

Indian National Centre for Ocean Information Services (INCOIS)

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In news

Recently, Indian National Centre for Ocean Information Services (INCOIS) conducted an Indian Ocean mock Tsunami drills

About Indian National Centre for Ocean Information Services (INCOIS)

ESSO-INCOIS **was established as an autonomous body in 1999 under the Ministry of Earth Sciences (MoES) and is a unit of the Earth System Science Organization (ESSO).** ESSO- INCOIS is mandated to provide the best possible ocean information and advisory services to society, industry, government agencies and the scientific community through sustained ocean observations and constant improvements through systematic and focussed research.

Functions of INCOIS

- It provides **round-the-clock monitoring and warning services for the coastal population on tsunamis, storm surges, high waves, etc.** through the in-house Indian Tsunami Early Warning Centre (ITEWC).
- The Intergovernmental Oceanographic Commission (IOC) of UNESCO designated ITEWC as a Regional Tsunami Service Provider (RTSP) to provide tsunami warnings to countries on the Indian Ocean Rim.
- Provides **daily advisories to fisher folk to help them easily locate areas of abundant fish** in the ocean while saving on both fuel and time used to search for the

same.

- These advisories called **Potential Fishing Zone Advisories** are issued in Hindi, English and 8 vernacular languages.
- These advisories are given through SMS, Village Information Centres, local radio, local TV, Electronic Display Boards at fish landing centres, NGO websites, the ESSO-INCOIS website etc.
- **Short term (3-7 days) Ocean State Forecasts** (waves, currents, sea surface temperature, etc.) are issued **daily to fisher folk, the shipping industry, the oil and natural gas industry, the Navy, the Coast Guard, etc.**
- **It deploys and maintains a suite of Ocean Observing Systems in the Indian Ocean** to collect data on various oceanic parameters to understand the processes in the ocean and to predict their changes.
- **IT conducts systematic quality checks and archives all observational, satellite and other oceanic data at the ESSO-INCOIS Data Centre** and then makes such data available to students, researchers and any other users.
 - **ESSO-INCOIS has been designated as the "National Oceanographic Data Centre" by IOC/IODE of UNESCO** and is also **identified as the "Regional Argo Data Centre for the Indian Ocean"**.
- **Generates Global Ocean Analysis data using mathematical models** and observations on a daily basis to provide the initial conditions to ocean-atmosphere coupled models used for the prediction of the monsoon and to understand oceanic processes.
- **Carries out Research and Modeling to optimize the performance of mathematical models used for ocean state forecasts**, prediction of tsunami waves, storm surges, etc. along the coast.

Other activities

- **INCOIS has established a national network (Indian**

Seismic and GNSS Network (ISGN)) that integrates Seismic and GNSS stations and provides high quality data for research and operational use.

- **INCOIS has established a VSAT aided Emergency Communication System (VECS)** (a fail-safe satellite-based communication system) to provide tsunami warnings with the least possible time delay even when there is a failure in conventional communication systems.
- **INCOIS has** established high performance computing systems and data communication networks at ESSO-INCOIS with 100% redundancy and reliability to support the computational requirements of ocean state forecast models etc.
- **Training and capacity building for students, young researchers in India and Indian Ocean Rim Countries** through short and long duration training courses in Operational Oceanography at the International Training Centre for Operational Oceanography (ITCOcean) established at ESSO-INCOIS.
- ESSO-INCOIS signed a MoA with IOC/UNESCO in July 2013 to collaborate in training and capacity development activities.

International Involvement of INCOIS:

- INCOIS has a prominent international presence, being a **permanent member of the Indian delegation to IOC of UNESCO and a founding member of the Indian Ocean Global Ocean Observing System (IOGOOS)** and the Partnership for Observing the Oceans (POGO).
- **ESSO-INCOIS houses the IOGOOS secretariat and the Sustained Indian Ocean Biogeochemistry and Ecosystem Research (SIBER) International Programme Office.**
- **Through the Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES), ESSO-INCOIS provides ocean information and forecasts to member countries.**

- ESSO-INCOIS is also a **member of the Global Ocean Data Assimilation Experiment (GODAE)** OceanView Science Team (GOVST) and Patron's Group.