

# Operationalizing fisheries co-management

## Lessons learned from lagoon fisheries co-management in Thua Thien Hue Province, Viet Nam





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**in Thua Thien Hue Province, Viet Nam**

**Baku Takahashi**  
**Arie Pieter van Duijn**

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# Foreword

It is now widely recognized that the active involvement of stakeholders in the management of natural resources is of the utmost importance for national governments to achieve their resource management objectives. This is especially the case in the absence of well-defined property rights, or where the rights to the resources are vested with a government agency that is not fully able to enforce regulations regarding access to and withdrawal of natural resources. In this situation a government agency can choose to allow an identifiable community of interdependent users to co-manage natural resources. In such a communal property regime, the most relevant day-to-day or operational-level property rights are "access" and "withdrawal" rights. However, communities may also have a more extensive set of rights that authorizes their participation in defining operational-level rights such as management and exclusion. Worldwide, this co-management of natural resources is making a positive contribution to the management of increasingly scarce natural resources, by enhancing stakeholders involvement.

In Viet Nam, fisheries resources are *de jure* state property, but *de facto* common pool resources. Management information on the wide variety of target species is often lacking and difficult and expensive to collect. This situation is further complicated by the small-scale nature of coastal fisheries with a wide diversity of gear and landing sites. As the financial burden of monitoring, surveillance and control measures required to implement management measures through top-down control is too high, government authorities increasingly view participation of resource users as a necessary element of the fisheries management system. As a consequence, the government of Viet Nam is looking for suitable alternatives to achieve its fisheries resource management objectives. At the national level this has resulted in the establishment of the Viet Nam Fisheries Society (VINAFIS) with branches at provincial level.

The Integrated Management of Lagoon Activities in Thua Thien Hue Province Project (IMOLA) is a trust-fund project started in August 2005, funded by the Italian and Vietnamese governments. The project is aimed at assisting the Thua Thien Hue Province to promote the livelihoods of local fisherfolk through the sound and sustainable management of natural resources in the Tam Giang–Cau Hai Lagoon, which is the largest lagoon system in Southeast Asia. As both the population and the economy of Thua Thien Hue Province are growing, the Tam Giang–Cau Hai Lagoon ecosystem is coming under increasing pressure. Overexploitation of fisheries resources by capture fisheries and encroachment on critical habitats by aquaculture ponds are key contributors to the deterioration of fisheries resources. IMOLA supports the implementation of Decision 4260/2005/QĐ-UBND, in which the Provincial People's Committee delegates power to the district authority to allocate fishing rights to fisheries associations (including some forms of aquaculture) at the grassroots level. This is done through the establishment and strengthening of fisheries associations and the development of an effective co-management mechanism.

This publication aims at enhanced understanding of the role of the national government in promoting fisheries co-management in Viet Nam and its conclusions can be used more widely as a source of advice for and guidance to those in the region or further afield who are involved in fisheries resource management. Finally, the report serves as an advocacy tool for implementing fisheries co-management approaches.



Hiroyuki Konuma  
Assistant Director-General and  
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# Executive summary

The Tam Giang–Cau Hai Lagoon is the largest lagoon system in Southeast Asia, located in Thua Thien Hue Province of Viet Nam. Historically, this valuable common pool resource has been used by the local people to meet their subsistence needs and to earn their livelihoods. After the war ended in 1975, however, the lagoon system underwent many drastic changes. These changes included population increases in the coastal areas, improvements in fishing boats and gears, and the introduction of aquaculture on the lagoon shores. In the non-fisheries sectors, there have been significant environmental changes such as intensifying agriculture, expanding residential areas, and infrastructure development that have impacted the lagoon.

Because of the deteriorating lagoon environment and fisheries resources, the provincial authority issued a series of policies and regulations to control fishing and aquaculture operations in the lagoon in the hope of managing the lagoon resources sustainably. However, the conventional top-down approach to lagoon fisheries management proved to be ineffective as it excluded the involvement of local resource users. A large number of regulations were issued by the authority in order to manage the lagoon fisheries resources but enforcement and compliance were especially low. At the same time, the authority has not had enough human and financial resources to implement fisheries management policies at field level, especially when approximately 300 000 people are said to rely on the lagoon resources to different degrees and the majority of the fishing is small-scale fishing.

In order to break through the management impasse, in late 2005, the provincial authority issued Decision 4260 that enabled the participation of local fishers in the management planning and implementation as well as the delegation of some lagoon management responsibilities to the local fishers' groups. The co-management component of the Integrated Management of Lagoon Activities in Thua Thien Hue Province Project (IMOLA), which is executed by the Food and Agriculture Organization of the United Nations (FAO), has been implemented in Thua Thien Hue Province since mid 2005.

IMOLA has comprised five stages: preparatory, inception, planning, implementation, and monitoring and evaluation stages. Although these stages are separated here for easier understanding, they are interrelated parts of one continuous process.

The preparatory stage involved a series of surveys to understand better the socio-economic and fisheries situation of the locale in which the co-management project would be implemented. This process included the selection of target areas (communes in this case). Co-management feasibility assessment was a part of this process to increase the probability of the success of co-management. Data collection and sharing with stakeholders were particularly important as fisheries co-management is often initiated in data-poor situations. The shared data (e.g. pertaining to fishing gear and aquaculture maps), which were the subject of in-depth discussions, helped to foster a common understanding, which was one of the important bases for co-management operationalization.

The second phase of co-management operationalization was the inception stage. This stage focused largely on establishing and strengthening local fisheries associations as partners in co-management. Depending on the field conditions, this process had to start with fishers' mobilization, or with the consolidation of existing formal and informal groups and networks, if such existed already. Determining an appropriate group size, developing the shape of the organization (including charter, executive board, subgroups, congress, and others), and enhancing the participants' awareness and capacities were all integral parts of the inception stage. At the end of this stage were the formally established local fisheries associations.



With the involvement of local fisheries associations and relevant authorities, the planning stage of the lagoon co-management commenced. The planning stage was a time-consuming process in which fisheries management plans had to be formulated and an agreement among key stakeholders had to be reached. As the lagoon water surface is finite, the resource management planning involved water surface demarcation and allocation to local fisheries associations, the development of zoning plans and the creation of resource management regulations. Methodologically, the process involved many back-and-forth discussions and negotiations between local fisheries associations and the authorities that were grouped under co-management bodies at the commune level. Some operational issues such as a user fee system, the association's income generating activities, patrolling, and conflict management were discussed during this stage and decisions on the issues were then reached. All of the agreed-upon plans and regulations were eventually put together as a single document, on the basis of which the district authorities officially allocated fishing rights to the local fisheries associations.

The fourth phase was the implementation stage. Starting from the registration of resource users (capture fishers and aquaculturists) and their gears/facilities, the implementation involved the collection of membership and resource user fees, fishing gear reduction and rearrangement, habitat protection, lagoon patrolling, and the operation of economic/business activities by local fisheries associations. All resource management activities were based on the plan as stipulated in the fishing rights allocation document and the fisheries associations' annual action plans. Lagoon fisheries co-management in the Tam Giang–Cau Hai Lagoon is currently at this stage, after six years of operation under the auspices of IMOLA.

The monitoring and evaluation (M&E) is not a separate stage, but it should be done in parallel with the co-management implementation. The keys to effective M&E are deciding how to measure the progress towards the intended goal and how to structure such an assessment. Although there is no universally applicable M&E framework for fisheries co-management, consideration should be given to three different kinds of indicators of process, inputs and outputs. In particular, the importance and practical usefulness of the process indicators for fisheries co-management should be noted and highlighted.

There is a need for a co-management recognition scheme that rewards progress in the co-management process rather than simply looks at final impacts (as is usually done through certification schemes). The assessment of ultimate impact (output) indicators is often more difficult to do when there is a poor data collection system in place and given the nature of small-scale fisheries in many developing countries. IMOLA has yet to assess the output indicators. It is considered particularly important to make the management system adaptable to the variations in the fisheries resources. This report identifies some key challenges, including lack of institutional support to the lagoon fisheries co-management system by the authority and a not fully streamlined legal system, to operationalize and sustain lagoon co-management.

Fisheries co-management is a process that requires the participation and collaboration of different stakeholders including the fishers, authorities at different levels and other key players. There is no end to the co-management in this sense, and the co-management should evolve over time, adjusting itself to the changing environment and ecosystem. Trust is a binding factor among different stakeholders, and it is on the basis of this trust that the appropriate level of power should be delegated so that local fishers can make their own decision as to how their resources should be managed.

Fisheries co-management is a unique process that may take different forms in different places and contexts; however, the case study of the Tam Giang–Cau Hai Lagoon offers some common and practical lessons and guidance to co-management practitioners not only in the country, but also regionally and internationally.



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# Abbreviations and acronyms

BOD	biological oxygen demand
CAFFFE	Center for Agro-Forestry-Fisheries Extension
CB	Checking body
CBFM-SEA	Community Based Fisheries Management Programme in Southeast Asia
CIDA	Canadian International Development Agency
CMB	co-management body
CPC	Commune People's Committee
CPRM	Common-Pool Resources Management (Project)
CPUE	catch per unit effort
CSSH	Centre for Social Studies and Humanities
DANIDA	Danish International Development Agency
DARD	Department of Agriculture and Rural Development
DECAFIREP	Department of Capture Fisheries and Resources Protection
DOFI	Department of Fisheries
DOHA	Department of Home Affairs
DONRE	Department of Natural Resources and Environment
DOT	Department of Transport
DPC	District People's Committee
DPF	Division of Planning and Finance (of DARD)
EB	executive board
F/S	feasibility study
FA	fisheries association
FAD	fish aggregating device
FAO	Food and Agriculture Organization of the United Nations
FSPS	Fisheries Sector Programme Support
GIS	geographic information system
GPS	global positioning system
IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
IMOLA	Integrated Management of Lagoon Activities in Thua Thien Hue Province Project
IQ/ITQ	individual quota/individual transferable quota
IUU	illegal, unreported and unregulated (fishing)
M&E	monitoring and evaluation
MARD	Ministry of Agriculture and Rural Development
MCD	Centre for Marine Life Conservation and Community Development
MG	mobilization group
MOSTE	Ministry of Science and Technology
NAV	Nordic Assistance to Vietnam
NGO	non-governmental organization
NRU	Natural Resources Unit (of IMOLA)
PFA	provincial fisheries association
PPC	Provincial People's Committee
PRA	participatory rural appraisal
SCAFI	Strengthening of Capture Fisheries Management
SDA	Sub-Department of Aquaculture
SEU	Socio-economic Unit (of IMOLA)
SPOT	Satellite Pour l' Observation de la Terre
TU	Training Unit (of IMOLA)
TURF	territorial use rights in fisheries
US\$	United States Dollar
VINAFIS	Vietnamese Fisheries Society
VND	Vietnamese Dong



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# I. Introduction

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The purpose of this publication is to provide a case study of the Integrated Management of Lagoon Activities in Thua Thien Hue Province Project (IMOLA) from which co-management practitioners can draw important lessons to facilitate the co-management process in other areas. The case study thus describes the co-management process that IMOLA went through during the course of its implementation. Fisheries co-management is a complex and organic process and takes different forms and approaches depending on the particular local conditions. The process cannot be defined monolithically. Therefore, the case study is not meant to define a universal process or “model” for co-management.

Co-management is an attitude and approach to natural resource management that is built upon trust, solidarity, and cooperation among all involved, including the resource users and authorities. Ultimately, co-management is about the management of people rather than natural resources.

IMOLA was started in August 2005 to assist the provincial government of Thua Thien Hue Province in lagoon management. One of its objectives was to develop and implement the co-management of lagoon resources/activities in order to manage the lagoon sustainably. IMOLA is a trust-fund project executed by the Food and Agriculture Organization of the United Nations (FAO) and funded by the Italian and Vietnamese governments. Structurally, IMOLA is under the provincial Department of Agriculture and Rural Development (DARD), which is in charge of the fisheries sector, including aquaculture. Its first phase started in 2005 and the project is now in its third phase.

This report is based on the authors’ six years of project experience in lagoon co-management in Thua Thien Hue Province. When the project started, there was *de jure* state ownership of the lagoon and a strong top-down management approach by the provincial authority, but *de facto* open access, i.e. there was no actual control on access. The project has been facilitating the development and operationalization of a lagoon co-management regime through feasibility studies, mobilization of local fisherfolk into fisheries associations (FAs), establishment of co-management mechanisms as well as rules and regulations and assistance to those responsible for implementing the co-management.

The Tam Giang–Cau Hai Lagoon is located in Thua Thien Hue Province in central Viet Nam. It is the largest lagoon system in Southeast Asia and extends about 70 km along the coast with a surface area of about 22 000 ha. The lagoon is connected to the South China Sea by two inlets. The lagoon contains complex ecosystems ranging from marine to freshwater systems. The unique natural landscape of the lagoon shore provides diverse niches to various unique aquatic animals and plants. To date, over 200 species of fish have been identified in the lagoon.

