

## Significant achievements in the last 5 years

### Molluscan culture

- Developed technique for mabe pearl production in blacklip pearl oysters and organized training programmes on the technique to women SHGs in A&N Islands
- Established a 2 million spat/year capacity hatchery in A&N Islands and developed complete protocol for spat production in blacklip pearl oysters
- Evaluated the socio-economic impact of mussel farming in Kerala, where the production is close to 20,000 tonnes/annum. The biggest outcome of mussel farming in Kerala was the empowerment of women with 87% of the SHG farms owned by women. The successful diffusion of mussel farming is the result of a combination of factors, chiefly, the availability of suitable water bodies; high rate of education; proximity of mussel markets and high degree of mussel consumption in the area; and a unique synergy between technology developers, promoters, and credit advancers.
- Designed and developed mussel seeding and harvesting machine. Automation was introduced into the farming practice to increase efficiency and to ease the tedium to women SHGs.
- Developed standards for organic farming of bivalves with APEDA and MPEDA. Bivalve farming is by default organic; however the thresholds for different criteria have been set in this policy document.
- Developed framework for mariculture site lease policy in open water bodies, mainly as an advisory to maritime states.
- Developed depuration display unit for promotion of live oysters in 5-star hotels
- Influence of environmental factors on growth rate of *Crassostrea madrasensis* in suspended culture was quantified in estuarine ecosystems. The growth rate was significantly correlated with *Chl a* concentrations in all the seasons.
- Seston and water quality were studied and modelled using PCA with 12 environmental variables for selection of potential mussel farming sites along the southwest coast.

- *Pinctada fucata* reimplementation technique developed. A method of extracting pearls and re-implanting nucleus has been developed at Visakhapatnam Research Centre of CMFRI.
- Saibo Tissue regeneration technique: The donor mantle tissue (Saibo) is extracted by first anesthetizing the pearl oysters for continuous generation of Saibo.
- A comparison between horizontal and vertically grown mussel ropes showed better production and growth in the latter, but the difference was not statistically significant ( $P < 0.05$ ).
- Production of Akoya pearls from the Southwest coast of India. The Indian pearl oyster *Pinctada fucata* is typically capable of producing pearls of 3–5 mm diameter. The feasibility of production of pearls similar to Akoya pearls of 6–8 mm diameter was established from the southwest coast of India.