



## Cabinet Approves O-SMART Scheme

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Recently the cabinet approved Umbrella scheme “Ocean Services, Technology, Observations, Resources Modelling and Science (O-SMART)” .

- The scheme encompasses a total of 16 sub-projects addressing ocean development activities such as Services, Technology, Resources, Observations and Science.
- Implementation period is from 2017-18 to 2019-20.
- The project will be implemented by Ministry of Earth Sciences.
- The ocean advisory services and technologies being rendered and developed under the scheme will play a pivotal role in the development activities over
- many sectors, working in the marine environment including the coastal states of India, contributing significantly to the GDP.

### Background

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- The ministry is proposing to continue the existing schemes in a focused way as a part of umbrella scheme of O-SMART.
- Ocean Policy Statement enacted in November 1982, implements multi-disciplinary projects in the field of ocean development primarily to
  - provide a suite of Ocean Information services,
  - develop technology for sustainable harnessing the ocean resources,
  - promote front-ranking research and
  - conduct ocean scientific ocean surveys.
- India’s ocean related activities extended from the Arctic to the Antarctic region covering large ocean spaces which have been monitored through a wide spectrum of in situ and satellite-based observations.
- India also signed the Antarctic Treaty System and joined Commission of Conservation of Antarctic Marine Living Resources (CCAMLR) for harnessing the resources.
- The ministry has been monitoring the health of coastal waters of India including shoreline changes and marine ecosystem.

- Some of the technologies for harnessing the ocean resources that have been developed are low temperature thermal desalination for islands, Remotely Operated Submersible and soil tester, shallow bed mining systems, etc.
- Deep-sea mining of Poly-Metallic Nodules [PMN] in the Central Indian Ocean was allotted by International Sea Bed Authority [ISBA] for exploration of PMN, and also in the Indian Ocean for exploration of hydrothermal sulphides.
- India has also established a state-of-the art early warning systems for ocean disasters, viz, tsunami, cyclones, storm surges etc., for providing round the clock services for India and countries of the Indian Ocean, which have been recognized by UNESCO.

## Vision

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The important deliverables during the next years envisage under the scheme include:

- Strengthening of Ocean Observations and Modelling
- Strengthening of Ocean Services for Fishermen
- Setting up Marine Coastal Observatories for monitoring marine pollution in 2018
- Setting up Ocean Thermal Energy Conversion Plant (OTEC) in Kavaratti
- Acquisition of 2 Coastal Research Vessels for Coastal research
- Continuation of Ocean Survey and Exploration of Minerals and Living Resources
- Technology Development for Deep Ocean Mining- Deep Mining System and Manned Submersibles
- Setting up Six Desalination Plants in Lakshadweep

## Impact

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- The services rendered under the O-SMART will provide economic benefits to a number of user communities in the coastal and ocean sectors, namely, fisheries, offshore industry, coastal states, defence, shipping, ports etc.
- Fishermen community receiving information like fish potential and local weather conditions in the coastal waters daily through mobile will help them to reduce the search time, resulting savings in the fuel cost.
- Implementation of O-SMART will help in addressing issues relating to Sustainable Development Goal-14, which aims to conserve use of oceans, marine resources for sustainable development.
- This scheme (O-SMART) also provide necessary scientific and technological background required for implementation of various aspects of Blue Economy.
- The State of Art Early Warning Systems established under the O-SMART Scheme will help in effectively dealing with ocean disasters like Tsunami, storm surges.
- The technologies being developed under this Scheme will help in harnessing the vast ocean resources of both living and non-living resources from the seas around India.

### ***Commission of Conservation of Antarctic Marine Living Resources (CCAMLR)***

- It was established by international convention in 1982, with the objective of conserving Antarctic marine life.
- Secretariat is based in Hobart, Tasmania.
- Currently, CCAMLR has 25 Members and 11 Acceding States.
- India is one of the members of CCAMLR.

### ***International Seabed Authority [ISBA]***

- It was established under the 1982 United Nations Convention on the Law of the Sea ,to organize, regulate and control all mineral-related activities in the international seabed area beyond the limits of national jurisdiction
- It is based in Kingston, Jamaica.
- It has 168 members.
- India is one of the member countries.

### ***Blue Economy***

- The “blue economy” concept seeks to promote economic growth, social inclusion, and the preservation or improvement of livelihoods while at the same time ensuring environmental sustainability of the oceans and coastal areas.
- The blue economy aims for integration of development of ocean economy, along with social inclusion, environmental sustainability, combined with innovative business models.

### ***Poly-Metallic Nodules (PMN)***

- Polymetallic nodules, also called manganese nodules, are rock concretions formed of concentric layers of iron and manganese hydroxides around a core. The core may be microscopically small and is sometimes completely transformed into manganese minerals by crystallization.
- Polymetallic nodules contain multiple metals like copper, nickel, cobalt, manganese, iron, lead, zinc, aluminium, silver, gold and platinum etc. in variable constitutions and are precipitate of hot fluids from upwelling hot magma from the deep interior of the oceanic crust.

Mining for Polymetallic nodules is of strategic importance for India as there are no terrestrial sources of these metals in India.