As a result of its size and richness in natural resources, the lagoon constitutes an important livelihood source for the local people living along the coast. The lagoon is located within the administrative boundaries of one province, covering five coastal districts with 33 communes and nearly 100 villages. Approximately 300 000 people live in and around the lagoon with many involved in capture fisheries and aquaculture. About one third of these people are estimated to rely directly on capture fisheries and aquaculture.

Since the 1990s, the lagoon has undergone rapid ecological and resource deterioration because of increasing fishing pressure and aquaculture development (mainly ponds for giant tiger prawn, *Penaeus monodon*) among other things. With declining lagoon resources and an increasing number of fishing gears and aquaculture facilities that limit the available water surface of the lagoon, the number of conflicts among resource users has been increasing. This has been especially true in shallow lagoon areas, which are also the most suitable areas for fish spawning and nursing. Given the importance of the lagoon for socio-cultural, ecological and economic reasons, the provincial government realized the need to formulate effective management strategies and plans for the lagoon. In October 2004, the province approved the first master plan on capture fisheries on the lagoon and this paved the way for lagoon capture fisheries management (Provincial People's Committee of Thua Thien Hue Province [PPC], 2004).

One year later, in December 2005, the Provincial People's Committee (PPC) of Thua Thien Hue issued Decision No. 4260/2005/QĐ-UBND on lagoon fisheries management. The Decision was innovative in that the PPC encouraged the decentralized management of the lagoon fisheries by delegating management responsibility to the lower levels and by recognizing local FAs as lagoon management partners. The Decision specifically delegated power to district authorities to issue fishing rights to local FAs for lagoon fisheries management. The Decision set the legal foundation for lagoon capture fisheries co-management in the province.

The lagoon co-management largely focuses on fisheries management, including both capture fisheries and aquaculture on the lagoon water surface. However, IMOLA also considers the implications for fisheries resources of agriculture, livestock raising, construction, tourism, waste management, and others taking place in and around the lagoon.

The experience gained from IMOLA, like all co-management processes, is specific to the Tam Giang-Cau Hai Lagoon in Viet Nam, but there are major steps and activities that can be generalized for use elsewhere. The last chapter includes some of the key lessons and recommendations drawn from the IMOLA experience for policy-makers and practitioners in fisheries co-management operationalization.

### **1. Structure of this report**

This report comprises a background chapter and then five chapters, each addressing one of the five phases of lagoon fisheries co-management operationalization and explaining in detail what particular activities need to be done in each stage. The five stages are:

1. **Preparatory stage**
2. **Inception stage**
3. **Planning stage**
4. **Implementation stage**
5. **M & E stage**

**The background chapter** provides readers with background knowledge related to lagoon co-management. It starts with a brief description of the lagoon and its people as well as their interrelations through their use of resources, including the characteristics of the lagoon system and its resources and the people whose livelihoods and/or subsistence depend on the lagoon resources. There is a brief history of lagoon fisheries showing the emerging need for the management of the lagoon over time. The chapter also introduces the government institutional setup surrounding lagoon issues, policy related to lagoon co-management and finally the FAO IMOLA that is the focus of this report.

**The chapter on the preparatory stage** explains a series of basic socio-economic and natural resources surveys and co-management feasibility studies that IMOLA undertook at the very beginning of its operation. Not all of these surveys were necessarily a part of the co-management process *per se* but provided an important database for planning, consensus building and decision-making throughout the lagoon co-management process. This chapter also covers the process of target commune selection through feasibility assessment of co-management as well as a brief introduction to the participatory tools used in the co-management process.

**The chapter on the inception stage** covers the process of establishing and strengthening the local FAs in lagoon villages and communes. The chapter explains in detail how local fishers were mobilized and their awareness raised and how local FAs were legally established. The chapter includes an explanation of what constitutes “legally established FAs.”

**The chapter on the planning stage** explores the process of formulating a lagoon resource management plan with local FAs and the authorities. This process includes the demarcation of the water surface, development of zoning and resource management plans, and fishing rights allocation at the end of the process. This chapter also touches upon the issues of resource user fees, patrolling, and conflict management, which are critical but often controversial aspects of co-management.

**The chapter on the implementation stage** explains the implementation process of the above plan including zoning and resource management regulations as well as monitoring and enforcement (patrolling). This chapter also introduces the efforts to promote FA-based economic activities as a part of strengthening the financial base of FAs.

**The chapter on the monitoring and evaluation stage** provides some examples of and insights into the measurement and assessment of the progress and outcome of fisheries co-management. The monitoring and evaluation (M&E) indicators are also discussed in this chapter.

Figure 1 shows diagrammatically the complete co-management operationalization process, its constituent activities and the periods when these took place.



Figure 1 A diagram showing the process of operationalizing co-management

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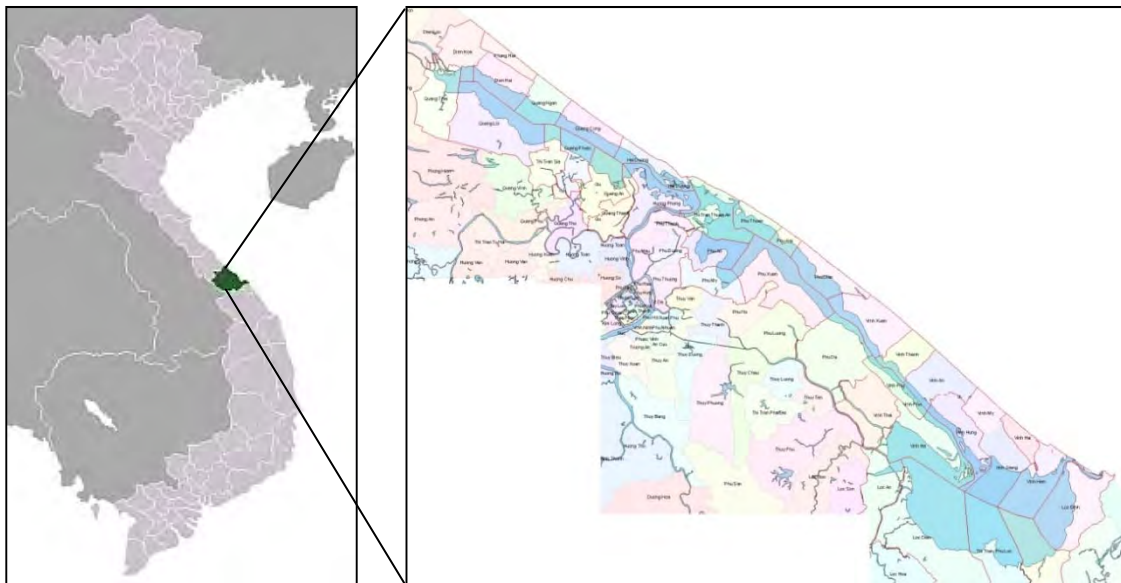
## II. Background

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This chapter starts with a brief description of the lagoon including the characteristics of the lagoon system and its resources. There is also a description of the local people, their use of lagoon resources, a brief history of lagoon fisheries and the need over time for lagoon resources management.

### *1. The lagoon and its resources*

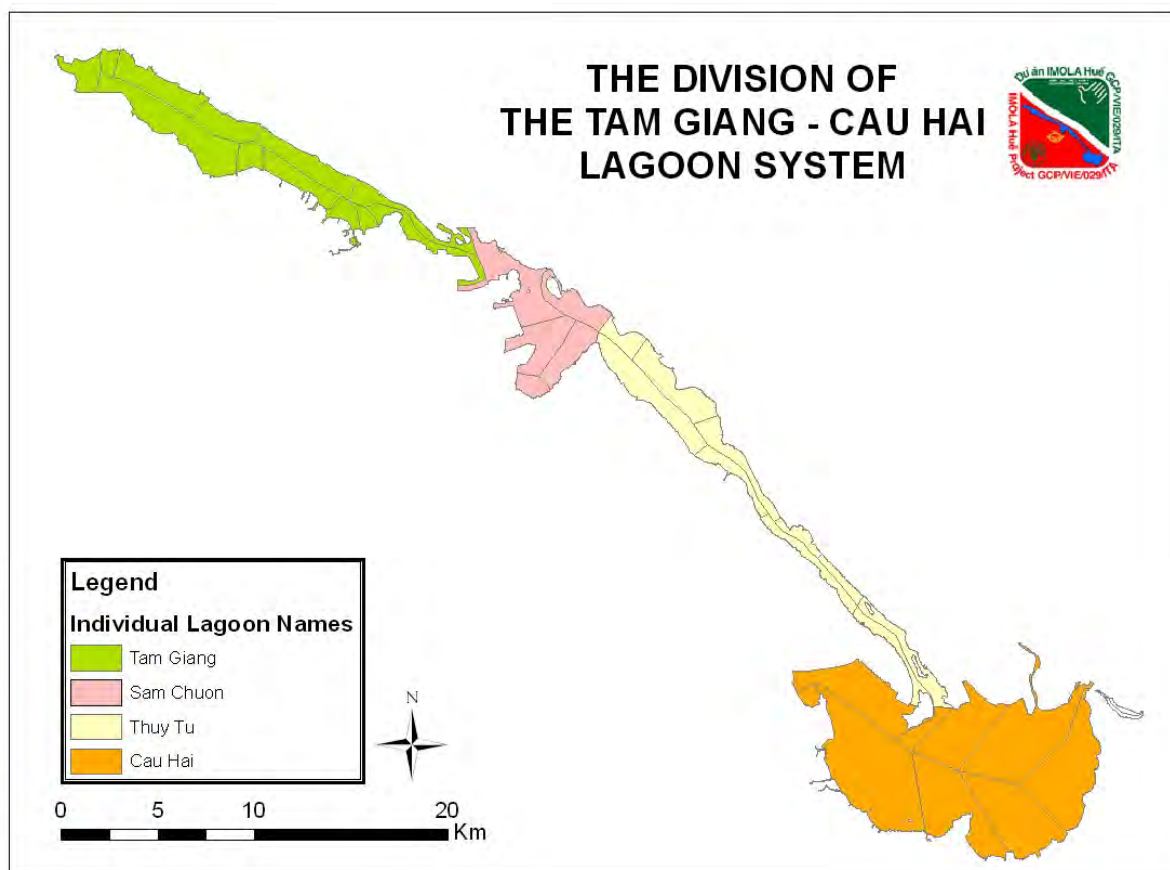
The Tam Giang–Cau Hai Lagoon is located in the central province of Thua Thien Hue in Viet Nam. It is the largest lagoon system in Southeast Asia, which extends about 70 km along the coast, with a surface area of about 22 000 ha (see Figure 2). The lagoon has two inlets that connect it to the South China Sea and four main rivers (O Lau, Huong, Bo and Truoi) flow into the lagoon. This complex mixture of marine and freshwater supply in different geographic areas results in a complex lagoon ecosystem with various habitats. The unique natural landscape of the lagoon shore also provides diverse niches for different aquatic animals and plants. As a result, the lagoon is the habitat of more than 200 species of fish.



**Figure 2** Maps showing the location of Thua Thien Hue Province and the lagoon  
(Source for the image on the left: Wikimedia Commons)

Because of its size and diversity, the Tam Giang–Cau Hai Lagoon system is often divided into four (sometimes five) subsystems by different researchers or agencies (see Figure 3). Starting from the north, the four are the Tam Giang Lagoon (5 000 ha), the Sam Chuon Lagoon (2 000 ha), the Ha Trung–Thuy Tu Lagoon (3 500 ha), and the Cau Hai Lagoon (10 000 ha).





**Figure 3 A map showing the division of the Tam Giang–Cau Hai Lagoon system**

Note: Grey lines show administrative (commune) boundaries.

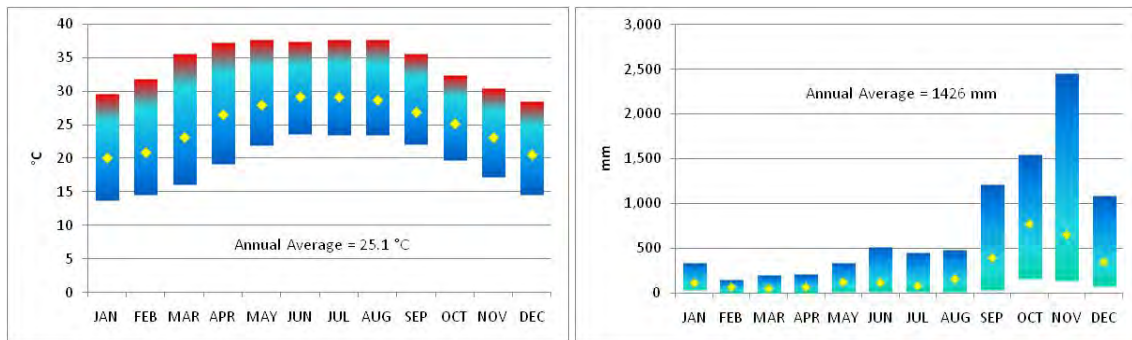
Depending on the distance from the inlets and river mouths, most of the lagoon areas are brackish, with the exception of the northern Tam Giang Lagoon that has a freshwater ecosystem with a large volume of influx from the O Lau River in the north. The area around the mouth of the O Lau River is an ecologically important wetland area that was once proposed as a Ramsar site.

