addressing climate change requires widespread cooperation to reduce greenhouse gas emissions, adapt to current and future impacts, and promote sustainable practices to mitigate further damage to the planet.

1.5. Impact of Climate Change in Punjab

Climate change is not just about the increase in temperature and summer days. It causes many problems mentioned below:

Changing Temperature Patterns: Rising temperatures are affecting agriculture and human health. Extreme heatwaves are becoming more frequent, leading to heat-related illnesses.

Altered Rainfall Patterns: Irregular and unpredictable rainfall patterns are impacting crop production. Intense rainfall events can lead to flooding in some areas, while prolonged droughts can affect water availability.

Agricultural Productivity: Climate change affects crop yields and quality. Rising temperatures, shifting monsoon patterns, and extreme weather events like heatwaves and floods impact crops, potentially leading to food insecurity in the entire country.

Livestock Health: Changes in temperature and water availability can affect the health and productivity of livestock, which is essential for many rural households.

Water Scarcity: Decreased water availability from melting glaciers and changes in river flows affect both agriculture and drinking water supplies.



Groundwater Depletion: The excessive use of groundwater for irrigation has led to declining water tables in some areas, which is a local concern.

Extreme Weather Events: Punjab is vulnerable to extreme weather events like riverine and flash floods, and heavy rainfall, which are causing severe damage to lives and infrastructure.

Climate Migration: Climate-induced impacts on agriculture can lead to rural-to-urban migration as people seek alternative livelihoods, potentially increasing pressure on urban resources.

Energy Demands: Increased temperatures can lead to higher energy demands for cooling, which can strain the energy grid.

Health and WASH Issues: It can make people sick due to heatwaves, poor air quality, and the spread of diseases.



To address these challenges, the country needs to develop strategies for climate change adaptation and mitigation. This may include improved water management, sustainable agricultural practices, disaster preparedness, and the adoption of clean and renewable energy sources. Local and national governments, as well as the international community, must work together to reduce the impacts of climate change on Punjab and Pakistan as a whole.



1.6. Climate-Induced Disasters in Punjab and Specifically in the Target Districts

The climate-induced disasters in the province of Punjab particularly in the districts of Rahim Yar Khan and Rajanpur, are typically associated with factors such as extreme weather events, changes in precipitation patterns, and rising temperatures. The climate-induced disasters that can be observed in the target districts are river and flash floods, droughts, and heat waves, while the snowstorm is also common in the Murree district affecting the lives of the residents and tourists.

Self-Assessment

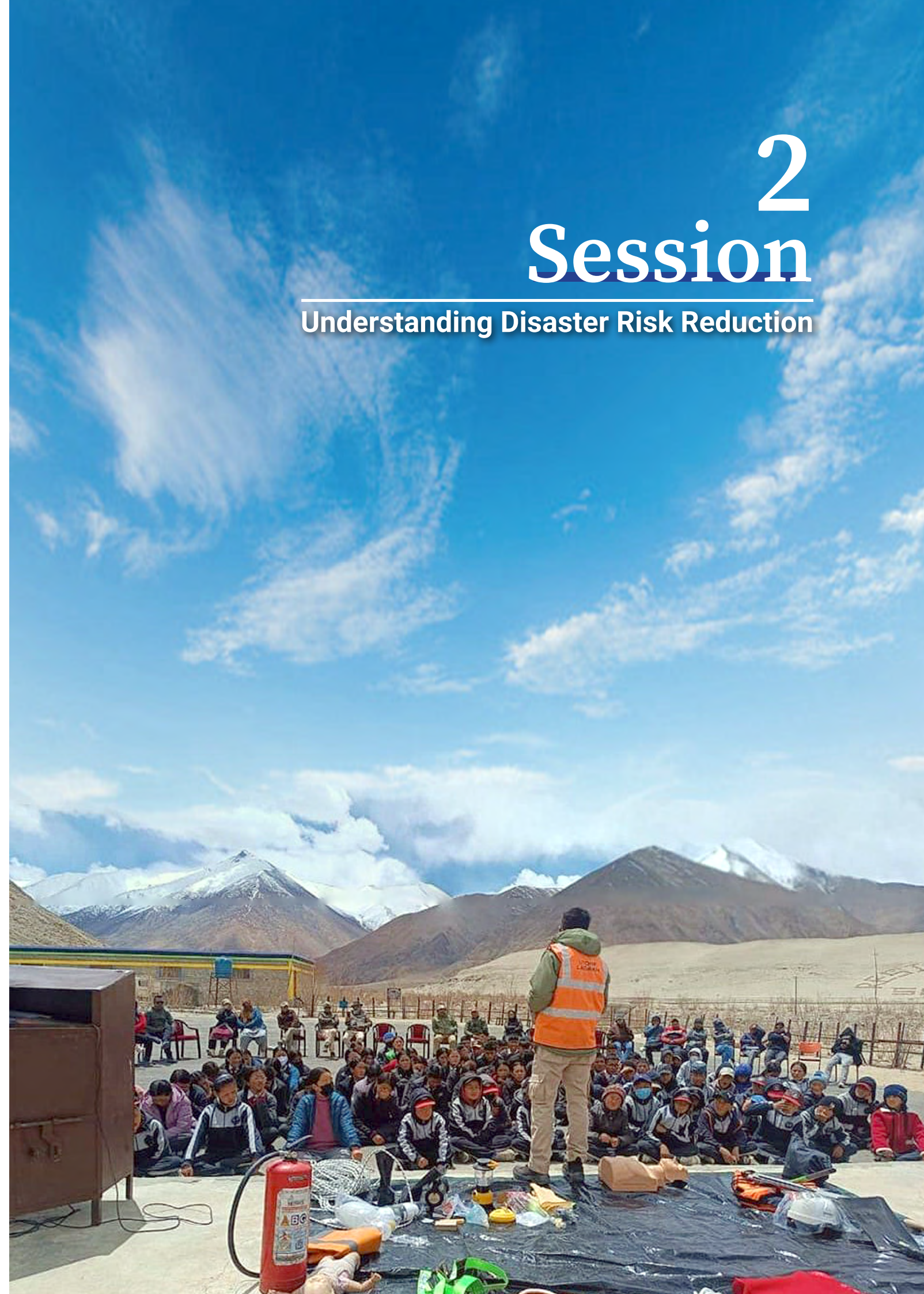
Q1: Explain the term climate change.

