

MITIGATING EFFECTS OF TROPICAL CYCLONES AT SEA -
AN ICG PERSPECTIVE

Tropical cyclones (TC) are one of the most powerful and destructive weather phenomena of nature that has the potential to cause mass destruction including loss of human lives. Indian peninsula being surrounded by ocean bodies from three sides is vulnerable to tropical cyclones during most part of the year. Under the influence of climate change, cyclones are becoming more intense and frequent. This in result has increased the vulnerabilities of seafarers and coastal communities as well since more people living in hazard-prone areas are exposed to the risk. India has a long history with cyclones. Since 2007, more than 5000 people have died, and damage runs into billions of dollars due to cyclones. In 2019-20, India witnessed multiple cyclones, including Amphan, Nisarga and Nivar. It is therefore of utmost importance to develop mitigation and preventive strategies and enhance preparedness to minimize the damages and save life and property including ones at sea.

India has a coastline of about 7516 km of which 5400 km is along the mainland and remaining 2116 km is along two prominent island groups of Andaman & Nicobar and Lakshadweep and Minicoy. The Indian ocean is world's biggest maritime conduit for International trade, especially energy. Its littoral is vast, densely populated and represent some of the major growing economies, India being one of them. Indian trade through oceans is about **90 %** by volume and **77 %** by value. As far as fishing sector is concerned, India also has one of the largest fishing fleet of about **2.67** lakh registered fishing boats. Fishing is considered as one of the most risky occupations in the world. In addition to the high risk of fatality, fish harvesters are also at risk of a wide range of non-fatal injuries during their work at sea. Weather factors an intrinsic part in fish harvesters' operating environment and the most dangerous situations at sea are associated with weather. The Indian Fisheries sector is rudimentary in nature. Fishing boats in India lacks apt Lifesaving equipment and mostly not suited to operate in harsh weather/ cyclonic weather conditions and therefore, the need of alerting them is paramount.

Amongst the varied maritime challenges faced by ICG, TCs are the most significant one which needs calibrated preparation, contingency measures including seamless coordination amongst stake holders, and sets of preventive measures to minimise severe damages associated with cyclones. ICG therefore has a humungous humanitarian responsibility to ensure the safety of seafarers and fishers in the Indian Search and Rescue Region, an area of 4.6 million square km. Over the last four and half decades, the service has grown in strength, having 159 Surface Platforms and 74 aircraft as on date. Indian

Coast Guard has been deploying 45-50 ships and 10-12 aircraft every day. Through its relentless efforts, ICG has saved about 1226 lives in the past year alone and more than 11,000 lives since inception, which translates into saving **One precious life every second day** and rescuing about 13,000 lives whilst rendering support to civil authorities.

ICG has been at the forefront of saving lives through preventive measures and rescue operations during all the cyclones in ISRR. The service has devised various novel ways to alert fishermen and seafarers during cyclones. At the first report of prediction of significant weather system by IMD, ICG field formations both air and surface, are put on high alert and in a high state of preparedness. As a two pronged measure, ICG warns fisheries authorities, state authorities and local administration about the impending cyclone so that the information reaches to ground level while the units at sea broadcast radio warnings in area and shepherd the ill-informed fishers back to safety of harbours. Close liaison is also maintained with state administration, various departments including IMD to ensure wide spread precautionary measures in affected areas. Additional units are deployed so as to cover a wide area along the predicted path of cyclone. The cyclone warnings are relayed in vernacular language as well so that fisher folks can understand and return to the harbour immediately.

Indian Coast Guard ROC/ROS which is part of CSN network has been instrumental in relaying these alerts to mariners at sea. Phase II of ICG's prestigious CSN project is underway and likely to complete soon, which will provide near gap free reach along entire coastline in future. Simultaneously, Disaster Relief Teams (DRTs) in liaison with local administration are kept standby at all the major ICG bases to respond to any eventuality in the area. All the Coast Guard ships and aircraft in respective regions are kept ready to respond at short notice. In case of an emerging SAR requirement, the MRCC construct of the Indian Coast Guard initiates a SAR alert, identifies and dispatches the nearest available SAR resource be it an ICG or Merchant vessel to assist the distressed entity in the shortest possible time.

In the bygone years, ICG has evolved as a first responder to provide assistance to civil authorities during natural calamities. The pre-emptive and preventive strategy of ICG has ensured that in past 08 years barring cyclone 'Tauktae', there have been no lose of life at sea. Even during 'Tauktae', ICG ships and aircraft had successfully rescued **147** lives in different ops along west coast.

Under the Make in India vision, ICG has also inducted HAL make ALH MK III aircraft fitted with state of the art sensors and equipment. These aircraft are capable of flying at greater distance over sea, undertaking rescue operations at night and have flown extensively in pre-emptive operations

during recent cyclones. These helicopters are strategically positioned at Bhubaneswar, Kochi and Porbandar for cyclone contingencies and to provide a swift response over seas around vulnerable locations. ICG is also enhancing its surface fleet and various shipbuilding projects pertaining to ships of different displacements ranging from Fast Patrol Vessels (FPVs) to Offshore Patrol Vessel (OPVs) are in the pipe line.

Indian Coast Guard plays a stellar role in protecting wide-ranging national Maritime interests as also enforcing and fulfilling provisions under International Maritime laws, thus being a facilitator for progressing Blue Economy. The Indian Coast Guard has a benign charter of duty which also includes search and rescue, saving life and property, and assistance to fishermen at sea. Since its inception in 1978, the ICG has relentlessly pursued the objective of safe, secure, and clean seas through cooperative frameworks.

With the induction of the latest state of the art ship and aircraft and dealing with natural calamities, such as cyclones, Indian Coast Guard as the first responder in the region has become the most relevant and potent force in IOR. In the coming years, ICG is furthering its operational capabilities and engaging with other agencies to develop strategies to ensure safety of life at sea. Cyclone as natural phenomenon will remain a challenge, the effect of which can be mitigated with sharp planning, pre-emptive and preventive response in line with ICG motto of '**Vayam Rakshamah**'.