

Regional exchange on sandfish aquaculture for restocking

We sometimes wonder how far we have come and continuously look for ways to measure progress. What can be achieved through a south-south exchange, the depth of knowledge and expertise gained, the number of countries involved, and their degree of development, are all obvious signs of development.

In October–November 2017, participants from five Pacific Island countries and territories (Fiji, Kiribati, New Caledonia, Papua New Guinea [PNG] and Vanuatu) gathered together through a series of placements, visits and a workshop into what was the first regional exchange on sandfish aquaculture for restocking. The programme was organised by the Pacific Community with support from the New Zealand Ministry of Foreign Affairs and Trade. Twenty years ago, a south-south exchange on this same topic would not have been possible, and even ten years ago, the reach and scope of the programme would have been much more limited in terms of the number of countries involved and the variety and depth of expertise available.

In this first regional exchange on sandfish, participants were able to: 1) experience activities related to sandfish aquaculture in three countries (PNG first, then Fiji and New Caledonia); and 2) participate in a hatchery techniques workshop; and 3) be involved in another workshop to discuss what could be done at the regional level to address some of the constraints of sandfish aquaculture in order for restocking to become an effective way to increase fisheries productivity.

Action-packed week in Kavieng, PNG

The exchange programme started in Kavieng, PNG at the National Fisheries Authority Nago Island Mariculture Research Facility where we were welcomed by facility manager Peter Minimulu from the Australian Centre for International Agricultural Research (ACIAR) and scientist Thane Militz, along with Esther Leini and Nicholas Daniels who are both in charge of sandfish restocking activities and who were nominated as PNG representatives in our regional exchange.

During the week, activities were organised for participants to witness production phases — from spawning to sea ranching surveys. We were able to see first hand the innovative techniques that had been developed through repeated research trials for the development of larvae culture protocol, using 100% algal paste instead of live microalgae (Fig. 1), and to increase juvenile survival during the nursery phase using floating hapa net systems.



Figure 1. Shalendra Singh (left, Fiji Ministry of Fisheries) and Ajay Arudere (Vanuatu Fisheries Department) feeding sandfish larvae under the watchful eye of Esther Leini (PNG National Fisheries Authority). Image: Michel Bermudes

Fiji hatchery brainstorming

The activities that took place in Fiji started with a period of four weeks of hatchery placements at the Ministry of Fisheries's marine hatchery in Galoa for participants from Vanuatu (Derek French, Aquaculture Solutions Vanuatu), Esther Leini (NFA, PNG) and Joana Rabaua (Ministry of Fisheries and Marine Resources Development, Kiribati). Placements were overseen by Anand Prasad (facility manager) and Teari Tekebo (sandfish hatchery manager). The placements were an ideal opportunity for the less experienced hatchery operators to learn from regional experts such as Esther Leini and Teari Tekebo. The gathering in Fiji also presented a unique opportunity to hold a small workshop on hatchery techniques. Presentations were made by representatives from Fiji, Kiribati, New Caledonia and PNG, and at this workshop we were able to hear great stories from participants who have been able to develop techniques suited to their own country's set of conditions and circumstances.

The Fiji event concluded with the release of sandfish juveniles at Vitawa Village (Fig. 2), which was followed by a customary ceremony during which the tribe's chief, the village head and elders, and our group of regional experts engaged in a question-and-answer session on sandfish restocking and the management of community-based marine protected areas.

Closing the loop in New Caledonia

It always helps to have a vision, and to have this vision realised. To be able to see that vision in action is even better. This is what participants were able to do during their stay in New Caledonia where they visited a large-scale hatchery capable of producing in excess of 1 million sandfish juveniles per year, a farm where sandfish are grown in shrimp ponds (Fig. 3), and where there is a newly refurbished beche-de-mer processing plant. While this level of development is still a long way off for other countries in the region, and while the model is not necessarily adaptable to other islands, this state of advancement allowed us to see what is possible in the region, and to set the backdrop for the first Regional Workshop on Sandfish Aquaculture for Restocking, held in Noumea (22–23 November 2017) to conclude the exchange. The goal of the meeting was to identify gaps and potential solutions to move forward. The two main constraints in sandfish aquaculture that were highlighted during the workshop were insufficient seed supply and the lack of an effective model for sea ranching and restocking. Continued and enhanced regional collaboration was perceived as the motor for increasing the pace of development at the country level and for finding solutions to the constraints of seed supply and sea ranching models.



Figure 2. Releasing sandfish at the Vitawa Village marine protected area in Fiji. Image: Michel Bermudes



Figure 3. Kamarawa Tamton (MFMRD, Kiribati) holding a sandfish produced by Laurent Burgy (right) and his team (Société d'élevage de la Ouenghi, New Caledonia). Image: Michel Bermudes

Benefits for participants and participating organisations

Seeing is believing. From a technical capacity building perspective, the programme offered tremendous comparative value. Given how hard it can be to transfer techniques or technologies from one country to another, it was extremely satisfying to see participants truly embrace what they saw in other countries (e.g. larvae culture technique in PNG, nursery technique in Fiji, processing technique in New Caledonia).

The programme also intended to foster leadership, and leadership was observed in two ways: first, through the participants who stepped up to showcase their work during field visits and in-country activities, and second, through the participants who openly talked about the changes they wanted to implement when back to their home country and how they would run their own training workshops for their colleagues and staff.

Professional networks for the continued exchange of ideas and experiences among PICTs (e.g. the Facebook group Pacific Sandfish Exchange was created at the end of the programme) and capacity building from visiting experts demonstrating techniques in a different country context (e.g. New Caledonia demonstrated a new technique for transport of juveniles in Fiji) were direct benefits for both participants and organisations.

Benefits for SPC

SPC learned much from the exchange, which proved to be an effective model for technical capacity building. The programme also enabled the leveraging of previous investment in capacity building by SPC and other development partners (e.g. ACIAR's work in PNG, access to the Fiji hatchery where staff had previously received SPC funded training). Finally, this type of exercise is particularly useful in spotting emerging leaders and people with the capacity to work effectively with regional counterparts and SPC.

Needless to say, participants left with their heads full of ideas and some are already thinking about what the next regional sandfish exchange will look like. The challenge now is to harness this collaborative energy to support development at the country level. The next step for organisers and participants is to form a regional working group that can continue the work started during the exchange.

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