Q2: What types of differences you can find between climate and weather?

Q3: What significant changes in the weather you have observed in your villages?

2 Session

Understanding Disaster Risk Reduction



A: Session plan

Session objective

- » To familiarize participants with the notion of disaster risk reduction and its current status in Pakistan, particularly in the province of Punjab.
- » To discuss the conventional disaster management cycle, elucidating the phases before, during, and after the disasters.
- » To inform participants about the visible effects of climate change that contribute to the escalation of disasters, with a specific emphasis on the aberration caused by the frequency and magnitude of hydro-meteorological hazards.

Duration of session

1 hour

Facilitation techniques

- » Interactive presentation
- » Group work
- » Group presentations
- » Video shows
- » Questions/answers and discussion

Material required

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

B: Process follows

The facilitator is recommended to adhere to the following steps while facilitating the session:

- » Commence the session by explaining the objectives outlined at the beginning of the session. Additionally, inform participants that the session will involve group work along with an interactive presentation and a question-and-answer segment.
- » Familiarize participants with the terms and concepts that will be discussed. These encompass terms such as disaster, capacity, response, relief, rehabilitation, reconstruction, recovery, mitigation, prevention, preparedness, and disaster risk reduction. Display these terms on flip charts, positioning them either on the flip stand or the wall for easy reference.

Group work (15 minutes)

Before delving into the aforementioned terms, it would be beneficial to sensitize participants through an interactive group exercise. To facilitate this, evenly distribute participants into the same four groups formed during the earlier session.

- » Prepare four sets of definitions accompanied by relevant photos on hard copies in advance. Omit the heading from each definition to encourage participants to discuss and assign appropriate headings during the exercise. Allocate 15 minutes for group deliberations and provide flip charts along with different color markers for participants to use if they wish to paste on the charts.
- » Instruct each group to read the definitions, examine the accompanying pictures, and collaboratively assign suitable headings to each photo. Utilize color markers to prominently display the chosen headings.
- » After 15 minutes of discussion, prompt the groups to display the photocopies prominently on the wall or hang them with masking tape.
- » Express gratitude to participants for their active engagement and commence the formal presentation by showcasing the slides.

Presentation by the facilitator (30 minutes)

After the collaborative group exercise, the facilitator will present and explain different terms one by one through PowerPoint slides, while the group members can cross-reference their definitions with the facilitator's slides, marking ✓ or X with permanent markers to track the accuracy of their identifications.

NOTE: Several videos documenting significant disasters in Pakistan can be found on YouTube, providing valuable insights into the elements at risk and the destructive consequences resulting from poor planning and lack of awareness. Facilitators are recommended to pre-download these videos to be shown during the session for enhanced learning.

Questions & answers session (15 minutes)

Invite participants to share their comments and questions regarding the session. In the absence of participant questions, the facilitator should initiate queries for the participants to respond to. At the end of the session, extend thanks to the participants for their active involvement and evaluate the group work to determine which group successfully identified more correct answers.