The lagoon’s brackish water area has many kinds of marine and brackish water finfish species such as groupers, snappers, scats, rabbitfishes, and mullets as well as a variety of crustaceans like crabs, prawns and shrimps. Mollusc species such as clams and oysters as well as jellyfish also inhabit the lagoon. Shallow water areas accommodate different kinds of seaweeds and other aquatic plants, which provide shelter and food for small finfish and crustaceans. One brackish water carp species (*Cyprinus centralus*), known among local fisherfolk as *ca day*, is said to be endemic to the Tam Giang–Cau Hai Lagoon system. The lagoon’s freshwater area has different carp species, including common carp and grass carp.

Another important factor that makes the lagoon system unique and diverse is the province’s weather. From Figure 4, it is clear that the province has two very distinct seasons, namely the dry and hot summer season (usually from March to September, solar calendar) and the wet and cold winter season (usually from October to February, solar calendar). In the dry summer season, because of the hot weather and lack of rain, the lagoon water becomes relatively saline. But during the wet winter season, the lagoon gets a lot of freshwater directly and indirectly from the continuous rain in the region and this results in relatively low to zero salinity in many parts of the lagoon. The lagoon experiences strong storms in September and October (solar calendar) that, according to the local fisherfolk, presages the beginning of a long rainy season that inundates the entire area around the lagoon, including many of the paddy fields and aquaculture ponds. In the winter season, most of the



agriculture and pond aquaculture activities along the lagoon cease because of flooding and low temperatures.

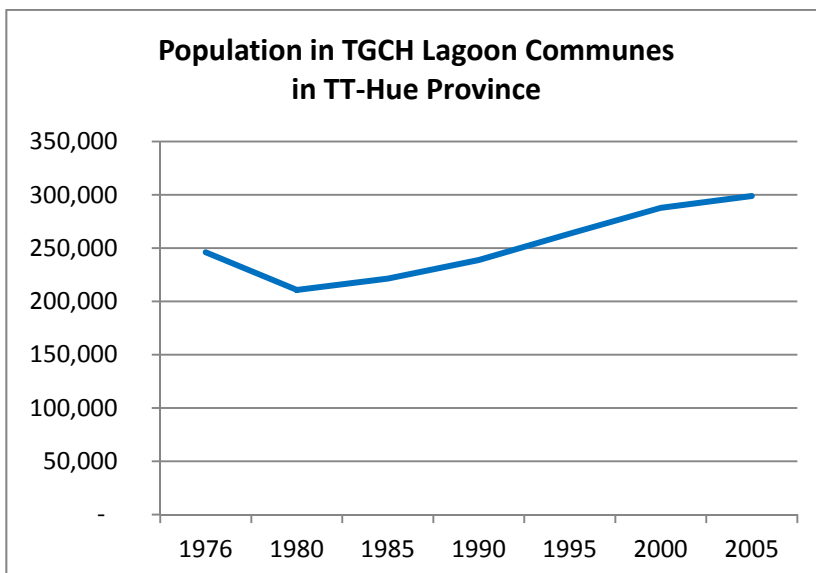


**Figure 4** Graphs showing average temperature (left) and precipitation (right) by month  
 Note: Average figures are shown as dots in the bars.

## 2. The lagoon and its people

Because of its size and rich natural resources, the lagoon has been an important livelihood source for the local coastal population. The lagoon falls under one province, covering five coastal districts with 33 communes and nearly 100 villages. About 300 000 people make their living in and around the lagoon with many involved in capture fisheries and aquaculture activities. Out of 300 000, one third is estimated to rely directly on fisheries and aquaculture activities.

The population in the lagoon area decreased after the Vietnam War, which ended in 1975, because of massive outmigration (see Figure 5). Following this decline there was about a 42 percent increase in the population in five lagoon districts between 1980 and 2005. This was the result of improved security conditions in those areas, better availability of infrastructure and services, more fertile lands and available lagoon resources, and a government resettlement programme.



**Figure 5** A graph of population in the Tam Giang-Cau Hai Lagoon communes in Thua Thien Hue Province

The lagoon generally has two distinctive groups of population depending on where and under what conditions they live. One group of people lives on the land legally or illegally and engages in

agriculture, capture fisheries and aquaculture. The other group, which is usually poorer and more marginalized, consists of the so-called “*sampan*” (boat) people.<sup>1</sup> As the name suggests, *sampan* people are living on boats and therefore do not own any land or a house. Because of their mobile lifestyle, their education and economic conditions are relatively low with many illiterates and poor among them compared to the land-based population. These *sampan* people are typically engaged in small-scale, subsistence mobile fishing. Although the number of *sampan* families has been decreasing over time as a result of a government resettlement programme onto the land, the *sampan* population is still an important part of the province’s fishing communities that should not be forgotten.

### **3. Lagoon fisheries and its challenges**

The once resource-rich lagoon system has been an open access resource for the local population. In the past, the lagoon water surface was used by the local fisherfolk on a first come first served basis with a limited set of local regulations. For example, a traditional local custom states that once a stake trap (one type of traditional fixed fishing gear) is set up in a lagoon area the gear owner gets exclusive use rights to the water surface enclosed by the net. Under this rule, other fisherfolk are neither allowed to install fixed fishing gears nor to conduct mobile fishing within the enclosed area and close to the stake trap. This loose form of lagoon management with a limited number of local customs did not cause resource depletion, largely because of the large water surface, the abundant fishery resources and the relatively low density of the fishing population with the limited fishing capacity. However, since the 1990s, the lagoon has experienced rapid ecological and resource deterioration because of increasing fishing pressure and the development of aquaculture (mainly ponds for giant tiger prawn) among other things.

Aquaculture development, particularly of low-tide ponds and net enclosures that encroached into the lagoon, destroyed and reduced the availability of shallow nursing and breeding grounds, including seaweed and seagrass areas. Moreover, brackish water aquaculture consumed a large amount of natural fingerlings and so-called trash fish as its feed source, adding extra pressure on capturing small and juvenile fish. Untreated effluents from aquaculture were also directly poured into the lagoon because of the lack of wastewater treatment facilities.

With the declining lagoon resources and the increasing number of fishing gears and aquaculture facilities that limited the available lagoon water surface, conflicts among resource users began to rise. Illegal fishing activities also increased, adding further conflicts and causing deterioration of fisher morale.

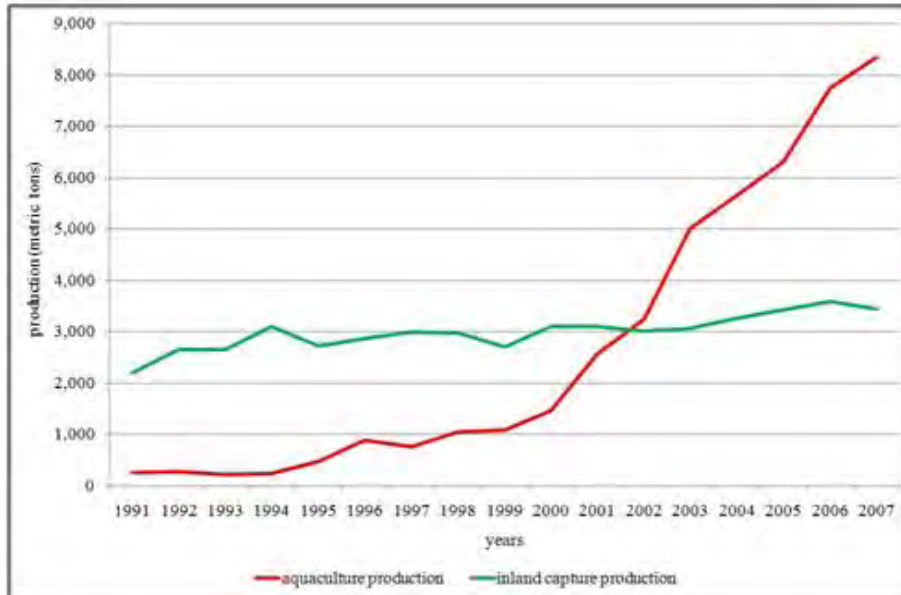
Although the uncontrolled expansion of capture fisheries and aquaculture played a major role in declining lagoon fisheries resources, other factors also contributed to lagoon ecological degradation. These factors included agriculture and livestock raising, uncoordinated development in the lagoon areas and watersheds such as markets, ports, bridges, barrage, and dams, and the lack of solid waste and wastewater treatment systems for residential areas.

Figure 6 shows the official production statistics for inland capture fisheries (green line) and aquaculture (red line) over time. Although the official statistics on inland capture production shows stagnation or a slight increase, local fisherfolk frequently and almost uniformly report lagoon resource degradation and decreasing fish catch per unit effort (CPUE). According to the local fishers, they could easily catch 10 to 15 kg per day by using a stake trap in the past, but this has reduced to 1 to 2 kg per day in recent years. The catch with a bottom net amounted to a third of that caught seven to ten years ago in the lagoon (Network of Aquaculture Centres in Asia-Pacific

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<sup>1</sup> Those populations should be clearly distinguished from the boat people who fled the country with their boats during the Vietnam War.

[NACA], 2006). Schmidt and Marconi (2010) also reported that there was a tendency and possibility for the government agencies to under-report the overall input and over-report output because of growth oriented sector planning by the national government. The resource degradation was not quantified in a systematic way but was obvious to everyone's eyes.



**Figure 6 Growth of capture fisheries and aquaculture in Thua Thien Hue Province** (Schmidt and Marconi, 2010, p.33, based on the Statistical Yearbook of Thua Thien Hue Province)

#### **4. Need for lagoon co-management**

Given the importance of the lagoon for social, ecological and economic reasons, the provincial government recognized an urgent need to formulate effective management strategies and plans for the lagoon. In October 2004, the provincial authority approved the first master plan on capture fisheries on the lagoon and this paved the way for lagoon fisheries management. In subsequent years the provincial authority issued a series of decisions, regulations, and policies related to the lagoon's management. However, the conventional lagoon management approach by the provincial government had a series of drawbacks that limited the impact of these policies. The key drawbacks included:

- **Insufficient quantity and quality of available human resources.** Policies were made without sufficient consideration as to how they were going to be enforced and monitored. There is usually only one officer in charge of agriculture, forestry, and fisheries at the commune level (lowest administrative unit). The absolute number as well as the capacities of the officers in charge of fisheries was insufficient to enforce and monitor policies.
- **Limited financial resources.** The above issue was aggravated by the lack of finance at the commune level, or insufficient financial allocation to communes by district and provincial authorities, which made the enhancement of field-level monitoring and enforcement by the authorities virtually impossible.
- **Insufficient compliance as a result of a lack of stakeholder participation.** Lack of or insufficient participation of stakeholders, especially lagoon resource users, in policy and regulation making. These policies were usually formulated by the provincial and district officer(s) in charge of the particular subject without informing or consulting with the local fisherfolk. Policies and regulations have been unilaterally announced and imposed by the authorities on lagoon resource users and this has led to poor compliance and cooperation at the field level. The strong top-down policy and regulation making referred to above also

failed to capture the needs and realities of the local lagoon resource users, resulting in unrealistic or impractical rules.

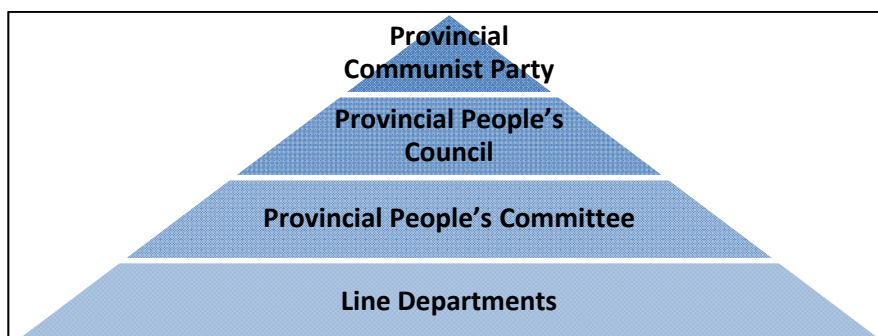
- **Poor dissemination and communication.** Poor dissemination of policies and regulations made at the provincial and district levels to the resource users as well as lower levels of the government. The poor dissemination was partly a result of insufficient human and financial resources, but also because of the lack of or an inefficient communication channel on lagoon management issues.
- **Lack of property rights.** Poor sense of ownership of the lagoon resources by local resource users resulted in the people's habitual reliance (dependency syndrome) on the authorities for addressing lagoon management issues and a lack of initiatives by those users with respect to the lagoon conservation and management. The poor sense of ownership was largely a result of the insufficient involvement of local resource users by the authorities.
- **Free-riding.** A poor sense of the lagoon as a shared, common pool resource among resource users has led to a free-riding attitude by many local resource users.

These issues called for a more participatory, inclusive management approach of the Tam Giang–Cau Hai Lagoon by the authorities instead of the conventional top-down approach. By the early 2000s, lagoon co-management was considered as a potentially viable option for more effective lagoon management with a series of inputs from international projects and agencies. This recognition eventually led to the issuance of Decision No. 4260/2005/QĐ-UBND by the Provincial People's Committee (PPC, 2005) in December 2005. This Decision specifically encourages the greater involvement of local resource users in policy-making and implementation, as well as the delegation of some management responsibilities to the local FAs.

