



Enhancing
Flood Resilience
in Punjab, Pakistan



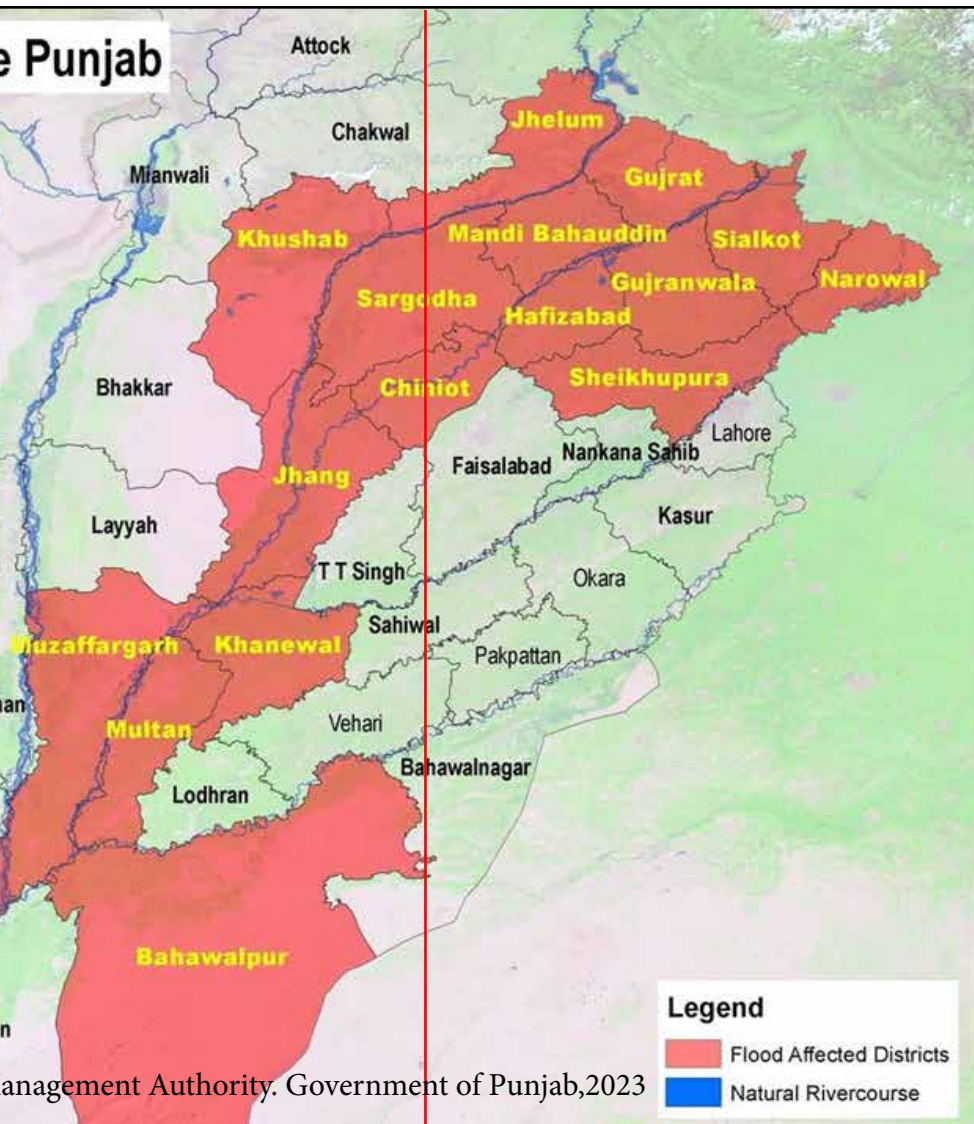


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Flood Affected Districts of the Punjab

Sr. No.	District	Sr. No.	District
1.	Jhelum	9.	Mandi Bahaudin
2.	Khushab	10.	Sargodha
3.	Muzaffargarh	11.	Chiniot
4.	Narowal	12.	Jhang
5.	Sialkot	13.	Khanewal
6.	Gujrat	14.	Multan
7.	Gujranwala	15.	Bahawalpur
8.	Hafizabad	16.	Sheikhupura



FLOOD AFFECTED DISTRICTS OF PUNJAB

District	Risk	District	Risk	District	Risk	District	Risk
Bhakkar	A	Jhelum	A	Chiniot	B	Lodhran	C
D.G. Khan	A	RY Khan	A	Attock	B	Khushab	C
Multan	A	Rajanpur	A	Bahawalnagar	B	Okara	C
Mianwali	A	Gujranwala	A	Khanewal	B	Rawalpindi	C
Muzaffargarh	A	Lahore	B	Sheikhupura	B	Sargodha	C
Layyah	A	Gujrat	B	Sahiwal	B	TT Singh	C
Jhang	A	Sialkot	B	Faisalabad	C	Vehari	C
MB Din	A	Hafizabad	B	Chakwal	C	Pakpattan	C
Narowal	A	Nankana	B	Kasur	C	Bahawalpur	C
High Risk	A	Medium Risk	B	Low Risk	C		

Credit: Provincial Disaster Management Authority. Government of Punjab,2023

ENHANCING FLOOD RESILIENCE IN PUNJAB

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Sincerely

Mubasher Bukhari

President: Media Foundation 360



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FLOOD PREPAREDNESS AND RESPONSE PLAN FOR PUNJAB PROVINCE

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14 DEC -16 DEC 2023

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	Muhammad Aqib	SDO

ACRONYMS

AC	-----	Assistant Commissioner
ADIO	-----	Assistant Disease Investigation Officer
BHU	-----	Basic Health Unit
CBO	-----	Community Based Organization
CCCC	-----	Command, Control and Communication Center
CERC	-----	Central Emergency Response Committee
DGHS	-----	Directorate General Health Services
DHQ	-----	District Headquarter Hospital
DPO	-----	District Police Officer
DRF	-----	Disaster Response Force
DRTA	-----	District Regional Transport Authority
FPAP	-----	Family Planning Association of Pakistan
FRP	-----	Flood Resilience Program
GoP	-----	Government of Punjab
IDP	-----	Internally Displaced Persons
IRC	-----	International Rescue Committee
LGR	-----	Local Government Representative
LG&CD	-----	Local Government and Community Development
MF360	-----	Media Foundation 360
M&E	-----	Monitoring and Evaluation
MOU	-----	Memorandum of Understanding
MPA	-----	Member Provincial Assembly
NDMA	-----	National Disaster Management Authority
NGO	-----	Non-Government Organization
PDMA	-----	Punjab Provincial Disaster Management Authority
PRSP	-----	Pakistan Rural Support program (PRSP)
RTI	-----	Right to Information
R.R.R	-----	Rescue, Resilient Recovery and Rehabilitation
USAID	-----	United States Agency for International Development
WRC	-----	Welfare and Relief Committee

DISASTER RELATED TERMS

CAPACITY: It is the combination of all the strength and resources available within a community, society or organization that can reduce the level of risk, or the effects of a disaster. Capacity may include physical, institutional, social or economic means as well as skilled personnel or collective attributes such as leadership and management.

