

Sana Gram

Disaster Management in Pakistan: Challenges and Way forward

Outlines

1- introduction

1.1 The story of Fatima who rang the bell.

1.2 General statement.

1.3 Thesis Statement: Pakistan's disaster management suffers from institutional fragmentation, poor policies, out-dated warning systems and inefficient political system, however, through strong coordination, climate resilient policies, updated warning systems, the nation can transform its vulnerability into resilience.

2- What is Disaster Management and

its phases of management.

3- History of Recent Disasters in Pakistan.

4- Institutional Framework for Disaster Management in Pakistan.

5- Major Challenges in Disaster Management in Pakistan.

5.1 Institutional fragmentation and poor coordination among NDMA and PDMA and local bodies weakens disaster governance.

5.2 A reactive relief-focused approach overshadows prevention, mitigation and preparedness efforts.

5.3 Out-dated early warning system and weak data sharing limits response and forecasting.

5.4 Poor urban planning, deforestation and poor infrastructure intensify floods

and earthquake effects.

5.5 Limited resources, Political instability and bureaucratic inefficiency hinders long-term resilience is major challenge for Pakistan.

6- Way Forward for Effective Disaster Management in Pakistan

6.1 Strengthen NDMA-PDMA and enforce National Disaster Risk Management Framework (NDRMF) through clear authority and accountability.

6.2 Shift from Relief to Prevention by Investing in risk mapping, training, preparedness and community-based disaster management.

6.3 Modernize early warning system, digital satellite data, digital forecasting and rapid information sharing at local area.

6.4 Promote climate resilient infrastructure, ban encroachment on

floodplains, and launch large scale afforestation projects.

6.5 Ensure sustainable financing, Political stability, and transparent governance to implement long-term disaster resilience strategies.

7- Conclusion

The Essay

When torrential rainfall struck in Sindh in 2022. A 13-year old girl Fatima from Dasu District saw the flood water coming towards her village. She immediately ran to the nearby mosque and rang the bell continuously which was used for evacuation in any emergency. She remembered this in one of her school disaster preparedness.

drill. So, the people evacuated village immediately before the flood swept away their houses. 200 people saved due to Fatima's courage and timely taken step. This incident shows the community preparedness, effectiveness and weakens Pakistan's disaster management system.

This story reflects larger nation's reality: the response of people to any disaster is brave and poor institutional framework. A country like Pakistan which is prone to disasters needs stronger disaster management. After 2005 earthquake, NDMA National Disaster Management Authority established but wide devastating in 2010, 2022 and 2025 flood shows its weakness.

The poor warning systems, political instability add fuel

to fire. However, through well-planned policies, training, preparedness, new technologies used for warning system and empowering communities like Fatima's to turn vulnerability into strength.

Disaster management is the coordinated mechanism of utilizing available resources effectively to handle emergency, save lives and minimize loss. It is the strategic planning to protect assets from hazard risk. Disaster management has four interlinked phases: Mitigation, Preparedness, response, and recovery. This is a continuous cycle of four steps. Every developed country has well-planned disaster management mechanisms to save their people, and they follow four

phases which includes Mitigation which means hazard mapping, vulnerability analysis and public awareness to reduce long term risk. In this phase new and modern technology used and held on community drills to mitigate the hazards risk. The second phase is Preparedness which means to use available resources, evacuation planning and remains alert for any emergency situation. The third phase is response which means response in any emergency situation like 2011 in Japan Tohoku earthquake and tsunami, they evacuated the place by using early modern warning system and prevented from many casualties. The fourth and last step is recovery, which is after the disaster in this approach.

rebuilding infrastructure, livelihood and help the affected people in their recovery. ^{as seen in Pakistan 2022 flood.} These four phases are very important for any developed and developing country to save their people from hazards risks. Disasters are natural any country do not control or stop it but they have stronger disaster management to combat any catastrophe as Kofi Annan, former Secretary-General of United Nation said.

"We cannot stop natural disasters but we can arm ourselves with knowledge—so that many lives need not to be lost if disaster strike."

