

Indian National Centre for Ocean Information Services (INCOIS)

Indian National Center for Ocean Information Services (INCOIS) is an autonomous organization of the Government of India, under the Ministry of Earth Sciences, located in Pragathi Nagar, Hyderabad.

INCOIS was established as an autonomous body in 2007 under the Ministry of Earth Sciences (MoES) and is a unit of the Earth System Science Organization (ESSO).

History of INCOIS

Under the guidance of Dr A. Narendra Nath, the Ministry of Earth Sciences initiated a project called PFZ Mission during the 1990s. It was handed over to National Remote Sensing Centre (NRSC) Hyderabad

The project was separated as a result from NRSC and a new organisation was created to look after it. Indian National Centre for Ocean Information Services (INCOIS) and was placed under reputed scientist Dr A.Narendra Nath, Who was also the founder-director for INCOIS.

The services of the INCOIS led to its recognition as one of the key International Oceanic Organisation.

Services Provided by INCOIS

The following are the services provided by INCOIS

1. Potential Fishing Zone (PFZ): The identification of Potential Fishing Zones was one of the first advisory services started by INCOIS. The PFZ uses real-time data for ocean colour and imagery provided by OCEANSAT. OCEANSAT is a satellite built by ISRO for ocean applications. This service was started to help fisherman identify high-quantity fishing zones in order to maximise their catch.

This service was started by the Ministry of Earth Sciences with the help of the Department of Space and several institutions under the Ministry of Agriculture. These organizations are collaborating with the State Governments of the beneficiary states to offer these services to the end-users.

2. Tsunami Early Warning System (TEWS): Following the devastating Tsunami of December 26, 2004, and frequent storm-surgest that occur from time to time, the Government of India wanted to set up an early warning centre for tsunami and other storm surges in the Indian Ocean region.. On October 15 2007, a centre housing the Tsunami Early Warning System was

set up in INCOIS by the Ministry of Earth Sciences through the collaboration of Department of Science and Technology (DST, Department of Space (DOS) and Council for Scientific and Industrial Research (CSIR)

The data obtained from a network of equipment is used to run models to provide maps that describe inundation scenarios from the entire coastal belt. Based on these scenarios, potential danger zones are identified to generate advisories for various stakeholders. In the event of a Tsunami, advisories are generated at intervals that show the location of storm surges which helps local authorities to evacuate people from the region likely to be affected.

3. Indian Ocean Forecasting System (INDOFOS): Since India is a peninsula, surrounded by water on its three sides, thus it is important to know the state of the oceans in advance for carrying out various commercial activities.

Thinking about all these factors, a new service was rolled out to forecast the ocean state, which is capable of predicting the surface and sub-surface features of the Indian Ocean in advance. It is called the Indian Ocean Forecasting System (INDOFOS).

The generated forecasts fall under four categories. They are

- Global,
- Regional,
- Location-specific
- Coastal forecasts.

For the coastal forecast, the models are set up with the concept of "coarse grid" with coarse resolution in open ocean region whereas very fine resolution is used for location-specific forecasts.

4. Ocean Observation Group (OOG): The Ocean Observation Group measures and monitors the temperature and salinity of the upper 2000 metres of the ocean. This is done through a global array of 3000 free-drifting, profiling floats that relay the measurements data to agencies, which in turn make the data publicly available up in hours of receiving the data.

This system was named as Argo, which emphasizes the strong complementary relationship between the free-drifting floats and Jason altimeter mission.

The Argo system helps to study quantitatively the evolving state of the upper ocean and the patterns of its climate variability, including heat, freshwater storage and transport.