## ***5. Institutional background***

### ***5.1 Provincial government***

The management of the lagoon involves a number of government agencies at the provincial level with overlapping mandates. The overall coordinating entity in the province is the Provincial People's Committee (PPC), which works under the instructions of the Provincial People's Council and the Provincial Communist Party (see Figure 7). Under its chairperson and vice-chairpersons, the PPC provides instructions and guidance to the line departments on specific issues and approves provincial policies and regulations with advice from those line departments.



**Figure 7** The government structure at the provincial level

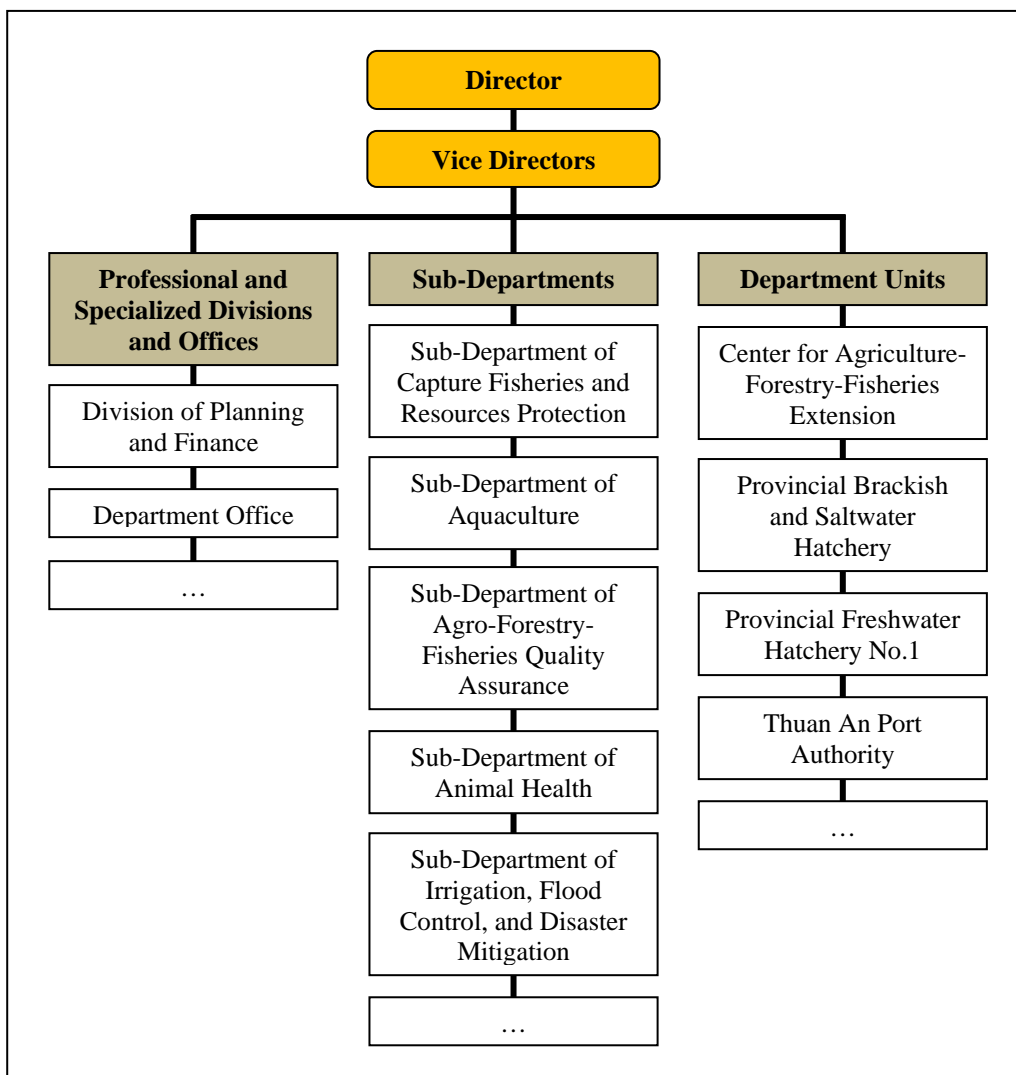
### ***5.2 Line departments***

There are two major line departments involved in lagoon management. These are the Department of Natural Resources and Environment (DONRE) and the Department of Agriculture and Rural Development (DARD). There are many other departments involved in lagoon management, but their involvement is only marginal.

The lagoon environment in general falls under DONRE. DONRE undertakes periodic environmental monitoring of the lagoon that overlaps with water quality monitoring done by DARD in lagoon aquaculture areas. Another function of DONRE is the production of cadastral and land use maps. Through its Mapping and Survey Division, DONRE has the capacity to undertake land survey and mapping with GPS/GIS, which DARD is very weak on. Technical work for official demarcation and verification of administrative boundaries is under DONRE, whereas the management of administrative boundaries comes under the Department of Home Affairs (DOHA).

The fisheries sector in general is under DARD, which is in charge of primary industries, including agriculture, forestry, and fisheries. The former Department of Fisheries was merged into DARD in 2008 with the restructuring of the central ministries. DARD is divided into several divisions/offices, subdepartments, and centres (see Figure 8). In relation to fisheries management, two key institutions are the Sub-Department of Capture Fisheries and Resources Protection (sub-DECAFIREP), which is in charge of capture fishing and fisheries resource conservation; and the Sub-Department of Aquaculture (SDA), which was established in 2008 and is in charge of aquaculture and aquatic animal health. Those subdepartments operate under the supervision of two vice directors in the fisheries sector. In addition to these two subdepartments, there is the Division of Planning and Finance (DPF), which is in charge of overall planning and budgeting under DARD, including for the fisheries sector. The field extension service is provided by the Center for Agro-Forestry-Fisheries Extension (CAFFE).

There are also some other line departments marginally involved in lagoon management. The Department of Transport (DOT), for example, manages the waterways and boat navigation routes on the lagoon whereas the Department of Science and Technology undertakes scientific studies on the lagoon. The Police Department and the Frontier Army are in charge of detection and handling of administrative violations and patrolling of national borders, respectively.



**Figure 8** The structure of the Department of Agriculture and Rural Development in Thua Thien Hue Province related to the fisheries sector

### **5.3 District and commune authorities**

In Viet Nam, the departmental structure of the government is copied from the national down to the commune level. At the district level exactly the same government structure and technical departments such as DARD and DONRE exist. At the commune level, each line agency is represented by technical officer(s) in charge of a specific sector. For fisheries, there is usually only one officer in charge of agriculture, forestry, and fisheries in each commune.

### **5.4 Fisheries associations**

Apart from the government structure, there is a structure specific to fisheries associations. At the national level, the Vietnamese National Fisheries Association (VINAFIS) is in operation. At the provincial level, the Provincial Fisheries Association (PFA) exists with limited capacity both in terms of human and financial resources. There are no FAs at the district level but there are local FAs at commune or subcommune (village or inter-village) levels. In practice, local FAs operate without much support from PFA and VINAFIS.

## **6. Policy context**

### **6.1 National level**

The major legal document on fisheries management in Viet Nam at the national level is the Fisheries Law of Viet Nam (Law No. 17/2003/qh 11) adopted by the National Assembly on 26 November 2003 and this has been effective since 1 July 2004. The Law does not have a specific clause on fisheries co-management or fishing rights allocation to local FAs, although the PPC of Thua Thien Hue has been promoting this idea officially since 2005, particularly in its Decision No. 4260/2005/QD-UBND on lagoon fisheries management (PPC, 2005).

One potentially relevant article states:

The Provincial People's Committees shall have responsibility to issue rules of fishing grounds in rivers, lakes, lagoons and other natural waters under its jurisdiction in accordance with [the] guidance of [the] Ministry of Fisheries; shall organize and promote the local residents to take part in monitoring, detection and prosecution of any violations committed [with respect] to fisheries activities in fishing grounds. (Article 15.3)

### **6.2 Provincial level**

At the provincial level, there are many legal documents related to lagoon and fisheries management, including the first master plan on capture fisheries in the lagoon, which was approved in October 2004 with Decision No. 3677/2004/QD-UB and paved the way for lagoon fisheries management (PPC, 2004). However, the most important provincial regulation in relation to lagoon co-management was Decision No. 4260/2005/QD-UBND mentioned above (PPC, 2005).

The Decision was innovative in that the PPC encouraged the decentralized management of the lagoon fisheries by delegating management responsibility to the lower levels and recognized local FAs as partners in lagoon management. The Decision specifically states that among its objectives are "To promote democracy at grassroots level and decentralization and to reduce the management cost of coastal fisheries ... the State encourages community-based fisheries management" (Article 1.3).

The Decision also states that fishing rights will be allocated only to FAs and not to individuals, and requires the local fishers and fishing households in the lagoon to join FAs to enjoy the benefits from the fishing rights allocation.

Individuals and households participating in lagoon fisheries must organize themselves in fisheries associations at the village, inter-village or commune levels. The State will only delegate the power of lagoon fisheries management to the fishery associations at the grassroots level. (Article 3)

As for the methods of management, the Decision encourages area-based management with physical demarcation and zoning as well as FA-based self-management regulations.

The State delegates [the] management of fisheries resources in certain areas of [the] lagoon to fisheries associations at the grassroots level. On that basis, fisheries associations properly and creatively regulate the fisheries activities of their members, ensuring the harmony among members and between members and associations and the whole society. (Article 5)

The State encourages fisheries associations at the local level, based on the State Law, to develop their "self-management rules" detailing community rules and aimed at protecting

fishing grounds, aquatic resources and other issues such as protection of the aquatic environment and management of water ways and the collection of fisheries tax, etc. (Article 11)

Finally, the Decision specifically delegated power to the district authority to issue fishing rights to local FAs for lagoon management.

The Provincial People's Committee delegates power to the People's Committees of Lagoon Districts to issue the fishing rights to fisheries associations at the village and commune levels in certain water bodies in their designated area based on the quantity and types of fishing gear, fishing seasons and aquatic species. The fishing rights in the lagoon area include the rights and responsibilities to timely prevent acts of fishery law violation, responsibilities of protecting fishing grounds, developing aquatic resources, ensuring free access to water ways, preventing degradation of the water environment and ensuring submission of taxes to the State. (Article 13)

In sum, the Decision set the legal foundation for lagoon co-management in the province.

To provide further guidance to implement Decision 4260, the then Department of Fisheries (currently a part of DARD) issued Guidelines No. 159/HD-STs on 26 April 2006. The Guidelines include six main instructions regarding: 1) the legal basis for violation handling; 2) differentiation of land use rights and fishing rights; 3) components of fishing rights (fixed fishing, mobile fishing, and aquaculture); 4) basic conditions for fishing rights allocation; 5) tasks of the PFA; and 6) the role of the Commune People's Committees (CPCs) in co-management.

As for the basic conditions for fishing rights allocation, these are stated in the guidelines as:

- there must be strong FAs that have participants from groups with different aquatic activities at the commune, village or inter-village level;
  - there must be a request by the Fisheries Associations together with the membership list of the Fisheries Associations and production plans according to types of activities, scale, the amount and the production management plan for specific areas;
  - there must be an agreement from the People's Committee of the commune and agreement on the management of the production surface water area; and
  - any request must be assessed by the Department of Fisheries to ensure the planning and unified management in the whole lagoon area of Thua Thien Hue province.
- (Guidelines point No.3).

This document was meant to provide detailed guidance on the operationalization of Decision 4260. However, the Guidelines were not detailed enough to provide clear guidance to the district authorities on the specific requirements for fishing rights issuance. This later caused a series of misunderstandings and hesitation on the part of the district authorities in the allocation of fishing rights. The lack of clear guidelines has also confused the local FAs when preparing applications for fishing rights and this eventually led to the development of tentative and unofficial guidelines listing specific requirements for fishing rights applications by local FAs by IMOLA in consultation with two lagoon districts, three communes, and nine local FAs.

### ***7. Integrated Management of Lagoon Activities in Thua Thien Hue Province Project (IMOLA)***

IMOLA commenced in August 2005 to assist the provincial government in lagoon fisheries management in Thua Thien Hue Province. IMOLA is a trust-fund project executed by the FAO, funded by the Italian and Vietnamese governments. Structurally, IMOLA is housed under DARD,



which is in charge of the fishery sector. Among the key objectives of the project are to develop and operationalize lagoon co-management in order to manage the lagoon resources effectively. Its first phase was from 2005 to 2008 and the second phase was completed in April 2010. The third phase is underway.

The project is divided into three technical units, namely the Natural Resources Unit (NRU), the Socio-economic Unit (SEU), and the Training Unit (TU). The NRU is in charge of undertaking a series of natural resources and fisheries related surveys on water and sediment quality, hydrology, fixed fishing gears, and aquaculture, which provide the foundational data and maps for the lagoon co-management processes. The SEU is in charge of the main lagoon co-management component of the project, undertaking socio-economic surveys, facilitating and assisting co-management development processes with local FAs and the authorities. The TU is in charge of capacity building activities for the local fishers, although other technical units also provide training depending on the subject.