Useful tips for facilitators

- » Ensure that your presentation incorporates pertinent photographs or sketches for each term and concept.
- » When elucidating the definitions, provide simple and local examples to facilitate participants' understanding and enhance their ability to relate to the information.
- » Promote participant engagement by encouraging them to share pertinent examples related to specific terms.
- » Adhere to the assigned time constraints, and kindly remind participants if they exceed the allocated time during group discussions.

C: Supported reading material for the workshop's participants

2.1. Introduction to disaster risk reduction

Disaster risk reduction is aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development.



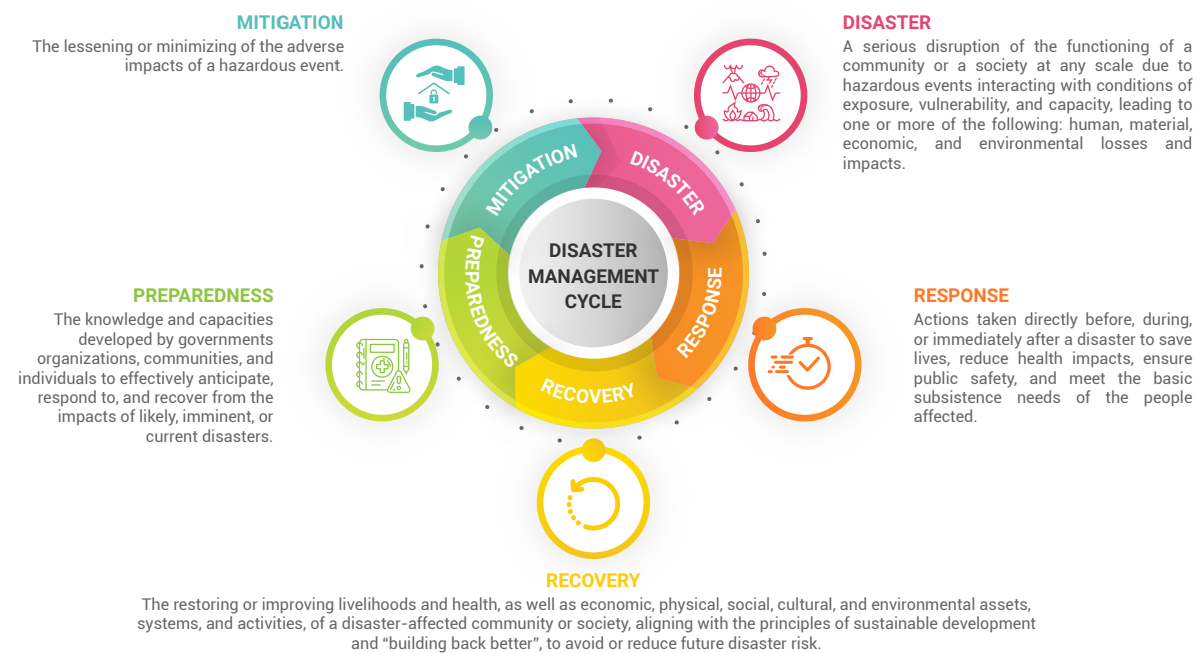
Figure 4: Bamboo plants are considered more resilient to disasters

Disasters can strike without warning, leaving communities vulnerable to devastation. However, with the right knowledge and preparedness, communities can reduce the impact of disasters and save lives. Disaster risk reduction at the community level is a critical approach to building resilience and ensuring the safety and well-being of its members. It is like a bamboo plant that has a strong resistance against natural events and withstands even after the disaster retreats.

2.2. Disaster management cycle

Disaster management at the community level follows a cyclic process known as the disaster management cycle. This cycle consists of several phases that guide communities in preparing for, responding to, recovering from, and mitigating the impact of disasters. Below is an overview of the disaster management cycle:

2.3. Different phases of the disaster management cycle



Self-Assessment

Q1: Enlist disasters triggered by climate change in your district.

Q2: Describe different phases of the disaster management cycle in your own words.

Q3: Why do we need to think about taking proactive measures against disasters?

3

Session

Linking Climate Change and Disasters



A: Session plan

Session objective

- » Explain the relationship between climate change and occurrences of climate-imposed hazards (e.g., floods, droughts, heatwaves, etc.)
- » Discuss different case studies from different areas of the country illustrating the connection

Duration of session

1 hour

Facilitation techniques

- » Interactive presentation
- » Group work
- » Group presentations
- » Questions & answers session and discussion

Material required

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

B: Process follows

- » Initiate the presentation by outlining the session objectives.
- » Elaborate on the key activities that will be conducted during the delivery of the session.

Group work (20 minutes)

As usual, the same group will be working together to discuss the following questions:

- ✓ Identify local climate-related hazards and risks, discuss the nature and occurrence of these hazards and their connections with climate change
 - ✓ What are visible impacts that can be observed on the health, education, and agriculture-related activities
- » Provide flip charts and color markers to each group, instruct them to work on their topics, and display the results prominently on the wall.

