Open Sea Cage Farming of Spiny Lobster by CMFRI – A Success Story

The concept of rearing fishes in floating net cages in sheltered bays and open sea has been applied in several countries using species of high value. Several countries have established commercial ventures in cage farming. The ongrowing and production of farmed aquatic organisms in caged enclosures in open sea in India was initiated at Visakhapatnam, Andhra Pradesh during 2007 with the objective of testing the feasibility of open sea cage farming of marine finfishes and shellfishes. Successful harvesting of the cultured Asian seabass _Lates calcarifer_ from the cage opened up a new era in seafarming in the country. Encouraged by the success, floating marine cages were launched at Veraval in Gujarat, Chennai in Tamilnadu and Vizhinjam in Kerala for fattening of spiny lobsters. CMFRI chose to farm lobsters in the cages in all the three places, as live spiny lobster is a high value seafood in the global market. At Vizhinjam, a 5m diameter cage was fabricated and launched in January 2009. The cage was made of 140 mm HDPE material, provided with a railing of 1m. It was also provided with 4 feet catwalk which could be used as working space for the fishermen during feeding and cleaning of the net.

Open Sea Floating Cages at Vizhinjam

Live lobsters are in great demand in Southeast Asian Countries and China. Depending on demand, live lobster fetches a price ranging from Rs.1000-2000 per kilogram in the export market. Realizing its importance, significant advances were made in lobster culture in floating and fixed net cages in countries viz., Australia, New Zealand, Vietnam, Taiwan and Singapore. At present, an average of 2000 t of lobsters are exploited annually from Indian seas and indiscriminate exploitation over the years has resulted in decline of the resource. Open sea cage farming of lobsters is a new venture though CMFRI has developed and demonstrated the feasibility of farming spiny lobsters in onshore facilities. Large scale farming of spiny lobsters, however may not be possible, because hatchery production is not a feasible option now due to prolonged larval phase

Lobster Harvest from Cage Farming at Vizhinjam

दक्षिण पूर्व एशिया के देशों और चीन में_शुली_ महाबिंदियों को पीछे हटाने के लिए_ भीमा_ अपनी सारी मज़ाकें बंद कर दिए आते हैं। लोबस्टर को आंशिक रूप से पूरा_ मात_ रक्षा रखने के लिए_ एक दक्षिण अशियाई देश_ अन्य_ फिफ्टी०_ सर्वश्रेष्ठ संयुक्त_ राष्ट्र_ या_ जीमेक्स_ फिफ्टी०_ के लिए_ वापसी_ पाने का_ प्रयास_ करते_ हैं। उल्लेख_ किए_ गए_ वर्षों_ में_ पूरा_ लोबस्टर_ उत्पादन_ की_ दर_ में_ बढ़ती_ जा रही_ है_ और_ इसी_ कारण_ लोबस्टर_ फिफ्टी०_ की_ अन्य_ दक्षिण_ अशियाई_ देशों_ में_ फिफ्टी०_ के_ लिए_ पूर्व_ रूप से_ विकसित_ होते_ हैं। फिफ्टी०_ के_ लिए_ विकसित_ होने_ के_ लिए_ दक्षिण_ अशियाई_ देशों_ में_ फिफ्टी०_ के_ लिए_ संयुक्त_ राष्ट्र_ का_ स्वागत_ करने_ के_ लिए_ लोबस्टर_ फिफ्टी०_ की_ अन्य_ दक्षिण_ अशियाई_ देशों_ में_ पूरा_ उत्पादन_ की_ दर_ में_ बढ़ती_ जा_ रही_ है। यह_ माना_ जा_ रहा_ है_ जब_ भी_ फिफ्टी०_ की_ अन्य_ दक्षिण_ अशियाई_ देशों_ में_ पूरा_ उत्पादन_ के_ लिए_ स्थापित_ निर्माण_ के_ लिए_ आवश्यक_ संसाधन_ नहीं_ हैं_ तो_ यह_ फिफ्टी०_ के_ लिए_ स्वागत_ करने_ के_ लिए_ अन्य_ दक्षिण_ अशियाई_ देशों_ में_ पूरा_ उत्पादन_ की_ दर_ में_ बढ़ती_ जा_ रही_ है। इसी_ कारण_ फिफ्टी०_ के_ लिए_ स्वागत_ करने_ के_ लिए_ अन्य_ दक्षिण_ अशियाई_ देशों_ में_ पूरा_ उत्पादन_ की_ दर_ में_ बढ़ती_ जा_ रही_ है।
export of lobsters below the Minimum Legal Size (MLS). The lobsters were as healthy as wild caught lobsters and have good colouration. With a price tag of ₹1000/kg, the cultured lobsters were fattened to 200 g and then exported to fetch higher revenue.

At Vizhinjam, 1200 juvenile lobsters (P. homarus) weighing between 70 and 95 g were stocked in the middle of January 2009 in 5 m diameter floating cage with 6 m cylindrical HDPE netting below the sea surface and was protected outside by another net. The cage was moored at a depth of 8 m in Vizhinjam bay. Lobsters were fed daily ad libitum a depth of 8 m in Vizhinjam bay. Lobsters were fed daily ad libitum.

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Lobsters at harvest weighed 260 g on an average after 4½ months of ongrowing and 85% of lobsters stocked were retrieved. The cage also withstood the impact of rough sea of Kerala and proved to be sea worthy. The harvested lobsters were as healthy as wild caught lobsters and have good colouration. With a price tag of ₹1000/kg, the farming operation has turned out to be an economically successful venture with a net profit of ₹1.5 lakhs. A cage of this size can be stocked with 1500 young lobsters and therefore depending on the market price, the value of the harvest could be ₹3.4 lakhs. The southwest coast of Kerala and Tamilnadu is suited for lobster culture as the area has a rich supply of mussels, which could be used as feed. Veravall in Gujarat and Mumbai coasts are also areas where small scale lobster culture based on incidental catch of undersize lobsters could be taken up. The cage culture also gives opportunity for the cultured lobsters to breed (P. homarus attains sexual maturity and starts breeding at 175 g) and augment the local population thereby promoting conservation of the resource.
The Kerala State Revenue Minister Sri. K.P. Rajendran inaugurated the harvest in the presence of Sri. George Mercier, MLA, Kovalam, Dr. E.V. Radhakrishnan, Head, Crustacean Fisheries Division, Dr. Rani Mary George, Scientist-in-Charge, Vizhinjam Research Centre, Grama Panchayat Presidents, Government officials, Scientists and fishermen. Besides, a good number of officials from various central & state organizations, NGOs’, fishermen societies and entrepreneurs took part.

Open sea floating cage culture of lobsters is new to the country and will definitely help in augmenting production, besides attracting private entrepreneurs to take up this mariculture enterprise. This farming practice not only helps to utilize the undersized lobsters, which otherwise would have been sold at a very low price in local market, but also helps to sustain the local population by breeding during the culture period. The local fishers will also be benefited as this will generate better profit as the total expenditure on seed cost, labour and feed will be lesser. CMFRI will extend technical support to farmers venturing into cage farming. A major constraint is that there is no organized seed collection mechanism now and holding centres give only low priority to the undersized lobsters and as a result the lobsters supplied are weak and highly stressed. The holding centres should increase the supply of healthy young lobsters to make lobster farming a successful venture.

(Sani Mary George, A.P. Lipton, M.K. Anil, K.N. Saleela, S. Jasmine, H. Jose Kingsly, C. Unnikrishnan and staff of Vizhinjam R.C. along with E.V. Radhakrishnan, Head, CFD and K.K. Philipose were associated with the achievement).