Development of economically viable postlarval capture and culture (PCC) based activities in Bora Bora (French Polynesia)

What is PCC?
PCC stands for postlarval capture and culture (or “grow-out”). Postlarvae are a development stage in reef fish and crustaceans prior to both settlement in the lagoon and adulthood. The vast majority of animals start their development cycle with an ocean phase lasting one to three months, after which fish and crustaceans re-enter the lagoon in their hundreds of millions. Only approximately one in a million individuals will reach their adult stage, with most juveniles being eaten by predators. Using innovative techniques (such as crest nets or light traps - see photos below), postlarvae can be captured and bred for sale to four potential uses: aquaculture for food purposes; restocking into ecosystems to boost biodiversity and fish density for fishing purposes or simply for ecotourism such as snorkelling in coral gardens; and the lucrative aquarium market. Despite their impressive numbers, the captured animals only account for a very small portion of the larval flow, hence the very slight impact on the ecosystem compared to techniques involving the capture of adults with large quantities of breeding individuals. This makes PCC a potentially eco-friendly industry.


Photos courtesy of CRIOBÉ (Moorea), SPE in French Polynesia and Ecocean
PARTNER #1:
BoraEcoFish (BEF) is a French company based in Bora Bora island (French Polynesia), owned by François Chevalier, that currently employs 3 people. BEF is currently developing a threefold strategy for selling postlarvae products based on contracts with international ornamental wholesalers, local high standard hotels and gourmet restaurants.

A joint venture between BoraEcoFish and Hawaiian SeaLife supported by the CRISP programme.

This project is a partnership between the biggest marine ornamental wholesaler in Hawaii and a French Polynesia company specialized in PCC, in order to demonstrate that sustainable PCC-reared fishes are a feasible alternative to wild-caught fishes to supply the American and Asian ornamental fish markets. The project will take place in Bora Bora and Marquesas, where partner #1 already has extensive experience of PCC and will receive new PCC technology and perform capacity building. Partner #2 already owns a fish farm in Hawaii that will undergo extensive modifications in order to be optimal to rear postlarvae on a large scale. After best site selection, various postlarval fishing gear will be tested to determine which is most efficient for the chosen site and, finally, estimates will be made of the profitability of PCC depending on species collection. The project will test export to Hawaii and then to the wider retail market.

PARTNER #2:
Hawaiin Sealife is a US company based in Hawaii (US territories), owned by Richard Xié, one of the biggest marine ornamental wholesalers aiming to promote PCC products.

Photos courtesy of Françoise Buil (Reporter)
ACTIVITY 2:

USE OF POSTLARVAE AND CORAL GARDENS FOR ECOTOURISM-BASED ACTIVITIES

PARTNERS #3 and 4:
The Intercontinental Bora Bora Resort & Thalasso Spa and the Méridien are two high standard hotels located on Bora Bora island. These hotels are promoting ecofriendly practices and coral reef knowledge to their customers, in particular by developing coral gardens that are maintained by BEF, which implements coral restoration, fish reseeding and on-farm visits for tourists.

The Intercontinental Bora Bora Resort & Thalasso Spa achieved Benchmarked status under Green Globe international sustainable tourism programme and is proceeding to certification. A process supported by the CRISP programme was launched in early 2009 by a local association, Te Mana O Te Moana, to develop marine-based standards for the Green Globe certification.

From left to right: Sylvio BION (Director of Thalasso), Mathieu PETIT (Te Mana O Te Moana association), Anne-Catherine IMHOFF (Intercontinental Papeete) and Eric CLUA (CRISP Manager).

Photos courtesy of Eric CLUA (CRISP)
The manta shrimp (MS) is a luxury food in French Polynesia, where the demand is never met by the supply. MS are caught in the wild by fishers who sell the crustacean for up to USD 300/kg. Postlarvae of MS are regularly trapped in small mesh nets and can be raised up to the commercial size (around 20 cm).

A pilot study is currently being conducted in the BoraEcoFish facility with funding from the fisheries department of French Polynesia. Two MS species are presently studied: Lysiosquillina maculata and L. sulcata, the former one being more appreciated by gourmets. These two species of MS are caught at 1.5 and 2 cm respectively and must be raised in PVC pipes which replace their natural burrows in soft lagoon substrates. The aquaculture of MS requires solid technical knowledge but is an interesting complementary income generating activity.

Photos courtesy of Eric CLUA (CRISP)