



Government of Pakistan
Ministry of Environment

CLIMATE CHANGE

Disaster Management in Pakistan



INTERNATIONAL UNION FOR CONSERVATION OF NATURE





Climate Change Disaster Management in Pakistan

Pakistan is highly vulnerable to disasters caused by Climate Change, and especially prone to floods and droughts. Sandstorms, dust storms, micro-cloudbursts, cyclones and tsunamis are additional threats.

In recent years Pakistan has witnessed several extreme events, resulting in major loss of life and property and causing chaos and destruction in several hot spots. Cyclone ‘Yemyn’ in 2007 had a wide impact on 26 districts of Balochistan and Sindh; it affected 2.5 million people and caused the loss of nearly 400 lives.

The highlands are particularly vulnerable to Glacier Lake Outburst Floods (GLOF). Pakistan has 5218 glaciers and 2420 lakes, of which 50 are highly dangerous and may cause flooding in the plains of Punjab and Sindh. The highly vulnerable Indus delta faces hazards from sea intrusion and sea rise.

Climate change and variability

Global warming is causing damage to Pakistan’s environment. Among the impacts felt and seen are biodiversity loss, shifts in weather patterns and changes in fresh water supply. Temperature increase might cause an upward shift of almost 400 meters in the coastline. It might impact upon the snow and rain patterns and the availability of snow for melt during summer, which is a major source of water in many rivers. Changes in the climate denote that the incidence of flash flooding and extreme flooding can increase during the next few decades. Variable monsoons, also anticipated, could mean more droughts.

Besides these, our Balochistan province and parts of Sindh, Punjab and the northern area have experienced extreme shortages of water and drought conditions.

The last drought, which engulfed Balochistan and parts of Sindh and Punjab from 1998 till 2005, was the worst in recent history. Almost 50% of the overall livestock population in Balochistan was devastated, causing a mass-scale migration to the river banks and painful resettlement, which resulted in economic losses of over Rs 25 billion. The indirect impacts and impacts on livelihood have increased indebtedness and people still continue to suffer from the consequences.

Climate Change is likely to change the whole scenario of disaster management in Pakistan, like the 2005 earthquake that left over 70,000 dead and caused massive destruction in Kashmir and the surrounding areas.



Our response capability and our ability to handle large-scale disasters are rather weak, with major reliance placed on the military for transportation and infrastructure rehabilitation. Limited resources and a lack of professional training often restrict the way Pakistan can address the emerging challenges of Climate Change.

Since Pakistan is ranked amongst the top 10 countries in Asia that will be impacted by Climate Change it requires an efficient response mechanism that caters to the needs of adaptation to changing climates and a strong ability to manage disaster.

This can best be done through a nationwide Adaptation and Disaster Relief Response Center with decentralized units within the 160 districts. Furthermore, we need to develop a strong capability to meet eventualities in the troubled hotspots where climate changes are likely to play out.

Where we currently stand!

The National Disaster Management Authority (NDMA) has been established as the focal point and lead agency for coordinating and facilitating the implementation of strategies and programmes on disaster risk reduction, response and recovery. Similarly, Disaster Management Authorities have been established at provincial, regional, and district levels.

NDMA is providing technical guidance to national and provincial stakeholders about formulation of plans, strategies and programmes for disaster risk management. NDMA is also working on different programmes on capacity development of national, provincial and local stakeholders. Despite being at a very initial stage, the NDMA is already gearing up to address the challenges posed by all types of disasters including the ones caused by Climate Change.

What our biggest threats are!

- Disease outbreaks due to changing climates, leading to diseases like malaria, cholera, dysentery and other water-borne diseases
- Glacier melt, resulting in catastrophic events on the Indus river and our eastern rivers
- Trans-boundary events in India, like extreme floods that would ruin Pakistan as it is the lower riparian
- Lack of precipitation in the medium to long run, resulting in prolonged drought
- Widespread damage to our coastline, which is prone to sea rise, hurricanes, tsunamis, cyclones, etc.
- Sandstorms, thunder/lightning strikes, hailstorms over widely dispersed areas, making relief efforts difficult

Hazards in Pakistan

Natural Hazards	Human Induced Hazards
<ul style="list-style-type: none">● Earthquakes● Floods● Tsunami● Avalanches● Landslides● Cyclones/Storms● Glacial Lake Outburst Floods (GLOF)● Droughts● River erosion● Pest attacks● Epidemics	<ul style="list-style-type: none">● Transport accidents● Oil spills● Urban fires● Civil conflicts● International displacements● radiological (CNR)● Accidents

Why Pakistan needs an Adaptation Center

The threats are multiple and of a varied nature in all the 8 agro-ecological zones.

With a 180-million population, likely to double by 2035, addressing Climate Change threats is a costly affair. Without a basic knowledge of adaptation technologies and advanced know-how, Pakistan’s ability to deal with disaster relief management will be merely marginal.

Threats of mass immigration to escape the impacts of Climate Change in Afghanistan are a major and serious danger to Pakistan’s economic and social welfare.

Adaptation Strategies

- Implement detailed disaster planning and mapping
- Enhance response capacity in high-risk areas like mountains, the Indus Delta, Balochistan, low-lying areas prone to flooding, etc.
- Install early warning systems and upgrade meteorological services
- Revise physical infrastructure and construction codes
- Introduce Climate Change-induced insurance coverage (of life and property in high-risk areas)
- Build district and sub-district capacity for Climate Change-related and other disasters, e.g. Civil Defense
- Establish a Climate Induced Disaster Fund
- Create modeling scenarios for low-medium and high-risk climate-related disasters, e.g. GLOF

The resources required to strengthen/establish the necessary institutional framework, purchase the requisite relief equipment and build national capacity will require roughly US \$5 billion over a 10-year period.

For further information please contact:



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Design: Azhar Saeed, IUCN Pakistan
Photographs: © IUCN Pakistan