

Searanching in a Quezon island, Philippines: toward a sustainable livelihood for small fisherfolks

By **AS Frio**

The Mandaragat Fishermen Association of Perez town in Alabat Island, Quezon province is showing the way in providing an alternative livelihood for its fisherfolk.

Alabat is a 54-km island stretch separated from the mainland province by clear placid waters. Its three towns of Perez, Alabat and Quezon face the mainland's coastal towns of Mauban, Atimonan, Plaridel and Hondagua. To its backside is the Pacific Ocean. Perez town is a 45-minute boat ride from the Atimonan port.

In cooperation with the Office of the Provincial Agriculturist of Quezon province (OPA) and the municipal government of Perez, the association is managing a pilot searanching project. It aims to provide a fish sanctuary and an aquaculture demonstration to encourage local fishers to engage in a more environment-friendly fishing activity and to refrain from illegal fishing activities such as dynamite and cyanide fishing.

Project beginnings

"The project started in 1997," relates Mr. Antonio Dimaano, agriculture technologist of OPA. "Earlier, the Mandaragat Fishermen Association obtained a loan from the Livelihood Enhancement for Agricultural Development (LEAD) program of the Department of Agriculture. They used this to make fish traps, locally called *bobo*, which is made of chicken wire. This is about 8 ft long, 4 ft wide and 3 ft high. Most of the 20 members of the association are divers-fishers and they used the *bobo* to catch mostly bottom-dwelling fish species such as groupers. While these fishtraps helped the fishers catch fish, they found out that they were mostly getting large groupers which were mainly breeders. They thought that if this catch continued, their waters

would be further depleted sooner. It should be noted that previous illegal fishing methods like dynamite and cyanide fishing have destroyed our corals, thus affecting fish supply in the coral areas. Today, one easily notes that we practically have very little fish in our waters."

Recognizing their plight, Mr. Glicerio Manzano, association president and chairman of the Perez Municipal Agriculture and Fisheries Council (MAFC) brought this issue in one of the meetings of the Provincial Agriculture and Fisheries Council (PAFC) where he also serves as member. Not long after, in November 1997, the office of the provincial agriculturist initiated a pilot searanching project funded and implemented by the provincial government in collaboration with the Mandaragat association and the local government of Perez.

Mr. Manzano reports that in the November, 1997 inauguration of the searanching project, their association contributed twelve grouper breeders for stocking the fish sanctuary area of the project.

"In the 1950s," Mr. Manzano recalls, "this body of water around our island teemed with groupers and seniorita. Everybody was happy then, but in the 1970s we saw the decline of fish production. Many were engaged in dynamite and cyanide fishing. While everybody can see that our waters are very clear and still unpolluted, we don't have enough fish today. So, we would like our members and other residents of our community to have an alternative to illegal fishing. We believe that this project will be able to convince them that protecting our fish resources would, in the long run, be a more beneficial effort."

"In addition," Mr. Manzano stresses, "our local government can earn as much as

₱200,000 annually from fees and permits for people who may want to engage in aquaculture when this project finally demonstrates the feasibility of searanching."

Third-term Perez Mayor Alicia Caringal noted that, as a partner of the collaborative project, the Perez local government was responsible for hosting the area for the project and for encouraging the community to support the project.

On hearing about the technical assistance activities of SEAFDEC Aquaculture Department in coastal resource management in Tangalan and Ibayay towns in Aklan province, she said that they would like to engage in grouper culture like the SEAFDEC projects being implemented in the said towns. "The netcage culture of grouper is very much suited to our place. We have enough bamboo materials for the cages and the trash fish available here for feeding the groupers is very cheap. We still lack funds though, to implement such endeavor," Mayor Caringal revealed.

Project activities

The searanching project is in Barangay Sangirin, a five-minute boat ride from the Perez municipal port. Sangirin has a 12-ha cove area with mangroves. Initially, the searanch fish sanctuary covers 2 ha. A half hectare shallow portion near the shoreline toward the mangrove area is enclosed by man-made coral dikes. The rest is enclosed by a nylon net that follows the gradual slope of the sea bottom. The deepest portion of the net enclosure reaches 18 m.

The searanching concept is based on the fishers' perception that a protected fish sanctuary could very well lead to more sustainable livelihood opportunities for all. The grouper breeders they are rearing in the searanch can spawn undisturbed. Their



The searanching and sanctuary project covers a 2-ha area fenced by coral dikes at the shallow portion near the shoreline and net enclosures toward the deeper portion of the sea bottom. At the background is part of the 12-ha mangrove area that connects to the searanch. Twelve grouper breeders are stocked in the enclosure and spawning has been observed

fry can easily go back to the sea as the holes in the net enclosures are big enough for them to pass through but small enough for the breeders to escape. Thus, the fishers believe that there will be more fry growing into adults in the wild.

During high tide, even if the net enclosures are submerged by one or a few meters, the fishers report that groupers do not swim out as this fish species is bottom-dwelling.

