MABE PEARL PRODUCTION

A Technology for A & N Islands' Development

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The marine pearling industry is diverse, with a wide range of cultured pearls and several levels of entrepreneurs ranging from villagers who collect spat from natural beds to large entrepreneurs, who have made huge investments in pearl production and trade. Globally, the significant socio-economic impact has been felt in island communities where pearl culture or mother of pearl (MoP) trade is well established. Apart from the round pearl industry, many island nations have ambitious programmes on Mabe pearls.

What are Mabes?

"Mabes" are dome-shaped pearls and these can be either half pearls or pearls depicting an image. These are generally produced in the winged pearl oyster (or Mabe oyster) of the genus *Pteria*. These oysters have an elongated hinge and the nacre (pearl coating) colour is multi-hued and brilliant. Though there are several species of winged oysters, two species are commercially important *viz.*, *Pteria penguin* and *Pteria sterna* which are used for commercial scale culture in Southeast Asia, Australia, Pacific island nations, Gulf of California and Mexico. One of the earliest records of commercial Mabe pearl production is from the Ryukyu Island in Japan in the pearl oyster *P. penguin* (called "*Mabe gai*" in Japanese). In the Gulf of Mexico nearly 8,000 Mabes are produced per annum from the winged oyster *Pteria sterna*. In China, three companies have been established at Hainan Island and Leizhou Peninsula for production of Mabe pearls from *Pteria penguin*. In the Phuket Island in Thailand also Mabe pearls are produced.

In India, success was achieved in producing Mabe pearls in the marine pearl oyster *Pinctada fucata* in the pearl farm of Central Marine Fisheries Research Institute (CMFRI) under a National Agricultural Technology Project (NATP) in 2002-03. Using the same technique but with different anaesthetising procedures, Mabe pearls were produced in the black lip pearl oyster *Pinctada margaritifera* and the winged pearl oyster *Pteria penguin* by CMFRI under a project funded by the Centre for Marine Living Resources and Ecology (CMLRE) under the Ministry of Earth Sciences (MoES) in the Andaman and Nicobar Islands.

The Technique: The base images which are used for Mabe pearl production are produced using finely sieved shell powder and resins. They can also be carved from shells. The size of the base images is very important. They range from a small 1 cm^2 to a large 3 cm^2. The carefully prepared fine base images are placed in specific locations on the inner valve of the pearl oysters with the use of specific equipments and after anaesthetising the pearl oysters.

The implanted pearl oysters are stocked in small lantern cages and suspended from rafts moored in sites which have clear oceanic waters. Within 60 to 90 days the base images will be fully coated with fine pearly nacre. The colour of the nacre depends on the location of base image on the shell. The Mabe along with the shell can later be mounted on wooden stands to be kept as mementos or can be converted to jewellery pieces like pendants and rings mounted in silver or gold. The Mabe pearl production is simple and can be easily adopted by islanders of Andaman and Nicobar Islands.

Awareness Programmes: The first attempt in creating awareness among the islanders at Port Blair was done in May 2008 in a function organised by the Gem and Jewellery Export Promotion Council (GJEPC) of India and the Department of Small Scale Industries, A & N Islands. During this programme which was attended by shell craftsmen and jewelers the method of pearl farming and Mabe pearl production was explained. Again, on 25th August 2009 a 1-day awareness programme on marine black Mabe pearl production was conducted for the benefit of fisherwomen of Panighat village in A&N at the fishermen community hall of Hope Town in the islands under the aegis of the local panchayat. The trainees were taken to the Panighat pearl oyster farm and the Marine Hill laboratory/hatchery of the project for demonstration on Mabe pearl production.

Scope for commercial level Mabe Pearl Production: There is high potential to develop Mabe pearl industry in the Andaman and Nicobar Islands. Mabe farming and jewellery making are well suited for tropical coastal villages in need of inexpensive business start-up capabilities with high-end market value for the finished product. Domestic market can be developed for tourists visiting the islands and in international markets for Indian Mabe. The A&N Islands economy is based to a large extent on tourists. The number of tourists visiting the islands increased from 86,066 in 2000 to 1,36,426 in 2008. During this period the number of foreign tourists visiting the islands has increased from 4,634 to 12,512. Just like the shellcraft industry, the Mabe pearl or black pearl production programmes can also thrive on this flourishing tourist industry.

Lessons from Zanzibar for India: One of the latest report on Mabe pearl production as a sustainable livelihood opportunity is the project on Mabe pearl production in *Pteria penguin* in Zanzibar. In 2006, the University of Hawaii and Institute of Marine Science-IMS introduced pearl farming technology among women's groups in four villages surrounding Menai Bay to pilot half-pearl (Mabe) farming. In January 2007 a trial batch of 94 *Pteria penguin* were seeded for half-pearl production, each oyster seeded with 2–3 semi-spherical nuclei and farmed from a raft near Bweleo. High quality half pearls (28 nos) were produced, some of which were auctioned for USD 3600 at a gala event held at the Palace Museum. Some of the remaining pearls were converted to jewellery and placed for sale to the tourists visiting Zanzibar. Similar production of half pearls has also been reported from *Pinctada margaritifera* in Tanzania.

