# Community Action to Protect Fishery Resources in Nha Phu Lagoon, Vietnam

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#### Abstract

Rural communities around Nha Phu Lagoon depend on coastal fishery resources for their livelihoods. The prevailing problem is that unorganized Vietnamese fishermen are watching helplessness at the vast degradation of their natural resources in which they have a substantial share. The over-exploitation of marine resources is a common and recognized problem and fishery resources protection and management is under development. However, so far government measurements are not yet sufficient to carry out the assigned tasks.

For a period of six months participatory action research following an Integrated Natural Resource Management approach was carried out visiting 12 fishing villages around Nha Phu Lagoon. Electric fishing is still very common in Nha Phu Lagoon and was identified as one major factor in the destruction of coastal fishery resources and social structures. Electric fishing violates Article 6 according to Resolution No. 17/2003/QH11 of the National Fisheries Law. The main reasons fishermen engage in electric fishing is the low initial investment cost and that no specific knowledge is needed. In addition, electric fishing is less labor intensive and the income slightly higher than from traditional gill net fishing methods. Seven years ago electric fishing was introduced to the village of Ha Lien. Soon half of the fishermen were using this destructive fishing method. The following rapid reduction of fishery resources lead to conflicts that paralyzed the entire community until a village meeting was arranged to raise awareness and persuade fishermen to ban electric fishing. The whole community agreed to ban electric fishing and in 2002 a local 'Fishery Protection Group' was established to control illegal electric fishing activities in the area. The local government authorized the self-formed group and 20 group members patrol and confiscate electric fishing equipment. The number of electric fishermen in the area has declined significantly. Today fishermen in Ha Lien are characterized by high awareness towards the degraded state of their natural resources and strong communal ties have formed between households.

### Introduction

Rural communities around Nha Phu Lagoon like in many coastal regions in Vietnam depend on coastal fishery resources for their livelihoods. Although Vietnams coastal waters are rich of natural resources environmental destruction and overfishing have lead to a massive degradation of fishery resources<sup>1</sup>. The overexploitation of marine resources is a common and recognized problem and the introduction of laws and regulations is under development. However, so far government organizations are not yet sufficient to carry out the assigned tasks and law

<sup>&</sup>lt;sup>1</sup> The degradation of fishery resources is not a problem unique to Vietnam. Today fisheries worldwide are threatened through overfishing. (See for instance FROESE & PAULY, 2003; GRAINGER, 1999)

enforcement is weak. In addition, few fishermen are organized in fishery groups or receive extension services.

The objective of the present article is to give an overview of the fishery sector in Nha Phu Lagoon, present an example of a self-help organization by introducing the case study of Ha Lien Village, and share some lessons learned from community action.

## **Materials and Methods**

The results presented in this paper are based on primary data collected through qualitative and quantitative methods during a six months investigation period. The underlying research approach is that of integrated natural resources management (INRM), which is best described by the CGIAR workshops on INRM. The survey was carried out from September 2003 to February 2004 at Nha Phu Lagoon in Khanh Hoa Province in Central Vietnam. Nha Phu Lagoons covers 4500 ha and is surrounded by 12 villages. The villages lie in two districts Ninh Hoa and Nha Trang, representing five municipalities: Ninh Phu, Ninh Ha, Ninh Loc, Ninh Ich and Vinh Luong. The villages were visited on a daily basis together with a research assistant to help translating. The three-volume sourcebook "Participatory Methods in Community-based Coastal Resource Management" from the Internetional Institute of Purel Percentuation (IIDP, 1008) methods.

Management" from the International Institute of Rural Reconstruction (IIRR, 1998) provided a basis of participatory methods used specifically for coastal resource management. At first, qualitative methods were chosen such as:

- Identification of key informants
- Semi-structured interviews
- Focus-group discussions
- Resource mapping

In addition, more quantitative methods were selected:

- Questionnaires
- Venn-diagrams
- Matrix-ranking

The combination of qualitative and quantitative methods is an important and recognized technique that leads to an improved quality of information (MARSLAND et al. 2001).

Participants were fishermen and their families but also village leaders, women-, fishery-, and farmer-groups, local governments, the marine border police, the Ministry of Fisheries, extension services, banks, middleman, and sales persons. Important to mention is that households usually rely on a combination of fishing, aquaculture, agriculture and/or trading for income.

### Results

Questionnaires and Problem Ranking

The questionnaire was carried out in each of the 12 villages, respectively with 6 households. The 72 questioned participants mentioned that fish catches had declined by 52 percent in recent years. This figure is based on qualitative statements, because there is no statistical data available and a

lot of fish is traded on informal markets, i.e. it is difficult to assess this figure quantitative. Reasons for the degradation of coastal fishery resources were gathered during group discussions and then ranked during the questionnaire. Ranking scores ranged from 1 to 10, i.e. small to large impact on the degradation of coastal fishery resources and are presented in cumulative order:

- 1. Drag net
- 2. Population increase
- 3. Pollution from agriculture and cities
- 4. Electric fishing
- 5. Destruction of mangroves
- 6. Pollution from shrimp ponds
- 7. No alternative jobs

Interesting to point out is the causal connection between the gathered problems, i.e. population increase leads to the destruction of mangroves to construct shrimp ponds, which wastewaters lead to pollution, and with no alternative jobs more people enter the coastal fishery sector using illegal fishing practices. For the following example of a self-help organization I would like to focus on electric fishing.