- » After completing the group work, participants will hang the flip charts at a prominent place on the wall.
- » At the end of the activity, the facilitator shall express gratitude to all participants for their active participation. Ask a representative from each group one by one to present their findings.

Presentation by the facilitator (30 minutes)

Following the conclusion of all group presentations, use PowerPoint slides to recap the key points. Explain the nature and occurrence of different hydro-meteorological hazards, their correlation with climate change and global warming, and the observable impacts in various districts. Simultaneously, the facilitator can pose questions to stimulate discussion and enhance active participation among the participants.

Questions & answers session (10 minutes)

Conclude the presentation by welcoming participants to ask questions or share any observable evidence they have witnessed in their villages related to climate change. Address any questions raised. In the absence of participant questions, facilitators can initiate a discussion by posing relevant questions for consideration.

C: Supported reading material for the workshop's participants

3.1. The relationship between climate change and natural disasters

Climate change and natural disasters are interconnected in a complex and often destructive relationship. Climate change, primarily driven by human activities such as burning fossil fuels and deforestation, is altering the Earth's climate system. This, in turn, influences the frequency, intensity, and patterns of natural disasters.

Here's how these two phenomena are closely linked:



3.2. Impact of climate change on accelerating disasters

Climate change is having a significant impact on accelerating disasters in Pakistan. The country is highly vulnerable to climate change due to its geographic location and socio-economic factors. Some of the key factors in which climate change is exacerbating disasters in Pakistan include:

Climate change has led to altered rainfall patterns, resulting in more intense and prolonged monsoon rains. This increase in precipitation has caused more frequent and severe flooding events. Riverine, flash, coastal, and urban flooding are common examples of flooding in the country.



To address these challenges, Pakistan has been taking steps to enhance disaster risk reduction and climate change adaptation strategies. This includes the development of early warning systems, improving infrastructure resilience, and promoting sustainable agriculture practices. However, the accelerating impact of climate change on disasters in Pakistan highlights the need for a comprehensive and integrated approach that involves not only local and national efforts but also international cooperation and support to mitigate and adapt to the changing climate.

3.3. Case studies from Pakistan illustrating the connection

3.3.1. Increase in heatwave incidences

During recent years, the heat wave phenomenon has emerged as a growing concern, particularly in urban areas like Karachi, Hyderabad, Multan, Lahore, Sukkur, and other cities. These areas often experience prolonged periods of extremely high temperatures and humidity, often with minimal or no wind.



Karachi, for instance, faced a severe heat wave in both 2014 and 2015. In June 2015, Karachi City endured an intense heat wave that resulted in more than 1,200 fatalities, with approximately 65,000 individuals affected and 1,200 cases of heat-related illnesses reported (see Figure 1.2.6). Temperatures during this period soared between 40 to 49 degrees Celsius.

This increasing occurrence of heat wave incidents can be attributed to climate change, global warming, and environmental pollution. Consequently, Karachi, with a population of over 16 million residents, is at a heightened risk during the scorching summer seasons.

Research studies indicate that factors such as housing quality, population size, low-income levels, and limited education contribute to increased vulnerability to heat waves in Karachi, as was evident in the June 2015 heat wave incident. Therefore, it is imperative to provide urban dwellers with more shaded communal spaces incorporating greenery in future urban designs. In such scenarios, it is also crucial to ensure the availability of water and fans for the most vulnerable segments of the population, including the elderly, the ill, and children.

3.3.2. Climate crisis or coincidence? understanding the 2022 hill torrent and nullah-driven flash floods

In addition to Pakistan's river system, the country is host to numerous perennial hill torrents, which become flowing streams during heavy rains in hilly regions. In Punjab and Khyber Pakhtunkhwa, these torrents are commonly referred to as "Rodh



Khoie." In the Punjab region, there are approximately 200 such hill torrents, with 13 of them being considered major. When heavy rainfall occurs in the Suleiman Ranges, these torrents can rapidly transform into flash floods, causing substantial damage to cultivated lands, crops, residences, and both public and private infrastructure in the Dera Ghazi Khan, Rajanpur, and Mianwali districts. While flash floods wreak havoc in the Dera Ghazi Khan Canal and Chashma Right Bank Canal command areas, they also deprive the barren lands in the Piedmont area (Pachad area) of water for agricultural purposes. Typically, these torrents quickly dry up after the rain ceases, and their impact is limited to a few miles downstream from the hilly regions. Local communities have traditionally harnessed torrent water for irrigation through a system of diversion and distribution arrangements. In the 2022 floods, the districts of Dadu, Jaffarabad, Naseerabad, D.G. Khan, Rajanpur, Mianwali, D.I. Khan, and Tank experienced significant devastation due to hill torrent floods.

