

## **Expert reports and recommendations**

### **a. Roadmap for the Development of Fisheries in Andaman and Nicobar Islands (ANFISH) - Fisheries Division, ICAR, New Delhi August 2005.**

#### **(i) Coastal and Oceanic Fisheries**

- Keeping the revalidated potential yield as a base, a target exploitation of 20% by the end of the XIth plan and 50% by the end of the XIIth plan was projected and formed the basis for developmental planning.
- Upgradation of existing crafts with FRP coating and improved gillnets and lines.
- Introduction 3 new classes of vessels (gillnetters and longliners) for exploitation of coastal tunas.
- Introduction of large tuna longliners for the exploitation of oceanic tunas and production of sashimi grade tuna for export to South and Far East Asia.
- All new introductions of craft and gear to harvest hitherto unexploited potential resources to start as pilot demonstration fishing trials to show the financial viability of such new introductions to the private industry .
- Use of FADs to increase efficiency in fishing.
- Building infrastructure for handling, storage, processing and marketing of catch and creation of 3 Fish Processing Estates.
- Upgradation of the Fisheries Training Centre and continuous training for fishers by visiting experts from CIFT, CIFNET, CIBA and CMFRI.
- An advisory technical assistance from CMFRI, which would strengthen the Department's capabilities in resource management and conservation through workshops and on-the-job training.
- Creation of IMIE (Institute for Marine Island Ecosystems) for R&D backstopping for all developmental initiatives and for creating a systematic database on the resources.

- Formation of single window agency (Fisheries Development Agency) for assisting entrepreneurs to obtain all necessary licenses, permits, clearances etc.
- Promotion of Fisheries Tourism by creation of facilities for sport fishing and fish watching.

### **(ii) Brackishwater Aquaculture/ Coastal Aquaculture**

- Areas identified for brackish water aquaculture in south, middle and north Andamans -about 680 ha before tsunami and an additional 1000 ha after tsunami.
- Methods to ameliorate sites having low pH and acid sulphate soils, which are prevalent in the islands.
- 3 species of shrimps, 5 species of fishes and 2 species of crabs identified for brackish water farming.
- Pond, cage and pen culture systems recommended for location specific farming systems.
- Seed requirement to be met by the establishment of shrimp, fish and crab hatcheries and feed requirement to be met with a feed mill.
- Policies for environment, health and disease management, conservation and quarantine requirements set out.

### **(iii) Mariculture**

- Raft, cage and longline systems of farming recommended for deep areas and rack and pen culture systems recommended for shallow water bodies.
- Cage farming of groupers, rabbitfish, snappers, jacks and trevallies and tunas to be given emphasis.
- Establishment of two 100% EOUs for marine ornamental fish production and export.
- Lobster fattening to be carried out in integrated cage systems.
- Mariculture of pearl oysters, edible oysters, giant clams, gastropods, sea cucumbers, seaweeds, sea turtles and crocodiles recommended.

- Conservation mariculture for resource enhancement of endangered and threatened species and eco-tourism through establishment of turtle rookeries, ocean nurseries for corals, giant clams and crocodiles; and setting up of an oceanarium with manned submersible rides.
- All new programmes to be demonstrated by the research institutes through R&D funding from the A&N administration as presently done for black pearl production being implemented by the CMFRI with DOD funding.
- Establishment of 2 finfish hatcheries and one edible oyster and giant clam hatchery.
- Development of an open sea mariculture policy.

**b. Observations/recommendations of the Action plan for Development of post-tsunami "New Andamans" - M.S.Swaminathan Research Foundation October 2005.**

- The Fisheries Sector both marine and inland offers great scope for employment and income generation as well as nutrition security of the islands, therefore recommends for giving importance to Fisheries as in Iceland.
- The field staff should give more time for sustainable development of fisheries.
- Lack of processing facilities, limited local market, poor forward linkages are cited as reasons for decline in fisheries production in the islands.
- Consortium of different Institutions to be formed to promote fishery entrepreneurship.
- Code of conduct to be evolved for sustainable fishery development.
- Promotion of Coastal Aquaculture in the inundated fields integrating fish, crab-integrating mangroves. Elevated bunds could be used for horticulture crops.
- Enhancing the fishery infrastructure and extension in the islands.

**c. Draft State Development Report of Andaman and Nicobar Islands, prepared by the National Institute of Public Finance Policy, New Delhi, during March 2006 recommends the following :-**

- Make changes in fishing craft and gear to suit the exploitation of coastal, oceanic pelagic tunas.
- Introduce fishing craft having 10m LOA designed by CIFT.
- Fleet of mechanized boats should be increased to 50-90 by the end of XI th FYP.
- Engage private long liners/purse seiners for exploitation of oceanic tunas.
- Deploy oceanic FADs and educate the fishermen in FAD fishing.
- Introduce Marine Fisheries Regulation Act.
- Improve infrastructure for fish landings by constructing landing centres and a major fishing harbour in Campbell Bay.
- Educate fishermen in modern methods of fishing.
- Strengthen and activate fishermen co-operatives.
- Introduce integrated brackish water farming in tidal inundated areas and introduce the concept of organic farming.
- Introduce cage culture of marine fishes and hatcheries for production of fish seeds.
- Introduce lobster fattening in sea cages in selected areas.
- Expand mud crab fattening in mangrove pens.
- Introduce/develop technology for breeding and farming of black lip pearl oyster.
- Introduce/develop technology for breeding and rearing of marine ornamental fishes.
- Develop technology for breeding, sea ranching and farming Trochus and Turbo for shell craft export.

- Introduce seaweed culture in selected areas.
- Introduce/develop technology for Deep Ocean Water (DOW) aquaculture.
- Improve infrastructure for fish storage, processing and transport.

**d. The National Commission on Farmers (NCF)- 2006 by M.S.Swaminathan Research Foundation:**

- The National Commission on Farmers aims to attract and retain educated youths in farming sector and recommends methods of technological up-gradations amongst agriculture and allied subjects including Inland and marine fishery.
- The report in its Chapter –III “ Fish for All ” suggests the following strategies:-
  - Enhancing productivity in all inland ponds and integrated attention to capture and culture fishery both in inland ponds and in coastal areas.
  - Ensuring the adoption of responsible and sustainable fishery practices in the area of marine fishery and introducing a code of conduct for the purpose.
  - Establishing agro-aqua farms with an integrated approach.
  - Spreading quality literacy among fisher families with respect to sanitary and phytosanitary measures and codex alimentarius food safety standards.
  - Improving facilities for fish landing, storage, transportation, processing and marketing.
  - Developing social marketing techniques, which can help to ensure the availability of good quality aquatic products to resource-poor consumers.
  - Introducing Aquarian reforms to help the spread of fish enterprises based on the principle of environmental sustainability, economic viability, social, general equity, nutritive quality and food safety. Aquarian reforms should aim to promote harmony between artisanal and mechanized

fishers and agriculture and aquaculture and cover both Inland and coastal areas.

- Organizing Fish for all training centres for fishers families based on the principle of learning by doing, to impart latest technical skills ranging from capture or culture to consumption. Helping both resource poor producers and resource poor consumers through sustainable self help groups is a major objective of the “Fish for All” programme.

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