

## **Selection of villages, benchmark studies and formation of Reef Sub-committees**

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The process of building an artificial reef in a particular site is a long one, involving several, often rigorous exercises and assessments. The steps involved in this process are listed below -

- Assuring the source of funds
- Listing the number of probable villages in the project zone
- Primary stakeholder meetings for initial consensus
- Benchmark survey and socio-economic evaluation of the community in the hamlet
- Secondary stakeholder meeting, forming of the AR Sub Committee and arriving at a few probable sites with least fishing conflicts and standard protocols
- Signing of MoU and collecting letter of acceptance from each selected village
- Site study, diving, sediment and fauna studies and physical parameters
- Confirmation of the ideal site and documenting
- Probable numbers of different modules and density and assemblage affixed as per the site spec.
- Fabrication, curing and transport to the site
- Deployment at the site in the presence of the ARSC members and fisher heads and officials of the state Department of Fisheries
- Collective and simultaneously release of leaf fronds and tree branches by the fishers depending on the fish resources gathering at the site, by attaching them to the modules
- Handing over the layout, orientation, and GPS coordinates to the committee for further records and upkeep.
- Setting up a display board with the name and coordinates at a public place in the village for easy access
- Release of a circular with the GPS coordinates and depth of the artificial reef site to the local fisheries office and adjacent fishing villages



**Fig.16. Preliminary enquiries with locals and officials for the listing of potential villages**



**Fig. 17. Primary stakeholder meeting**

Given a coastal district and list of fishing villages and landing centers, the screening for potential villages has to be done with the information collected using a questionnaire for the following details -

**A. Name of the village/hamlet /details of the panchayath /FCS/society /Association**

**B. Screening information:**

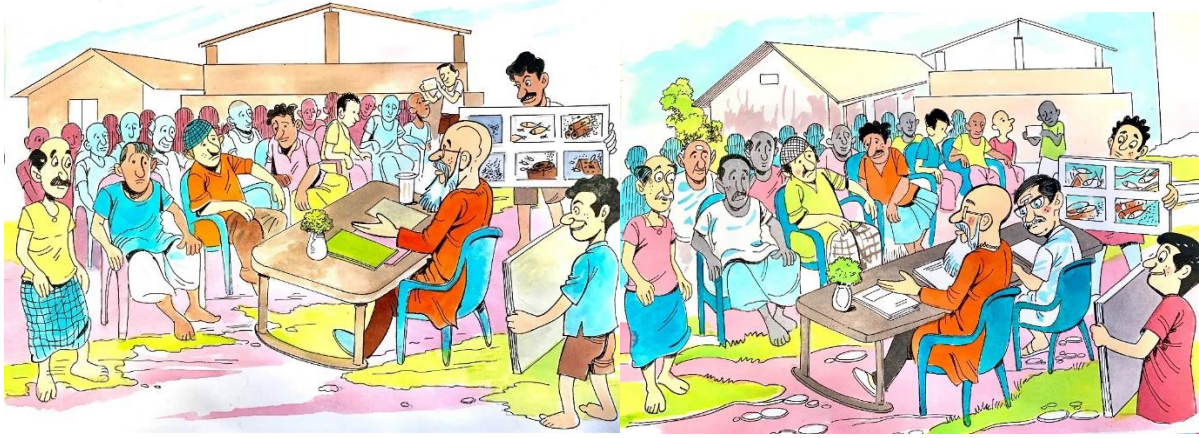
1. Number of active fishermen/traditional fishers and hook and line operators;
2. Important fishing grounds, reefs, coordinates, and resources;
3. Important fishing gears and crafts;
4. Access to nearest markets and cities;
5. Adjacent natural reef areas or AR sites;
6. Adjacent villages active in traditional and hook and line fishing;
7. Rocky or limestone substratum areas as bottom;

8. Nearest access to industries and outfalls/discharges/extensions/jetties /remnants/rigs/platforms;
9. Distances from or to the salt pans/marshes/river mouths/ETP discharges /desalination plant outlets /thermal plant outlets;
10. Does the proposed area fall under the MPA/seagrass beds/seaweed beds/coral reef areas /sanctuary/no-take zones/prohibited zones etc.;
11. Average tidal amplitude/current speeds/and turbidity and the possibility of sediment transport if any;
12. Does the proposed area fall in the way of harbors and ports or admiralty/important navigation of ships, vessels, tugs and defence vessels;
13. The extent of fisher intent, interest, consensus, and minimal conflicts within and in neighbourhoods.

After listing down the probable villages a physical visit and verification of facts pertaining to the fishing practices, intensity, fishing ground and resource specifics, is very essential. This is done through a Primary Stakeholders Meet (PSM). If the concept is agreeable to a select group and fishers are keen to know further about the proposal, and all other factors and criteria converge to the possibility of reef installation, a second visit is to be arranged with a larger assembly, with prior notice to all the active fishers, leaders and youth along with the State Fisheries Department officials and representatives of SHGs, NGOs, and service wings/Cooperatives/Federations/Societies. At The Secondary Stakeholders Meeting (SSM), the detailed proposal is discussed with all scientific inputs, displays and video/ppt presentations. With the approval of the Panchayat and leaders, an **Artificial Reef Sub Committee (ARSC)** is formed by inviting nominations from the active fishers and youth recommended by the leaders (minimum of five and maximum of ten members) with the full approval of the audience and the officials. Their contact details and xerox copies of Aadhar cards are gathered and an agreement is exchanged between the village heads and the implementing Agency wherein these details are shared.

