# Science & Technology · GS - III

**Discuss the significance of India's participation in international ocean-science initiatives for marine research, disaster preparedness and sustainable ocean governance.**

| EXAM YEAR | PAPER | SUBJECT |
|---|---|---|
| DAILY PRACTICE 15/10/2026 | GS - III | Science & Technology |

| MARKS | WORD LIMIT |
|---|---|
| 10 | ~150 words |

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## Answer Hint

Ocean Science, International Scientific Cooperation, INCOIS, UNESCO-IOC, Indian Ocean Expedition (IOE-2), Marine Research, Ocean Observation, Tsunami Early Warning System, Disaster Preparedness, Climate Change, Marine Biodiversity, Blue Economy, Sustainable Ocean Governance.

## Model Answer

### 1. Introduction

Oceans play a crucial role in climate regulation, biodiversity, food security and the global economy. India's participation in international ocean-science initiatives strengthens scientific cooperation and supports the sustainable use of marine resources.

### 2. Main Body

#### A. Significance of International Ocean-Science Cooperation

1. **Scientific research:** Collaboration promotes ocean observation, data sharing and improved understanding of marine ecosystems.
2. **Disaster preparedness:** Ocean monitoring and early-warning systems help reduce risks from tsunamis, storm surges and extreme marine events.
3. **Climate change:** Ocean research improves understanding of sea-level rise, ocean warming and changing weather patterns.
4. **Blue economy:** Scientific knowledge supports sustainable fisheries, marine biotechnology and responsible use of ocean resources.
5. **Global cooperation:** Initiatives associated with UNESCO's Intergovernmental Oceanographic Commission facilitate international coordination in marine science.

### B. India's Institutional Contribution

The Indian National Centre for Ocean Information Services (INCOIS), based in Hyderabad, provides ocean information, forecasting and early-warning services. The reported election of its Director, Dr. T. Srinivasa Kumar, as Chair of the UNESCO-IOC Indian Ocean Expedition (IOE-2) panel reflects India's engagement in international ocean research.

## 3. Conclusion

Strengthening ocean research, international data sharing and institutional capacity can enhance India's maritime security, disaster resilience and sustainable Blue Economy.