Marine cage farming of Asian seabass under participatory mode - A success story

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Karwar Research Centre of ICAR-CMFRI in association with the Directorate of fisheries, Govt. of Goa identified Polem village (14° 54' 21.12" N ; 74° 04' 32.20" E) in south Goa for the cage culture demonstration under the proejct 'National Innovations on Climate Resilient Agriculture (NICRA)'. Awareness programmes were conducted for the fishermen communities in the village regarding the present status of marine fisheries resources of India and future prospects. Self Help

Site selected for cage farming of Asian seabass at Polem, Goa

Stocking of Asian seabass in 6 m diameter steel cage

Monitoring of growth parameters of Asian seabass

Fish harvest conducted in the presence of Director of Fisheries, Goa

Groups (SHGs) were formed among the fishermen of Polem village and hands on training on various aspects of cage farming was given to the identified group at the Karwar Research Centre of ICAR-CMFRI.

Site selection for the cage farm at Polem was done following a standard protocol (Philipose *et al*., 2012. *Indian J. Fish.*, 59 (1) : 83-88). The seeds of Asian seabass, *Lates calcarifer* (average size 5.0 ± 0.3 cm) were procured from Rajiv Gandhi Centre for Aquaculture (RGCA) and nursery rearing was done in the marine hatchery complex of Karwar Research Centre for 30 days. A total of 8 cages of 6 metre(m) diameter were installed. Nursery reared fishes (average size 15 ± 0.2 cm) were stocked @ 14 numbers / m^3 in the cages in two batches. The first batch of fish was stocked in November 2015 and second batch in December 2015. The culture period lasted for six months. All the technical services such as net exchange, feeding, growth and health monitoring of fishes were given by the scientists and technical staff of the centre from the day of stocking till the harvest.

During the culture period, fishes were fed with trash fish @ 6% biomass. Nets were exchanged at monthly intervals to avoid settling of barnacles and other fouling organisms and also to maintain free flow of water into the cages. Growth parameters were monitored at monthly intervals and average growth rate was recorded. Fish health was examined every month for the presence of any external parasites. Average temperature, salinity, pH and dissolved oxygen of the water from cage site ranged between 27° C to 30.5° C, 30 to 35 ppt, 7.3 to 8.2 and 6 to 6.5 mg/l respectively. Nutrients were found

to be within the permissible limits. Total bacterial count and *Vibrio* count of sediment ranged from 2×10^4cfu/g to 5×10^4cfu/g and 2.5×10^3cfu/g to 8.2×10^3cfu/g respectively. After 6 months of culture, first batch recorded a maximum weight of 1.2 kg with 60 % survival rate, while the second batch recorded a maximum weight of 0.8 kg with 58% survival rate. The SHGs got a final production of 11kgs/m^3 and 9kgs/m^3 of Asian seabass from two batches and benefited with a profit of ₹ 5, 00,000.

Successful cage farming of Asian seabass by Self Help Groups (SHGs) at Polem, Goa indicated that marine cage farming can play an important role in improving the livelihood and socio-economic status of the coastal communities. High density stocking was not possible for want of enough numbers of seabass seeds during the farming period. Provided the sea bass seeds are available, production at the rate of 50 kg/m^3 can achieved easily.