CAPACITY BUILDING: Efforts aimed to develop human skills or societal infrastructure within a community or organization needed to reduce the level of risk. In extended understanding, capacity building also includes development of institutional, financial, political and other resources, at different levels of the society

CLIMATE CHANGE: The climate of a place or region is changed if over an extended period (typically decades or longer) there is a statistically significant change in measurements of either the mean temperature or variability of the climate for that region

CONTAMINATION: The word contamination means to pollute. Whether it is food, air, or water, when you contaminate something, you make it impure or hazardous. Contaminate comes from the Latin word contaminate meaning “made impure”.

COPING CAPACITY: The means by which people or organizations use available resources and abilities to face a disaster. In general, this involves managing resources, both in normal times as well as during crises or adverse conditions.

DEHYDRATION: Dehydration is a condition caused by the excessive loss of water from the body, which causes a rise in blood sodium levels. Since dehydration is most often caused by excessive sweating, vomiting, or diarrhea, water loss is usually accompanied by a deficiency of electrolytes.

DISASTER: A serious disruption of the functioning of a community or society causing widespread human, material, economic resources. It results from the combination of hazards, conditions of vulnerability and insufficient capacity to reduce the potential negative consequences of risks.

DISASTER RISK MANAGEMENT: It is the comprehensive approach to minimize the adverse impacts of a disaster. DRM encompasses all actions taken before, during, and after the disasters. It includes activities on mitigation, preparedness, emergency response, recovery, rehabilitation, and reconstruction.

DISASTER RISK REDUCTION: The measures aimed at minimizing vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development.

EARLY WARNING: The provision of timely and effective information, through identified institutions, to communities and individuals so that they could take action to reduce their risks and prepare for effective response.

EMERGENCY MANAGEMENT: The management and deployment of resources for dealing with all aspects of emergencies, in particularly preparedness, response, and rehabilitation.

EPIDEMIC: An outbreak or unusually high occurrence of a disease or illness in a population or area, epidemic is an outbreak of a disease that spreads rapidly among individuals in an area or population at the same time.

FORECAST: Estimate of the occurrence of a future event. This term is used with different meanings in different disciplines.

HAZARD: Anything that has the potential of damaging physical event or phenomenon that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hazards can include natural (geological, hydro meteorological and biological) or induced by human processes (environmental degradation and technological hazards). Hazards can be single, sequential or combined in their origin and effects. Each hazard is characterized by its location, intensity, frequency and probability.

HAZARD ANALYSIS: Identification, studies and monitoring of any hazard to determine its potential, origin, characteristics and behavior.

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INFESTATION: Infestation is the state of being invaded or overrun by pests or parasites. It can also refer to the actual organisms living on or within a host.

LAND-USE PLANNING: Branch of physical and socio-economic planning that determines the means and assesses the values or limitations of various options in which land is to be utilized, with the corresponding effects on different segments of the population or interests of a community considered in resulting decisions. Land-use planning can help to mitigate disasters and reduce risks by discouraging high-density settlements and construction of key installations in hazard-prone areas, control of population density and expansion, structural and non-structural mitigation measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.

MITIGATION: Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.

METEOROLOGICAL DISASTER: Disasters resulting from meteorological phenomena, such as floods, cyclones, droughts, glacial lake outbursts, landslides due to heavy rain and avalanches.

NATURAL HAZARDS: Natural disasters or phenomenon occurred on earth that may constitute a damaging event. Natural hazards can be classified by origin namely: geological, hydro meteorological or biological. Hazardous events can vary in magnitude or intensity, frequency, duration, area of extent, speed of onset, spatial dispersion and temporal spacing.

PREPAREDNESS: Activities and measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations.

PREVENTION: Activities to ensure complete avoidance of the adverse impact of hazards.

PUBLIC AWARENESS: The process of informing the general population about the increasing levels of consciousness, risks and the ways the public can reduce their exposure to hazards. This is particularly important for public officials in fulfilling their responsibilities to save lives and property in the event of a disaster.

RECOVERY: Decisions and actions taken after a disaster with a view to restoring or improving the pre-disaster living conditions of the stricken community, while encouraging and facilitating necessary adjustments to reduce disaster risk.

RELIEF / RESPONSE: The provision of assistance during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected. It can be of an immediate, short-term, or protracted duration.

RESILIENCE / RESILIENT: The capacity of a community, society or organization, potentially exposed to hazards, to adapt by resisting or changing in order to maintain an acceptable level of functioning. Resilience can be augmented by learning from previous disasters measures for improved protection and enhanced risk reduction measures in the future.

RETROFITTING (OR UPGRADING): Reinforcement of existing buildings and structures to become more resistant and resilient to the forces of natural hazards.

RISK: The chances of losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between hazards and vulnerable social conditions. Risk is expressed as $\text{Risk} = \text{Hazards} \times \text{Vulnerability}$. Some experts also include the concept of exposure to refer to the physical aspects of vulnerability.

RISK ASSESSMENT / ANALYSIS: A methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating existing vulnerability that could pose a potential threat to people, property, livelihoods and the environment.

1: EXECUTIVE SUMMARY

Addressing the complex issue of flooding in Pakistan requires a comprehensive and integrated approach. This document seeks to provide potential measures to mitigate flooding, prepare the population for emergencies, and build resilience against floods and other weather events made more severe by climate change. It advocates a holistic and proactive approach. Further, it urges decisive political and community action to plan for flood resilience and recovery, media literacy and creation of policies to mitigate the causes of catastrophic floods. These actions include recommendations for public policy (for example, construction regulations), nature-based flood mitigation (such as maintaining or reclaiming wetlands, as well as creating urban green spaces and permeable surfaces), emergency preparedness, intergovernmental coordination, and public engagement.

Increased frequency and intensity of extreme weather events, including heavy rainfall and unusual fast melting glaciers attributed to climate change exacerbate flood risk in Pakistan. Pakistan has faced several devastating floods in its history, one most recently wreaking havoc in 2022. These floods have led to massive loss of life, displacement of communities, and extensive damage to the infrastructure and agriculture. Flooding occurs with regularity due to various factors, including monsoon rains and the country's unique geographic features, such as proximity to rivers and low-lying areas that contribute to varying levels of vulnerability. In addition to factors such as climate and topography, flood risk is also heightened by human activities such as deforestation, urbanization, and poor land management.

Hill or mountain torrent floods, also known as flash floods, can also occur over a relatively short period of time in hilly or mountainous terrain. These floods can happen with little warning due to the rapid accumulation of water that can cause rivers and streams to overflow. These are high intensity events due to steep slopes of hills and mountains. Water gains momentum as it descends, leading to the rapid formation of powerful torrents. These floods can often carry a significant amount of debris, such as rocks, mud, and vegetation, all of which increase the destructive force of the flood.

