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Q5 Pakistan's recurring floods have exposed systemic weaknesses in disaster preparedness, governance, and climate resilience. Explain why lessons were not institutionalized. How can Pakistan integrate climate adaptation, governance reforms and economic planning to mitigate the impact of future floods.

I. Introduction:

"Climate injustice is starkly visible in Pakistan, with its 230 million population facing severe consequences despite the country's disproportionately small contribution to global climate change."

~ Amnesty International

Pakistan's recurring floods have laid bare deep-rooted structural weaknesses in disaster preparedness, governance frameworks, and climate resilience. Despite

contributing less than 1% to global greenhouse gas emissions, Pakistan remains among the most climate-vulnerable countries in the world. According to the Global Climate Risk Index, Pakistan has consistently ranked among the top 10 most affected countries by climate-induced disasters over the past two decades. The catastrophic floods of 2022 and 2025 were not isolated natural events but a manifestation of institutional failure to translate lessons into long-term resilience.

II- Recurring Floods as a Structural Challenge:

Pakistan's exposure to floods is intensifying due to a combination of geographic vulnerability, climatic shifts, and governance constraints. Pakistan has over 7,000 glaciers in the Hindu Kush-Karakoram-Himalayan region, feeding the Indus River system, which provides

85% of the country's water supply. The 2022 floods submerged nearly one-third of the country, displaced 33 million people, killed 1208 individuals, and damaged over 5000km of highways. In 2025, monsoon related disasters killed over 1000 people, confirming that flood risk is now a permanent development threat rather than an episodic emergency.

III. Why Flood Lessons were not Institutionalized:

(1) Reactive Disaster Management Culture:

Pakistan's flood governance has remained event-driven rather than risk-informed.

Post-disaster focus
has largely been on
relief and compensation,
not prevention.

Disaster response
institutions prioritize
emergency relief, while
long term mitigation
remains unfunded.

As a result, flood responses reset after every disaster instead of evolving into institutional memory.

2. Fragmented Governance and Weak Coordination:

Flood management suffers from institutional fragmentation across federal, provincial, and local tiers. Climate-Change policies exist, but implementation gaps persist due to poor coordination.

Climate considerations are rarely manifested into Development planning, Infrastructure Design and Urban expansion policies.

Local governments lack both financial autonomy and technical capacity to enforce land-use regulations in flood-prone zones.

3. Inadequate Urban Planning and Infrastructure Deficits:

Unplanned urbanization has magnified flood impacts.

Pakistan's
urban population
stands at 38% and
is projected to reach
59% by 2050.

Cities have
expanded through
concrete-centric development,
eliminating natural
drainage and recharge
zones.

In Lahore, ground-
water levels are declining
by 1-4 feet annually,
while recharge mechanisms
remain minimal.

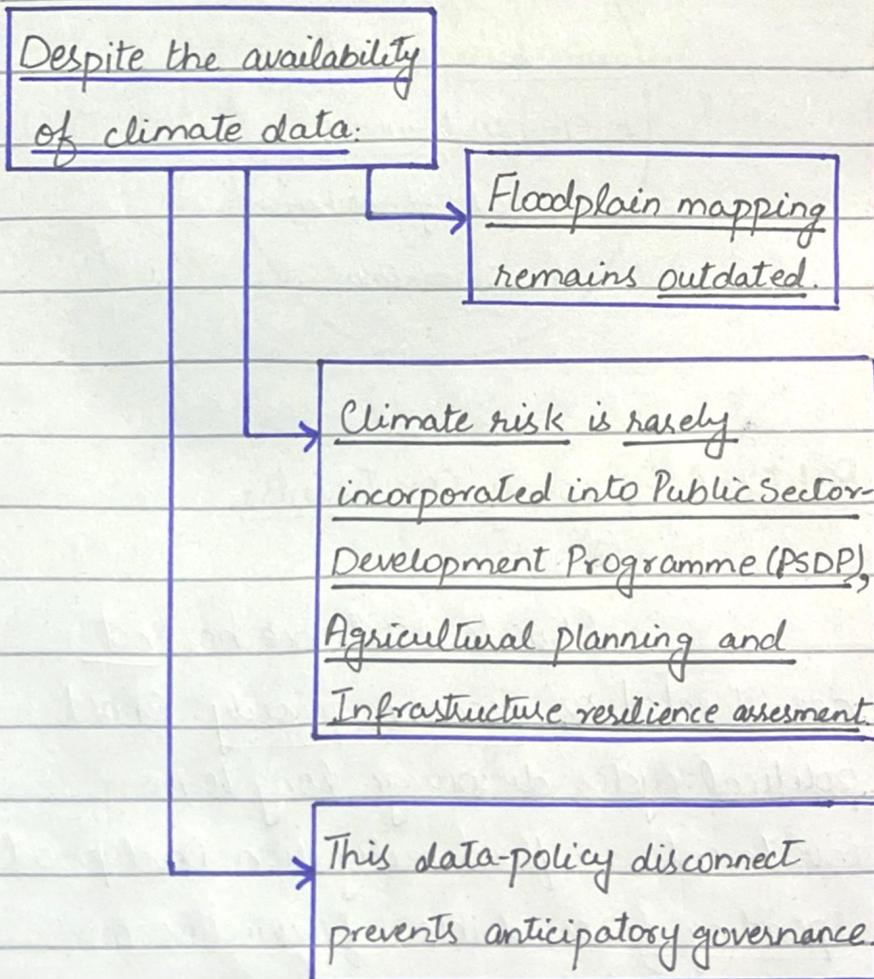
4- Political Economy Constraints:

