

# Comanagement of Natural Resources

LOCAL LEARNING FOR POVERTY REDUCTION

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## Emphasis on people, not things, calms the waters in Tam Giang Lagoon

**Aquaculture boom threatens livelihoods and the environment**

*The unregulated expansion of aquaculture in a huge coastal lagoon was making it impossible for poor mobile fishers to make a living, and threatening the environment of the lagoon itself. With local government officials unable or unwilling to act, a team of researchers from two universities and the Department of Fisheries was determined to save the lagoon and livelihoods by finding participatory solutions to the impasse.*

Viet Nam's unique Tam Giang Lagoon is a near-perfect natural habitat for fisheries and aquaculture. Over 70 km long with an average depth of only 2 m, the lagoon is a highly productive habitat for both freshwater and marine species. But, in recent years, a combination of greed, social inequity, and short-sighted government policy led to violence on the water and threatened to destroy the finely balanced environment.

Most of the 300 000 people who live around the lagoon depend on fishing or farming for their livelihoods. The introduction of aquaculture in the 1980s triggered a boom that saw a rapid increase in net enclosures and diking of low-lying fields, producing ponds for profitable export species such as tiger prawn. The growth of aquaculture was spectacular, but it came at a price. The shallow lagoon was soon criss-crossed with net enclosures, earth berms, and fish pens to support the more traditional ponds, and other aquaculture-related infrastructure.

The loss of their traditional fishing grounds generated conflict between the mobile, boat-based fishers and the aquaculturalists. The fish farmers were comparatively

well off, and getting wealthier, while the mobile gear fishers in their small boats were increasingly marginalized. They needed more and larger gear to catch the same amount of fish, and some had turned to the illegal practice of electric fishing, using batteries and submerged electrodes to kill entire schools of fish. Such indiscriminate destruction of the fish stock was opposed by most fishers.



Demarcating the pen zones, fish-corral rows, and navigation space in Tam Giang Lagoon.

Tam Giang Lagoon Project



Tam Giang Lagoon Project

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This was the situation uncovered in the late 1990s by a study of the condition of the aquatic resource base and its use by communities around the lagoon. The study was funded by IDRC and the Canadian International Development Agency (CIDA). The research team was composed of experts from Hue University of Agriculture and Forestry (HUAf), Hue University of Sciences (HUS), and the provincial Department of Fisheries. The project led to an unusual degree of collaboration among scientists and government officials. In fact, said HUAf's rector, Tran Van Minh, "It provided us with a new model of how to collaborate effectively with government agencies."

## Focus on livelihoods

At the time the project began, researchers were just starting to experiment with participatory methods. To speed up the process, IDRC provided training in the techniques needed to get local people involved in assessing usage patterns in the lagoon and in identifying problem areas and solutions. In the early stages the project focused mainly on strategies to improve livelihoods.

Working at three sites in different parts of the lagoon, the multidisciplinary team soon discovered that, although the government had introduced reforms for agricultural land, it had not considered aquatic resource tenure. Prime fishing areas in the lagoon were held by families on the basis of local custom. They had invested in permanent fishing structures such as fish corrals that took advantage of the currents to guide fish into narrow traps or nets. The mobile gear fishers had no defined fishing areas. They survived by "following the fish tail," but this became increasingly difficult as the area of open water continued to shrink with the expansion of net enclosures.

The mobile fishers lived independently on their boats, and were much poorer than fishers in land-based communities. Because of the difficulty of delivering basic services, such as education and health care, the government encouraged them to settle in existing communities on the margins of the lagoon. One such community was the Quang Thai

commune at the northern end of the lagoon. Here they struggled to fish alongside established neighbours who had the benefit of access to good agricultural land as well.

In an effort to reduce pressure on the lagoon, and strengthen livelihoods, the researchers first introduced a new cash crop, peanuts, which thrived in the sandy soil. This early success built community confidence and soon was adopted by neighbouring villages. The researchers then turned their attention to the more difficult challenges of the aquatic resource base. They helped poor fishers assess the resource habitat and identify areas for restricting fishing and protecting against illegal electric fishing.

## Hardly any open water

Meanwhile, in the more productive central lagoon commune of Phu Tan, work with the communities and local government focused on the issues raised by the spread of aquaculture and net enclosures. At the beginning of the 1990s, such enclosures had been virtually unknown in the lagoon waters, but by the close of the decade uncontrolled growth meant that they covered 75 percent of the commune's water territory. Shrimp ponds built out from flooded rice fields on the low-lying shore occupied another 20 percent of the water surface. There was hardly any open water left!

All levels of government encouraged aquaculture, without considering how to regulate the resulting boom. Local governments earned fees from formalizing new private tenure claims. Provincial governments earned higher taxes. The national government in its turn earned increased revenues from the high-value export products. But the lagoon and its poorest inhabitants were suffering. Water quality and current flow declined dramatically, creating conditions for disease and reducing productivity. The increased privatization of the common pool resources of the lagoon hit the poorest fishers hard, forcing them to try fishing in other territories that were already heavily exploited.

The tenure regulations for the "privatization" of the lagoon surface were as murky as the waters. Under Vietnamese law, lagoon resources are owned by the state, but for many generations customary practice had allocated portions of the lagoon to private use. Wealthy families who had previously held rights to fixed gear were the first to replace that gear with permanent fish net enclosures for stocking high-value species. But then other fishers and local landowners joined in the bonanza. Claiming private rights to the water as well, they invested in the poles and multiple net layers required to stake out their own private aquaculture areas in the lagoon.