### ***8. Other projects working on lagoon fisheries co-management***

Apart from IMOLA, there were several other projects working in parallel on fisheries co-management in the Tam Giang–Cau Hai Lagoon. One of these was the Common Pool Resources Management Project (CPRM) supported by the International Development Research Centre (IDRC), the Canadian International Development Agency (CIDA), and Viet Nam's Ministry of Science, Technology and Environment (MOSTE). The CPRM was started in 1995, conducting action research on participatory lagoon fisheries management with several local communities. Support to the local fisheries associations and their community-based planning process was a part of the project's efforts. Several local team members of the CPRM also participated in IMOLA work.

Another major project that operated in the lagoon was the Fisheries Sector Support Programme (FSPS) executed by the then Ministry of Fisheries (the current Directorate of Fisheries is under the Ministry of Agriculture and Rural Development) with funding from the Danish Government. FSPS Phase I was started in 2000 and Phase II was implemented from 2006 to 2010/2011. One of the FSPS Phase II components on capture fisheries management in Thua Thien Hue Province has a focus on lagoon fisheries co-management in one of the lagoon communes and has assisted participatory resource management planning and implementation with local FAs and the authorities.

There have been other smaller scale projects operating in the lagoon area related to fisheries co-management, but the above two have been the two major projects that have influenced and interacted with IMOLA in its implementation.



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### III. Preparatory stage

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The preparatory stage of fisheries co-management is often overlooked and underreported. It is often time consuming and requires a considerable amount of energy compared to the later stages of a co-management process. However, good preparation increases the chance of success and reduces the risk of making wrong decisions. It enhances a proper understanding of issues and the identification of more effective management solutions by local fishers.

At the start of the project, the idea of fisheries co-management was not widely understood by the province – not only by most government officials, but also by the newly employed local project staff.<sup>2</sup> As a consequence, the first thing that the project had to do was to analyse the training needs of the project staff and to provide them with appropriate training in understanding the basics of co-management of small-scale fisheries to enable them to facilitate the lagoon fisheries co-management process in the communes bordering the lagoon.

At the same time, as is the case in many other developing countries, the data required to understand the socio-economic status of lagoon communes and the environmental status of the lagoon were lacking at the outset of the process. The project thus had to start with basic socio-economic and environmental surveys.

During the preparatory stage the project undertook the following steps, which were related to the following co-management inception, planning and implementation stages.

Step 1: Screening target communes for co-management support.

Step 2: Assessing co-management feasibility in potential target communes.

Step 3: Deciding the target communes for lagoon co-management.

Step 4: Checking the initial status of FAs in selected communes.

Step 5: Training of the project technical staff.

Step 6: Understanding the lagoon environment and fisheries:

- survey on lagoon environment (water and sediment qualities, etc.);
- survey on lagoon capture fisheries status (mapping of fixed fishing gear, etc.);
- survey on lagoon aquaculture (mapping of ponds, etc.); and
- other related surveys and studies on lagoon environment and fisheries.

Table 1 gives a summary of the workflow and timeframe for the co-management preparatory stage and more information is provided in subsequent sections.

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<sup>2</sup> The fisheries co-management concept was introduced to Viet Nam in the mid-1990s to key national and provincial officials (Pomeroy, Nguyen, & Ha, 2009). Although the concept had been around since then, at the time the IMOLA was started in 2005, fisheries co-management was not known or not well-understood by most of the local government officials, especially those below the provincial level. However, there were some key provincial officials who had a good understanding of the concept.

**Table 1 General workflow and timeframe for the fisheries co-management preparatory stage**

<b>Socio-Economic Assessment</b>	<b>Capacity Building</b>	<b>Natural Resources Assessment</b>
Screening of potential target communes for co-management pilot (2 weeks)		Water and sediment study (nearly 1 year)
Feasibility study of potential target communes (10 weeks)	Staff training on fisheries co-management (two-day training with follow-up on-the-job training)	Capture fisheries mapping and survey (0.5 years x 2 times)
Final selection of target communes (1 to 2 weeks)	Staff training in participatory survey and planning methods (one-day training with follow-up on-the-job training)	Aquaculture mapping and survey (nearly 1 year)
		Other relevant studies

Note: The duration mentioned in brackets indicates the time required to complete each activity in the case of IMOLA. In practice, the time requirement would vary significantly depending on size/number of the target areas/FAs, staff availability, and the local contexts.

## **1. Screening target communes for co-management support**

When the project started exploring the possibilities of implementing fisheries co-management in lagoon communes it had limited background information on them. Moreover, objective secondary data itself were not fully available in the province to make informed decisions.

Prior to the initial screening, the project had already established some relations with several local communes through the establishment of fisheries and aquaculture promotion centres<sup>3</sup> from which the project could obtain some information on the socio-economic status of these communes.

The project also made use of the information available from the initial surveys it carried out during the initial screening of the co-management target communes, namely:

- the socio-economic PRA and questionnaire surveys; and
- the training needs assessment.

As the lagoon comprises a large water surface area (22 000 ha), falling under five districts, the project chose two communes from each of the four brackish water districts, excluding one freshwater district, namely Phong Dien District. With the O Lau River flowing into the lagoon from the north, the lagoon area of Phong Dien District is a predominantly freshwater area. The culture of giant tiger prawn in ponds, which was one of the major aquaculture activities in the Tam Giang–Cau Hai Lagoon, therefore does not occur in this district. Moreover, the district water surface area is quite limited (685 ha) compared to the other four districts in the lagoon system.

Finally, the selection of the two representative communes per district was made based on a consideration of all the above studies as well as discussions with Department of Fisheries (DOFI) and the project's internal discussions (see Figure 9 and Table 2).

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<sup>3</sup> A promotion centre is a physical space in a Commune People's Committee (CPC) building where local fishers can obtain information on better fisheries and aquaculture techniques and practices.

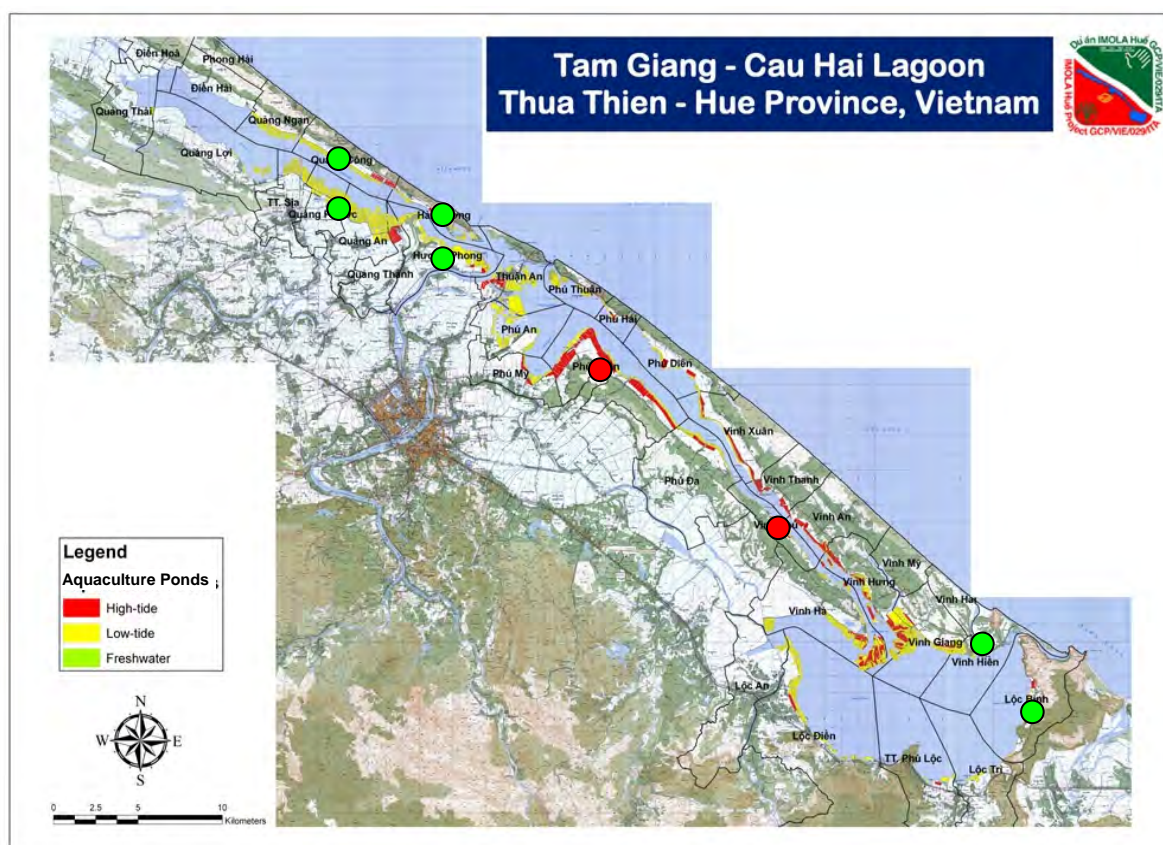


Figure 9 A map showing eight preselected communes for screening

Table 2 Eight communes preselected for initial screening for co-management

#	Commune	District	Lagoon	Note
1	Quang Cong	Quang Dien	Tam Giang	Major shrimp culture commune
2	Quang Phuoc	Quang Dien	Tam Giang	
3	Hai Duong	Huong Tra	Tam Giang	Inlet commune
4	Huong Phong	Huong Tra	Tam Giang	Inlet commune
5	Phu Xuan	Phu Vang	Sam Chuon	Major shrimp culture commune
6	Vinh Phu	Phu Vang	Thuy Tu	
7	Vinh Hien	Phu Loc	Cau Hai	Inlet commune
8	Loc Binh	Phu Loc	Cau Hai	Inlet commune

After the preselection of eight lagoon communes, the project undertook the preliminary screening of those potential target communes for lagoon fisheries co-management. The project officers visited the People's Committees of those communes and organized a series of meetings with key stakeholders, including commune leaders and officers in charge of fisheries, village heads, key fishers, self-management groups and others, to discuss their concerns and the issue of co-management.

The main objectives of the meetings were to:

1. obtain an overview of the fisheries and aquaculture activities in those communes and their contributions to local people's livelihoods;
2. verify the extent and magnitude of issues related to fisheries management;
3. understand the existence and nature of local conflicts that might affect lagoon co-management feasibility;
4. verify the willingness of the local authority and fishers to undertake lagoon co-management; and
5. identify existing support from other projects and programmes.

Figure 10 shows the type of small meeting that took place with existing FAs before deciding to preselect them.



**Figure 10 A scene from a meeting with an existing FA before preselection**

After reviewing the results of the preliminary meetings, two communes were excluded from the list (indicated in red in Figure 9 and Table 2). Vinh Phu Commune was removed from the list as a Vietnamese NGO called the Centre for Social Studies and Humanities (CSSH) was working on the establishment and strengthening of an FA in the commune. The second commune, Phu Xuan Commune, was not chosen as, at that time, there were tensions between the commune authority and the commune residents, and it was concluded that these tensions might undermine the chances of success.

In initiating the co-management pilot project, an important consideration was to try and ensure initial success, i.e. to select the locations where the possibility of success was reasonably high while targeting those places in need of lagoon fishery co-management. As the main aim of the co-management pilot was to demonstrate the success and usefulness of a new form of fisheries management to relevant stakeholders, particularly local authorities, the possibility of success was an important consideration. Another consideration was the relative inexperience of the staff, who needed initially to be trained on the job. More challenging places were considered to be better tackled during the expansion/replication stage after initial success and after a certain amount of confidence in implementing lagoon fisheries co-management was accumulated among stakeholders – it was thought that if the fisheries co-management pilot project did not work in the most promising place(s), it would most likely not work in more difficult locations.

Note that those preliminary meetings were to screen the potential target communes and so were basically a quick scan to obtain an overview of the local situation and context. A more in-depth feasibility assessment was planned at a later stage as described in the later sections.

#### **OUTPUT: 6 communes preselected**



## 2. Assessing co-management feasibility in potential target communes

After the preliminary screening of target communes, further consideration was given to including several more communes (see Figure 11 and Table 3). Specifically, the project decided to include five additional communes in the Phu Loc District. The district covers almost the entire area of the Cau Hai Lagoon, which is the largest lagoon (10 000 ha) in the system. This decision to include more communes in this district was made mainly on the basis of the large size of the water surface, the importance and magnitude of fishing activities in the district, and the existence of a district plan to rearrange stake traps (a type of fixed fishing gear) in the near future, which was the major concern of many lagoon capture fishers. The five additional communes were not all completely new from the perspective of the project as three had been involved in one or more of the following activities: participatory rural appraisal (PRA), a questionnaire survey and/or aquaculture training. The other two communes were selected either because of the importance and magnitude of fishing activities in the commune (Loc Dien) or existing fisheries cooperation (Phu Loc Town).