Mr. Domingo Mamasig, head of the OPA, reports that just a few meters away from the searanch and fish sanctuary, the Mandaragat association has put up 10 units of 1 x 1 x 1.2 m nylon cages attached to the ramp of a floating, small cottage-like structure. The association members are currently raising grouper fingerlings caught in the wild as a showcase for their members and other local fisherfolk. The members have also constructed a small hut near the sanctuary for housing their people who would guard against possible thieves and saboteurs.

Mr. Mamasig further notes that in nearby Patnanungan Island of the Polillo island group, fishers grow grouper for the live market in Manila and that they are getting good prices. These fishers also have holding pens for groupers which they buy from other fishers nearby. When the fish reach the desired size, they sell these to their normal buyers. In addition, they raise groupers in net cages.

"This somehow affects our grouper supply hereabouts. That's

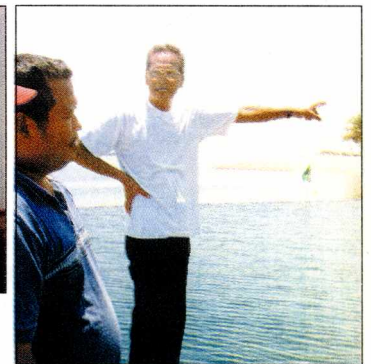
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Near the searanch, grouper fingerlings are being raised in nylon net cages by the Mandaragat fishers association



Perez town mayor Alicia Caringal: "We hope we can install additional grouper cages in this project like those SEAFDEC has done in Aklan"



Mr. Glicerio Manzano, president of the Mandaragat Fishers Association (above, right) showing the area covered by the searanching project: "We need more advocacy and dissemination of information among our co-fishers; that this project is a more sustainable and better alternative to illegal fishing"

The project actors and other local government staff in their visit to the searanching project site





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why we really have to make this project work. Our office constantly monitors our own searanching activities," Mr. Mamasig continues.

Early benefits

What has happened so far? What benefits have been obtained from the project?

Messrs. Mamasig and Dimaano of OPA claim that fishes like *Caesio*, snapper, rabbitfish and parrotfish have been observed to be rapidly growing and multiplying inside the enclosed searanching area. Also, some lobsters, mudcrabs have been seen inside the site. They also point out that some corals inside the sanctuary have regenerated.

The Mandaragat fishers say that they have had some good fish catches in the sea bottom area immediately around the searanch sanctuary. "This was quite significant, compared to the time that we did not have this project yet. You will also note that the grouper fingerlings we have stocked in our netcages were previously caught by our members," exclaims Mr. Manzano of the fishers association.

Pressing concerns

Stirrings in the modest searanching project are sending signals for outside assistance. Residents, officials and technologists involved in the project feel they could not let such a noble cause go into remission. They have invested so much of their effort, time and resources to show local fisherfolks that an environmentally sound fishing livelihood can be achieved.

"Our main problem is the lack of funds to sustain the project" was constantly echoed by the project actors.

Dr. Henry Buzar, executive assistant of Quezon governor Hon. Wilfredo Enverga, while lamenting the usual financial problem that begets most government-sponsored projects, says: "While this is the present constraint, we are trying our best to interest outside parties to lend us a hand."

On the other hand, while aware of the funding concern, the Mandaragat fishers also feel that advocacy and information dissemination among their fellow fishers and other community residents should be intensified. Mr. Manzano emphasizes: "The more the people in our community learn that there is a better alternative to illegal fishing, the more fish will there be, and the better the chances for a sustained livelihood for all of us." ###

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USES

Examples of the applications of chitin and its derivatives are given in Table 2. Food and nutrition, and water treatment industries absorb much of the produce yearly.

MARKETING

Estimated price of chitin in 1994 is US\$11 per kg, with some grades priced much higher (Anon. 1994). Around 8 years ago, Japan and the USA are the major producers of chitin and its derivatives (Shoemaker 1991). Most materials produced annually go to Japan where there is advanced technology and commercialization of chitosan. Other main markets are USA, UK and Germany.

PROSPECTS

Technologies to produce the qualities required of chitin and its derivatives from shellfish waste are available (Van Ornum 1994). In addition, new applications, especially of chitosan, are being discovered and refined. One drawback though is competition with biochemical industries. Still, as Nicol (1991) puts it, "a 'natural' material that uses up waste, is biodegradable and does not damage the environment may have a bright future."

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times higher than rotifers. High percentages of 22:6n-3 (DHA) were detected in the fatty acid composition of *Pseudodiaptomus* (13%) and *Acartia* (24%) with DHA/EPA (20:5n-3) values of 1.4 and 2.6, respectively. By providing nauplii of copepods at the early feeding stage, an average survival of 3.4% at harvest (Day 36) was obtained in a pilot scale grouper seed production trial in three 10-tons tanks. ###

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assessment of its potential use using the current practice of immersion or bath method appears limited due to some factors including the difficulty in dissolving the drug in water, the morphological deformities it caused to test animals, and the possible emergence of drug resistance due to inappropriate use.

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