# Disaster Management · GS - III

**The Intergovernmental Panel on Climate Change (IPCC) has predicted a global sea level rise of about one metre by AD 2100. What would be its impact in India and the other countries in the Indian Ocean region?**

| EXAM YEAR | PAPER | SUBJECT |
|---|---|---|
| 2023 | GS - III | Disaster Management |

| MARKS | WORD LIMIT |
|---|---|
| 15 | ~250 words |

## Answer Hint

**Sea-level rise threatens low-lying coasts through inundation, erosion, salinisation and extreme flooding; densely populated deltas and small island states in the Indian Ocean are especially vulnerable, requiring adaptation alongside mitigation.**

## Model Answer

### Introduction

Sea-level rise results mainly from thermal expansion of seawater and melting of glaciers and ice sheets. A substantial rise by 2100 would create severe ecological, economic and humanitarian consequences across the Indian Ocean region.

### Body

### Impacts on India

**Coastal inundation:** Low-lying coastal areas and islands face permanent or periodic flooding.

**Delta vulnerability:** The Ganga-Brahmaputra-Meghna and other deltas are particularly exposed.

**Coastal erosion:** Rising sea levels intensify shoreline retreat and threaten settlements and infrastructure.

**Salinisation:** Seawater intrusion can contaminate freshwater aquifers and agricultural land.

**Cyclone impacts:** Higher sea levels increase storm-surge reach during tropical cyclones.

**Livelihood losses:** Fisheries, agriculture, tourism and coastal industries may be affected.

**Urban risk:** Coastal cities such as Mumbai, Kolkata and Chennai face increased flooding and infrastructure stress.

## Indian Ocean Region

**Small Island Developing States:** Maldives, Seychelles and Mauritius face existential threats because of low elevation.

**Bangladesh:** High population density in low-lying deltaic areas creates severe displacement risks.

**Sri Lanka:** Coastal ecosystems, settlements, tourism and fisheries may face increasing vulnerability.

**East African coast:** Mozambique, Tanzania and other coastal regions may experience flooding, erosion and livelihood losses.

BECOME IAS
AI POWERED UPSC PREP

## Broader Consequences

Climate-induced migration, food insecurity, ecosystem loss, freshwater stress and economic disruption may intensify regional instability.

## Way Forward

India and other countries require coastal-zone planning, mangrove restoration, resilient infrastructure, early-warning systems, climate-resilient agriculture and international climate finance.

## Conclusion

Sea-level rise is not merely an environmental challenge but a **developmental, economic and humanitarian threat**. Adaptation and mitigation must therefore proceed together through regional cooperation across the Indian Ocean.