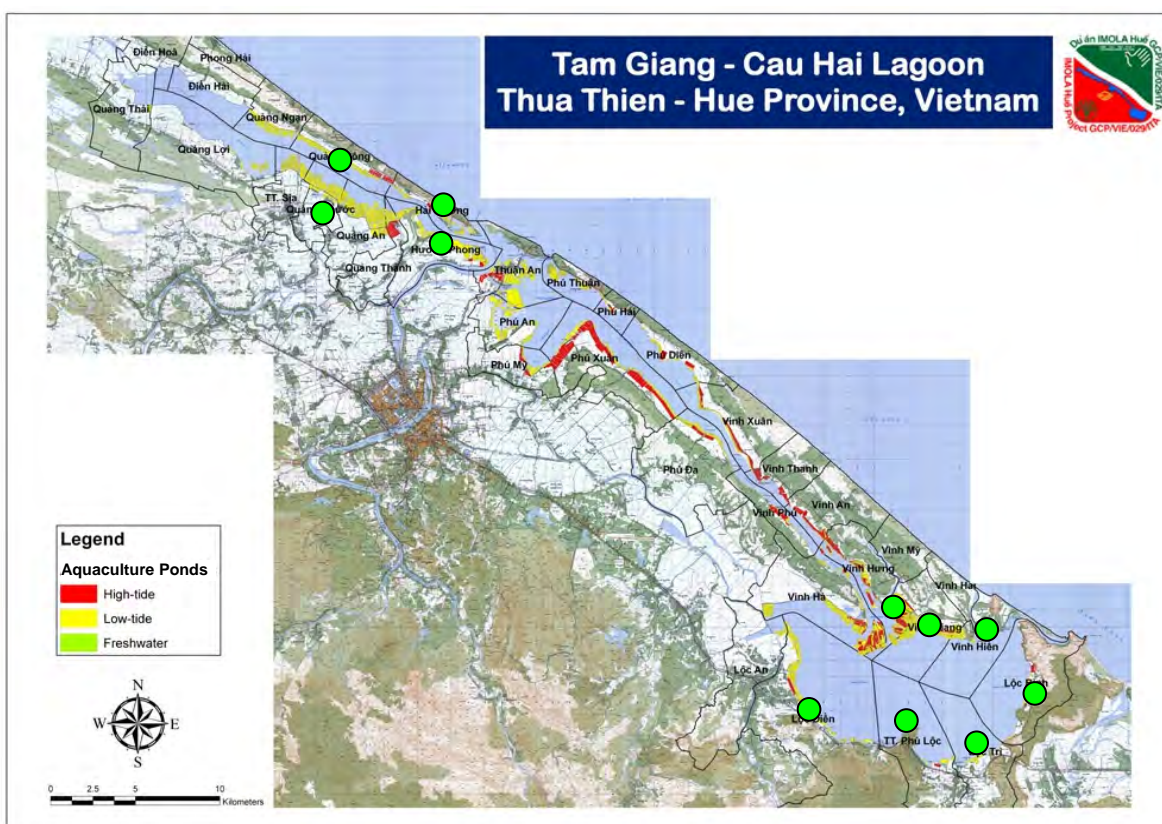


Figure 11 A map showing 11 communes for co-management feasibility study

Table 3 Eleven communes for co-management feasibility study

#	Commune	District	Lagoon	Note
1	Quang Cong	Quang Dien	Tam Giang	Preselected
2	Quang Phuoc	Quang Dien	Tam Giang	Preselected
3	Hai Duong	Huong Tra	Tam Giang	Preselected
4	Huong Phong	Huong Tra	Tam Giang	Preselected
5	Vinh Hien	Phu Loc	Cau Hai	Preselected
6	Loc Binh	Phu Loc	Cau Hai	Preselected
7	Loc Tri	Phu Loc	Cau Hai	New addition
8	Phu Loc Town	Phu Loc	Cau Hai	New addition
9	Loc Dien	Phu Loc	Cau Hai	New addition
10	Vinh Hung	Phu Loc	Cau Hai	New addition
11	Vinh Giang	Phu Loc	Cau Hai	New addition



To make a final selection of communes for co-management support, the project conducted a co-management feasibility study (F/S) in those 11 communes. The objectives of the feasibility study were to:

1. assess the feasibility of establishing fisheries and aquaculture associations;
2. update the commune profiles; and
3. provide intensive field exposure to the newly recruited technical staff.

An additional reason for carrying out this survey was that two out of seven communes in Phu Loc District were new to the project and had not yet been involved in project activities. The feasibility assessment and updating of commune profiles included obtaining more in-depth knowledge about the fisheries and aquaculture activities in each commune such as season, their magnitude and relative importance to the livelihoods of commune residents, community mobilization status and social cohesion, social structure, existing issues and conflicts, political will of local authority, existing support to lagoon management, and so forth. After all, the F/S aimed at evaluating the feasibility of establishing FAs and undertaking lagoon fisheries co-management.

After equipping the project technical staff with the necessary background knowledge and tools to undertake a co-management F/S (see the later section on staff training for more details), they were sent to each candidate commune in a group of two to four staff to undertake actual assessment.

The co-management F/S mainly consisted of:

**Secondary data collection:**

- Collection of statistical information from government authorities (at different levels), official and project reports, and other sources on fisheries and aquaculture activities in the commune (categorized by fishing gear and aquaculture types).

**Primary data collection:**

- Group meetings with CPC staff, village heads, self-management groups, and key fishers to identify existing structures and issues related to fisheries and aquaculture activities as well as to assess the willingness to undertake lagoon co-management in the commune;
- Meetings with key community/mass organizations such as Women's Union, Farmers' Union, cooperatives, and FAs;
- Seasonal calendar to understand the seasonality of fisheries and aquaculture activities in the commune;
- Hand-drawn map making to understand the geographic divisions of the water surface and the distribution of fishing and aquaculture activities;
- Livelihoods ranking to understand the relative importance and contribution of particular types of fisheries and aquaculture activities to local people's livelihoods; and
- Issue ranking to prioritize the problems to be tackled in the commune.

**Data verification:**

- Following data collection and initial data analysis a verification meeting with key stakeholders was organized.

Figure 12 shows an example of a feasibility assessment session.



**Figure 12 Pictures from the co-management feasibility assessment sessions**

With information and data of varying quality collected, the final co-management feasibility study reports were prepared for the 11 candidate communes. A report consisted of a main text of about ten pages plus a series of detailed annexes showing the collected statistics on fisheries and aquaculture, seasonal calendar(s), different ranking results, work schedule, and lists of participants.

The following pages will provide more detail on how the F/S was conducted in steps, but Box 1 summarises the tools that were used.

**Output: Co-management feasibility for 11 preselected communes assessed and evaluated**

**Box 1: How the assessment was done**

Although there were a number of PRA and survey tools that could be used to undertake the assessment depending on what needed to be assessed, the project’s co-management F/S deployed a limited set of such tools. Those tools were:

- group interview (semi-structured);
- individual interview (semi-structured);
- hand-drawn maps;
- seasonal calendar;
- livelihoods ranking; and
- issues ranking.

PRA can be used in many ways and can be means and/or ends, but generally it is used to:

1. develop an understanding by projects/programmes of past and current conditions of local communities with the participation and involvement of rural populations; and/or
2. enhance and promote a sense of ownership and awareness of the situation they are in and of the issues that concern them.

As PRA tools were applied for the F/S in our case, the main purpose of the PRA exercise was more towards the first purpose, although some tools were also used in the later stage of the co-management process for the second purpose, particularly to identify the issues and potential community solutions with local FAs and authorities.

The overall schedule of the co-management F/S is presented in Table 4, followed by brief explanations of PRA tools used in the study.

**Table 4 An example of the F/S schedule from Loc Binh**

No.	Time	Venue	Content of the activities	Targets
1	Morning 11/4	CPC	Exchanging the action plan and collecting the secondary data and general data.	CPC, statistical staff, fisheries staff, village heads
2	Afternoon 11/4	3 villages	Interviewing every village head to collect village information, hold specific discussions about the targets, time and venues for group meetings.	Three fishing village heads
3	Morning 12/4	Tan Binh	Group meetings, individual interviews and identifying the seasonal calendar.	Group 1 – Tan Binh village
4	Afternoon 12/4	Tan Binh	Group meetings, individual interviews and identifying the seasonal calendar.	Group 2 – Tan Binh village
5	Morning 13/4	Hoa An	Group meetings, individual interviews and identifying the seasonal calendar.	Aquaculture in Hoa An
6	Afternoon 13/4	Hoa An	Group meetings, individual interviews, identifying the seasonal calendar and priority rankings.	Capture fisheries group in Hoa An
7	Morning 16/4	Mai Gia Phuong	Group meetings, individual interviews, identifying the seasonal calendar and priority rankings. Working with three remaining villages (there is also fishing activity).	Aquaculture and capture fisheries groups in Mai Gia Phuong village
8	Afternoon 16/4	Hai Binh	Group meetings, individual interviews, identifying the seasonal calendar and priority rankings.	Aquaculture and capture fisheries groups in Hai Binh village
9	Morning 17/4	An Binh	Group meetings, individual interviews, identifying the seasonal calendar and priority rankings.	Aquaculture and capture fisheries groups in An Binh village
10	Afternoon 17/4	Tan An	Individual interviews. Data finalizing.	Tan An village head Tu and Vu
11	Morning 18/4		Data finalizing and chart drawing.	Tu, Vu and Thai group (commune staff)
12	Afternoon 18/4	CPC	Verification meetings, cross checking the collected data.	Commune staff, FA, representative from villages

(Vo & Nguyen, 2007)

## 2.1 Hand drawn maps

A simple hand-drawn map was used to understand the distribution of fishers, fisheries resources, and fishing/aquaculture activities in the communes. The commune area was divided into villages according to the perceptions of the villagers, and aquaculture and capture fisheries activities were plotted on the map. The quality of the map varied depending on the facilitation capacity of the technical staff in charge, but they in general provided an overview of geographic extent to be covered under co-management, and the potential division of FAs in each commune (including the identification of the areas not covered under existing FAs or self-management groups).

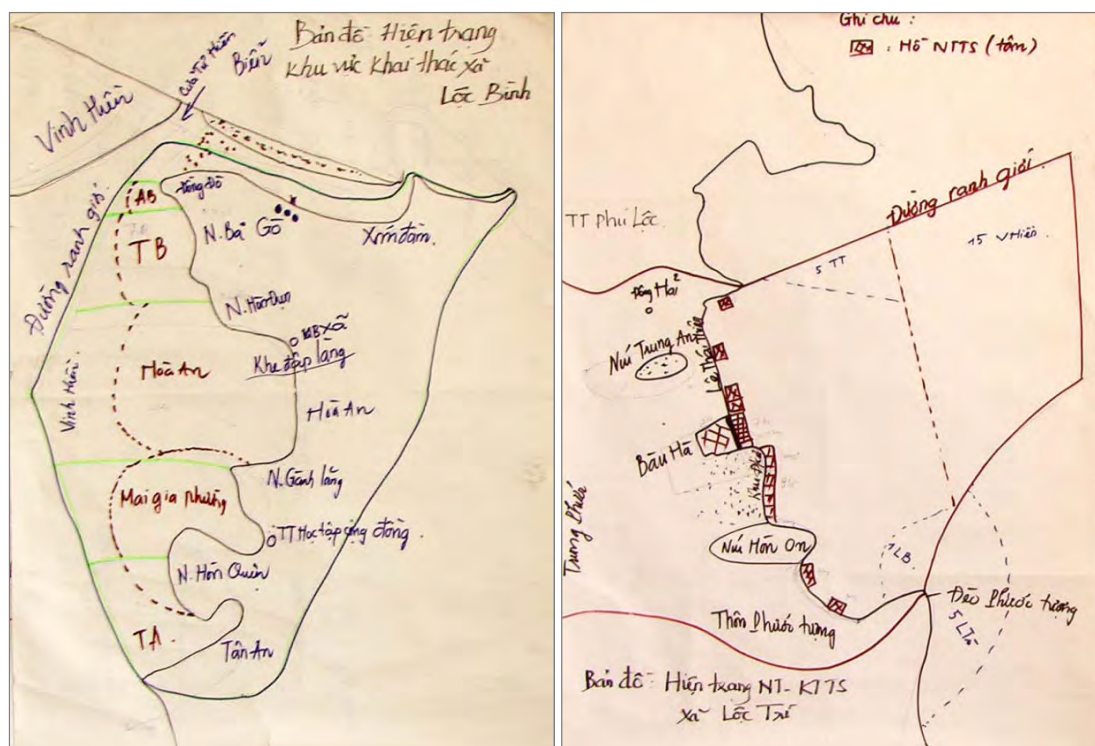


Figure 13 Examples of hand-drawn maps from Loc Binh (left) and Loc Tri (right) (Vo & Nguyen, 2007a; Vo & Nguyen, 2007b)

## 2.2 Seasonal calendar

A seasonal calendar was used to understand the seasonality of the local fishers' activities in the lagoon, the productivity of each activity by season, and seasonal time availability of fishers. The calendar was made through participatory sessions with local fishers by first asking about the range of activities in the lagoon and their seasonality and then obtaining other detail later. The resulting seasonal calendar (see Table 5) provided a general overview of lagoon-based activities and a rough idea of when fishing activities should be regulated and when fishers would have time to undertake extra activities (e.g. additional income generation). Although the project did not distinguish males and females in seasonal calendar making, for certain purposes it might be advisable to prepare a seasonal calendar for men and women separately.

