

Daily Answer Writing

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Structure:

- Define Flood.
- Causes of Flood.
- Conclusion

Context:

- Measures to be taken urban flooding .
- Impact of the devastation due to floods.

Introduction:

Flood is an overflow of a large body of water over areas not usually inundated. Thus, flooding in urban areas is caused by intense and/or prolonged rainfall, which overwhelms the capacity of the drainage system and hence affects large number of people due to high population density in urban areas.

Causes of frequent urban floods:

Natural:

Meteorological Factors: Heavy rainfall, cyclonic storms and thunderstorms causes water to flow quickly through paved urban areas and impound in low lying areas.

Hydrological Factors: Overbank flow channel networks, occurrence of high tides impeding the drainage in coastal cities.

Climate Change: Climate change due to various anthropogenic events has led to extreme weather events.

Anthropological:

Unplanned Urbanization:

Unplanned Urbanization is the key cause of urban flooding. A major concern is blocking of natural drainage pathways through construction activity and encroachment on catchment areas, riverbeds and lakebeds.

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Destruction of lakes:

A major issue in India cities. Lakes can store the excess water and regulate the flow of water. However, pollution of natural urban water bodies and converting them for development purposes has increased risk of floods.

Unauthorised colonies and excess construction:

Reduced infiltration due paving of surfaces which decreases ground absorption and increases the speed and amount of surface flow.

Impact of the devastation due to floods:

On economy:

Damage to infrastructure, roads and settlements, industrial production, basic supplies, post disaster rehabilitation difficulties etc.

On human population and wildlife:

Trauma, loss of life, injuries and disease outbreak, contamination of water etc.

On environment:

Loss of habitat, tree and forest cover, biodiversity loss and large scale greenery recovery failure.

On transport and communication:

Increased traffic congestion, disruption in rail services, disruption in communication- on telephone, internet cables causing massive public inconvenience.

Measures to address urban flooding in India:

National Disaster Management (NDMA) Guidelines:

In 2010, NDMA had issued guidelines on Urban Flood Management in India -to create a National Hydro-meteorological Network for providing early warning, use of Doppler Weather Radars to be expanded to cover all urban areas in the country, an inventory of the existing storm water drainage system to be prepared etc.

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Rain water harvesting and other check measures:

On-channel storage of rain water in storm drains, artificial recharge trenches, retention basins, deepening of ponds and lakes etc.

Sustainable usage of land:

Low-lying areas in cities have to be reserved for parks and other low-impact human activities, restrict encroachments in natural drainage areas; clearance of river beds, proper implementation of Coastal Regulation Zone rules. Planting drought resistant and flood resistant sturdy trees in vulnerable areas also helps.

Utilising International best practices:

Implementing 'Mobile Walls' like in Germany, and 'sponge' cities in line with cities in China which involves replacing concrete pavements with porous pavements to ensure better filtration.

Policy making and city planning:

Each city should have their Flood mitigation plans strongly embedded within the master plan of the city. There should be prompt, well-coordinated and effective response in case of urban floods to minimize casualties and loss of property and also facilitate early recovery.

Wetlands protection:

Urban flooding may increase if wetlands not protected. Centre for Science and Environment(CSE) has recommended strong laws to protect urban lakes, their catchment and feeder channels

Conclusion:

Floods have become a more common phenomenon in the wake of the climate change and unorganised urban development has worsened the situation. India has to learn its lessons from recent floods, in Assam, Bihar, Tamil Nadu, Karnataka and Kerala. Addressing the underlying causes and taking immediate effective corrective measures is most important need to tackle and overcome the floods and its devastation.

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