Floods in 2022 were devastating to Pakistan. Large swaths of the country were covered in



water. Thousands of people were killed and millions of people were displaced from their homes, subjecting them to immense hardship. Outbreaks of waterborne diseases, such as cholera and dengue fever, posed serious health challenges. Stagnant water created breeding grounds for mosquitoes, leading to an increase in disease. The situation was made worse by an acute shortage of clean water. These floods also resulted in infrastructure destruction, economic and agricultural losses and further land erosion and soil degradation. Severe flooding is the result of both natural causes (such as monsoon rains and snow melt) and man-made causes (deforestation, poor land management, and climate change).

Climate change has resulted in more severe weather events, in effect exposing already existing weaknesses in infrastructure and emergency preparedness. The floods of 2022 revealed the importance of early warning systems; robust plans for disaster preparedness and response; better coordination among government and non-governmental agencies; adequate

healthcare and disease prevention; community engagement in disaster management planning; more resilient infrastructure; sustainable land use; strong cooperation and aid with international partners; and, finally, the necessity for adaptation to climate change.

Disastrous flooding has presented significant challenges for the Punjab Province, specifically the absence of effective communication, insufficient availability of accurate information, inadequate road infrastructure, and a complete lack of transportation in the flood-affected regions. Experts have noted systemic failures that led to breakdowns in communication among government institutions. Other human-created problems came from water being diverted to lower lands in order to protect cities, villages, industries, and wealthy agricultural concerns. Additionally, the absence of a reliable emergency alarm system resulted in a lack of timely warnings for people unexpectedly engulfed by flood waters.



3: OBJECTIVES

Media Foundation 360's initiative urges collaboration among government agencies, non-governmental organizations, community leaders, media and experts, to enhance the effectiveness of a flood preparedness and response Plan. Media Foundation 320 brought together diverse perspectives, expertise, and experiences, to collaboratively prepare this document, seeking to identify and address gaps, explore innovative solutions, and build a unified approach to preparing for the immediate and severe threats flooding poses to Pakistan, particularly Punjab Province. Punjab Province can best prepare for flooding disaster if positive political action is promptly taken.

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4: PAKISTAN'S UNIQUE GEOGRAPHIC AND METEOROLOGICAL CHARACTERISTICS

Pakistan, located in South Asia, is a country with diverse and unique geographical features and a varied climate. Pakistan population is 232 million, the fifth largest in the world. However, it emits less than .1 percent of the world's green house gases. Nevertheless, Pakistan is disproportionately exposed to the threat of severe flooding and shortages of clean drinking water.

Pakistan's land mass is roughly the size of the United Kingdom and France, combined. It borders India to the east, Iran and Afghanistan to the west, China to the north and the Arabian Sea to the south. Its major cities include Islamabad, the capital, located against the backdrop of the Margalla Hills, Karachi, a major port city on the Arabian Sea, and Lahore, the cultural center of the country. Some regions are more at risk to flooding than others. The Indus River Basin is at risk, as areas along the river and its tributaries are prone to flood, particularly during the monsoon season and when snow melts from the Himalayas. The heart of Pakistan, Punjab Province, especially those parts near the Indus River, often face severe flooding. The extensive canal system in Punjab, while beneficial for irrigation, can exacerbate flood risks when overflowed. Downstream, Sindh Province is also vulnerable to floods because of a flat terrain, combined with poor drainage systems. Such topographic features can lead to prolonged water stagnation and flooding. Other areas of the country prone to flooding include the Khyber Pakhtunkhwa Province, the



Baluchistan Province. Large cities like Karachi also face flood risks due to inadequate drainage systems, rapid urbanization, deforestation, and occasional heavy rainfall.

Pakistan experiences a variety of climates, ranging from arid to subtropical. Its winter season (November to February) is generally mild in the south, but cold in the north, with heavy snowfall in the Himalayas. Spring (March to May) features pleasant temperatures nationwide. However, summer (June to August) is hot and dry, particularly in the south. Northern areas remain relatively cooler. Monsoon season (July to September) brings significant rainfall.



Rivers and Flood zones

Disaster Type	Vulnerable Districts / Areas	
Riverine Flooding	Indus	Mianwali, Bhakkar, Layyah, Muzaffargarh, DG Khan, Rajanpur, R.Y. Khan
	Jhelum	Jhelum, M.B. Din, Khushab, Jhang..
	Chenab	Gujranwala, Gujrat, Sialkot, Sargodha, Chiniot, Hafizabad, Jhang, Khanewal, Multan.
	Ravi	Lahore, Sheikhpura, Nankana Sahib, Okara, Sahiwal, Khanewal
	Sutlej	Kasur, Pakpattan, Vehari, Lodhran, Bahawalnagar, Bahawalpur
Flash Floods	Mianwali, D.G. Khan, Rajanpur	

5: CLIMATE CHANGE CHALLENGES

Pakistan is significantly affected by climate change, with an increased frequency of extreme weather events such as floods and droughts. In 2022, Pakistan experienced the hottest temperatures in its history. Pollution and diminishing water resources are a major concern. Climate change is a genuine emergency, with the Earth's climate undergoing a significant transformation, as evidenced by temperatures increasing 1.5 degrees each year. The link between carbon emissions and increased floods is indisputable, meaning many flood events can be considered man-made, a consequence of human activities that alter the climate and intensify the severity of natural disasters. The burning of fossil fuels, a cornerstone of industrialization and development have resulted in far-reaching effects: Developed countries, having heavily relied on fossil fuels for their economic development, now witness the global impact of the resulting carbon emissions. Unfortunately, many undeveloped countries bear the brunt of the consequences of the resulting human-caused climate change.

With each passing year the Greenhouse Effect brings new records of heat, changing weather patterns, and violent weather-related disasters, according to environmental lawyer

and expert Ahmad Rafay Alam. The scale of carbon emissions, Alam warns, has reached a point where it surpasses the Earth's natural capacity to absorb and mitigate its effects. Even significant attempts to mitigate climate change are now overshadowed by the sheer magnitude of carbon emissions, pushing our planet to the brink of extinction. According to the United Nations, we are in the midst of the sixth mass extinction event in the history of the world. Extreme temperatures not only jeopardize the population's health, but also strain vital resources, challenging the resilience of communities. Evidently, air pollution, a consequence of increased carbon emissions, reduces life expectancy in Pakistan's ever expanding urban spaces by as much as two years.

Significant action is called for to both mitigate climate change and adapt to its effects. Pakistan has declared a national emergency due to climate change and recurring floods, marking the third time in its history it has done so, due to the significant losses of lives and property in the country. Climate change adds complexity to flood management in Pakistan. Unpredictable weather patterns, changing rainfall intensity, and the melting of glaciers contribute to the increased frequency and severity of floods.

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While it is important for nations to cut carbon emissions to fight climate change, communities and individuals must still prepare for the negative effects of our current climate. This includes becoming flood resilient through technological innovations, climate-friendly public policy, and nature-based mitigations. Developing adaptive strategies, incorporating climate-resilient infrastructure and fostering sustainable land-use practices are imperative to address the evolving challenges posed by climate change.

