

① Essay: Disaster Management in Pakistan: challenges and way forward.

Outline

Q1, Introduction

a. Hook

b. History of Disaster Management in Pakistan

c. Thesis statement:

Disaster Management is become one of the Defining issue in Pakistan. Lack of Disaster Management causes Institutional and governance challenge, infrastructural and Technological challenge, Environmental and climate challenge, social and economic challenge. However, strategic reforms, and integrated planning, technological upgradation

environmental sustainability, can turn the challenge into a opportunity for sustainable development.

II Overview of Disaster Management in Pakistan

a. Natural Disaster

b. Emerging threat: climate ~~change~~ change, urban flooding.

c. Major Past disaster

(III) Challenges in Disaster Management in Pakistan

a. The Governance challenge

b. The Environmental challenge

c. The Social and Economic challenge

d. Technological challenge.

Institutional Response and its limitations

a. Gap in Disaster Management (NOMA, PDMA)

b. Weak Coordination and response of government in crises.

(Case study swat incident 2025)

V Learn from best practices (case studies)

a. ~~Ned~~ Netherlands, flood-resilient infrastructure

b. Singapore smart water management

VI Way Forward.

a. Institutional Reforms

b. Preparedness and prevention

c. Technological and infrastructure upgrade.

d. Financial and Economic measures.

e. Environmental sustainability.

f. Regional and International cooperation

VII

Conclusion.

"Each year, Natural Disaster cause over 100 billion \$ in damages worldwide, turning cities into disrupted pods of destruction and despair"
(World Bank Report, 2023)

Disaster are sudden events that causes greater damage to people, property and the environment. They can be natural, like floods or earthquakes, or man-made, such as industrial accidents.

Pakistan faces many kind of disaster every year: its geography, changing climate, and

weak infrastructure system make it one of the most disaster prone country in the world. The devastating 2005

earthquake causes a great destruction

in the country and become a turning point, leading to creation of

Natural Disaster Management (NDMA)

in 2007 under the Disaster Management

act. This marked the beginning

of a ~~str~~ well organized approach

to prevention and preparedness and

rehabilitation, Later, the 2010 floods further highlighted the need for

local and provincial disaster management bodies. Today Pakistan follows a national framework focusing on risk reduction

community awareness and building resilience against future disasters.

The main challenge of disaster management in Pakistan lies not in the frequency of disasters but in weak planning, poor coordination and lack of preparedness.

Therefore, adopting proactive measures,

strengthening institutions and promoting community awareness are essential for building a resilient future for Pakistan.

To begin with, After the 2005 earthquake Pakistan introduced a proper disaster Management framework. The National Disaster Management act of 2010 created the NDMA at the federal level and PDMA in the provinces, However, most of the time the system focuses more on relief after disaster rather than prevention before disaster. ~~2010~~ The 2010 and 2022 floods spreads wide destruction in the country alarming the government for future preparedness and planning. Karachi heatwaves and Droughts in Thar

and blotistan are the majorst disaster in Pakistan. Recently 2015 flood in Punjab and KPK causes destruction and Thousands of people become homeless.

Moreover, one of the biggest problem is poor coordination between NDMA, Provincial department and local authorities. often, roles and responsibilities are unclear. During disaster this confusion leads to delay and mismanagement. In addition, Pakistan early warning system and forecasting tools.

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ies are still weak, many cities have no proper flood barriers, drainage system or earthquake resistant buildings. cities grow without planning which increase vulnerability.

Likewise, People are often unaware of disaster risks and safety measure. Poverty, illiteracy and population pressure push families to live in dangerous areas like river banks or unstable

Slopes. During disaster, women children and poor communities suffer the most.

Disaster management receives very ^{little} funds. Most of the money spent ^{after} a disaster on relief instead

of prevention. There are no strong disaster insurance schemes and foreign aid is often needed for recovery.

Another major challenge is climate change. It has made disaster more frequent and intense.

Deforestation, water management and construction on ~~not~~ natural drainage paths worsen floods and landslides.

rank among the top ten countries
most affected by climate change,
yet adaptation ~~effort~~ efforts are

still slow and limited. In addition

weak infrastructure and outdated

technological ~~is~~ issue is also

the challenge to overcome disaster.

Despite living in the age of data

and artificial intelligence, most developing

cities still rely on outdated
and manual system for disaster

management. many cities also

lack proper data of forecasting

and early warning of disaster
which makes planning and
quick action almost impossible. ^{lack}

Technology could help reduce
damage and save lives, but
investment in it is still very
low. Instead of smart system
modern technology become essential
part for management of natural
disaster.

Furthermore, Pakistan institutions
response to ~~urban~~ Disaster
management has remained weak
and poorly coordinated. Agencies

as NDMA and PDMA often lack resources, trained staff and clear communication gap. This lead to delay in rescue and relief operation. Likewise, disaster preparedness plan are mostly reactive rather than preventive, focusing on post flood rehabilitation instead of risk reduction. The Swat flood incident 2025 once again exposed these shortcomings, as rescue team arrived late and coordination and military units remained insufficient. Despite repeated lesson

from past flood, early warning
drainage improvement and community
training have not been properly
implemented.

However, Pakistan can draw
valuable lessons from global examples
of successful flood management system.
The Netherlands has developed one
of the world most resilient
flood infrastructures through strong
planning, public awareness, and
advanced water control system
such as dikes and storm surge
barriers. Similarly, Singapore has

emerged smart water management
through underground drainage tunnels,
green spaces and strict urban
zoning laws that prevent waterlogging.

Firstly, These challenges required a
comprehensive approach for
effective disaster management. Institutional
reforms are essential to strengthen
the overall governance structure
of disaster management. The NDMA
and PDMA must be empowered
with better coordination, trained human
resources and adequate funding. The
overlapping roles of federal and
provincial should be clarified
through legislation and clear

command structure. Moreover disaster management should be integrated into national development planning, ensuring that every ministry and department plays its role in risk reduction and resilience building.

Secondly, preparedness and prevention should be prioritized over post disaster response. Awareness campaigns, ~~the~~ school-level training and community based disaster risk reduction program can save countless lives. Moreover, technolized

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3rd industrial upgrades can revolutionize disaster management. The use of Geographic information system (GIS) Satellite, drones and mobile based alert system can strengthen forecasting and response. Investment in ~~sea~~ research and development can also help design innovative solutions such as flood barriers, drought resistant and earthquake-resistant construction materials.

Thirdly Financial and economic are crucial for sustainable recovery and risk reduction. The government

Should create a dedicated disaster management plan and Disaster risk Insurance fund to help victims rebuild their lives. Encouraging private sector participation through corporate social responsibility.

Fourthly, environmental sustainability must be at the heart of disaster management.

Protecting Forest, restoring wetlands, controlling urban sprawl, and promoting renewable energies can reduce disaster risk. Lastly regional and international cooperation

discuss
vital. Pakistan should strengthen
collaboration with neighboring countries
and global organization for knowledge
sharing, technological transfer and joint
training program.

In conclusion, Pakistan's
path forward lies in transforming
its disaster management system
from reactive to proactive-
one that is institutionally strong,
technological advanced, environmentally
responsible, and globally connected,