Introduction

- Tuna is the major fishery resource of Lakshadweep Islands
- With an aim to help the fishermen to locate tuna fishing grounds, the Indian National Centre for Ocean Information Services based at Hyderabad developed the fishery advisories.

Objective

The main objective of the study was to validate the tuna PFZ advisories for Lakshadweep.

Methodology

- The advisories were shared with fishermen of the island and validation was done from Minicoy, Andrott, Kavarathi and Kalpeni during the period August 2015 to March 2017.
- The length of the major species landed from the PFZ area and the gut content of the tuna was analysed using standard methods.
- A survey was conducted to understand fishermen opinion about usefulness of PFZ validation.

Validation

- The Tuna PFZ advisories released by the INCOIS were validated through 20 boats operated in PFZ areas. Non-PFZ areas were also evaluated for comparisons.
- The catch composition, total number and weight and the price per kg of each resource and the total income per boat were noted from the boats which operated in the PFZ areas. Non-PFZ areas were also evaluated for comparisons.

Results

- Higher catch were obtained at PFZ during certain months. It was observed during August and October the catch was higher by 87 and 31% respectively in PFZ with non PFZ area.
- The profit was nearly 90% more in August, but in October the profit was at par indicating 16.5%.
- The difference in income was lowest in February indicating 20.5%
- The average income per boat operated in a PFZ area was higher (Rs 1,79,731) than a boat which was operated in a Non PFZ area (Rs 74,500) in October indicating 58.5% more income.
- The difference in income in the period October 2015 to March 2016 was 16.5%.

What does the tuna feed on?

- Almost all stomach of the skipjack tuna caught from Agathi Island had the bait fishes Spratelloides gracilis and Apogon sp.
- While the gut of yellow fin tuna from Andrott had Spratelloides gracilis, Charybdis smithii and Decapterus russelli. Some fishes had fully digested flesh in the gut.

Gut content analysis of tuna

- Spratelloides gracilis
- Squid
- Apogon
- Gut of tuna—opened for analysis
- Gut content analysis of tuna

Bait fishes - Spratelloides gracilis

- Gut content analysis of tuna

Post Harvest/Smoke drying of tuna

- 2016-17 - Good landing of skipjack tuna. Major share was used for preparation of maslin (smoked tuna). The market price of maslin - approx. Rs 450 - 550 per kg depending on the size. Recently, a firm from Srilanka has imported 600-700kgs of maslin from Agathi.

Fishers opinion

- Few fishermen follow the PFZ advisory but most of the times, they get good catch at nearby grounds. They are reluctant to travel longer distance predicted by PFZ advisory for fishing since they get catch at nearby grounds.
- The seconds in latitude-longitude coordinate is not providing them the right direction to the fishing ground.
- After they follow the traditional method of following the water current, the presence of bait fishes and information provided by the other fishermen.
- PFZ advisories are useful. Sometimes at PFZ location they find the presence of dolphins, small fishes and other larger fishes which do not have good market value. During such occasions, they don’t get tuna catch at the fishing ground.

Conclusion

- The tuna PFZ advisories of INCOIS indicate the occurrence of tunas in most instances. However, sometimes PFZ occur in distant area and it is difficult to reach those spots.
- The research on this theme has to be continued and more details on tuna habitats and the hot spots have to be identified.

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