6: RISK ASSESSMENT

Pakistan's extensive river system, particularly the Indus River and its tributaries, is prone to flooding, especially during the monsoon season. Glacier melts in northern regions during the summer contribute to increased river flows, heightening the risk of floods. Additionally, low-lying areas in the Indus River basin are naturally susceptible to floods. High population density in vulnerable areas, such as the Indus River plains, increases the risk to lives and livelihoods. Inadequate infrastructure, including insufficient flood barriers and drainage systems, exacerbates the impact of floods. A large segment of Pakistan's economy is dependent on agriculture, which is highly vulnerable to flood-related disruptions.

High levels of poverty and inequality mean that a significant portion of the population lives in areas with poor infrastructure and lacks resources to recover from disasters. High population density, especially in urban areas, magnifies the impact of infrastructure failures. A large segment of Pakistan's economy is dependent on agriculture, which is highly vulnerable to climate-related disasters, impacting livelihoods and food security. Limited public awareness and education about disaster risk reduction contribute to vulnerability. Finally the country's healthcare system struggles to cope with the increased demand resulting from disasters.

Another urgent concern is the fundamental need for access to clean drinking water and continued access to agricultural irrigation. Meeting these basic needs are complicated by water scarcity, inefficient distribution systems, pollution, and the impacts of climate change.

Additionally, flood mitigation and flood resilience efforts require a synchronous reporting mechanism where civil society actors, government and the media can play a major role. Electronic and digital media can contribute substantially by tracking the victims and recording their needs, connecting them to the government or nongovernment centres where help can be sought. A need is felt for digital media sites and platforms where both government and community data is represented, thus providing accurate and to-the-minute information for the flood mitigation and resilience efforts.

Media projection during and after the flood can be a challenge for Pakistan's journalists on various counts. Journalists covering the floods are not prepared to deal with dire life risks, they do not have credible primary data before heading out to cover stories and, usually depend on personal resources to travel. As a consequent of such anomalies, the independent figures of flood-induced losses appear different across the news channels.

7-PREVENTION AND MITIGATION

The National Disaster Risk Management Framework provides strategies for risk assessment, disaster prevention, preparedness, response, and recovery. The National Flood Protection Plan provides guidelines and measures for flood control, including the construction of dams and embankments, improved drainage, and watershed management. Pakistan's National Climate Change Policy includes measures to enhance climate resilience and adaptation to changing weather patterns. Finally, federal water policies address water resource management.

Developing effective strategies requires a delicate balance between addressing immediate needs and implementing long-term solutions. Communities can strike this balance through improving infrastructure, promoting water conservation and implementing sustainable water management policies.

Riparian rights is a point of concern for many who rely on the Indus River. In many cases, land owners are unaware of their rights, particularly when international companies and cooperatives seek use of water sources.

8-NATIONAL POLICY & GOVERNMENT AGENCIES

National policies related to flood management are the responsibility of the National Disaster Management Authority (NDMA), established under the National Disaster Management Act of 2010. It is the primary federal body responsible for disaster management, including flood mitigation.

The Provincial Disaster Management Authorities (PDMAs) are crucial government agencies operating at the provincial level, working in tandem with the NDMA to implement disaster management policies and coordinate responses. District Disaster Management Authorities (DDMAs) play a crucial role in the execution of disaster management plans and immediate response measures.

The PDMA has an established routine for flood events and strives to provide early warnings for timely evacuation and flood preparedness, including: resource mobilization (adequate and timely supply of relief materials, food, shelter, and medical aid, as well as coordination with other agencies to avoid duplication and ensure complete coverage); community engagement (through awareness programs); and communication (including satellite support, mobile vans). Nevertheless, the challenge of reaching remote and vulnerable communities with accurate and practical information alludes to significant gaps in PDMA's ability to adequately respond.

Effective flood mitigation requires coordinated

efforts across various government departments and agencies (PDMA, health and education departments, NDMA, military, media, and NGOs). A comprehensive national policy on flood management, integrating inputs from experts, scientists and local communities, is crucial. Regular reviews and updates to adapt to evolving climatic conditions can help Pakistan's resilience in the event of flood events.

Awareness and capacity building

Before the flood—Awareness and preparation is required for the pre-flood and post-flood periods. Pre-flood preparations should be made for early warning systems; the construction of infrastructure features such as dams, levees, and embankments, to mitigate the impact of floods and control water flows; the implementation of land-use policy and building codes, regulating construction in flood-prone areas; the reduction of soil erosion and the promotion of water absorption; the education and engagement of communities to respond to floods, including training for disaster response teams and local emergency services.

Post-flood: Search and rescue operations are of paramount concern after a flood event in order to provide medical assistance and distribute relief supplies. Additionally, plans should be made to facilitate the rapid reconstruction of damaged infrastructure, especially roads and bridges. Those whose livelihood depends on agriculture will depend upon the province's ability to provide financial

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support such as micro-financial grants and skills development assistance. Especially vulnerable

populations (children, seniors, women, gender and religious minorities, etc.) affected by floods will require food assistance, access to healthcare, and cash transfer assistance, etc. Likewise, businesses will require financial assistance. Finally, capacity building of the media personnel is important on how to liaise with public and community members and safely report before and during flood periods.

9-PREPAREDNESS

The PDMA provides regular training programs for its staff, local authorities and community leaders on disaster response and management. PDMA has strengthened its technical capabilities in field data analysis, risk assessment, and decision-making. Furthermore, the PDMA fosters partnerships with community organizations to ensure a coordinated and effective response by developing and implementing community-based early warning systems. Finally, PDMA has developed standardized communication protocols to streamline information sharing and coordination with federal agencies, NGOs and other government institutions.

Nevertheless, the PDMA needs to upgrade and expand its early warning systems, incorporating modern technologies for real-time data collection and dissemination.

Investments should be made in research and development of technologies and innovations for better flood resilience, including improved forecasting models, flood-resistant building materials, and sustainable water management practices.

Implementing state-of-the-art early warning systems (EWS) is essential for timely detection and communication of potential flood events. Advanced technologies such as satellite imagery, weather forecasting, and hydro-logical modeling can significantly enhance the accuracy and effectiveness of early warnings. Utilizing remote-sensing and Geographic Information System (GIS) technologies aids in mapping flood-prone areas, monitoring changes in land use, and assessing overall vulnerability. These tools contribute to informed decision making and effective planning. Developing robust flood forecasting models helps authorities predict the extent and timing of floods, enabling

better preparedness and response. The integration of advanced modeling techniques improves the accuracy of predictions.

Communities must make plans for evacuating the populations when conditions warrant. Local leaders and community elders needs some form of capacity building to be able to establish evacuation routes and make these known to residents. Additionally, places that provide safe shelter should be identified in advance. The population should be made aware and warned to avoid low-lying areas, or places near rivers and streams. Likewise, caution should be exercised around bridges.

Residents should have access to up-to-date weather forecasts and flood warnings. In the event that community members are not aware of mass media or social media messages from authorities, mosques could be of assistance in announcing emergency measures. Every mosque, school, BHU, or hospital should have emergency kits with such essentials as water, non-perishable food, medications, flashlights with working batteries, important documents, and a first-aid kit.

