Disaster Management · GS - III

Examine the challenges involved in managing river floods during tropical cyclones. Suggest measures to strengthen flood-risk reduction and disaster preparedness in India.

EXAM YEAR	PAPER	SUBJECT
DAILY PRACTICE 04/11/2026	GS - III	Disaster Management

MARKS	WORD LIMIT
10	~150 words

Answer Hint

Extreme rainfall; river-basin inflows; barrage operation; downstream flood risks; early-warning systems; coordinated reservoir management; resilient infrastructure; community preparedness.

Model Answer

Introduction

Tropical cyclones can cause intense rainfall, rapid river inflows and flooding across coastal and inland regions. During Cyclone Murasu, the release of surplus water from Prakasam Barrage highlighted the importance of coordinated river-flow management.

Major Challenges

Heavy rainfall across upstream catchments can rapidly increase river discharge. Barrage operators must balance water-level regulation with downstream safety. Unplanned releases, inadequate drainage, encroachment on floodplains and limited warning dissemination can increase losses. Urbanisation and the loss of wetlands further reduce natural water-storage capacity.

Way Forward

India should strengthen catchment-based rainfall monitoring, flood forecasting and real-time communication between meteorological agencies, irrigation departments and disaster-management authorities. Barrage releases should follow transparent operating protocols informed by inflows, downstream conditions and forecasts. Floodplain zoning, wetland restoration, resilient drainage and community-based evacuation plans can reduce exposure. Regular drills and accessible warnings are particularly important for vulnerable communities.

Conclusion

Effective flood management requires more than controlling water through infrastructure. An integrated river-basin approach combining scientific forecasting, coordinated releases, ecosystem protection and community preparedness can reduce disaster risks.

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