Geography · GS - I

Comment on the resource potentials of the long coastline of India and highlight the status of natural hazard preparedness in these areas.

EXAM YEAR	PAPER	SUBJECT
2023	GS - I	Geography

MARKS	WORD LIMIT
15	~250 words

Answer Hint

Examine marine fisheries, ports, trade, offshore energy, tourism, aquaculture, minerals and coastal ecosystems; identify cyclones, storm surges, tsunamis, coastal erosion and sea-level rise as major hazards; assess early warning, evacuation, shelters, coastal regulation and ecosystem-based preparedness.

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Model Answer

Introduction

India's approximately **7,500-km-long coastline**, including the mainland and islands, provides immense economic and ecological resources. At the same time, dense coastal populations and exposure to multiple hazards make disaster preparedness crucial.

Body

Resource Potential

Fisheries and aquaculture:

Marine fisheries provide food, employment and livelihoods to coastal communities. Aquaculture has significant export and domestic potential.

Ports and maritime trade:

India's strategic location along major Indian Ocean routes supports ports, shipping, logistics and international trade.

Offshore energy:

The continental shelf offers potential for offshore oil and gas and increasingly for offshore renewable energy, particularly wind.

Tourism:

Beaches, coral reefs, mangroves, islands and coastal cultural landscapes provide substantial tourism potential.

Marine biotechnology and minerals:

Marine biodiversity offers opportunities for pharmaceuticals, biotechnology and other applications, while coastal areas contain mineral resources.

Ecosystem services:

Mangroves, coral reefs and wetlands support fisheries, biodiversity, carbon sequestration and coastal protection.

Natural Hazards

Coastal India is vulnerable to **cyclones, storm surges, tsunamis, coastal flooding, erosion and sea-level rise**. The east coast is particularly exposed to severe cyclones, while islands face additional vulnerability.

Preparedness

India has significantly strengthened preparedness through:

Early warning systems: IMD forecasting and the Indian Tsunami Early Warning Centre provide critical alerts.

Evacuation and shelters: Cyclone shelters, evacuation plans and community preparedness have improved outcomes.

Institutional mechanisms: NDMA, NDRF, state disaster authorities and local administrations coordinate preparedness and response.

Nature-based protection: Mangroves and coastal vegetation reduce the impact of waves and storm surges.

However, challenges remain in enforcing coastal regulations, managing unplanned urbanisation, strengthening last-mile communication and protecting vulnerable fishing communities.

Conclusion

India's coastline is both an **economic asset and a zone of environmental vulnerability**. Sustainable resource utilisation combined with resilient infrastructure, ecosystem protection, early warning and community-based disaster preparedness is essential for coastal security.

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