It is imperative that community members and family members establish ahead of time a communication plan to be used in the event of an emergency. They should also prepare dry rations to survive the flood period when there is no access to fresh produce.

Individuals should keep mobile phones charged and consider having a backup power source. Officials should be prepared, in the case of the failure of cellular communications, to use indigenous methods of communications.

Residents should use sandbags to create barriers around their homes to divert water. Documents, appliances, and other valuables should be moved to the highest point possible in the home. In the event of flooding, residents should turn off utilities such as gas and electricity.

It is important that residents work together in the event of an emergency to ensure everyone is safe. If possible, volunteer to help others; if necessary, seek help of others. Finally, residents should wait for authorities to declare it is safe before returning to their homes. When returning they should be cautious of possible structural damage and contaminated water.

10-COMMUNITY ENGAGEMENT

Floods in Pakistan not only leave behind physical destruction, but also inflict severe mental and psychological trauma on the affected population. Floods disrupt lives, destroy homes, and create a sense of helplessness, leading to various mental health challenges. Both female and male victims experience heightened levels of stress, anxiety, depression, and post-traumatic stress disorder (PTSD). The loss of homes, livelihoods, and sometimes the lives of loved ones, exacerbates these challenges, creating a complex web of emotional distress. The lack of an outlet for emotional expression can contribute to long-term mental health issues that hinder the overall recovery process. To address this gap, it is imperative to implement gender-inclusive counseling programs. Such programs should be designed to create a safe and non-judgmental space for both males and females to share their experiences and emotions, and receive guidance on coping mechanisms.

Effective flood management requires the active participation of local communities. Involving local communities in flood risk reduction initiatives enhances resilience. However, gaps in community engagement and education persist. Many communities lack awareness of evacuation procedures, disaster preparedness, and sustainable land-use practices. Investing in community education programs, promoting local leadership, and fostering a culture of resilience can empower communities to actively contribute to their own safety during flood events. Community-based planning, awareness campaigns, and education programs empower individuals to take proactive measures and respond effectively during floods. Additionally, integrating community awareness programs into building codes can help educate residents about flood risks and safety measures.

Timely and accurate information is critical for flood preparedness. Community-based early warning systems, coupled with education campaigns, can empower individuals to respond promptly and evacuate when necessary, reducing casualties and property damage. Pakistan must invest in upgraded warning systems to provide timely and accurate information about floods. Such warning messages must reach vulnerable communities, utilizing various channels such as mobile phones, sirens, and through community leaders.

Government officials should prepare to conduct extensive public awareness campaigns on flood risks, as well as preparedness measures, and evacuation procedures. Considering the diverse cultural and linguistic landscape of Pakistan, materials should be developed in multiple languages.

PDMA has launched extensive public awareness campaigns on flood risks, evacuation procedures, and available resources through various channels, such as radio, social media, and community events. Public awareness campaigns could be done in collaboration with local leaders, mosques, and community organizations, through localized alert systems, mobile apps, social media platforms and websites. Journalists must be more aware of the dangers of climate change, as well as be prepared to educate the public about becoming flood resilient.

IDP (Internally Displaced Persons) Flood and crime situations should be addressed through a combination of immediate relief and long-term solutions with the help of AC (Assistant Commissioner), CCCC (Command, Control and Communication Center), CERC Central Emergency Response Committee, DPO (District Police Officer) DRF (Disaster Response Force). Making a group of representatives from each agency and deploying special DPO in the place of emergency can solve a lot of problems in addressing crimes. Some of the measures are discussed below.

Community Policing: Strengthen community policing initiatives to build trust between law enforcement and the community, fostering a safer environment with the help of DPOs.

Investment in Law Enforcement: Increase funding and resources for law enforcement agencies to enhance their capacity and effectiveness to deal with the crimes committed during and in the flood zones.

Social Programs: Implement social programs targeting at-risk populations to address root causes of crime, such as poverty, unemployment, and lack of education.

Emergency Shelters: Establish well-equipped emergency shelters with adequate security for displaced persons during the flood period.

Legal Framework: Strengthen and enforce laws related to disaster management, crime prevention, and protection of internally displaced persons.

11-NATURE-BASED SOLUTIONS

Unplanned urbanization and deforestation contribute to soil erosion and exacerbate the impact of floods. Implementing sustainable land-use practices such as afforestation, watershed management, and controlled development, can help mitigate the effects of flooding. Preserving natural buffers like wetlands, floodplains, and embankments provide essential protection against the rapid onset of floods. Building reservoirs and dams strategically help regulate water flow, stores excess water during heavy rainfall, and releases it gradually during dry periods. These structures play a crucial role in flood control and water resource management.

Planting trees and restoring natural vegetation in watershed areas help absorb excess rainwater, reduce soil erosion, and regulate river flow. Pakistan has initiated several tree plantation campaigns in recent years to combat environmental degradation and climate change. These efforts have included the “Ten Billion Tree Tsunami,” launched by the federal government, with the goal of planting ten billion trees across the country over a period of five years. This effort is in addition to initiatives in various cities to increase green cover in urban areas. Tree planting not only helps combat climate change by absorbing carbon dioxide and cooling the air, but also help prevent soil erosion and provide permeable ground in which floodwaters can be absorbed. Healthy ecosystems contribute to the overall resilience of the landscape.

Preserving and restoring wetlands act as natural buffers against flooding by absorbing and storing

water. Wetlands also provide habitat for biodiversity and contribute to water purification.

Incorporating green spaces and permeable surfaces in urban planning allows for natural water absorption, reducing surface runoff and the risk of flooding. Green roofs, rain gardens, and permeable pavements are examples of green infrastructures.

Active involvement of communities is crucial for effective flood mitigation. Community education programs should focus on promoting awareness of evacuation procedures, disaster preparedness, and sustainable practices. Local leaders, once trained, can play a pivotal role in disseminating information, organizing drills, and fostering a culture of resilience in their communities.

Public education in Punjab had achieved notable results by adding Dengue-fever awareness and mitigation education in their textbooks, sensitizing a vast set of population. Public education should create similar information for the young, empowering them to become leaders in their schools and communities, with measures ranging from being elders in post-flood education resilience leaders to compiling torches and batteries, dry food ration, and sanitation supplies, etc.

Given Pakistan’s reliance on agriculture, climate-resilient farming practices are integral to flood mitigation. Implementing measures such as improved water management, drought-resistant crops, and sustainable farming techniques can help minimize the impact of floods on the agricultural sector, ensuring food security for the population.

12-INFRASTRUCTURE

Underground reservoirs can store excess water during floods, reducing the impact of floodwaters on communities and infrastructure. These reservoirs can help in recharging groundwater aquifers, which maintain groundwater level and provide a sustainable water source for dry periods. Underground water storage also reduces water loss due to evaporation, which can be significant in arid and semi-arid climates, such as Pakistan’s. Since reservoirs are underground, they don’t require large surface areas, allowing the land above them to be used for other purposes, such as agriculture or construction. Finally, underground storage can potentially improve the quality of stored water through natural filtration processes.