Apart from the hill torrents, several nullahs (small streams) traverse various regions, especially in Sialkot, Narowal, and Rawalpindi Districts. Nevertheless, there are numerous other nullahs throughout the country that can result in localized flooding and cause harm to local communities and infrastructure. When heavy rains occur, these nullahs can swell, but they often recede suddenly, causing localized damage to standing crops, trees, residences, and other infrastructure. Some of these nullahs, including Palkhu, Deg, Aik, Basantar, and Bein, flow in the Sialkot and Narowal Districts. The well-known Lai Nullah runs through Rawalpindi city and is a frequent source of infrastructure damage due to significant encroachments along its banks.

3.3.3. Locust plagues on the rise due to climate change

The relationship between locusts and climate change is complex and multifaceted. Climate change, characterized by rising temperatures, altered precipitation patterns, and extreme weather events, has a significant impact on the behavior and distribution of locusts. These insects are highly sensitive to environmental conditions, and changes in temperature and humidity can influence their reproduction, development, and migratory patterns. Warmer temperatures, in particular, can accelerate the maturation of locusts, leading to more frequent and severe outbreaks. Additionally, altered precipitation patterns can create suitable breeding grounds for locusts, further exacerbating the frequency and intensity of swarms.



The shifting patterns of rainfall, coupled with prolonged dry spells in desert climates and elevated temperatures, create conducive conditions for locust infestations in the southern regions of Pakistan. The historical record of locust infestations indicates that over the past century, the country experienced significant desert locust invasions in the years 1926, 1952, 1962, and 1992. However, during recent years, the frequency and magnitude of locust infestations have tremendously increased mainly due to the causes mentioned above that provide breeding

grounds for the desert locust, with the highest concentration found in Baluchistan (60%), followed by Sindh (25%) and Punjab (15%). During the 2019-20 period, severe locust attacks inflicted considerable damage on cultivated areas and fruit orchards across 54 districts in Pakistan. These affected regions encompassed 31 districts in Baluchistan, 8 in Khyber Pakhtunkhwa, 10 in Punjab, and 5 districts in Sindh.

Punjab, specifically Rahim Yar Khan, Bahawalpur, Bahawalnagar, Bhakkar, Khushab, Rajanpur, and Muzaffargarh, experienced significant impacts from climate change, contributing to the challenges faced by the region.

3.3.4. Seawater intrusion in Sindh Province

The water table in lower Sindh, particularly in the deltaic region, is characterized by high saline content. The heavy soils prevalent in this area possess limited percolation and porosity, making it difficult for natural drainage and reclamation processes to occur. As a consequence, issues of salinity and waterlogging have already plagued various zones, significantly impeding farmers' ability to realize their full agricultural potential.

Compounding these challenges is the increasing frequency of storm surges, coupled with the rise in sea levels. This dynamic has given rise to a burgeoning problem: the intrusion of seawater into the land. As time progresses, this intrusion threatens to claim more land area, exacerbating the existing salinity and sodicity issues in the soil. Ultimately, these conditions could deteriorate the productive potential of the fertile deltaic soils.

Moreover, there is clear and compelling evidence of the elimination of natural habitats along the shoreline and a northward shift in biodiversity. This shift is primarily attributed to the relentless encroachment of seawater, which exerts overwhelming pressure on the existing ecosystems and habitats in the region.

Self-Assessment

Q1: How you can define the relationship between climate change and disasters?

Q2: Describe any two hazards that might have been accelerated due to climate change phenomena.

Q3: Can you highlight any climate change impact that you have observed in your district?

4 Session

Dealing organizations for Disaster Risk Reduction and Climate Change in Pakistan

Evolution of Disaster Management System

- 2021: Merger of ERRA in NDMA
- 2015: Merger of ERC in NDMA
- 2018: National Disaster Response Plan
- 2012: National Disaster Management Plan
- 2012: National Disaster Risk Reduction Policy
- 2010: National Disaster Management Act
- 2007: Raising pf NDMA and PDMAs and Establishment of NDMC
- 2006: National Disaster Management Ordinance
- 2005: Federal Relief Commission
- 1971: National Emergency Relief Cell established
- 1958: National Calamity Act

Evolution of Climate Change

- 2023: National Adaptation Pan
- 2021: National Climate Change-Plicy 2021
- 2017: Pakistan Climate Change Act
- 2015: Ministry of Climate Charnge Re-established
- 2013: The Ministry of Climate Change was Downgraded to a Division of the Cabinet Secretariat
- 2012: National Climate Change Policy
- 2012: The Ministry of Climate Change established
- 2005: National Environmental Policy
- 1997: Federal and Provincial Evironmental Protection Agencies, and the Pakistan Environmental Protection Council established
- 1997: Pakistan Environmental Protection Act
- 1983: Pakistan Environmental Protection Ordinance

A: Session plan

Session objective

- » Explore the prominent organizations operating in Pakistan, both nationally and locally, that are involved in climate change and disaster management.
- » Familiarize participants with the roles, responsibilities, and, in particular, the key functions of these organizations at the local levels in addressing pertinent issues.