### Focus Group Discussions

Electric fishing was introduced to Nha Phu Lagoon seven years ago. For several reasons given below this illegal fishing practice was soon widely adopted by small-scale fishermen, although violating Article 6 of Resolution No. 17/2003/QH11 of the National Fisheries Law. Electric fishing gear stuns small fish and shrimp, which then are scooped up by a net using a mesh size of 4mm (Figure 1). Besides being indiscriminate in size, an interviewed electric fishermen admitted that small fish are often used as duck feed, this fishing technique is used by wading in shallow water, which functions as breeding ground and nursery area of many marine invertebrates and fish. Another great disadvantage of electric fishing is that it destroys social structures in the fishery communities; fishermen using traditional fishing gear, like gill nets and crab traps versus fishermen using electric fishing gear. This is, because since the introduction of electric fishing catches have declined further and more people are going fishing today. Several reasons account for this perception. The main reason fishermen engage in electric fishing is the low initial investment cost and that no specific knowledge is needed compared to traditional fishing methods, which nets cost a substantial amount of money and which requires experienced fishermen to know where and when to go fishing. In addition, electric fishing is less labor intensive and the income slightly higher than from traditional gill net fishing methods. Fishermen using traditional methods for example will go fishing for about 12 to 14 hours a day. A fisherman using electric fishing gear will take only 3 to 4 hours daily. These reasons have led thereto that not only residents engage in electric fishing but also outsiders that come to the Lagoon by motorbike, which emphasizes the open-access situation<sup>2</sup>.

<sup>&</sup>lt;sup>2</sup> Of course this obsolete term fails to express that these coastal resources (such as any other resources) are far from open-access as Béné (2003) states, but require certain costs of entry to exploit.



# A Case Study: Ha Lien Village

Soon after electric fishing was introduced to the village of Ha Lien seven years ago, 50% of the fishermen engaged in this new technique. Strong social tension between the two sides led to conflicts and fights within the community. This went so far, that the village leader could

Figure 1: Electric fisherman in Nha Phu Lagoon.

not move freely in his village anymore, because of the many arguments he would get into. Although no internal leadership was detectable and no external efforts reported there was a shared understanding of the situation as fishery resources declined and conflicts grew. In 2002 collective action led the villagers to organize a village meeting were they unison agreed to ban electric fishing. A self-help organization was formed, the 'Fishery Protection Group'. Later this group even got the authorization from the local government authorities. Today 20 group members patrol and confiscate electric fishing equipment in the area.

The outcome is remarkable. The numbers of electric fishermen in the area has declined significantly. In the village of Ha Lien only 2 families remain. In addition, outsiders from other villages that fish nearby the village also are punished and their equipment confiscated. Of course there have been fights and arguments but the 'Fishery Protection Group' has staid persistent. In Ha Lien Village strong communal ties have formed and fish catches have stabilized. Last but not least awareness amongst fishermen has developed, which is expressed in (1) individual mangrove reforestation projects and (2) discussions amongst fishermen about a 'good code of practice in fishing', e.g. adoption of minimum mesh sizes in order not to catch undersized fish.

# Lessons from Community Action

Although there have been reports on local TV about the success story of Ha Lien Village, no horizontal scaling was detected, i.e. villages in close proximity, with similar large numbers of electric fishermen, social conflicts, and disagreement, react different. In most villages this means that no action is taken, even though, similar as in Ha Lien Village, individual actors are very aware of the negative effects of their unsustainable action. But only the shared understanding of the situation and thus further increasing awareness encouraged 'community action', generally known as collective action. In addition, this increased awareness combined with knowledge about

the cause and effect of the degradation of resources or like in the case study, of social tension leads to a willingness to change and to innovative ideas. In integrated coastal fisheries management Silvestre (1996) recalls "problems must first be perceived and diagnosed as one before solutions to them may be prescribed". In an analysis on forest management in 18 sites in Nepal, Ostrom (1998) points out the ability of resource users to organize themselves and use their what Béné (2003) calls "institutional richness", to establish arrangements governing resource use and to enforce these arrangements. Those communities that had formed self-help organizations experienced similar or improving forest conditions, comparable to the constant or presumable slightly increasing coastal fishery resources surrounding Ha Lien Village. On the other hand Ostrom (1998) states that the examined cases, …"vary substantially in regard to forest conditions and the extend of collective action",…, unfortunately no explanation is given. Interestingly,…,"no relationship between current population density and forest conditions were found",…, although one could argue that population density and therefore the pressure on resources is considerably low in Nepal (OSTROM, 1998).

### Conclusion

The extended use of coastal fishery resources is linked to enforcement to reduce utility through illegal action, improved natural resources management, and family planning. As national and local governments fail to enforce current fishery laws and regulations the community of Ha Lien Village succeeds in enforcing state law themselves. In his work on marine resource management practice and institutions in Indonesia Thorburn (2000) concludes that centralized, state-led natural resources management combined with uneven enforcement and the danger of collusion threatens resources. In this respect a study from the WorldFish Center carried out on co-management in Africa, analyzing nine case studies, is representative, recognizing that centralized approaches to fisheries management seem incapable of dealing with resource degradation (KHAN et al. 2004). Self-help organizations or collective action proves effective in enforcing fishery regulations and in developing improved natural resources management. The devolution of natural resources management to local resource-users could play a vital role in the successful management of Vietnams coastal resources but one needs to consider government agencies to address family planning and migration to reach sustainability.

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