

Question No 1

Pakistan repeatedly hit by floods. Critically evaluate its reasons and recommend policy options for the nation to follow.

Floods are the most devastating natural disaster that cause extensive damage to life, property and infrastructure. They occur when the flow of water exceed from the normal range. Pakistan is more prone to floods due to the harmful effects of climate change and being a lower riparian. Devastating floods of 2010 and 2022 cause extensive damage to life, property and infrastructure. In 2022 estimated loss of \$92bn and 1730 deaths occur. Several people remained displaced. There are multiple other reasons that cause floods in Pakistan.

(1) Climate change:-

Climate change is the most common cause of floods in developing countries especially in South Asia. As Pakistan contribute only 0.34% in Greenhouse gases (GHG) but it experience a devastating effects of climate change every year especially during monsoon.

As the temperature of the earth rises upto 2°C after industrial revolution it increase the temperature which cause melting of glacier in northern region of Pakistan. This outburst of glaciers cause heavy floods across the country.

(ii) Deforestation:-

Forests play very important role in maintaining natural cycle of climate. Forest absorb water and decrease the runoff. Cutting of forest on a large scale cause detrimental effects. Now water flow in a very smooth way without any resistance and cause heavy floods. It may increase the salinity of soil and produce negative effects.

(iii) Heavy Rainfall:-

prolonged or intense rainfall especially during monsoon cause severe threat. Late July to September when monsoon on its peak cause heavy floods and loss of life and property.

(iv) Glacier Melting:-

Due to increase in climate change temperature is increasing day by day this increase in temperature cause the melting of glaciers in Himalaya region and cause heavy floods.

Flood Management policies

(i) Structural policies:-

(ii) Construction of dams:-

Building of new small and medium sized dams can help to prevent from the destruction of floods. It can also act as reservoir in case of water scarcity. Existing dams like Mangla and Tarbela can prove beneficial by maintaining to store excess rainfall.

(ii) Embankment:-

It may protect the coastal area from riverine floods by building strong concrete system along the river so water cannot be able to flow in case of heavy rainfall especially in monsoon.

(iii) Urban drainage system:-

The major cities like Karachi and Lahore are more prone to urban flooding. There is need of proper drainage system so that water can flow easily through canal system and protect the cities from being damaged.

(iv) Flood zoning and Mapping:-

Identify the flood prone areas and restrict settlement in these

cross and introduce technology like
GIS - based flood prediction mapping.
(2) Non-Structural Policies:-

(i) Early warning system:-
Install early warning system in cities
prone to floods, so that people
can evacuate city before the
arrival of flood. This can protect
the life of people. First time in
2025 Government can be able to
evacuate 2.5 mn people, something
we did not see in 2022.

(ii) GIS and Remote Sensing:-
Identify the flood prone areas through
satellite and mapping those areas
to prevent settlement can be able
to prevent people from loss of floods.

(iii) Education and preparedness:-
Awareness through education in
schools, college, universities - from the
harmful effects of floods and can
we prevent ourselves and our
community from drowning.

(iv) Insurance Scheme:-
Government should provide insurance
Scheme to farmers who faced heavy
loss in the form of loss of crops.

Mr. Gohra said,

"These are farming families who
feed the nation"

By introducing insurance scheme ~~use~~ Government can help them to ~~come~~ ~~and~~ recover easily.

(3) Government initiatives:-

Pakistan's National Disaster Water Management authority should work with provincial Management authority for speedy recovery. International community should provide funds to recover easily from floods.

(4) Transboundary cooperation:-

Trans boundary cooperation is very important among Pakistan, Afghanistan and India, so that they can be able to save the life of people, property and infrastructure from damage. Promotion of green infrastructure can also help to recover from floods.

Conclusion:-

Flood management in Pakistan is important. It is a comprehensive, multi-dimensional approach that integrates engineering, policy, management, community participation, early warning system and climate-resilient development is crucial. Only through these structural and non-structural measures Pakistan move from a cycle of flood to long-term climate resilience and water sustainability.

Question NO 2

India unilaterally held Indus Treaty
Abeyance after Panalagam attack -
Critical evaluation and policy
options for Pakistan.

Indus water treaty signed in 1960
between India and Pakistan led by
World Bank to resolve the transboundary
water issue between two countries.

According to treaty Western rivers
were allotted to Pakistan: Indus,
Jhelum, Chenab, while Eastern rivers
were allotted to India. Ravi, Beas
and Sutlej. Pakistan will use
80% water from Indus river and
India use 20% of it. However,

treaty India to use water of
Western river for non-consumptive purpose
irrigation and hydroelectric power.

This treaty is successful from past six
decades despite having four
wars between India and Pakistan.

while in 2019 following Panalagam
attack India "hold the Indus
waters Treaty in abeyance", causing
tension between these two countries.

This is a deviation from international
law/norms and treaty's spirit of
mutual cooperation.

India's unilateral decision:

Following the ~~paragang~~ ~~attack~~, India unilaterally trig to suspend the treaty linking water with political issue, transboundary terrorism allegation against Pakistan. This move of India politicized a treaty use it as a tool for political purposes. This treaty remained survived despite having diplomatic tensions between two countries from the six decades. This move could be create unrest in South Asia region where China, Nepal, and Bangladesh also have transboundary water concerns with India.

Critical Evaluation of the Impacts

(i) Violation of International law

Indus Water Treaty is a bilateral treaty led by ~~world~~ Bank. This treaty cannot be suspended unilaterally under international.

India's action of suspension of treaty unilaterally is a violation of Vienna convention on the Law of Treaties (1969), which prohibit any country abrogation of treaty unilaterally.

(ii) undermining Regional stability

The abrogation of treaty unilaterally cause aggravates tension between two nuclear power which is a threatful not only for south Asia but for the whole world. It can transform water disputes into potential security threats, leading to regional instability.

(iii)

Impact on Pakistan's water security.

As Pakistan heavily relies on Indus water for its irrigation, 70% of water need for irrigation is met through Indus water. As Pakistan have agrigenian economy it heavily relies on Indus Basin for agriculture, energy, and livelihoods.

India's construction of dam on western river such as Kishanganga and Rattle undermine the treaty and is a threat for Pakistan. It can cause water scarcity and energy shortage. Kishanganga river divert the flow of Neelum River which decrease the energy production. Such actions may worse condition between two countries and cause water scarcity.

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(iv) Weakening of ~~Coop~~ (CBM) confidence-Building Measures.

Both countries ~~maintain~~ maintained their cooperation in water crisis through permanent Indus Commission (PIC) meetings, the primary forum for dialogue between two countries where they can share their hydrological data and resolve their transboundary water disputes through negotiation. Violation of treaty erodes trust between the countries and cause regional tensions.

Policy options for Pakistan

(i) Diplomatic and Legal Engagement

Activate World Bank's role in as a guarantor of treaty. Launch a global diplomatic campaign highlight India's violation of international law.

(ii) Regional Alliance

Collaborate with China, Nepal, and Bangladesh which also have transboundary water concerns with India to advocate for a rules-based South Asian water framework.

(iii) Strengthening Domestic water Management

Improve water storage capacity by building reservoirs.

Enhance irrigation system efficiency reduce waste through modern technology.

TO conclude unilateral suspension of IWI represent a dangerous politicization of development issues and is not good for regional peace in South Asia.