

that collaborated in organising the Festival, this is not a distant dream as they successfully managed to transcend differences among themselves and generate a creative atmosphere with tremendous energy.

This Festival was the third in a series of such celebrations, a way of collaborative learning, storytelling and documenting. In the words of Elmer

Ferrer et al., "This process of learning and the relationships between people that are as a result of this process, generates social energy that advances and sustains the CBCRM process. Social energy becomes manifest when individuals and groups work together to achieve common aspirations."

Fishermen's wives participate in conservation

by Rianne C. Tecson

Source: Cebu Daily News, 14 July 2003

If it were not for the need to conserve and manage their coastal resources, the men and women of Sitio Bangag, Barangay Saavedra in Moalboal town would have gone about their usual lives: the men fish while the women tend to the house and children. Now fisherfolk take turns protecting an 8.13-hectare marine sanctuary where corals and fish abound.

The men who fish for a living said the sanctuary increased their fish catch. The women, on the other hand, earn by catering to visitors who are eager to learn how the people protected the sanctuary for 17 years.

The marine sanctuary was established under the Central Visayas Regional project in 1986. Merlita Abrenica, secretary of the Saavedra Fisherfolk Association, said that from July to September 2002 the group earned PHP 18, 775 (~USD 342.00) in user's fees imposed on divers and snorkelers.

While the men are at sea, women members of the association remove crown of thorns starfish from corals inside the sanctuary. The women also take turns in stationing themselves at the guardhouse to monitor the sanctuary's premises.

The future of Fiji's live rock

by Sian Owen, Coordinator, World Wide Fund for Nature, Coral Reefs Initiative

A couple of hours west of Suva, Fiji's capital, an unpaved road winds through the sugarcane plantations to the coast and Malomalo village. Of the 150 people who live here, one-third depend directly on the ocean for their primary source of income. But not all this income comes from fishing — a significant part comes from harvesting "live rock".

Live rock is actually dead coral or rock covered with coralline algae, pink/purple-coloured algae found growing on rocky substrata in all of the world's oceans. It's used in aquariums to form a reef base in order to house tropical fish, corals, and invertebrates. The coralline algae also help keep the water clean.

The live rock trade is a booming business, growing at a rate of 12–30 per cent per year since 1990. With two-thirds of the world's 1.5 million aquarium hobbyists, the US is the world's largest consumer of live rock, representing more than 90 per cent of the trade.

Fiji is a major exporter of live aquarium products to the international market. This trade, which includes live coral and fish as well as live rock, is crucial for some Fijian villages, where the only alternative sources of income are low-skilled jobs in the sugarcane plantations and in tourist resorts. In 2001, over 800,000 kg of live rock was harvested and exported from Fiji alone.

The extraction of live rock takes place along the edges of the reef, with villagers selectively targeting rock covered with light to dark pink coralline algae. The villagers break up slabs of rock using iron rods. These are loaded up onto a *bilibili*, or bamboo raft, and dragged onto the beach by horses, where the rock is placed into boxes and loaded onto a waiting truck which takes it to a processing facility.

Once at the facility, the rock is placed under showers that continually spray salt water. The rock is

trimmed of all visible green algae growth and graded according to shape, weight, and percentage of coralline algae cover. The rock is left under these showers for 24–72 hours before shipment.

In the early 1990s, the villagers of Malomalo negotiated a deal with Ocean 2000, an indigenous company that supplies live rock and fish for export. Fiji's entire coastline is under customary tenure, with the rights to resource use belonging to individual villages. At the end of a series of traditional formal meetings, an agreement was reached with a contract signed by the Custodian of the Fishing Grounds and the sole license for live rock removal in the area belonging to the village Chief, Ratu Saula Maiyale.

Since 1994, live rock has been collected at Malomalo for Ocean 2000 by the traditional male users of the reef, both on a full time and an occasional basis. The rock is reimbursed for USD 0.70 per kilogram, which is divided among the collectors (USD 0.50), the custodian (USD 0.10), and the marine reserve that forms part of the village's traditional fishing grounds (USD 0.10). Full-time harvesters extract up to 200 kg per week. At an average of 150 kg live rock per week, some 7500 kg are extracted for sale by a single full time harvester in a year, contributing USD 3750 to annual household income.

The live rock trade is obviously very important for the livelihoods of Malomalo's inhabitants. But after nine years of extraction, the villagers were aware that these activities could have long-term consequences. Large-scale removal of live rock can destroy habitat for fish and marine invertebrates, can undermine the structure of coral reefs, and can lead to increased underwater erosion. This is exacerbated as not all harvested live rock is accepted, meaning that much more is harvested than the official figures suggest. Large quantities are often rejected, with the wastage evident as piled accumulations along the beach.

Concern about the sustainability of the industry was also raised in Fiji and in other parts of the world at around the same time. In 2001, the Fijian government called for an environmental assessment to inform policy on the trade. Also at this time, WWF was exploring a partnership with the Marine Aquarium Council (MAC) in relation to their newly launched certification system for the aquarium trade. All of these forces collided last year, when WWF and MAC embarked on a project to answer the government's concerns. The project's goal is twofold: to develop community-based processes for wise coral harvesting and management, and to help the government structure sound policies and legislation that will support a sustainable aquarium trade.

As part of the project, WWF has facilitated a series of community workshops to raise awareness on monitoring, evaluating, and managing marine resources. In Malomalo, the consensus following the workshops was that the productivity of their marine environment and certain marine resources was indeed becoming depleted. As a result, the village designated part of its traditional fishing grounds a *tabu* area, banned from extractive use.

WWF scientists also visit Malomalo regularly to gather data from the site. In 2002 (October), a team from WWF set out to conduct its first ever Biological (Status of the environment) and Socio-economic Assessment (aspects of the Live Rock Trade in Malomalo) of the area. Other visits to the site is basically to raise more awareness within the community and to help them with their management plans and at the moment the main focus is the Collection Area Management Plan (CAMP) a certification pre-requisite to being certified under MAC (Marine Aquarium Council). Each time they come, the scientists are first invited inside, where they sit barefoot on woven mats and begin the ceremony to request permission to visit the project site. A gift of *yaqona*, the root of which is used to make the slightly narcotic traditional drink which is consumed at all traditional ceremonies, is presented to the chief's representative, who then asks the elders to permit scientists to visit the project site.

It's too early yet to tell the results of this collaboration, but dialogue between traditional knowledge and modern science has begun, a first step to ensure the long-term stability of a reef and the people that it supports. Malomalo has acted upon what many around the world have yet to recognize — that marine resources, although hidden from sight, are under constant pressure, and need sound monitoring and management to ensure their continued provision of life for us all.



Transporting live rocks on a *bilibili* (bamboo raft)