

## ‘Mariculture could be the future of fish production in India’

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Dwindling catch from the seas may have set off alarm bells among stakeholders in the fishing sector, and led to fears of an erosion in revenues. Responding to the challenge, the Central Marine Fisheries Research Institute (CMFRI) has proposed a comprehensive mariculture policy to boost the output of marine food products, increase exports and generate local employment for communities that have traditionally relied on the sea. In an interview, CMFRI Director A Gopalakrishnan tells *BusinessLine* that mariculture is one of the best alternative employment options for India's 40-lakh-odd fisherfolk to meet the ever-increasing demand for fish production. Excerpts:

### **Have you identified ways to improve fish production from marine catch?**

The CMFRI is coming up with various policy recommendations at the national level to support sustained marine capture fisheries. Resources such as tuna, oceanic squids, meso-pelagic resources, krill and other unconventional and untapped resources can be harvested to meet the soaring demand.

Traditional fishermen need to be trained and equipped for deep-sea fishing. We provide strategies to conserve and sustain existing resources by following internationally-accepted management strategies such as like the eco-system approach to fisheries, implementation of minimum legal size (MLS), etc.

CMFRI will soon bring out a national code [of conduct] for marine fisheries management.

## **What are the reasons for the decline in fish availability? Can mariculture be considered an alternative?**

Fish production in India is almost entirely from the capture of fisheries, despite the country having huge potential for sea farming. With nearly 3.5 per cent growth per annum, India should be producing at least 10.5 million tonnes of marine fish by 2050.

Unlike other South Asian countries, sea farming or mariculture in India has long been confined to culture of seaweeds, pearly oysters, edible oysters and mussels in a few patches of the South West coast.

Given the present stagnation in capture fisheries production (3.63 million tonnes in 2016; 3.40 million tonnes in 2015; 3.53 million in 2014), the area could be profitably used for mariculture by adopting sustainable and socially-acceptable methodologies.

The main groups of marine resources farmed in India are crustaceans, finfishes, molluscs and seaweeds. Mariculture can partially fulfil the deficit in fish production.

### **Why do we need a mariculture policy?**

The absence of a proper policy is a major lacuna to enhancing sea cage farming in India. The enterprise would expand further with the availability of favourable policy guidelines for utilisation of coastal waters and increased private investments.

Given India's vast coastline, a long-term view of sustainable coastal and open sea mariculture should be envisaged and appropriate measures taken. It is estimated that effective utilisation of at least one per cent of this vast resource could achieve an annual production of more than 30 lakh tonnes of fish from sea-cage farming.

However, uncontrolled farming activities can create long-lasting damage to the ecosystem, affecting the fishery resources in the vicinity of farms. Therefore, a policy is essential to promote open sea-cage farming of finfishes and shell fishes in an eco-friendly manner.

### **What measures can be employed to boost fish production through open-sea cage farming?**

To meet the demand, India needs 15 million tonnes of fish from marine, brackish and freshwater resources. Currently, we produce only 10 million tonnes on an average every year. Therefore, CMFRI has taken steps to promote open-sea cage farming across the maritime States.

When land availability become scarce, sea cage farming will prove to be an opportunity to fish farmers. Diversification of culture practices and inclusion of new candidate species for mariculture will definitely augment fish production.

CMFRI has also taken steps to develop a bio-secure brood bank for high-value finfish breeding and seed production programmes.