Duration of session

30 minutes

Facilitation techniques

- » Interactive presentation
- » Q&A and discussion

Material required

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

B: Process follows

Formal Presentation (20 minutes)

- » Commence the session by outlining the objectives and potential outcomes. Invite participants to identify organizations involved in disaster management and climate change at the National, Provincial, and District levels.
- » Begin the session by prompting participants to identify National-level organizations, followed by Provincial-level organizations.
- » Shift the focus to District-level organizations dealing with disaster management and climate change mitigation and adaptation. As participants name these organizations, the facilitator can record them on flip charts or a whiteboard.
- » Following a thoughtful discussion and brainstorming, proceed to present PowerPoint slides highlighting major organizations addressing disasters and climate change. Explain their key roles and how communities can benefit from their involvement.
- » After all group presentations, summarize the main points through PowerPoint slides. Explain all the major organizations dealing with disaster management and climate change, while side by side, the facilitator can ask various questions to provide discussion and more active participation.

Questions & answers session (10 minutes)

Encourage participants to share their comments and pose questions related to the session.

Respond to any questions raised. If participants do not have any questions, facilitators can initiate a discussion by posing relevant questions for consideration.

Conclude the session by expressing thanks to participants for their active involvement and formally closing the session.

C: Supported reading material for the workshop's participants

4.1. Introduction

In this session, participants will gain insights into various government departments in Pakistan that are actively involved in climate change and disaster management. The aim is to familiarize participants with the roles, responsibilities, and key functions of these organizations in addressing climate change and disaster-related issues. This knowledge will enable a better understanding of the comprehensive efforts in place to mitigate and manage environmental challenges and natural disasters in Pakistan.

4.2. Ministry of Climate Change

The Ministry of Climate Change in Pakistan is a government body tasked with addressing environmental and climate-related issues in the country. Established to monitor, manage, and mitigate the impact of climate change, the ministry plays a crucial role in formulating and implementing climate policies, strategies, and initiatives.

Key responsibilities of the ministry include advocating for sustainable environmental practices, promoting conservation, and developing policies to combat climate change. It also represents Pakistan in international climate negotiations and works to fulfill the country's commitments under global climate agreements.

The Ministry of Climate Change is pivotal in advancing Pakistan's climate resilience, preserving natural resources, and contributing to the global fight against climate change. It plays a central role in ensuring a sustainable and environmentally responsible future for the nation.

4.3. Environmental Protection Agencies

The Environmental Protection Agencies (EPAs) in Pakistan are government entities responsible for safeguarding the environment and promoting sustainable development across the country. These agencies operate at both the federal and provincial levels and are primarily tasked with enforcing environmental laws, regulating pollution, and overseeing environmental impact assessments.

EPAs work to ensure that industries, businesses, and individuals comply with environmental regulations and standards. They also conduct assessments to evaluate the environmental impact of proposed projects and development activities, aiming to mitigate potential harm to the environment.

Furthermore, EPAs are involved in raising public awareness about environmental issues and sustainable practices. They play a vital role in preserving Pakistan's natural resources and protecting the environment for current and future generations, aligning with global efforts to combat climate change and enhance environmental conservation.

4.4. National Disaster Management Authority (NDMA)

The National Disaster Management Authority (NDMA) in Pakistan is a central government agency established to coordinate and oversee disaster risk management efforts at the national level. Formed under the National Disaster Management Act of 2010, NDMA plays a pivotal role in formulating national policies, guidelines, and strategies for disaster risk reduction and response.

NDMA collaborates with Provincial Disaster Management Authorities (PDMAs), District Disaster Management Authorities (DDMAs), and other stakeholders to ensure a unified and effective approach to disaster preparedness, response, and recovery. It provides guidelines for disaster management, assesses vulnerabilities, and establishes early warning systems. NDMA also coordinates international assistance and disaster response efforts.

Overall, NDMA serves as the linchpin of disaster management in Pakistan, working to enhance the country's resilience and protect its citizens and assets in the face of various hazards and emergencies.

4.5. Provincial Disaster Management Authorities (PDMAs)

Provincial Disaster Management Authorities (PDMAs) in Pakistan are essential government bodies responsible for disaster risk management and response within each province of the country. Established as a result of the National Disaster Management Act of 2010, these authorities are tasked with the strategic planning, coordination, and execution of disaster risk reduction and management efforts at the provincial level.