A few no-conflict/tentative proposed sites (directions and coordinates-with depth) suggested by the leaders and the ARSC members are noted down and a tentative date is fixed for physical site verification, and the members and boats assigned are also ascertained.

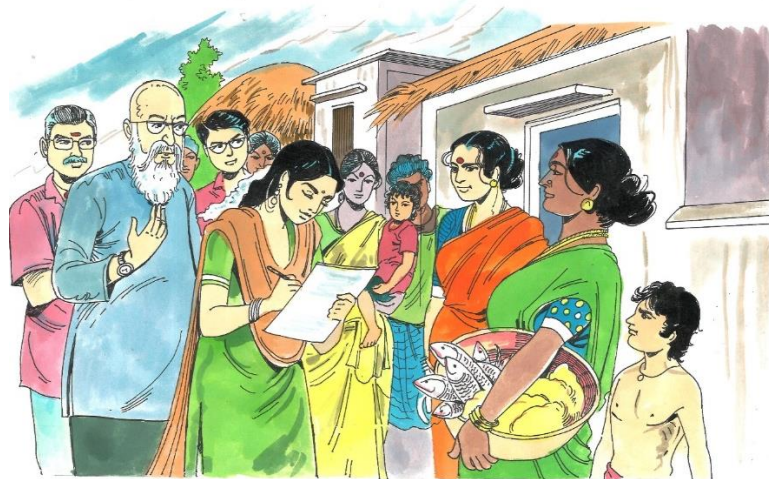
The next activity is the conduct of the primary socio-economic and benchmark evaluation studies and preparation of a status report on the livelihoods, profession, income levels and fishery resource sharing and potentials. A prescribed format of enquiry is used in the vernacular language engaging enumerators and the data is to be gathered within a set time frame. (Form annexure -1)



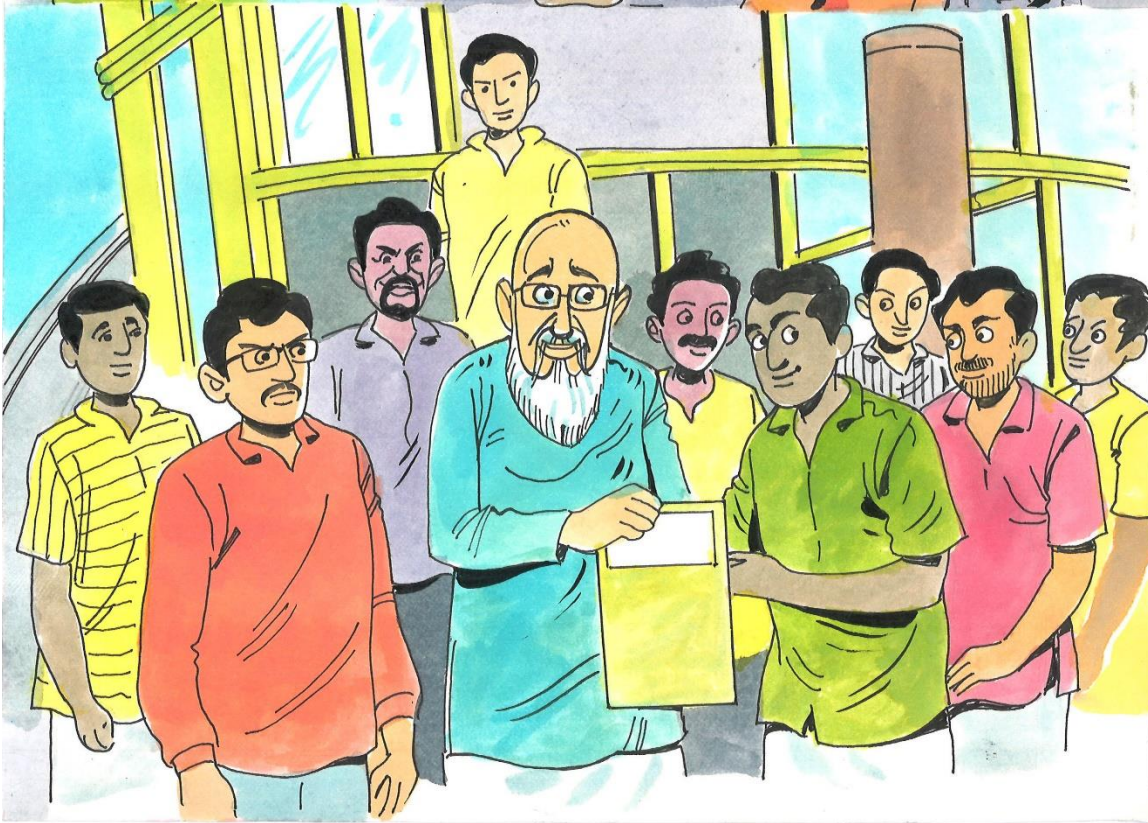
**Fig.18. Secondary stakeholder meeting**