Pakistan's history of disaster is shaped by geographical and climate vulnerability making it

most disaster prone country in the world. Straddling seismic waves, and climate sensitive zone ranked fifth in the Global Climate Index (2023). The recurring flood, earthquake, droughts making it vulnerable country; 2005 earthquake claimed 73,000 lives affected. 2010 flood caused 20 million displaced and affected exposed weaken disaster management system of Pakistan. Then in 2022 flood 33 million people displaced, crops devastated, homes swept away with flood. Recently 2025 flood affected about 6.3 million people. Moreover repeated droughts in Sindh and Balochistan caused food insecurity and lost million of lives. Melting of Himalayas also threaten the Glacial Lake Outburst flood (GLOFs).

in north pole. Together these episodes underscore that Pakistan's disaster are frequent, multifaceted and increasingly climate-driven, making resilient disaster management and long-term adaptation imperative. So by looking at entire history Pakistan has dire need to invest in disaster management for its survival as according to United Nations office for Disaster Risk Reduction (UNDRR)

"Disaster risk reduction is not a cost; it is an investment in humanity's future."

Pakistan's disaster management institutes operates through multi tiered institutional framework designed to ensure coordinated response and resilience building. At the federal level, the National Disaster

Management Authority work as a main body is involved in policy coordination and implementation of policies. In the amendment, the authority devolve to the provincial level. Disaster Management (PDMA's) work for relief and recovery. Disaster Management formed which help and link community structure. Together institutes many organizations like Pakistan

Department (PMD) for digital satellite. Additionally civil forces and humanitarian like Edhi foundation Pakistan Red Crescent

Management Authority (NDMA)

work as a main body which is involved in policy making, coordination and implementation

of policies. In the 18-constitutional amendment, the disaster authority devolve to the district and provincial level and Provincial

Disaster Management Authorities

(PDMAs) work for preparedness,

relief and recovery. District

Disaster Management Units (DDMUs)

formed which helps to contact

and link communities to national

structure. Together with these

institutes many other institutes

like Pakistan Meteorological

Department (PMD), SUPARCO

for digital satellite-based monitoring.

Additionally civil defence, armed

forces and humanitarian organization

like Edhi foundation and

Pakistan Red crescent Society

play a major role in relief and recovery. These institutes can save future generation if work properly. As Ban Ki Moon aptly said,

"Building resilience is not just to save lives - it is about securing the future of generations to come"

Although Pakistan have disaster management framework but it is facing many challenges which reduce their efficiency and it weakens the infrastructure of these institutes. There are following major challenges that Pakistan disaster management faced.

The major challenged faced by Pakistan in disaster management is institutional fragmentation and poor coordination among NDMA, PDMA, DMMs. As National disaster

Management Act 2010 laid the foundation of these institutes which works to reduce disaster risk and relief. But poor coordination and bad governance weakens these institutions and these institutes have only reactive or recovery approach. Floods like 2022, expose their weakness when many people died because of no management of timely evacuation and 33 million affected despite presence of federal, provincial and district level disaster management authority.

The Annual Report of NDMA in 2024 admit that inter-agency coordination remain weakest link in national disaster governance.

In 2025 recent flood also shown the fragmentation of these institutes and many people evacuated from affected

areas. and But the role of district and local bodies remains minimal in saving their people from flood. The bad governance in these institutes damage the framework of the disaster management system.

Now Pakistan's disaster management remains a patchwork rather than cohesive strategy. As Koffi Anan, former secretary general of United Nation said ,

"Good governance is the single most important factor in eradicating disaster vulnerability."

The second major challenged faced by Pakistan disaster management in their reactive relief - focused approach rather than risk reduction or preparedness. Pakistan's disaster management institutes failed

in organizing well-planned policies to reduce the disaster risk.

They only focus on the relief approach when country hit by any disaster that is out-dated and pathetic

approach and risk the life of million people of Pakistan.

This relief focused approach

is prove by the budget allocation of NDMA, in which

70% of the budget is for relief and recovery purposes.

only 15% of the budget is for preparedness and mitigation.

The budget allocation expose

the seriousness of the authority to reduce disaster's risk. Resultantly,

the flood of 2010, 2022,

2025 shows the vulnerability

of these authorities poor

policies when they only focus

on short term emergency.

Services rather than rebuilding infrastructure and livelihood.

The countries like Bangladesh now focus on risk reduction policies through community-service training but Pakistan merely rely on relief approach. True resilience as the Sendai Framework (2015-2030), a global framework stresses lies not in "responding to disaster" but in "preventing new and existing disaster risk reduction".