Climate resilience has not
been treated as economic priority. Short
political cycles discourage long term
investments in flood mitigation. Development
spending favors visible infrastructure over

climate-resilient planning

According to the World Bank,
climate change could reduced Pakistan's
GDP by 18-20% by 2050 if adaptation
remains inadequate.

5. Failure to Integrate Climate Data into Policy:



IV. Integrating Climate Adaptation, Governance Reforms, and Economic Planning:

1. Climate Adaptation Measures:

Pakistan must transition from ad-hoc responses to systemic climate adaptation. Upgrade flood-maps based on a 100-year return period. Strengthen early warning systems for monsoon floods and Glacial Lake Outburst Floods (GLOFs), as over 3000 glacial lakes exist, with 36 highly vulnerable and promote nature-based solutions, including watershed management and mangrove restoration, which can absorb 4 times more carbon and reduce coastal flooding.

2. Governance Reforms:

Effective adaptation requires institutional reforms. Pakistan should strengthen the Ministry of

Climate Change and operationalize mandates under Pakistan Climate Change Act 2017.

Pakistan should mainstream climate risk into national and provincial planning institutions and empower local governments for Land-use enforcement, Evacuation planning and Community-based disaster risk management.

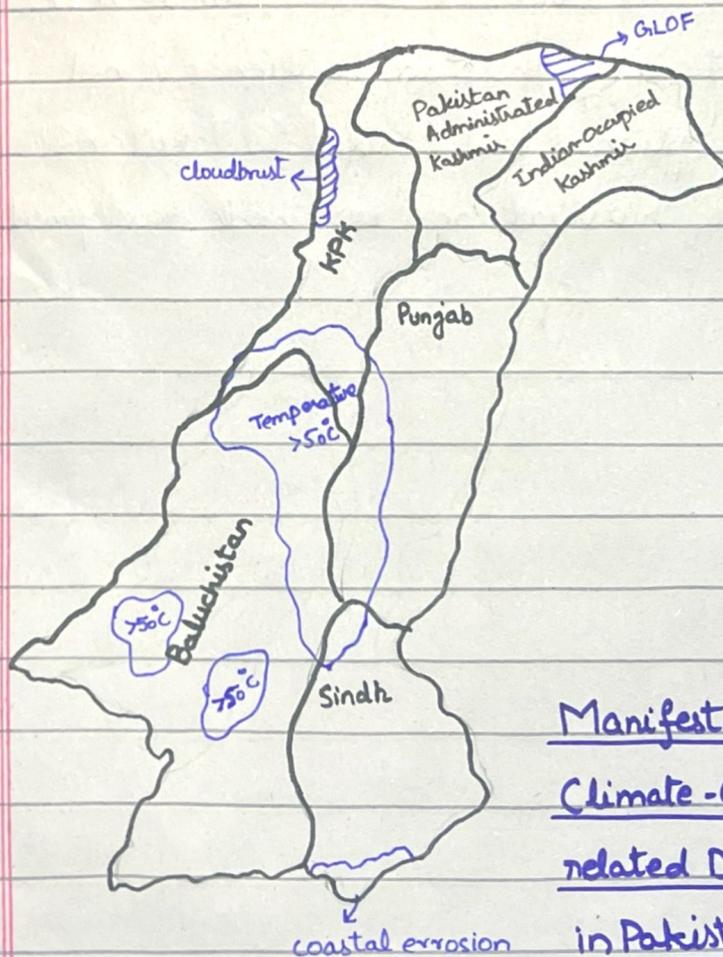
As emphasized in Pakistan's climate assessments:

The least prepared are the most exposed to climate change threats.

(B) Economic Planning and Climate-Resilient Development:

Flood mitigation must be treated as an economic investment, not a humanitarian cost. Agriculture, contributing 24% to GDP and employing 37% of the workforce, remains highly sensitive. Climate-resilient infrastructure can reduce

recurring reconstruction costs. Pakistan can leverage carbon markets, climate finance, international funds, potentially mobilizing \$ 2-5 billion by 2030 if regulatory frameworks are strengthened. Integrating climate-resilience into macro-economic planning aligns disaster risk reduction with sustainable growth.



Manifestation of
Climate-Change
related Disasters
in Pakistan
in 2025

Conclusion:

Pakistan's recurring floods are reflection of institutional inertia, governance fragmentation, and short-term economic thinking. Moving forward, Pakistan must adopt an integrated resilience framework that aligns climate adaptation, governance reforms, and economic planning. As empirical evidence shows, climate shocks will intensify, therefore, resilience is not longer optional but central to Pakistan's economic survival and sustainable development.