The fact that several island countries have started commercial Mabe pearls as island development programme supports the significance of Mabe pearl production in Andaman and Nicobar Islands. The progress made by CMFRI in the CMLRE–MoES project is unique since the images are not common and can be "branded" and

this has the potential to be developed as an industry in the Island targeting high-end consumers. However, before embarking on large projects, it is essential to "fix" or "limit" the number of Mabe pearls that can be produced per annum if the industry is depending on wild oysters, since indiscriminate exploitation of pearl oysters, can lead to stock depletion and the production will not be stable and sustained. On the other hand, if hatchery produced spat are reared and used for production; this restriction need not be made as the natural population of black lip pearl oysters will not be affected.

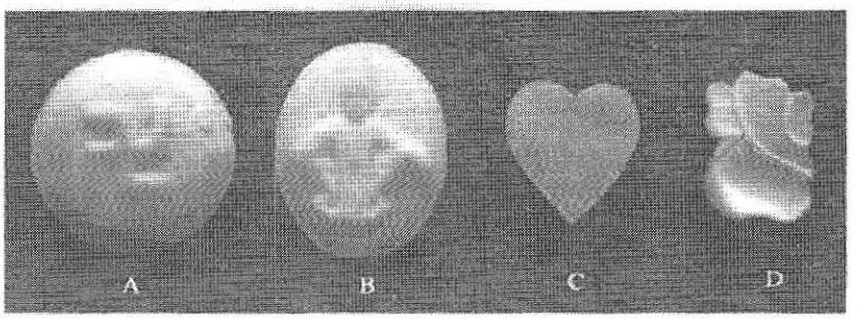

Fig 1: Base images made out of shell powder and resin (A&B) and those made from cut-shell (C&D)

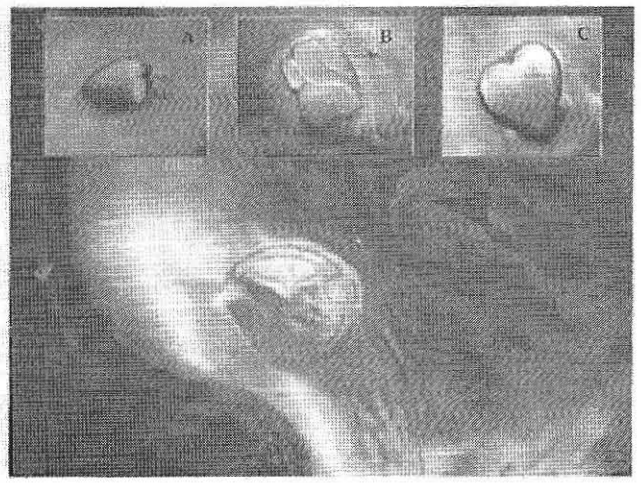

Fig 2: Mabe images produced in *P. margaritifera*

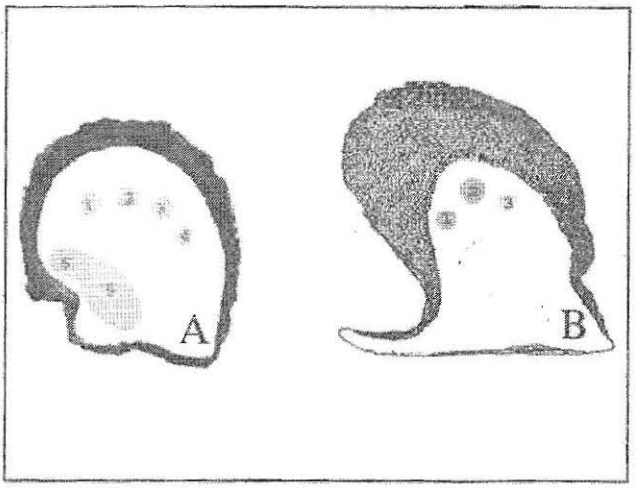

Fig 3: Positions suitable for Mabe base image placement in *P. margaritifera* and *P. penguin*

Fig 4: Mabe pearl production training to shell craft artisans through GJEPC, in May 2008

Fig 5: Mabe pearl production training to fisherwomen of Panighat panchayat in August 2009

Panel recommends continuing trawling ban in Kerala

The Commission on Fisheries appointed by the Government of Kerala two years ago to study trawling ban has recommended continuation of the ban in the present form, the State Fisheries Minister, Mr S. Sarma, has said.

Speaking at a meeting with various organisations of fishermen and boat owners to discuss the implementation of the ban, the Minister urged them to cooperate with the ban. The Cabinet had also reached a decision to that effect, he said.