

Significant Achievements

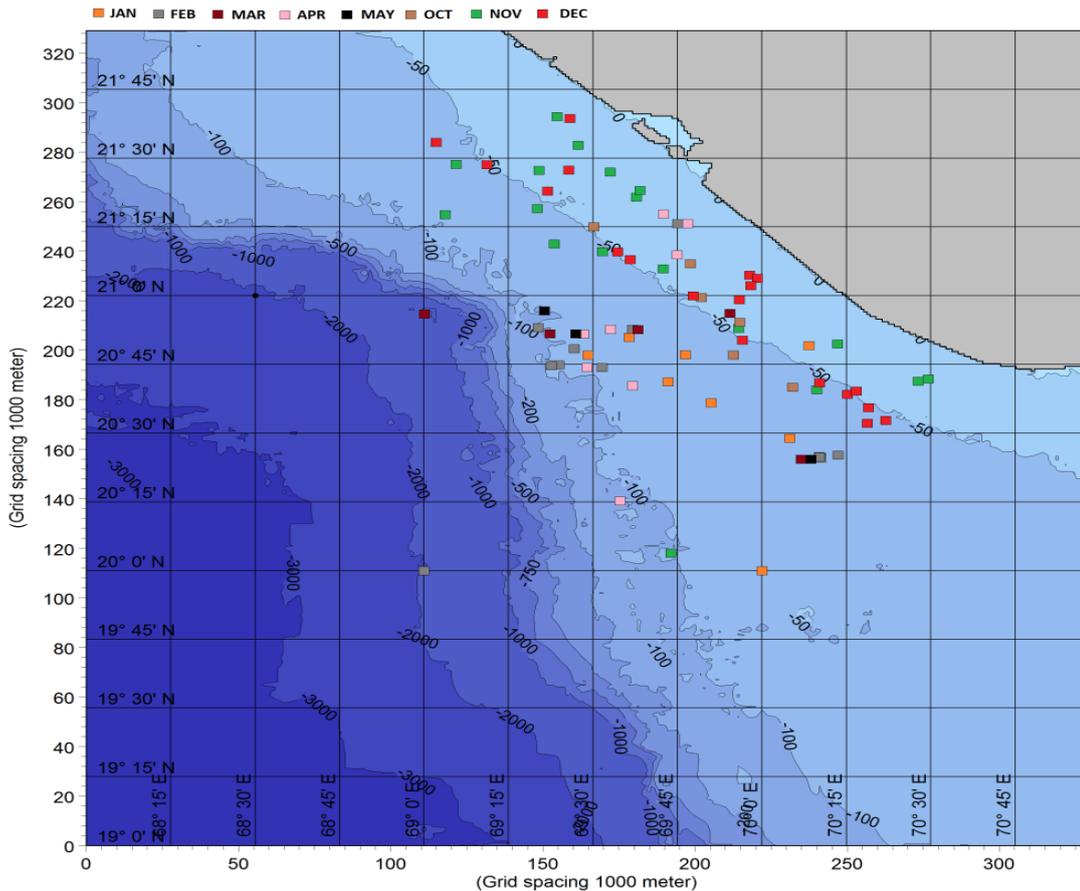
- Under the tribal sub-plan project, open water sea cage farming of rock lobster, *Panulirus polyphagus* and cobia, *Rachycentron canadum* was demonstrated to 'Sidi' tribals during 2012 to create sustainable livelihood opportunity for this community which was further continued with rock lobster, *P. polyphagus* during 2013 by Veraval Regional Centre of CMFRI. Twenty GI cages of 4 m. diameter during were deployed at Prabhas Patan area off Somnath for the demonstration of sea cage farming techniques. A total revenue of about 1.66 lakh rupees was obtained by selling the produce per cage which resulted an average profit of about 90 thousand rupees per cage. This provided an additional livelihood with income of about Rs 22,500 per month for each of the 22 families.



Fig. Honorable DG Dr. S. Ayyappan inaugurating the harvest of CMFRI sea cage farm at Somnath

- Studies under NICRA shows an increase of 1.54 °C, in Sea Surface temperature (SST), along the Gujarat Coast during last hundred years (1903-2011). An SST of > 26 °C was found to be the preferred temperature for the spawning of *Nemipterus japonicus*. An increase in the percentage of matured individual of *N. japonicus* was found during the warmer months, unlike other regions where the breeding pattern is known to shift towards cooler months.
- Studies involving carbon foot printing by analysing the life cycle assessment of marine fisheries and mariculture sector indicate 1.40 kg CO₂ has been emitted by single day trawl, 1.75 kg CO₂ by multiday trawl and highest amount of 2.60kg CO₂ by single day gill netter along the northwest coast.
- Projection of Sea surface temperature (SST) by developing the IPCC scenarios for the northwest coast projects an increase of 3.20 °C in the case of A1F1 scenario, 2.79 °C in case of A2 scenario and least minimum increase of 2.38 °C in case of A1B scenario by the end of 2100.

- Geo-referencing of Skipjack revealed inshore and off shore migration pattern of tuna with respect to sea temperature. Aggregation of tuna was seen near to the shore during the winter months in less than 50 m depth, while the tuna catch points were reported off shore i.e. beyond 50 m depth during the summer months. Seasonal distribution pattern of Skipjack tuna revealed dominance of large and medium sized skipjack tuna during the winter months while small sized tuna dominate the catch during the summer month, indicating spawning preferences.



- A total of 31 species of hard corals belonging to 24 genera and 9 families were recorded from the five surveyed reefs of Gulf of Kutch viz., Mithapur, Chandri Reef, Laku point, Savaj Island and Goose Island. 9 species of hard corals, viz., *Coscinaraea columnata*, *Montipora turgescens*, *Paracyathus stokesii*, *Platygyra pini*, *Plesiastrea versipora*, *Turbinaria reniformis* were not recorded previously from any of these Islands though they were recorded from other reefs of the Gulf of Kutch. *Turbinaria mesenterina*, *Goniopora djiboutiensis*, *Goniopora stokesi*, *Hydnophora pilosa* are new records from the Gulf of Kutch reefs. Average relative abundance shows that *Pories lutea* formed dominant species on the reefs, *Dipsastrea favus* formed abundant, 16 species formed common, 9 species formed uncommon and two formed rare categories. *Bernardpora stutchburyi* and *Turbinaria reniformis* were the two species recorded as rare.