Disaster Management · GS - III

Examine how compound flooding can amplify the impact of extreme coastal weather events on urban infrastructure and essential services.

EXAM YEAR	PAPER	SUBJECT
DAILY PRACTICE 27/11/2026	GS - III	Disaster Management

MARKS	WORD LIMIT
15	~250 words

Answer Hint

Compound flooding, storm surge, extreme rainfall, coastal vulnerability, urban drainage, critical infrastructure, disaster resilience, early warning systems

Model Answer

The Thanksgiving storm affecting the US East Coast illustrates how extreme weather can disrupt interconnected urban systems. When heavy rainfall, storm surge and strong winds occur together, their combined effects can exceed the capacity of conventional disaster-management arrangements.

How cascading disruptions occur

1. **Transport networks:** Coastal inundation and high winds can close bridges, airports and roads, disrupting mobility and emergency access.
2. **Electricity supply:** Flooded substations, damaged transmission lines and falling trees can cause widespread power outages.
3. **Urban drainage:** High coastal water levels may prevent stormwater from draining efficiently, increasing waterlogging and inundation.
4. **Economic activity:** Flight cancellations, port disruption and business closures create financial losses and interrupt supply chains.

5. **Public health:** Floodwater contamination, displacement and prolonged electricity outages can increase health risks, particularly for vulnerable populations.

Why conventional planning may be insufficient

Traditional flood assessments often examine rainfall, river flooding and coastal storm surge separately. However, their interaction can produce more severe consequences than individual hazard assessments suggest. Climate change and unplanned coastal urbanisation further increase exposure.

Building resilience

1. Integrate meteorological, river and coastal forecasting systems to improve compound-hazard warnings.
2. Upgrade drainage infrastructure and protect critical electricity and transport facilities.
3. Develop evacuation plans and backup power arrangements for essential services.
4. Use wetlands, mangroves and natural coastal buffers to reduce flood exposure.

India's coastal cities can draw lessons from such events by incorporating compound-risk assessments into urban planning and disaster preparedness.

Effective disaster management must address not only individual hazards but also the cascading failures they can trigger across interconnected infrastructure.

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