Active flood ponds are designed to collect and hold excess rainwater or floodwater, thereby reducing

the risk and severity of flooding. These ponds can gradually release stored water back into the river systems or use it for irrigation purposes, thereby controlling the flow rate and minimizing downstream flooding.

Upgrading and expanding urban drainage systems is essential for managing rainwater runoff in cities. Well-designed storm water drainage systems can prevent urban flooding and channel water away from the populated areas.

13-URBAN PLANNING AND PUBLIC POLICY



A paradigm shift is needed in urban planning, which incorporates environmental considerations. Safe building and retrofitting techniques should be adopted. Such policies would encourage such approaches as elevating building foundations to prevent flood waters from entering living spaces; using water-resistant materials, such as treated wood, concrete, and corrosion-resistant metals that help prevent long-term damage; adopt flood-resilient landscaping, by using permeable surfaces and effective draining systems to manage rainwater, and incorporating green infrastructure, such as rain gardens and swells, to absorb and redirect excess water; even technologies such as floating architecture can help by allowing structures to float or rise with floodwaters, providing a dynamic response to changing water levels. Pakistan must prioritize the implementation of safe building techniques and codes tailored to mitigate the impact of floods. By integrating innovative designs, resilient materials, and robust regulations, the country can foster the development of structures that not only withstand floods but also contribute to sustainable, disaster-resilient communities. As the frequency and intensity of floods continue to rise, a proactive and collaborative approach to building safety is paramount for the well-being and security of the

nation.

To this end, policy makers should consider revising building codes to help communities become flood resilient. Adopting sustainable land-use planning practices is vital for minimizing the impact of floods. Zoning regulations, land-use mapping and development guidelines can help steer urbanization away from high-risk areas. Such codes would include regulations that designate flood-prone areas and strictly restrict building structures in such areas. Elevation standards could mandate minimum standards for construction of raised foundations.

One key element in flood mitigation is the development of resilient infrastructure. Pakistan needs to invest in the construction and maintainance of sturdy embankments, efficient drainage systems, and flood-resistant buildings.

Finally, implementing integrated water resource management (IWRM) principles help with the development of a coordinated and sustainable approach to water management. Balancing the needs of agriculture, industry, and domestic users with environmental considerations help mitigate the risk and effects of flooding.

14-SEARCH AND RESCUE

(4 RS – RESCUE, RELIEF, REHABILITATION AND RECONSTRUCTION)



Swift deployment of rescue teams to locate and evacuate individuals, to designated safe zones, stranded by flooding in inaccessible areas requires the use of boats, helicopters, and other specialized equipment. Clear communication protocols should be developed, alongside well-equipped emergency communication centers, which serve as central hubs for coordinating information dissemination and response efforts, as well as reducing redundancy measures and communication breakdowns.

Including provisions in building codes for the integration of emergency evacuation routes and safe havens within structures is strongly recommended. Two or more evacuation exits are needed in building in flood affected zones. Mandating the installation of flood warning systems and providing emergency

supplies in multi-story buildings is also important.

Other immediate needs include for such things as: the provision of temporary shelters for families and individuals; distribution of essential items such as food, water, and hygiene kits; medical assistance for injuries, waterborne diseases and other health concerns; counseling services and other mental health-care should be provided for those dealing with the psychological impact of the floods; Patwaris (Land Revenue officials) need to assess damaged or destroyed homes to determine unbiased estimates and documentation of the extent of rehabilitation needed, while construction materials and support need to be provided for homes to be rebuilt; training programs should be provided to assist individuals with the restoration of livelihoods affected by floods, including those in agriculture and small business; authorities at various levels of government need to collaborate

to ensure fair and timely distribution of compensation to affected individuals and communities.

One of the primary challenges in flood management in Pakistan is the inadequacy of early warning systems. Timely and accurate information is crucial for effective disaster response. However, existing systems often fall short. Limited coverage, outdated technology, and insufficient community awareness contribute to delays in alerting vulnerable populations. Pakistan's infrastructure is not well-equipped to withstand the magnitude of flooding events. Inadequate drainage systems,



poorly constructed embankments, and the encroachment of riverbeds exacerbate the impact of floods. There is a need for comprehensive infrastructure development, including the construction of robust embankments and improved drainage networks, to minimize the devastation caused by flooding.

The aftermath of floods places immense strain on resources for rehabilitation. The scale of displacement, damage to homes, and loss of livelihoods overwhelm the capacity of existing relief mechanisms. Adequate funding and efficient coordination among government agencies, non-governmental organizations, and international partners are crucial to ensuring swift and effective relief efforts. Additionally, investing in long-term rehabilitation strategies is vital for the affected communities to recover and rebuild their lives.

15-MONITORING AND EVALUATION

Implementing monitoring and evaluation (M&E) in a flood resilience plan is crucial for assessing the effectiveness of the plan, identifying areas for improvement, and ensuring that objectives are met. Here are steps to integrate M&E into your flood resilience plan:

Indicators should be quantifiable and aligned with the goals of the plan.

1. **Indicator:** Changes in ecosystem health and biodiversity.

Measurement: Monitor the impact of floods and resilience measures on local ecosystems and biodiversity.

Insurance Coverage:

Indicator: Percentage increase in flood insurance coverage.

Measurement: Track the number of individuals and businesses covered by flood insurance before and after awareness campaigns or policy changes.

Community Evacuation Plans:

Indicator: Percentage of the population with access to and awareness of evacuation plans.

Measurement: Assess the development and communication of evacuation plans, as well as the community's understanding of these plans.

Social Vulnerability Reduction:

Indicator: Changes in social vulnerability indices.



Measurement: Use social vulnerability indices to assess the changes in vulnerability among different demographic groups before and after resilience interventions.

Post-Flood Recovery Time:

Indicator: Time taken for communities to recover after a flood event.

Measurement: Assess the speed and efficiency of recovery efforts and the resilience of communities in bouncing back from flood impacts.

These indicators should be adapted for the monitoring of flood resilience. Regular monitoring and evaluation using these indicators will provide valuable insights into the effectiveness of effort and guide adjustments for continuous improvement.

2. Establishing a Baseline:

Before implementing the plan, gather baseline data for each indicator. This provides a reference point against which progress can be measured. (this data can in clusters or area based)

3. Set Up Monitoring Systems:

Establish a monitoring system regularly collect and record data on the identified indicators.

Determine the frequency and methods of data collection, it may vary from sector to sector. This may involve surveys, field assessments, remote sensing, or other relevant techniques

4. Utilize Technology:

Leverage technology such as remote sensing, Geographic Information System (GIS), and data analytics to enhance monitoring capabilities and gather real-time data. It can be used by the government and non-government organization or it can be developed by private public partnership.

