

# Evolution of Fisheries and Aquaculture in India



**N.G.K. Pillai & Pradeep K. Katiha**

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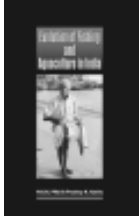
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## Pipeline technologies - marine

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### Marine

Technologies are being constantly evolved, refined and upgraded with the cooperation of fishermen and R&D organisations in the fisheries sector. Many of these have been perfected to particular needs of the fishing/farming groups and to suit particular agro-climatic zones of the country. Some of these technologies in the pipeline include:

#### Capture fisheries sector

- Conversion of trawlers into longliners using monofilament long lines
- Seasonal conversion of bottom trawlers into drift gill netters targetting tunas and seerfishes along the southeast coast of India and purse seiners to trawlers along upper southwest coast of India.
- Conversion into or introduction of large plank-built boats (using plywood) with in-board engines (100-120 h.p.) and power winches for operating large seines in deeper grounds of the shelf for target resources along the south west and south east coasts of India.
- Upgradation of existing medium size trawlers for deep sea fishing.

#### Culture fisheries sector

- Organic farming technology for the culture of shrimps without the use of drugs and chemicals in any stage of their life cycle
- Development of cost effective ecofriendly shrimp feed
- Production of transgenic shrimps/fishes/crabs and establishment of cell lines of crustaceans for pathogenicity studies
- Domestication of commercially important shrimp species in a biosecurity environment and production of Specific Pathogen Free post larvae under controlled conditions
- Tissue culture of abalone *Haliotis varia* and pearl oyster *Pinctada fucata*

- Half pearl production in *Haliotis varia*
- Black pearl production in *Pinctada margaritifera*
- On-shore culture of pearl oyster and production of pearls of desired colours
- Development of alternatives for bivalve culture- Flexible Plastic Strips (FPS) for seeding mussels instead of coir or nylon ropes, pre-stitched cotton nets to put mussel seeds for attachment
- Hatchery technology for cuttlefish *Sepiella inermis*
- Hatchery technology for ornamental gastropod *Babylonia* spp.
- Integrated fish and bivalve culture in brackishwater ponds – Fishes like pearl spot *Etroplus suratensis* can be cultured in cages between mussel or oyster seeded ropes on racks.
- Broodstock development, maturation, sex reversal, spawning and larval rearing of groupers
- Triploid strains of edible oyster and pearl oyster through gene manipulation
- Sea crab and mud crab hatchery technology
- Sand and spiny lobster hatchery technology
- Domestication and selective breeding of selected penaeids shrimps.

All these technologies offer scope for increased income generation and availability of cheap protein food for marginalised fishing communities.

### **Processing Sector**

Prospective products listed by CIFT with technologies in the pipeline are

- ◆ Coated products- fish fingers, fish balls, cutlets
- ◆ Extruded products –noodles, wafers, flakes
- ◆ Fish Mince and Mince based products
- ◆ Fish wafers and soup powder
- ◆ Battered and breaded products