PDMAs work in close collaboration with the National Disaster Management Authority (NDMA) and other relevant agencies to ensure that disaster management policies and plans are effectively implemented. They develop Provincial Disaster Management Plans and monitor their implementation. PDMAs also conduct risk assessments, establish early warning systems, and coordinate disaster response efforts.

These authorities play a critical role in building resilience and preparedness within their respective provinces, addressing a wide range of hazards, including natural disasters and other emergencies. By fostering coordination and collaboration among various stakeholders, PDMAs contribute significantly to mitigating the impact of disasters and protecting the lives and assets of the population in Pakistan's provinces.

The PDMA is headed by a Director General appointed by the Provincial Government. The following are the powers and functions of PDMA:

4.6. District Disaster Management Authorities (DDMAs)

District Disaster Management Authorities (DDMAs) in Pakistan are local-level government bodies responsible for disaster risk management within individual districts. Established by the National Disaster Management Act of 2010, DDMAs are headed by District Commissioners (DCs) and are composed of key department heads, civil society representatives, and, in some cases, United Nations representatives.

DDMAs have a critical role in disaster preparedness, response, and recovery at the district level. They plan, coordinate, and implement disaster risk management (DRM) measures in alignment with guidelines from higher authorities, such as the Provincial Disaster Management Authorities (PDMAs) and the National Disaster Management Authority (NDMA). DDMAs prepare district-level disaster risk management plans and emergency response plans, ensuring that risk-prone areas are identified and mitigation measures are taken.

These authorities also monitor the implementation of DRM plans in their districts, organize training programs for government officials and community members, and maintain mechanisms for early warnings and information dissemination. DDMAs are instrumental in local-level disaster management, enhancing community resilience and effective responses to disasters within their respective districts in Pakistan.

4.7. Rescue 1122 Department

Rescue 1122 is an essential emergency service department in Pakistan, responsible for providing rapid response to a wide range of emergencies. In Punjab Province, Rescue 1122 was established in 2006, soon after the network spread to other provinces and now Rescue 1122 operates across the country. Rescue 1122 is renowned for its swift and effective response to medical emergencies, accidents, natural disasters, and other crises.

The department is staffed with highly trained professionals, including paramedics and emergency response teams, equipped with state-of-the-art vehicles and equipment. They offer medical assistance, firefighting, and rescue services, playing a crucial role in saving lives and property during emergencies.

Rescue 1122 has been instrumental in improving the overall emergency response infrastructure in Pakistan, offering assistance to those in distress and promoting a culture of safety and preparedness. This department is a vital component of the nation's disaster management system and a beacon of hope during critical situations.

4.8. Civil Defence Department

The Civil Defence Department in Pakistan is a government department dedicated to safeguarding civilian populations during times of crisis, particularly in the face of natural disasters, emergencies, and national security threats. Established to protect and support civilians, the department focuses on preparedness, response, and recovery.

Key functions of the Civil Defence Department include developing and implementing disaster

management plans, conducting awareness and training programs, and coordinating with other emergency services and relevant authorities. They play a pivotal role in ensuring the safety and well-being of citizens, whether in times of natural disasters like earthquakes and floods or during national security crises.

The department's efforts are essential for enhancing resilience, promoting public safety, and minimizing the impact of emergencies on communities across Pakistan. Civil Defence Department personnel are trained to provide immediate assistance and guidance to the public, contributing to the overall disaster management framework of the nation.

Self-Assessment

Q1: What is the abbreviation of NDMA and PRCS?

Q2: Write down names of organizations working at district levels dealing with disaster management. Highlight the key roles of these organizations.

Q3: What is the major role of the Ministry of Climate Change in Pakistan?

5 Session

Need for Developing a Climate Adaptation Plan at the Local Levels



A: Session plan

Session objective

To highlight the importance of community engagement and taking ownership in preparing the adaptation plans through a participatory process. This entails actively involving community members and local stakeholders in the identification of climate-related risks and the proposal of solutions. This process shall develop a sense of ownership and empowerment, increasing the likelihood of successful implementation and sustained resilience within the community.

Duration of session

1 hour

Facilitation techniques

- » Interactive presentation
- » Group work
- » Group presentations
- » Questions & answers session and discussion

Material required

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

B: Process follows

- » Initiate the presentation by outlining the session objectives.
- » Elaborate on the key activities that will be conducted during the delivery of the session.

Group work (20 minutes)

As usual, the same group will be working together to discuss the following questions:

- » Develop the table of contents for the community adaptation plans.
- » Propose a mechanism for implementing the plan.
- » Who will be the lead stakeholders who can help you in accomplishing the interventions proposed in the adaptation plan

Before the start of the group activities, provide flip charts and color markers to each group, instruct them to work on their topics, and display the results prominently on the wall.