5. Build a Reporting Structure:

firm reporting structure that outlines who is responsible for collecting, analyzing, and reporting on the data. Define reporting timelines to ensure regular updates. Clarifying the limitation and deadline for the reporting is important

6. Training and Capacity Building:

Ensure that staff and stakeholders involved in monitoring and evaluation are adequately trained. This includes understanding the indicators, data collection methods, and reporting protocols. Monitoring team needs to be developed

7. Feedback Mechanism:

feedback mechanism that allow for real-time adjustments that necessary to grass root needs to be added at every step. This could include regular meetings, surveys, or other means of collecting feedback from stakeholders. Supervisory meetings and assessment of the work delivered

8. Periodic Reviews and Assessments:

periodic reviews and assessments of the flood resilience work and the progress against the established indicators. This could be done annually or at specific milestones.

9. Document Lessons Learned:

Every government department should Document lessons learned during the monitoring and evaluation process. This documentation can inform future iterations of the flood resilience work and contribute to broader knowledge sharing.

10. Adaptation and Improvement:

Use the M&E findings to adapt and improve the flood resilience plan. If certain strategies are not yielding the expected results, consider adjusting based on the outcomes. Department to department adjusting with the verifications

11. Communication and Transparency:

Communicate the M&E findings transparently to stakeholders. This fosters accountability and promotes trust in the resilience planning process.

By incorporating these steps into your flood resilience plan, you can establish a robust monitoring and evaluation framework that will contribute to the ongoing success and adaptability of your efforts.

16-RESOURCE LOCATION

The aftermath of floods places immense strain on resources for relief and rehabilitation. The scale of displacement, damage to homes, and loss of livelihoods overwhelm the capacity of existing relief mechanisms. Adequate funding and efficient coordination among government agencies, non-governmental organizations, and international partners are crucial to ensuring swift and effective relief efforts. Additionally, investing in long-term rehabilitation strategies is vital for the affected communities to recover and rebuild their lives

Creation of a website or accessible data where public private inventory is clearly delineated along with the needs of various communities will help with the nationwide and international assistance efforts.

17-CONCLUSION

Although Pakistan has made many preparations for floods, the country is not adequately prepared for major flood disasters. Policy makers, in partnership with non-governmental organizations, community and religious leaders, need to strengthen the country's ability to become flood resilient. The intensifying effects of climate change suggest that preparations be made on an emergency basis.

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18-KEY RECOMMENDATIONS

- Pakistan must pursue decisive political and community action to plan for flood resilience and recovery and to create policies to mitigate the causes and effects of catastrophic floods.
- A comprehensive national policy on flood management, integrating inputs from experts, scientists and local communities, is crucial. Regular reviews and updates to adapt to evolving climatic conditions will help Pakistan's resilience in the event of flood events.
- A robust plan for search and rescue, as well as evacuation and safe zones is of paramount importance.
- Pakistan must seek better coordination between government, non-governmental organizations, media and international partners in the event of flood.
- Pakistan must continue seeking nature-based solutions for climate change, such as planting trees, reducing soil erosion, reclaiming and maintaining wetlands, using green spaces and permeable ground material in urban settings, as well as practicing other sustainable land use policies.
- Investments must be made in research and development of technologies and innovations for better flood resilience, including improved forecasting models, flood-resistant building materials, and sustainable water management practices.
- The government must upgrade and expand its early warning systems, incorporating modern technologies for real-time data collection and dissemination. The implementation of a state-of-the-art early warning systems (EWS) is crucial for timely detection and communication of potential flood events. Other advanced technologies such as satellite imagery, weather forecasting, hydrological modeling, and GIS technologies can also significantly enhance the accuracy and effectiveness of early warnings.
- Consideration must be given to the construction of infrastructure features such as dams, levees, and embankments, to mitigate the impact of floods and control water flows.
- Attention must be given to land-use policy and building codes, regulating construction in flood-prone areas.
- The country is in need of more robust and sustainable infrastructure and communication methods.
- Communities must make plans for evacuating the populations when conditions warrant, with evacuation routes established in advance and made known to residents. Additionally, places that provide safe shelter should be identified in advance.
- Robust plans should be in place to provide adequate healthcare, including caring for mental health needs, and disease prevention.
- Increased community engagement in disaster management planning
- Continued education programme in floodravaged area should be ensured
- Capacity building for the media individuals and teams can consolidate the resilience efforts
- Pakistan needs a more resilient infrastructure and plans should be made to facilitate the rapid reconstruction of damaged infrastructure in the event of a flood, especially roads and bridges.
- Strong cooperation with aid and international partners
- Those whose livelihood depends on agriculture will depend upon the province's ability to provide financial support such as micro-financial grants and skills development assistance.
- Especially vulnerable populations affected by floods will require food assistance, access to healthcare, and cash transfer assistance. Likewise, businesses will require financial assistance.

GROUP WORK IN WORKSHOP

GROUP FORMATION AND ASSIGNMENT ALLOCATED TO GROUPS

Group Apple	Group Orange
GAPS and challenges: flood	How to mitigate the flood
Samina Shaheen	Jumma Khan
Mahi Khan	Muhammad Abdul Mueed
Naseer Anwer	Ch. Shahid Saleem
Anila Ashraf	Asif Aziz
Iram Fatima	Sher Ali Khalti
DUAA Mirza	Muhammad Aqib

Flood: Gaps and challenges:
Presenter: Naseer Anwar /
Samina Shaheen

The presentation explores the gaps and challenges in managing floods in Pakistan, highlighting the complexities involved in mitigating the destructive consequences of such natural disasters.

Gaps in Early Warning Systems:
One of the primary challenges in flood management in Pakistan is the inadequacy of early warning systems. Timely and accurate information is crucial for effective disaster response, yet the existing systems often fall short. Limited coverage, outdated technology, and insufficient community awareness contribute to delays in alerting vulnerable populations.

Infrastructure Deficiencies:
Pakistan's infrastructure is not well-equipped to withstand the magnitude of flooding events. Inadequate drainage systems, poorly constructed embankments, and the encroachment of riverbeds exacerbate the impact of floods. The need for comprehensive infrastructure development, including the construction of robust embankments and improved drainage networks, is essential to minimize the devastation caused by flooding.



Limited Resources for Relief and Rehabilitation: The aftermath of floods places immense strain on resources for relief and rehabilitation. The scale of displacement, damage to homes, and loss of livelihoods overwhelm the capacity of existing relief mechanisms. Adequate funding and efficient coordination among government agencies, non-governmental organizations, and international partners are crucial to ensuring swift and effective relief efforts. Additionally, investing in long-term rehabilitation strategies is vital for the affected communities to recover and rebuild their lives.

Climate Change and Uncertain Weather Patterns: Climate change adds another layer of complexity to flood management in Pakistan. Unpredictable weather patterns, changing rainfall intensity, and the melting of glaciers contribute to the increased frequency and severity of floods. Developing adaptive strategies, incorporating climate-resilient infrastructure, and fostering sustainable land-use practices are imperative to address the evolving challenges posed by climate change.