Along with poor policies of NDMA, PDMA, Pakistan also faces out-dated warning system. Poor warning system lead to poor and slow response to any disaster. Pakistan is facing challenges in technological advancement. So due to reliance on out-dated technologies

the catastrophes greatly impacted on Pakistan. Pakistan Meteorological Department (PMD) still rely on out-dated relay radar system. They have not advance digital satellites which limits them to share accurate data timely countries like Nepal using modern technologies to share data digitally and quickly warn the communities through mobiles. But in Pakistan 2022 flood poor warning system was inefficient and did not provide exact water data which affected and displaced millions of people. Recently during 2025 flood, Pakistan water sharing data according Indus water treaty (IWT) was suspended and Pakistan rely on chinese satellite technology for data sharing. This shows the vulnerability

Pakistan warning system Pakistan Partnership with SUPARCO and International agencies like the World Bank's, "climate resilient Pakistan" (2023) initiative as positive step - but unless predictive modeling, GIS mapping, and digital data network are fully integrated, early warning remains a failure.

One more major challenge faced by Pakistan's disaster management is poor urban planning. The disaster risks stem from chaotic expansion, poor planned infrastructure and building deforestation and encroachment on riverbeds. As seen in 2020 monsoon tragedy in Karachi due to poor drainage system which clogged and caused urban flooding. In 2022, Sindh was heavily damaged

because of poor ^{urban} planning and poor infrastructure inter and caused loss of Recently 2025 flood on riverbeds displaced when river passed its path and affected devastated 6 million approximately. Deforestation one of the major soil erosion. The H frequently and deforestation north pole cause which increases the of Glacial Lake out Flood (GLOF) in So now ^{only} integrated afforestation can reverse tragedy, as the saying

"When you build ^{no} Planning, you invite Wrath by de

because of poor ^{urban} planning and poor infrastructure intensity flood and caused loss of millions.

Recently 2025 flood, encroachment on riverbeds displaced largely when river passed through its path and affected and devastated 6 million people approximately. Deforestation is

one of the major cause in soil erosion. The Himaly melt frequently and deforestation in north pole cause soil erosion which increases the frequency of Glacial Lake out-burst

Flood (GLOF) in north pole.

So now ^{only} integrated planning,

afforestation can reverse the

tragedy. as ^{the} saying goes,

« When you build without
Planning^{no}, you invite nature's
Wrath by design.»

The fifth most important challenge faced by Pakistan disaster management is limited resources, political instability and bureaucratic inefficiency undermine the long-term resilience from disasters. Every year fiscal budget slashed and decrease the budget of disaster authority which cripples the institutes to work properly. According to the World Bank's "Resilient Recovery Project 2023", highlights the post disaster management underfunded by 11 billion dollar during 2022 floods. As Pakistan heavily rely on foreign aid and UN which further weakens its self-reliance and efficiency. Majorly Political instability caused in changing authorities of NAMA, PDMA frequently which further deepen

the gap of well-planned and resilience policies formed by these institutions. The bureaucratic inefficiency, red tape culture politicization of relief distribution erode public trust. True progress demands consistent political will and well-planned policies to reduce the disaster risk.

As Allama Iqbal said,

"Nations are born in the hearts of poets, they prosper and perish in the hands of politicians"

So too does Pakistan rise or fall resilience with its leadership, vision and commitment. Pakistan needs a quick and efficient response to all these challenges if Pakistan want to flourish and turn its vulnerability into resilience. Here are following way forwards for Pakistan's

disaster Management

The first foremost step taken in disaster management is for effective disaster governance is strengthening vertical and horizontal coordination among NDMA, PDMA, DDMU's and other local bodies. The NDRMF must be enforce with clear authority and accountability. The accountability of all the official must be checked for effective and proper working. The 2022 floods shows the poor coordination among the authorities which costs lives of millions so now Pakistan shift its structure to proper coordination. to save future generation. The NDMA is federal body its work merely not only in relief, or budget allocation it must

oversight the provisional authorities and its binding must be legal which enforce other bodies to work properly.

Additionally disaster management training ~~esta~~ for civil servants and other official to cope with any emergency situation. As the UNDP's 2024 report notes,

Resilient institutions are the first responders of modern states"

only through empowered and accountable structure can transform Pakistan ^{disaster} vulnerability into resilience.

The second major step must be taken by Pakistan disaster management to shift its focus from post-reactive approach to pre-risk reduction approach, aligning

with Sendai Framework
(2015-2030), principle of
"Build Back Better". This
requires a hazard mapping,
community-based disaster manage-
ment program. The CBDM
programs are very effective
in risk reduction transform
people from victims to responders
like in Bangladesh cyclone
preparedness training could reduce
save 90% of fatalities in
last two decades only. The
community training and public
awareness is most important
step in risk reduction as
in 2025 flood, on 15
August, a principal Saeed
Ahmed from Swat saved
900 student by timely
evacuating school in only
15 minutes. This time taken
step saved 900 lives.