**Fig.19. Noting down the details of ARSC members**



**Fig.20. Socio-economic survey**



**Fig.21. Signing of MOU & Agreement**

**Points to be discussed with the fishers:**

1. Resource constraints and reality
2. The intensity and increased efforts into fishing
3. Declining diversity, economic outputs, shares and scope for expansion
4. Coastal resources in scant and so does livelihoods
5. Increasing water temperatures and other interventions
6. The increasing cost of living and deprivation of basic needs
7. Options: Improve the resilience of coastal communities by improving economic returns through sustainable fishing practices.
8. Revive fish habitats and resource multiplication.
9. Renew fish diversity /biomass and local production
10. Introduction and management of Artificial reefs as a means to revive, restore and conserve and reserve sufficient stock balances for breeding and recruitment.
11. Increasing shelters and substrates for the ecosystem engineers and invertebrates to colonize and create more productive habitats.

12. Reintroduction of hook and line fishing and reducing cost inputs /dependence on fossil fuels /and manpower and reducing efforts in scouting time and energy.
13. Moving towards green technologies and sustainable fishing practices catching only required species and sizes.
14. Creating an ownership attitude and inclination towards seeding and farming, thus brightens the prospects of sea ranching and restocking.
15. Being a partner in creating and stabilizing fish diversity and wealth, towards sustainability.
16. Being a partner in the conservation of vulnerable /threatened species.
17. Indirectly dissuading the large mechanized vessels operating floor scraping gears and dredges, bottom set trap nets and trammels. Being partners in making fishing more lucrative, interesting and economical.

## ENHANCEMENT OF BIODIVERSITY & LIVELIHOOD BENEFITS

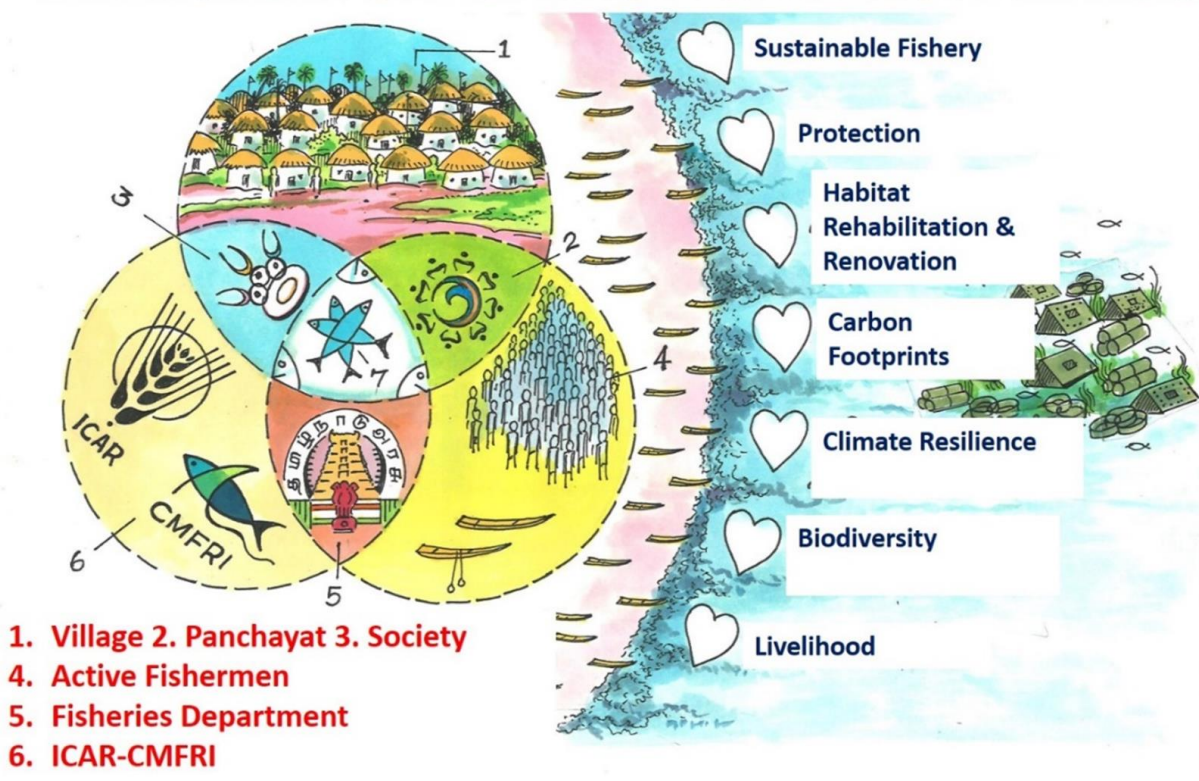


Fig.22. Artificial Reef Sub-Committee Organization & management objectives