**Table 5 An example of a seasonal calendar from Vinh Giang**

Activities	Lunar Calendar												Notes
	1	2	3	4	5	6	7	8	9	10	11	12	
Stake trap	Blue	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red	Red	Red	Blue	
Gillnet	Yellow	Blue	Blue	Blue	Blue	Blue	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	
Chinese cage-line trap	Blue	Blue	Blue	Blue	Blue	Blue	Red	Red	Red	Yellow	Yellow		Small mesh size
Electric lagoon seine			Red	Red	Red	Red	Red	Red	Red				Destructive
Dazzle and spear			Blue	Blue	Blue	Blue							
<i>Sao lan</i>							Blue	Blue	Blue	Blue	Blue	Blue	Subordinate career
Shrimp farming	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	

Note: Red: High income; Blue: Average income; Yellow: Low income; Green: Unknown (Nguyen & Le, 2007a)

### 2.3 Livelihoods and issues ranking

Livelihoods and issues ranking were used to understand the importance of livelihoods activities within a commune or village, particularly to see the contribution of fisheries related activities to the local people's livelihoods. The livelihoods ranking was quite important to evaluate the potential needs and impacts of fisheries co-management on the people's livelihoods in target communes. The issues ranking was equally important to understand the key issues that local fishers were facing and to identify the areas of intervention.

The ranking was usually done as follows:

1. random listing of key livelihoods activities/issues on coloured cards by participants;
2. grouping of cards into some key categories (i.e. activities/issues);
3. presentation of the summarized livelihoods activities/issues;
4. open discussion for prioritization; and
5. verification and adjustment of final ranking.

Examples of livelihoods ranking and issues ranking are shown in Tables 6 and 7, respectively.

**Table 6 An example of livelihoods ranking from Hai Duong**

No	Livelihoods	Ranking			
		Whole commune	Ha Bac	Ha Trung	Vinh Tri
1	Fisheries (aquaculture + capture fisheries)	1	1	1	2
2	Agricultural activities, poultry raising	4	4	5	1
3	Other small local occupations	2	3	4	4
4	Earning living far away	3	5	2	3
5	Sales and services	5	2	3	5
6	Transportation activities	6	-	-	-

(Ha & Le, 2007b)

**Table 7 An example of issues ranking from Huong Phong**

<b>PROBLEM</b>	<b>RATING</b>	<b>Remarks</b>
Low level of awareness	1	In aquaculture: the release of culture species not in line with the season, waste treatment and disease, etc.
Water pollution because of: <ul style="list-style-type: none"><li>• red tide</li><li>• wastewater from shrimp farming</li><li>• agricultural chemicals</li></ul>	2	Shrimp diseases cause shrimp farmers to suffer losses
Destructive fishing activities cause serious adverse effects on fisheries resources	3	The natural resources have greatly declined
No alternative livelihoods	4	Create new livelihoods
Need to enhance the roles of cooperative in Thuan Hoa and Dong Tien	5	Role of cooperatives is unclear
A shrimp seed supplier is not available	6	Purchase from other areas

(Ha & Le, 2007b)

### 3. Deciding the target communes for lagoon co-management

After finalizing the co-management feasibility study, each commune was individually evaluated and prioritized on the basis of the following criteria:

- the extent to which fisheries and aquaculture are the main livelihoods activities;
- the extent to which fisheries and aquaculture are facing management problems;
- whether any other project is in operation in support of fisheries co-management;
- the extent to which the working relationship between the commune authority and fishers is good; and
- the extent to which the commune authority and the fishers perceive and express the need for FAs and lagoon co-management.

Apart from the above criteria for target prioritization, a limiting factor for target commune selection was the project's financial and human capacities, which defined the maximum number of target communes that the project could cover. The project logframe (Activity 4.3) specifically mentioned:

... the establishment and support of pilot co- and/or community-based management schemes in seven communes. At least seven fisherfolk's and fish farmers' organizations formalized and legalized with support and training of the project (IMOLA, 2006).

The project eventually came up with a list of six target communes for lagoon co-management (see Figure 14 and Table 8);<sup>4</sup> four out of seven communes were selected in Cau Hai and two out of four communes were selected in Tam Giang. A summary of the reasons for the communes not being selected for the co-management support was as follows:

- **Quang Phuoc** was not selected because an international NGO, Nordic Assistance to Vietnam (NAV), had been providing assistance to local fishers since September 2005.
- **Huong Phong** was not selected because of the relatively smaller number of capture fishers, and aquaculture and fisheries were regarded as secondary sources of income with agriculture being the primary source. Also, two aquaculture cooperatives already existed in the commune although they were not functioning very well.
- **Phu Loc Town** was not selected because fishing activities were not as major as in neighbouring communes like Loc Tri and Loc Dien although fishing did play an important role in this town.
- **Vinh Giang** was not selected because most of the villages (3/4) regarded agriculture and/or livestock raising as more important sources of livelihoods than fisheries and only one village predominantly relied on fisheries and aquaculture. Although this commune was rated as a medium priority commune with a significant level of fishing activities, a preference was given to the two inlet communes of Loc Binh and Vinh Hien for the greater importance of fishing activities in those communes.
- **Vinh Hung** was not selected because the commune had relatively few fishing activities as a result of the limited lagoon water surface and aquaculture, which was a major livelihood activity, was already organized under a cooperative. Capture fisheries were also ranked fifth in livelihood importance ranking.

Nonetheless, it is important to note that the above evaluation and decisions were made on the basis of incomplete information. Throughout the project implementation, once new or

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<sup>4</sup> The main reason for the selection of a smaller number of target communes was that the project realized that it was necessary to establish more than one FA per commune as against its initial assumption of establishing one FA per commune.



additional information became available, the project had to reconsider its decision and extend its assistance to additional communes with pressing needs. For example, two communes, Phu Loc Town and Huong Phong, were added in response to their request for project assistance in lagoon fisheries co-management in 2009. Other six communes were core support communes of the project based on the initial assessment.

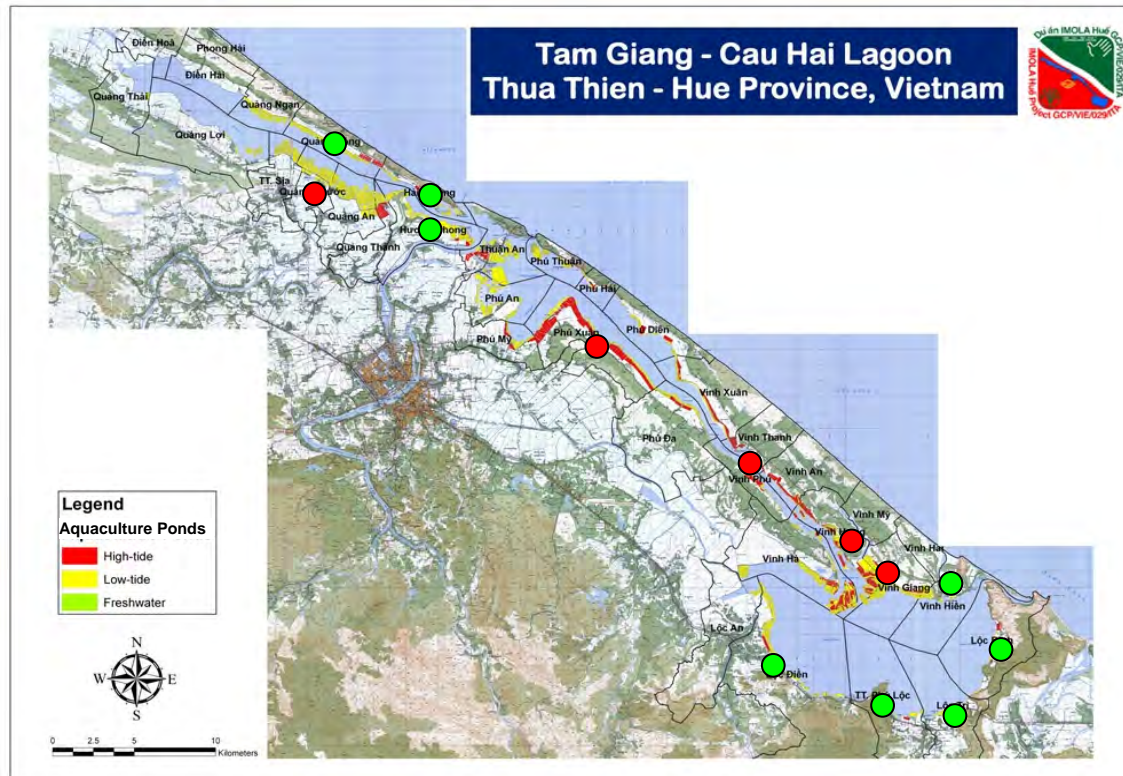


Figure 14 A map showing eight target communes (green) for lagoon fisheries co-management

Table 8 A summary of lagoon co-management target selection

#	Commune	District	Preselection	Selection	Current*
1	Quang Cong	QD	Yes	Yes	Yes
2	Quang Phuoc	QD	Yes	No	No
3	Hai Duong	HT	Yes	Yes	Yes
4	Huong Phong	HT	Yes	No	Yes
5	Phu Xuan	PV	No	--	No
6	Vinh Phu	PV	No	--	No
7	Vinh Hien	PL	Yes	Yes	Yes
8	Loc Binh	PL	Yes	Yes	Yes
9	Vinh Giang	PL	--	No	No
10	Loc Dien	PL	--	Yes	Yes
11	Phu Loc Town	PL	--	No	Yes
12	Loc Tri	PL	--	Yes	Yes
13	Vinh Hung	PL	--	No	No

\* As of July 2010.

Phu Loc Town, after observing the progress of co-management work with local FAs in neighbouring communes, sent a request to the project for assistance in mobilizing fishers and to undertake lagoon fisheries co-management in 2009. The support was given so that the project could geographically cover the major part of the Cau Hai Lagoon (see Figure 14 for



the location of Phu Loc Town) in order to manage the common resources in the largest lagoon (Cau Hai) in the system effectively.

When the project received requests for support from Huong Phong Commune in 2009, it had two fishing villages (Van Quat Dong and Thuan Hoa), with the former already receiving assistance from NAV since May 2008. For this reason, project support was provided only to the other village (Thuan Hoa) after discussions and coordination with NAV.

By 2009, Vinh Giang Commune had been receiving support on lagoon fisheries co-management from a project called the CPRM Project, which was located in the local university and funded by IDRC. It was decided that there was thus no need for further support in this commune.

**OUTPUT: 8 communes selected for fisheries co-management support**

#### 4. Checking the initial status of FAs in selected communes

After the agreement on the list of target communes for lagoon co-management support, the project first reviewed in detail the current status of local FAs, which would be the major counterparts of the local authorities (i.e. CPCs) in the lagoon co-management process. Without proper establishment of well-organized and capable FAs, lagoon co-management would not function as intended.

In the middle of 2007, when the co-management target communes were selected, there were only four FAs in four communes as summarized in Table 9. These FAs existed either at the village or commune (inter-village) levels, covering capture fisheries and/or aquaculture. For example, the Vinh Hien Lagoon FA solely focused on capture fisheries activities whereas the High-Tide FA in Quang Cong was exclusively for pond aquaculture. Other two had a more generic focus on fisheries and aquaculture although they attended to some other specific activities.

Among the four, only the High-Tide FA in Quang Cong had been established formally, meaning that it had received official approval from the PFA. The other three had been established informally although the process to formalize their status was ongoing.

**Table 9 Initial status of FAs in the project target communes**

#	Commune	FA Name	Level	Status	Type
1	Quang Cong	High-Tide	Commune	Formal	Aquaculture
2	Hai Duong	Huong Giang	Village	Informal	General with strong focus on cage culture
3	Huong Phong	--	--	No	--
4	Vinh Hien	Vinh Hien Lagoon	Village	Informal	Capture fisheries
5	Loc Binh	Loc Binh 1	Village	Informal	General with strong focus on capture fisheries
6	Loc Dien	--	--	No	--
7	Phu Loc Town	--	--	No	--
8	Loc Tri	--	--	No	--

Note: Phu Loc Town and Huong Phong were added as target communes in 2009 at the requests of commune authorities and groups of local fishers.

Understanding the current status and need for further establishment of FAs was an important initial step. The existence of one FA did not automatically imply that there was no need to establish additional FAs. For example, the High-Tide FA in Quang Cong, or the Vinh Hien Lagoon FA, only covered specific types of activities, which were in high-tide pond culture and lagoon capture fisheries respectively. However, each commune had other fisheries and aquaculture activities that had to be managed.

In other cases, an existing FA covered only a limited geographic area (e.g. one village), and there was still a need to establish FAs to manage the remaining areas. For example, the Loc Binh 1 FA covered only one village in Loc Binh Commune although there were six fishing villages in this commune. In such a situation, to have a complete coverage of the lagoon water surface by local FAs the options were either to expand the reach of the existing FA to other geographic areas or to establish new FAs to cover the remaining areas. The determination of those options had to be made with consideration of the particular local conditions (to be discussed in the later chapter on establishment of local FAs).

