

## Golden sandfish farming in Tonga – initial trials underway

*Aquaculture production of sea cucumbers is a hot topic in the aquaculture world these days. The high value of many sea cucumber species, the increasing demand for this commodity in various export markets (mainly from Asia), and the depletion of natural stocks in the wild have generated significant interest in the possibilities of sea cucumber aquaculture.*

Several Pacific Island countries and territories have devoted substantial human and financial resources to farming sea cucumbers, with variable results. Successful examples of sea cucumber breeding and larvae rearing can be found in the Federated States of Micronesia, Fiji, Kiribati, New Caledonia and now Tonga.

These countries have well-established sea cucumber hatcheries where animals are bred and larvae are reared until the juvenile stage. New Caledonia, for example, has been involved for many years in various restocking programmes in the Northern and Southern provinces of the main island using juvenile reared at the sea cucumber hatchery.

Sea ranching of juvenile sea cucumbers is still difficult, however, for many technical and socioeconomic reasons, such as suitable farming strategies, availability of farming sites, conflicts with other users and sectors, and poaching.

Tonga has concentrated on farming the golden sandfish, *Holothuria lessoni*, which is among the highest value sea cucumber species on the Chinese market. This species is native to Tonga, but has become difficult to find because of the depletion of natural stocks due to overfishing.

The Tongan-Chinese company Vast Ocean (Tonga) Aquaculture Company Limited, with strong experience in farming sea cucumbers and other invertebrates, is currently focused on the development of this aquaculture activity in Tonga. The company has established a hatchery and nursery facility on Tongatapu. Next to the hatchery, this same company has built a small processing plant.

Six local staff will be working at the hatchery and processing plant, and it is planned that additional local staff will be employed to follow up on grow-out activities in the field. It is hoped that the staff involved in farming and processing will capitalise on the skills and experience they will acquire while working for the sea cucumber farm; skills that will be useful in Tonga for developing other aquaculture activities.

The high-tech hatchery has been built next to the Ministry of Fisheries hatchery on Tongatapu. The newer hatchery operates 30 concrete raceways, where larvae and juveniles are maintained. The facility also includes a small nursery area where juveniles are kept for several weeks until they reach the appropriate size to be released into the oceanic nursery, as is usually done in sea ranching. The Ministry



Golden sandfish that were born and raised at the Vast Ocean (Tonga) Aquaculture Company Limited hatchery are taken to a suitable area in the lagoon for grow out. From L-R: Sione Mailau, Siosifa Folauhola and Victory Lu. (image: Eileen Fonua)

of Fisheries, in collaboration with Chinese experts, has already identified a suitable site for grow-out, where local sea cucumber stocks are relatively low and the natural habitat is adequate for this species.

The enterprise has managed to conduct five successful spawning runs since December 2018, with a production of



around 2 million juveniles in total. The first 10,000 juveniles were successfully transferred into a selected sea ranching aquaculture area on 23 March 2019. After five to seven months of sea ranching, the animals will be harvested.

Based on the results of this first trial, around 1.5 million juveniles will be released in the same grow-out area. The company expects to be able to export some of the processed animals around July or August this year.

Following an official request from Tonga's Ministry of Fisheries, the Pacific Community will be involved in the monitoring of grow-out activities, and in the development of a new regulation for aquaculture, which will consider aspects such as processing, exports, biosecurity and farming strategies.

We look forward to seeing this activity as one of the successful examples of sandfish farming in our region.

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