

Question no:1:

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

Introduction:

Pakistan remains the most-affected country by floods in the region of South Asia. Every year, floods leave the country with devastating impacts such as deaths, agriculture loss, livestock damage, infrastructure collapse and economic fallout. There are several reasons making Pakistan prone to floods and these include devastating climate change, lack of water storage infrastructure, rapid, uneven urbanization, deforestation improper waste disposal and poor land management and governance. These problems can be resolved by following

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measures building new water storage reservoirs, reforestation and afforestation campaigns, improving drainage system, stricter regulations against illegal construction and early warning systems for mass evacuation.

Reasons behind devastating floods in Pakistan

1. Exacerbating climate change: rapid glacial melt, torrential rainfalls and extreme temperatures

Despite contributing less than 1% to global greenhouse gas emissions, Pakistan remains one of the ten most vulnerable countries to climate change. Being home to over 7000 glaciers, it experiences massive floods due to rise in global temperatures. Moreover, erratic monsoons deluge the country every year.

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- Inadequate water storage dams: Limited water storage capacity

Pakistan has over 150 dams, including both big and medium sized. This limits the capacity of Pakistan to store enough water in summer. Unlike global average water storage capacity of 120 days, Pakistan can only store water of 30 days. This makes Pakistan vulnerable to floods every year.

3- Rapid, uneven urbanization: Decrease in green spaces and natural sponges

Green spaces offer a great deal of natural water absorption. As Pakistan's population is increasing at an alarming rate, people are shifting to urban centres for better life style. This strains the availability of vast green land due to ^{the} build up of massive residential

buildings, roads, schools and hospital
Thus, as natural sponges vanish, flood
vulnerability increases.

4- Large scale deforestation: Removal of natural flood barriers

Trees play an important role in
preventing floods and act as natural
absorbant of water through roots. Their
absence destabilizes soil, leading to
increased surface runoff and higher risk
of landslides. In Pakistan, forests have
shrunk by **18%**, leading Pakistan to
becoming prone to flood risks.

5- Improper waste disposal: Blocked waterways

Unchecked waste disposal in water
ways ^{causes} hindrance in the smooth
flow of flood water, leading to
massive flooding in an area.

This blockage is mostly caused

by neglectful and unchecked dumping of waste into channels, pipes and drains, limiting their ability to host excess water.

6. Poor land management and governance

Poor land management and governance exacerbate flooding by destroying natural flood defences like wetlands, increasing paved and impermeable surfaces that cause rapid runoff. Moreover, Neglect of drainage systems, coupled with corruption and weak enforcement of land-use laws, allows waste to block waterways and reduces the land's capacity to absorb rainwater.

Recommendations to prevent floods in Pakistan

1- Building water storage infrastructure: increased capacity for water storage

Building new dams increases that storage capacity of flood water. This water later can be used for industrial purpose and groundwater repumping.

Dasu dam, Diamer Basha dam and Mohmand dam, among others, are being built in Pakistan that would increase the water storage capacity, preventing inundation due to rapid glacier melt and erratic rainfalls in Summers in the Country.

2- Reforestation and afforestation campaigns

Large-scale afforestation and reforestation campaigns must be launched by both public and ~~gov~~ private sectors of Pakistan. People should be incentivized to plant trees. Severe punishments must be enacted to

re:
age

discourage people from deforestation

3-Improved drainage system : Vast space for smooth water flow

Drainage system must be regularly checked by authorities especially during pre-monsoon period. Proper waste disposable sites must be established for waste dumping. People must be encouraged to follow the dumping rules by setting some incentives. Moreover, educational campaigns informing people about ^{being} rightful and dutiful citizen of the country should be arranged both on social media and in schools.

4- Stricter land laws : Avoiding land encroachments and disturbance of natural waterways

Due to rapid rise in population and

urbanization, concrete infrastructure is also increasing, even on natural water ways. There is an immense need to regulate these illegal constructions that block the smooth flow of water. Similarly, housing authorities should be controlled by stricter laws and severe punishments.

5. Early warning systems: Allowing on-time evacuation in flood prone areas

Early warning systems should be established to alert people about expected flooding and prevent collateral damage. These people should be shifted to safer areas with proper care, fulfilling their daily needs. Similarly, steps must be taken to minimise danger to their assets and properties.

Conclusion:

Pakistan is the most flood-vulnerable country in the region and faces multiple impacts every year. Huge infrastructure and human losses due to flood are caused by multiple reasons and solving them is the only way forward to tackle this calamity of massive flooding ~~off~~ every year.

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