This is the importance of the community awareness. The National authority of Pakistan (NAP) 2023 now focus on the approach of pre-risk reduction approach. The true knowledge and drill of disaster management shows when the villagers of Gulek and Sindh know what to do when siren wails. As Henry Kissinger observed,

"The task of the leader is to anticipate crisis, not to react it."

Third most important step taken by Pakistan disaster management is the updated and new early warning system. Now Pakistan has to shift from old radar system to modern, satellite system,

RT forecasting, timely data sharing at community level. The NDMA, PDM, and the SUPARCO has to coordinate strongly and share data in no time with citizens to reduce the risk of disaster. Lesson learnt from Japan Meteorological agency which uses real-time public alerts through mobile apps, sirens and automated messages Pakistan's authorities needs to coordinate like this and forecasting the flood, earthquake, and droughts and adopt pre-risk reduction measures to reduce the damage. As World Bank supports Pakistan resilient climate approach (2023), this program already lays the foundation of this transformation through digital hydrological mapping.

and GIS base flood modeling
so now requires is local-level
connectivity ensuring that information
reaches district official and
citizen within a minutes.

In the words of UNDRR
(2023),

"An early warning that fails
to reach the people is merely
a whisper before a storm."

Promote climate resilient
infrastructure is the most
important and fourth step
should be taken by Pakistan
disaster management if want
to build resilience, without
proper infrastructure it is
not possible to reduce the
risk of disasters. There must
be strict monitoring on
future development in construction,
the housing colonies, building
must be on strict resilience.

codes approved from disaster management. There must be ban along encroachment on river - beds and drainage system so the flood water flows properly in future without causing devastation. Large scale afforestation must be introduced as Ten billion tree tsunami project which can reduce the soil erosion and reduce the risk of Glacial lake outburst flood at north pole. The Asian Development Bank's 2024 report highlights that 1 \$ investment in resilience infrastructure saves \$ 6 in post-disaster destruction. By turning climate adaptation into economic policy, Pakistan must ensure that future of Pakistan withstand with nature's tests. As environmentalist

Wangari Maathai said,

"The generation that destroys the environment is not the generation that pays the Price".

The 5th and most important step in disaster management is financial stability, political stability and will, and transparent governance to implement long term resilience strategies for disaster. No management strategy can succeed without political will and financial stability. So this needs to be addressed most importantly.

Pakistan must create a National disaster resilient fund, climate resilient fund, Green - climate fund to stabilize its financial structure. As the World Bank reports, "Resilient Recovery Project" 2023,

Stressed the need of domestic
funds to reduce aid dependency.
Additionally political stability
is require. The NDMA must
be free from political pressure
to implement and formulate
policies for disaster management.
The transparent system should
be introduced at national,
district and local level which
can increase public trust.
So the policies should formulate
before the disaster as Ban-Ki
Moon reminds us

**"Resilience not build
in the heat of crisis —
it is cultivated in the calm
before it"**

So Pakistan survival
is now based on the strength
of the institution. Political
stability. These can turn Pakistan's
from vulnerable to resilient nation.

Disaster
longer isolated
national disaster
foresight, and
the disasters
devastation in
Lessons from
and recently
the Pakistan
weaknesses in
Poor coordination
out-dated
and lack of
turning hazards
crisis. Yet, we
lies an opportunity
stronger. Pakistan
at pivotal
it should transform
modern technology
policies of
Proper infrastructure
Stability in

Domestic
agency
lity
must
pressure
ulate
gement
ould
nals,
which
n-ki
ld
m
ngth
bn's
ration

Disasters in Pakistan is no longer isolated tragedies but a national test of governance, foresight, and resilience. Although the disasters are natural but devastation made is man-made. Lessons from 2005, 2010, 2022 and recently 2025 flood expose the Pakistan disaster management weaknesses institutional fragmentation, poor coordination, poor policies, out-dated early warning system and lack of political will turns hazards into humanitarian crisis. Yet, within every crisis lies an opportunity to rebuild stronger. Pakistan is now stand at pivotal moment where it should transform into adapting modern technology, well-planned policies of institutional framework, proper infrastructure and political stability in disaster governance.

needed for survival. As Pakistan align with Sendai Framework and Paris agreement, it must realize that resilience not begin in relief camps but in classrooms, councils and cabinet. True disaster management is not about counting losses - It lies about cultivating foresight

"Then rise from dust, O nation
worn and torn,
Let every flood remind - the
dawn is born"

Pakistan's destiny depends not on the storms it faces, but on the strength it builds before they come.