This *de facto* privatization of the resource base frequently led to disputes. Waterways needed for navigation were enclosed by nets. Sometimes fish was poached from within the enclosures and equipment was damaged. In one incident, electric fishers from outside the community destroyed fish corrals and threatened villagers. In the

words of Nguyen Luong Hien, director of the provincial Fisheries Department, “Everybody acknowledges how important the lagoon is. However, no one actually manages and takes responsibility for what happens there. All the different organizations want to have rights, but that is all.”

The local government wanted to resolve the conflicts, but seemed powerless to do so. This provided the opportunity for the researchers to bring together government officials, the net enclosure owners, and the mobile gear fishers — the latter hoping that the reopening of waterways would allow them better local fishing opportunities. Using participatory mapping techniques, examination of water quality data, and negotiation with the different interest groups, the research team brokered an agreement on the design of clearings for improved navigation and water exchange. However, disagreement between mobile fishers and net enclosure owners stalled agreement on fishing rights in waters adjacent to net enclosures.

This was too much for the impatient local government. Without consulting the researchers they went ahead and implemented the waterway plan, and police forced net enclosure owners to relocate their operations. Unfortunately, the local government failed to adopt either the conflict resolution measures or the provisions for shared fishing access in the waterways that had been proposed by the research team. As a result, the negotiations collapsed and conflicts between mobile gear fishers and net enclosure owners escalated into violence.

## Reluctant to change

This experience brought home to provincial fisheries officials the arguments of the research team that conventional top-down planning would not work. However, the officials were still reluctant to consider a different approach in the poorer, more remote community of Quang Thai. Here the researchers introduced intensive aquaculture in smaller cage structures, but still there was competition for prime locations and navigable waterways, as in Phu Tan, and the local government was unable to provide practical solutions. Another issue was the increasing pressure on local sea grass needed to feed hordes of hungry carp in more and more fish cages. Local officials could see only that aquaculture production was up year after year, a trend that looked positive to them.

However, the researchers had by this time acquired considerable evidence and expertise from their previous research on lagoon exploitation and resource conflicts. They also had the support and collaboration of the communities they involved in their participatory research. The arguments of the research team got a boost with the introduction in 2003 of new national legislation that provided for fisheries comanagement through locally defined user groups, and specifically mandated provincial authorities to implement the legislation. Finally, the local officials were convinced that lasting solutions could come only from

participatory planning and comanagement, in which local fishers and governments agreed on guiding principles for use of the resources and made commitments that could be jointly enforced.

The provincial Department of Fisheries saw this as an opportunity to test practical implementation strategies for its new mandate. Local fishers had learned a lot about the lagoon resource base, and had sufficient information to make reasoned arguments and plans. The research team had acquired skills in communications and facilitation and could lead the process without imposing solutions. With strong motivation and an untested new policy mandate, fishers in Quang Thai proposed forming a user group. Key village and local government officials were identified and met to review recent research data on the degradation of lagoon resources and to share ideas. Others worked to improve communication between resource user groups and government and to develop environmental education messages to be disseminated by local government.

The major task of the user group, however, was to formulate a plan for allocating the lagoon’s surface area. The planning process was launched at a stakeholder meeting and workshop. The research team provided technical resources and facilitated consensus on key problems and overall strategy for the planning process. The central issue was how to reorganize fish pens and corrals to provide the space necessary for water flow and navigation. This would provide a base for improved administration and enforcement of conservation regulations. To minimize potential conflicts, all the participants agreed that the plan should maintain access for all current users, respect customary rights, and share the dislocations needed to rearrange gear in the lagoon waters.

## Limits and responsibilities

The plan took shape through the application of participatory research and shared information from joint mapping, focus group surveys, and group analysis. The process reinforced local knowledge as well as the insights from scientific research and provided a foundation for new



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approaches to comanagement and local governance. Local government officials initiated and led local resource planning. Provincial and district staff provided technical resources and facilitated local conflict management and problem solving.

The result was a plan that defined limits for the development of fish cages and corrals. But it went much further, identifying and mapping navigation waterways, and demarcating zones for different types of fishing and aquaculture gear. Finally, the plan defined several types of resource users with varying rights — and responsibilities — for implementing, monitoring, and enforcing management decisions. The fact that the plan and its solutions were put forward by the users themselves greatly increased the community's commitment to the outcome and simplified the work of Fisheries Department staff in the area.

Now the Quang Thai experience is being replicated in adjoining municipalities in the lagoon. Training materials and guidelines are being developed for provincial staff, who are taking leadership in fostering the new comanagement system. Says the Fisheries Department's Nguyen

Luong Hien, "Now we are looking for ways to better integrate community management and provincial government planning."

For the research team, the experiences in the Tam Giang Lagoon have fundamentally changed the way they approach research. Dr Ton That Phap, a member of the team from Hue University of Sciences, makes that clear when he says, "The participatory approach helped us change our way of thinking about research as being only the analysis of scientific data and technology. That approach emphasizes things and not people. We now have the tools and are interested in solving problems with people, to understand them, and to help them come up with necessary actions."

*This case study was written by Bob Stanley, an Ottawa-based writer.*

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