

#### **1.4.2 Norms/ standards for functions/ service delivery**

##### **Dissemination of Ocean Services for the benefit of Coastal Population**

Indian National Centre for Ocean Information Services (INCOIS) provides ocean information services such as Potential Fishing Zone (PFZ) Advisories (Daily basis), Ocean State Forecasts (OSF) (Daily basis), Tsunami Early Warning Services (TEWS)(Event basis), Coral Bleach Alerts, Harmful Algal Blooms, High Wave Alerts, Search and Rescue Services, Oil Spill Trajectory, etc. for the benefit of various user communities in the country. These multi-lingual PFZ (except during Marine fishing ban period and high wave / swell conditions) and OSF advisories are disseminated to the entire fishermen community situated all over the entire coast of India and Islands under 14 sectors, viz. Gujarat, Maharashtra, Goa, Karnataka, Kerala, South Tamil Nadu, North Tamil Nadu, South Andhra Pradesh, North Andhra Pradesh, Orissa, West Bengal, Andaman Islands, Nicobar Islands and Lakshadweep Islands.

All INCOIS Services were disseminated in 90's using the traditional ways by using Telephone and/ or Fax. In the beginning of the 20's, PFZ Advisories were also disseminated using the Internet/ website, email and Web-GIS as mode of communication. The Web-GIS is one such advanced tool used by ESSO-INCOIS during 2002 itself thereby enabling the user to query and retrieve the advisories interest to his region. Later, with the state of art of technology available, INCOIS has designed and installed Electronic Display Boards (EDB) at major fishing harbours which have made significant impact in the delivery chain. These EDB's have undergone to various changes and lead towards the new Generation of EDB's which facilitates dissemination of satellite pictures, animations, short-films, ocean state information, disaster information and Disaster warning and alert system in addition to the normal text information.

Presently, the mobile services are also playing a major role as the mobile is now being available with most of the fishermen community in the country. Hence, mobile has been used as an effective tool for dissemination of the PFZ advisories directly to the user. ESSO-INCOIS in collaboration with various partners (NGOs, Industry, Government and Private firms) have initiated various mobile based dissemination mechanisms such as Interactive Voice Response System (IVRS), mobile applications viz. INCOIS, Fisher Friend Mobile Application (FFMA), mKRISHI, Voice Messages / Audio Advisories / MMS and SMS in local languages, etc. In addition to this, the advisories are also being disseminated through Local Cable TV Networks, Doordarshan, All India Radio, Community Radio's, FM Radio Stations, Local News Papers, Help-line systems, NGOs, Social Media (Facebook, Twitter, etc.), Email, GTS, Fax, Digital DisplayBoards,etc.

Presently INCOIS is providing the PFZ and OSF services through SMS to about 7 lakhs of fishermen covering all coastal states. In addition to the fishermen community, OSF services are being provided to various public and private firms such as Indian Coast Guard, Indian Navy, Shipping industries, Maritime boards, ONGC, etc. INCOIS extended the Ocean State Forecast services to neighboring countries like Comoros, Madagascar, Maldives, Mozambique, Seychelles and Sri Lanka. The Tsunami early warning services are provided to 24 neighboring countries in the Indian Ocean. Also, in order to disseminate the information to the sailors in the deep sea, who are out of range of mobile signals, INCOIS in partnership with ISRO and

Airports Authority of India (AAI) developed satellite based disseminations through NAVIC and GAGAN systems respectively.