Community Engagement and Education: Effective flood management requires the active participation of local communities. However, gaps in community engagement and education persist. Many communities lack awareness about evacuation procedures, disaster preparedness, and sustainable land-use practices. Investing in community education programs, promoting local leadership, and fostering a culture of resilience can empower communities to actively contribute to their own safety during flood events.

How to mitigate the flood
 These presentation was similar to the earlier presentation but participants made couple of unique arguments. Floods in Pakistan pose a recurring threat, causing widespread devastation and impacting millions of lives. To effectively mitigate the impact of floods, a comprehensive strategy encompassing contingency plan, infrastructure development, early warning systems, community engagement, and sustainable practices are imperative.

1. Investing in Robust Infrastructure: One key element in flood mitigation is the development of resilient infrastructure. Pakistan needs to invest in the construction and maintenance of sturdy embankments, efficient drainage systems, and flood-resistant buildings.

2. Enhancing Early Warning Systems: Timely and accurate information is critical for flood preparedness. Community-based early warning systems, coupled with awareness campaigns, can empower individuals to respond promptly and evacuate when necessary, reducing casualties and property damage.

3. Sustainable Land-Use Practices: Unplanned urbanization and deforestation contribute to soil erosion and exacerbate the impact of floods. Implementing sustainable land-use practices, such as afforestation, watershed management, and controlled development, can help mitigate the effects of flooding. Preserving natural buffers like wetlands and floodplains provides essential



protection against the rapid onset of floods.

4. Community Engagement and Education: Active involvement of communities is crucial for effective flood mitigation. Community education programs should focus on promoting awareness of evacuation procedures, disaster preparedness, and sustainable practices. Local leaders can play a pivotal role in disseminating information, organizing drills, and fostering a culture of resilience within their communities.

5. Climate-Resilient Agriculture: Given Pakistan's reliance on agriculture, climate-resilient farming practices are integral to flood mitigation. Implementing measures such as improved water management, sowing drought-resistant crops, and sustainable farming techniques can help minimize the impact of floods on the agricultural sector, ensuring food security for the population.

6. Government Coordination and Policy: Effective flood mitigation requires coordinated efforts across various government departments and agencies (PDMA, Health, and Education department, NDMA, Law Enforcement Forces and NGOs). A comprehensive national policy on flood management, integrating inputs from experts, scientists, and local communities, is crucial. Regular reviews and updates to adapt to evolving climatic conditions will ensure the resilience of the nation against future flood events.

In conclusion, they added that mitigating floods in Pakistan demands a holistic and proactive approach.

RAW SUGGESTIONS AND FINDINGS DURING WORKSHOP



Group work: pre and post-flood resilience in Pakistan

First Group presentation

Pre and post-flood resilience in Pakistan involves a range of strategies and measures aimed at minimizing the impact of floods on communities, infrastructure, and the economy. Here are some key points related to pre/post-flood resilience in Pakistan:

Pre-Flood Resilience:

1. Early Warning Systems
2. Designing and constructing infrastructure, such as dams, levees, and embankments, to mitigate the impact of floods and control water flow.
3. Implementing land use planning measures to regulate construction in flood-prone areas
4. Rigorous capacity building of communities on flood risks, preparedness, and evacuation procedures.
5. Reduce soil erosion, enhance water retention.
6. Building the capacity of local authorities to respond effectively to floods, including training for disaster response teams and local emergency services.

Post-Flood Resilience:

1. Include search and rescue operations, medical assistance, and the distribution of relief supplies in the aftermath of floods.
2. Rapid reconstruction of damaged infrastructure, including roads, bridges
3. Agricultural assistance, microfinance, and skills development programs.
4. Assist vulnerable populations affected by floods, including cash transfer programs, food assistance, and access to healthcare.
5. Help individuals, businesses, and farms (livestock and agricultural) in their efforts to rebuild.
6. Investing in research and innovation to develop new technologies and approaches for better flood resilience, including improved forecasting models, flood-resistant building materials, and sustainable water management practices.

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Second Group presentation

Flood Rescue and Rehabilitation in Pakistan

They highlight the issues and added their suggestion what needs to be done to improve the situation.

Search and Rescue Operations:

Swift deployment of rescue teams to locate and evacuate individuals stranded by flooding. Use of boats, helicopters, and other specialized equipment for rescue operations in areas inaccessible by conventional means.

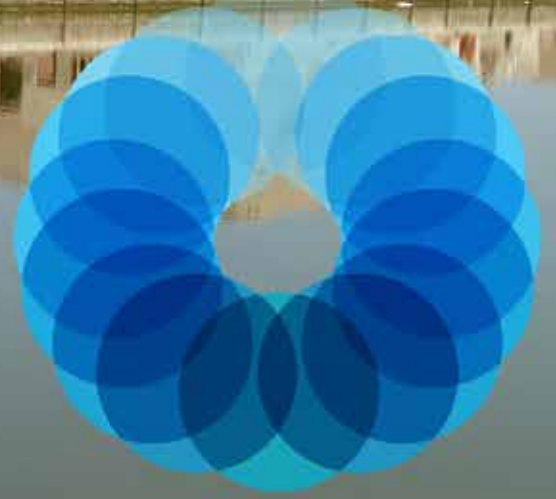
1. Temporary Shelter Provision: Establishment of temporary shelters to accommodate displaced individuals and families. People usually make their shelters by using their household stuff
2. Distribution of essential items, such as food, water, and hygiene kits, to those affected by the floods should be done by relief parties
3. Medical Assistance: Deployment of medical teams to provide immediate healthcare to flood-affected populations. Establishment of temporary medical camps to address injuries, waterborne diseases, and other health concerns.
4. Rehabilitation of Destroyed Houses: Assessment of damaged and destroyed houses to determine the extent of rehabilitation needed. Provision of construction materials and support for rebuilding homes in collaboration with local communities.
5. Livelihood Support: Implementation of programs to support the restoration of livelihoods affected by the floods. Training and assistance for affected individuals to rebuild businesses and agricultural activities.
6. Psycho-social Support: Provision of counseling services and mental health support to individuals and communities dealing with the psychological impact of the floods. Community-based psycho-social support programs to address trauma and promote resilience.
7. Estimate of Destroyed Properties: Patwarkhana (Land Revenue department):
8. Survey and Assessment: Conducting a comprehensive survey to assess the extent of damage to properties, including residential, commercial, and agricultural land.
9. Collaboration with relevant authorities, including the Patwarkhana (land revenue department), to gather accurate data on the destruction.
10. Property Valuation
11. Utilizing established valuation methods to determine the monetary value of the destroyed properties.
12. Unbiased Coordination from land revenue officials is needed to ensure accurate assessment and valuation of agricultural land affected by flooding.
13. Documentation and Records:
14. Proper documentation of the assessment results and valuation reports.

15. Maintaining detailed records of the affected properties to facilitate future planning, recovery efforts, and compensation distribution.
16. Government Assistance and Compensation.
17. Collaboration with relevant authorities to ensure fair and timely distribution of compensation to affected individuals and communities.

Flood Rescue and Rehabilitation in Pakistan



Presenter : SherAli / Naseer Anwer



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