At the end of the activity, the facilitator shall express gratitude to all participants for their active participation. Ask a representative from each group one by one to present their findings.

Presentation by the facilitator (30 minutes)

- » Following the conclusion of all group presentations, use PowerPoint slides to recap the key points. Explain the importance of the climate adaptation plans and emphasize how we can implement the plan to make it a reality. While showing your presentation, ensure that the facilitator is putting different questions at regular intervals to engage participants.
- » For this purpose, the facilitator should prepare certain relevant questions in advance to remain intact with the session objectives.
- » Try to ask questions from those who have less participation until now so they can also be involved in the discussion.

Questions & answers session (10 minutes)

Conclude the presentation by welcoming participants to ask questions or share their thoughts in the designing the planning process. Address any questions raised. In the absence of participant questions, facilitators can initiate a discussion by posing relevant questions for consideration.

C: Supported reading material for the workshop's participants

Developing climate adaptation plans at the community level is essential for several reasons:

5.1. Localized Impact of Climate Change

Climate change effects are often experienced at the local level, and communities are directly impacted by changes in temperature, precipitation patterns, extreme weather events, and sea-level rise. Tailoring adaptation plans to specific community needs allows for more effective responses to these localized challenges.

5.2. Climate Vulnerability and Capacity Assessment

Communities vary in terms of their vulnerability to climate change. Developing adaptation plans at the community level enables a thorough assessment of vulnerabilities and capacities, considering factors such as geography, infrastructure, socio-economic conditions, demographic characteristics, and availability and integrity of the local level capacities. This ensures that strategies are well-suited to address the unique challenges each community faces.

5.3. Community Engagement and Ownership

Involving community members in the adaptation planning process fosters a sense of ownership and empowerment. When individuals and local stakeholders actively participate in identifying

risks and proposing solutions, there is a higher likelihood of successful implementation and sustained resilience.

5.4. Tailored Solutions

Local communities possess valuable insights into their own needs, resources, and capacities. Customizing adaptation plans to the specific circumstances of each community allows for the development of tailored and contextually appropriate solutions. This increases the likelihood of successful implementation and long-term effectiveness.

5.5. Early Warning and Preparedness

Localized adaptation plans often include early warning systems and preparedness measures. This is crucial for communities to respond promptly to climate-related events, minimizing damage and protecting lives and livelihoods.

5.6. Resource Allocation

Developing adaptation plans at the community level enables better allocation of resources. Local governments, NGOs, and other stakeholders can prioritize interventions based on the specific needs and risks identified within each community, ensuring that resources are used efficiently.

5.7. Capacity Building

Community-level planning provides opportunities for capacity building and knowledge transfer. Residents can learn about climate risks, adaptation strategies, and sustainable practices, enhancing their ability to cope with and adapt to changing environmental conditions.

In summary, developing climate adaptation plans at the community level is a proactive and strategic approach to addressing the impacts of climate change, taking into account the unique characteristics, vulnerabilities, and capacities of each local community.



Session 0: Closing Remarks

A: Session plan

Session objective

- » Count on the workshop evaluation
- » Note down the feedback of the participants
- » Recap of key takeaways
- » Encouragement for participants to apply what they've learned
- » Distribute the certificates among the workshop participants

Duration of session

30 minutes

Facilitation techniques

- » Workshop evaluation forms distribution
- » Informal ceremony
- » Handing over certificates
- » Concluding remarks by the organizer and facilitator

Material required

- » Printed copies of the evaluation forms
- » Printed copies of the certificates
- » Camera

B: Process follows

Workshop evaluation (10 minutes)

Upon concluding all sessions, initiate a round of applause from the participants, acknowledging their active engagement and contributions that made the workshop engaging.

Following this, the final activity of the workshop involves evaluating the training. Distribute printed copies of evaluation forms, allocating 10 minutes for participants to provide feedback. The questions on the forms should primarily focus on the participants' satisfaction levels, allowing them to rank their experience regarding the facilitator, teaching methodologies, and the balance between group work and formal presentations.

Note down the feedback of the participants (10 minutes)

Following the completion of the form, gather it from the participants for subsequent analysis. Request input from two to three participants verbally, inquiring about their impressions of the workshop and the key insights they gained. Express gratitude for their valuable suggestions



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The “**Changing Minds for Climate Resilience through Awareness Raising and Local Capacity Measures**” is a transformative initiative spanning selected districts of Khyber Pakhtunkhwa and South Punjab. Focused on empowering vulnerable communities—particularly women, people with disabilities, youth, and children—the project seeks to enhance climate awareness, build adaptive capacities, and equip farmers with sustainable practices. Through knowledge dissemination and community engagement, we aim to forge a resilient front against climate change, fostering a united commitment for a sustainable future.

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