



The management challenges of Vanuatu's developing marine aquarium fish trade

Being Yeeting¹ and Kalo Pakoa²

The marine aquarium trade is a fairly new fishery in the Pacific, first appearing in the late 1970s, with full commercial operations appearing in the early 1980s. This trade involves the small, beautiful reef fish and coral species (live and dead) that traditionally have had little value (as food fish) in Pacific Island coastal communities.

In the last two decades, with the ever-increasing demand for marine aquarium products from hobbyists in the US and Western Europe (the main markets for the trade), the industry has expanded significantly in the insular Pacific, as more and more Pacific Island countries see it as a promising economic opportunity. This is reflected in the dramatic growth in value of marine aquarium exports from Pacific Island countries. The annual value of marine aquarium finfish exports from the Pacific Islands is presently about 2 million US dollars (USD), or 19% of the value of the global trade, compared to USD 100,000 two decades ago.

In most Pacific Island countries that have participated in the trade, the rapid growth of the industry has exceeded the in-country capacity to manage the trade, and it is proving to be a challenge to most government fisheries departments in the region. Because it is a "non-traditional" fishery in the Pacific region, there is a general lack of experience and understanding of the fishery resources and the dynamics of the trade, which is a further hindrance to management efforts.

Vanuatu's marine aquarium industry provides a good case study. The marine aquarium trade in Vanuatu started 14 years ago as a small industry consisting of three small operators, all based on the southwestern side of the main island of Efate. An average of 20,000 fish were exported each year. In 2002 and 2003, exports had increased to 70,000 fish per year, making marine aquarium fish Vanuatu's most important marine resource export commodity.

Why the sudden increase? Interestingly, the industry now involves only one main company export-

ing marine aquarium fish. Through the import of highly skilled and experienced staff, the present company has been able to improve the efficiency of its management and operations, including improvements in its handling practices and maintenance of its facilities. This has resulted in very low fish mortality rates of 3–5% and high quality products (a significant improvement from the poor quality products of the past). These improvements in turn have triggered more interest and demand from overseas buyers.

On a regional scale, however, Vanuatu's marine aquarium industry is quite small. Vanuatu contributes 0.5% of all marine aquarium exports from the Pacific, compared with Kiribati at 42% and Solomon Islands at 32%. Although small in the regional context, at the local level Vanuatu's marine aquarium trade has been able to offer some direct economic benefits. Exporters have become a significant client of Air Vanuatu in terms of cargo, and the trade has provided a source of income for local people, both through employment and through the purchase of fishing rights from local resource owners in traditionally owned reef areas.

The recent growth in Vanuatu's marine aquarium trade (in the absence of specific management measures to control the fishery) has triggered concerns. These have been mainly from tour and dive operators, who claim that the aquarium trade is causing considerable damage to the coral reefs and is depleting populations of the small, colourful, coral reef-dwelling fish in some of the popular dive sites. The release of the recent Disney film "Finding Nemo" has sparked additional controversy about the trade. For example, an article in *The Guardian* (21 November 2003, by David Fickling) stated, "A booming trade in aquarium fish, sparked by Finding Nemo, the Disney film featuring clownfish, is endangering the wildlife of the Vanuatu archipelago in the South Pacific." Under pressure from the Vanuatu tour and dive operators' association, in February 2004 the Shefa Provincial Council, which is the local governing body that administers

1. Live Reef Fish Specialist, Secretariat of the Pacific Community and coordinator of the Regional Live Reef Fish Trade Initiative. Secretariat of the Pacific Community, BP D5, 98448 Noumea, New Caledonia. Email: BeingY@spc.int
2. Principal Fisheries Officer and head of the Fisheries Management and Policy Section, Vanuatu Fisheries Department. Address: Vanuatu Department of Fisheries, Private Bag 9045, Port Vila, Vanuatu. Email: kmpakoa@hotmail.com

Efate, decided to ban the trade in Efate provincial waters. The ban, however, was lifted a few weeks later for legal reasons, and the Vanuatu Fisheries Department has since been given the urgent task of developing a management plan for the trade.

In November 2003, prior to the temporary ban, the Fisheries Department had established a National Aquarium Trade Advisory Committee (NATAC) comprising tour operators, aquarium companies and relevant agencies of the national government. The committee was supposedly an opportunity for different stakeholders to share ideas, concerns and potential solutions that would be acceptable to all. Unfortunately, the differences in interests among the members made it difficult to reach consensus. It became quite evident, however, that a management plan for the trade was necessary.

Given the urgency for this management plan, as well as the lack of resources and in-country capacity in the Vanuatu Fisheries Department (which is typical throughout the Pacific), the Fisheries Department requested assistance from the Secretariat of the Pacific Community (SPC).

The principal author, Being Yeeting, visited Vanuatu in April 2004 to assess the situation and to help the Fisheries Department discuss and develop a practical plan of action. The agreed plan of action recognises the lack of baseline information about aquarium fish resources, as well as the need to collect socioeconomic data on the trade. It also acknowledges the need to involve other resource users in the development of the management plan in order to strike a fair balance between the users and the reef owners. The plan of action also recognizes the need to build the capacity and expertise of local staff in resource survey and monitoring methods.

A second trip to Vanuatu was made in May 2004 to conduct the fieldwork required by the plan of action. This trip involved SPC's Fisheries Management Officer (FMO), Aliti Vunisea, in addition to the principal author, Yeeting. Yeeting trained two divers from the Fisheries Department and two divers from the private sector in the identification of aquarium fish and in using SPC's regionally standardized underwater visual census method. At the same time, SPC's FMO conducted the socioeconomic part of the work, meeting and interviewing people from government departments, the tourism industry, the aquarium trade industry, non-governmental organizations, local communities, and fishers.

Data analysis, and more importantly, the process of interpreting results and incorporating them into management plans, is often a weakness in Pacific Island countries. To ensure that this important work is done properly and the experience gained in doing so is transferred to staff at the Vanuatu Fisheries Department, a three-month attachment at SPC headquarters in Noumea was organized for Vanuatu's Principal Fisheries Officer (and second author of this paper), Kalo Pakoa. Pakoa worked with Yeeting to analyse the data collected from the underwater and socioeconomic surveys and used the results to develop management policies, a monitoring program, and a proposed management plan for Vanuatu's marine aquarium trade. He will present these to stakeholders for their comments and inputs. The next step will be to submit these products to the Vanuatu government for approval and implementation. SPC will continue to provide technical assistance well into the implementation stage.

Some of the strategies that are being considered for the new management plan include:

- Development and enforcement of conditions and requirements for operators.
- Revision of the legal framework to improve licensing requirements and to accommodate the new proposed management plan.
- Regulation of areas (zoning, no-take areas).
- Regulation of resources (quotas, size limits).
- Regulation of fishing effort (diffusion to outer islands, restricting number of operators, revision of licensing systems).
- Improved monitoring (of the resource, of operations, of exports).
- Increase benefits to, and participation of, communities through greater involvement in management and in low technology based operations.

The authors' view, and indeed the recent experience in several countries, is that the marine aquarium industry could be a major export industry for Pacific Island countries. But it will be a sustainable trade only if it is managed and monitored effectively.

The Vanuatu marine aquarium trade is an excellent case study of interest to all Pacific Island countries. The Secretariat of the Pacific Community held a discussion session on the aquarium trade at its 4th Heads of Fisheries Meeting in Noumea, New Caledonia, in August 2004. At the meeting, Vanuatu shared its experiences with other countries.