In the case of the above preselected communes, existing FAs, local fisherfolk, and CPCs agreed to have multiple FAs that would cover different activities or geographic areas. The only exception was Phu Loc Town – although the number of people they needed to cover was relatively large (about 200 households), the limited geographic area and fishing activities led to a decision to establish one FA, at least at the beginning.

**Output: Support strategies for each target commune (establishment of new FAs and/or strengthening of existing FAs)**

## 5. Training of the project technical staff

In March 2007, the project hired eight local technical staff to work on lagoon co-management. The technical staff differed in seniority (most of them were young) and/or understanding of the lagoon situation. Almost none of the technical staff had any previous experience with participatory approaches or process facilitation. The project therefore trained and prepared them for the initial feasibility study, providing a series of classroom training sessions as well as on-the-job training with the supervisors and the project consultants (see Table 10).

**Table 10 List of classroom sessions provided to the project technical staff**

Topic	Trainer	Duration (days)
Community-based management of natural resources	National consultant	2
Data analysis and report writing	National consultant	2
Planning process and methods and awareness of fisheries associations	National consultant	1
Participatory planning and organizational development	National consultant	1
Participatory tools, impact assessment, monitoring, and participatory learning	International consultant	0.5
Identification of management goals, objectives, and rules	International consultant	0.5
Purpose and structure of bylaws	International consultant	0.5
Participatory tools, impact assessment, monitoring and participatory learning	International consultant	0.5
Identification of management goals, objectives, and rules	International consultant	0.5
Fishing rights and co-management mechanisms	International consultant	1
Participatory planning for lagoon management	National consultant	0.5
Financial planning and management	National consultant	1

As the classroom training sessions were quite short and could not equip them with all the skills that were necessary, the major component of staff learning was done through actual fieldwork. Through the joint fieldwork and team meetings back at the office, senior project staff provided day-to-day guidance to the field technical staff to help them build their capacity and improve their interactions with the local fisherfolk.

Staff capacity building was a continuous process, requiring efforts throughout the project period. The co-management process has been a learning opportunity not only for the local fishers and government officials, but also for the project staff.

**Output: Project field staff trained in necessary knowledge, skills, and tools for co-management process facilitation**

## 6. Understanding the lagoon environment and fisheries

One of the great strengths of the project was that the lagoon fisheries co-management process with local FAs has been backed up by a series of objective and scientific assessments and data (including maps, an example of which is shown in Figure 15) that were constantly compared, discussed, and integrated with the local knowledge of the fisherfolk. The collection and presentation of the data and maps to the local fisherfolk helped all concerned visualize and share relevant issues and supported the development of a shared understanding of the problems that the fisherfolk were facing. Even though it is not the purpose of this report to explain each survey undertaken by the project in detail, it is worthwhile providing an overview of the surveys conducted and the data developed by the project as they greatly helped in promoting a proper understanding of the lagoon fisheries issues and in facilitating the discussions of the resource users in the FAs.

In the early stages, especially during 2006/07, the project focused largely on developing a proper understanding of the lagoon environment, fisheries and aquaculture and its people through a series of surveys as described in later sections. Three key surveys were:

1. water and sediment quality assessments for the entire lagoon;
2. fixed fishing gear mapping; and
3. pond aquaculture mapping and survey.

Although water and sediment quality assessments (four times in 2006) were undertaken by local academic institutions because of their technical requirements, the other two surveys were undertaken with the participation of local fisherfolk and government authorities. This survey process itself contributed to a better understanding of the fisheries issues that the lagoon and its fisherfolk were facing.

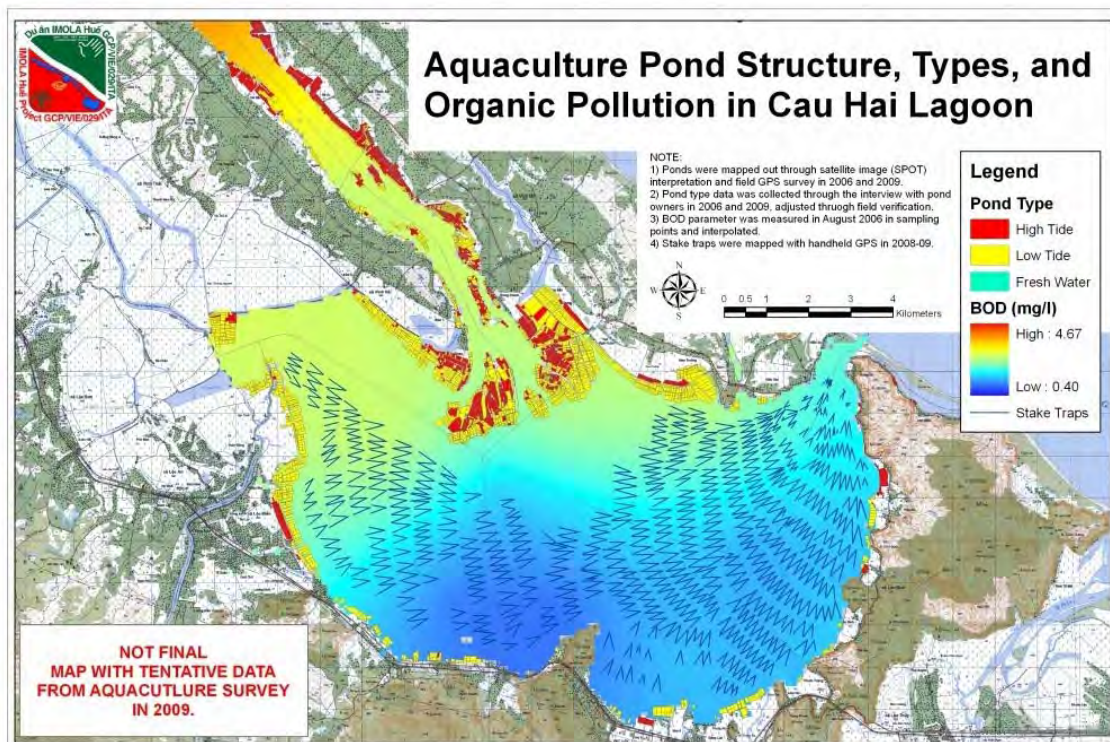


Figure 15 A map showing the status of lagoon water (BOD), capture fisheries (stake traps), and aquaculture (ponds) in the Cau Hai Lagoon

## 6.1 Surveys and co-management

Although the above surveys were not direct parts of the co-management activities, these baseline data were indispensable to promote a common understanding of the natural resources and fisheries status in the Tam Giang–Cau Hai Lagoon. Through participating in the survey process, developing data and maps, and discussing them (see Figure 16), the awareness of the participating government officials as well as of local fishers and aquaculturists was raised, resulting in an improved common understanding of the lagoon management issues.



**Figure 16** Local fishers discussing the location of gears and other issues with a lagoon status map provided by IMOLA

## **7. Fixed fishing gear mapping**

Initially, the local fishers and the authorities had a common sense of the main issue, which was overfishing, as the fish catch as well as the average size of the fish per fishing effort had drastically decreased (see e.g. Schmidt and Marconi, 2010). They, in general, never disagreed with the idea that something needed to be done to conserve lagoon resources. However, one of the problems was that the general picture of fishing gear status in the lagoon was not shared among the local fishers, leading to different understandings and perspectives on the status of capture fisheries and posing difficulties in planning.

As it was impossible to map the mobile fishing gears because of their nature, the project decided to undertake the mapping of a major fixed fishing gear, namely stake trap. A stake trap is one of the traditional fishing gears used by the local fishers, typically composed of two major wings (net fences with bamboo poles) that guide fish to the trap, and traps that actually catch the fish. A stake trap is usually installed in a V shape so that two wings can navigate fish into a trap, which is set at the end of the wings (i.e. the bottom of the V). The size of a stake trap varies, but in the Cau Hai Lagoon, a single wing was usually longer than 350 m. The province estimated that there were more than a thousand stake traps installed on the lagoon water, mainly in Cau Hai.

With topographic maps of 1:25 000 and 1:50 000, which the project purchased from the Government of Viet Nam and later digitized into a geographic information system (GIS) database, the project started the mapping of existing stake traps with hand-held global positioning system (GPS) receivers.

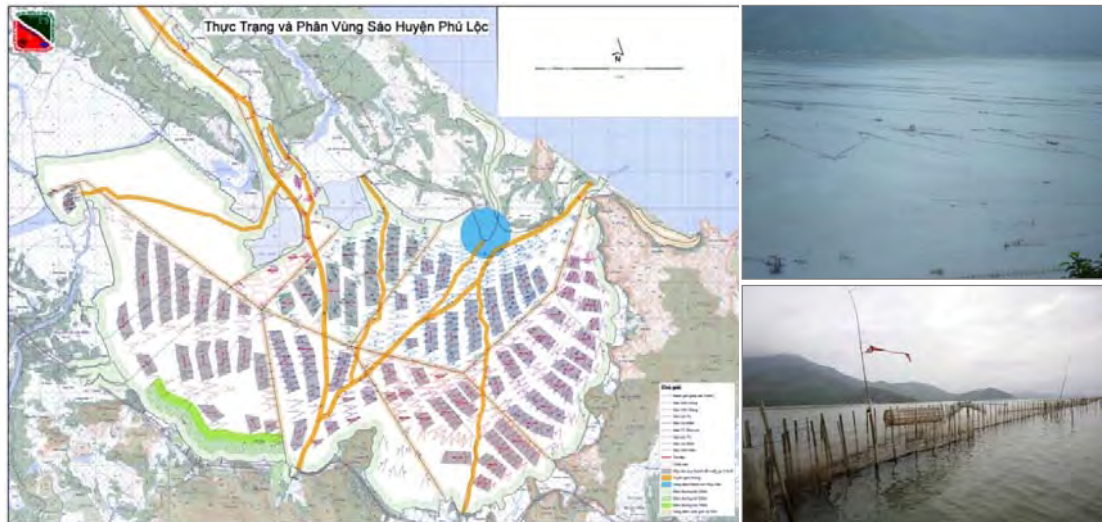
With seven hand-held GPS receivers, the project deployed its technical staff to undertake the mapping in each commune where fisherfolk were using stake traps. The mapping process was usually initiated by organizing a meeting with the commune authority (particularly fisheries staff) as well as key fishers who had a good knowledge of stake traps to understand the general situation of stake traps and their rough distribution on the communal lagoon water.

After the initial meeting, the project staff went on the lagoon by boat with CPC staff and key fishers to map each separate gear. During this process, the project technical staff also provided hands-on training on the use of GPS (which is no more complicated than operating a mobile phone) for the purpose of taking mapping points. The CPC staff and key fishers quickly mastered the mapping methodologies using GPS receivers. For example, on the first day CPC staff and key fishers came with the project technical staff, only watching how things were done. On the second day, they themselves operated the GPS receivers under supervision of the project technical staff. On the third day or later, whenever both parties felt comfortable in undertaking the mapping independently, the project technical staff were phased out of the mapping leaving the process to the local authority and fishers. However, the project technical staff were available on call whenever CPC staff needed their assistance.

This on-the-job training approach worked well with significant improvements in survey capacity at the local (commune) level. The survey also raised awareness of the issues related to stake traps by actually observing the gears one by one.

The collected data on GPS receivers were later gathered by the project and transferred into the project geo-database (GIS database) and overlaid on the topographic maps for visualization (see Figure 17). The draft maps were then sent to each commune for final verification and assignment of owners' names.





**Figure 17** An example of stake trap status map with proposed zoning for the Cau Hai Lagoon (left); a panoramic picture with stake traps on lagoon water (right top); and a close-up look of a stake trap (right bottom)

The geo-database and paper maps that came out of this process provided critical information on the current status of stake traps such as their shape, size, quantity, location, distribution, density, and ownership status to the local authorities and resource users. The average error of the GPS receiver was 10 m to 15 m, which was acceptable for general planning by local communes. In some communes, depending on the need, other types of fixed fishing gears such as bottom nets, lift nets, and fish aggregating devices (FADs) were also mapped.

**Output: GIS database on fixed fishing gear status and better and common understanding on the current situation of capture fisheries in the lagoon among local fishers and authorities**



## 8. Pond aquaculture mapping and survey

A survey on lagoon aquaculture was also conducted (see Figure 18). Given the importance and environmental impacts of pond aquaculture, mainly of giant tiger prawns, the project decided to focus its mapping activity on the lagoon's aquaculture ponds. There was no comprehensive geographic data on aquaculture that could show the exact distributional status of the aquaculture ponds and their properties such as culture species, culture method, productivity, and disease status.



**Figure 18** A panoramic view of aquaculture pond area (left) and aquaculture survey process (right)

Although the mapping of aquaculture ponds could, as in the case of the fixed fishing gears, technically be done by using hand-held GPS receivers, given the number and size of the aquaculture ponds, the project decided to undertake the mapping using satellite imagery. The number of ponds was estimated to be over 10 000 with an average of 5 000 m<sup>2</sup>/pond.

The project purchased and used the SPOT-5 imagery for the entire lagoon for pond mapping with a resolution of 5 to 10 m. The project technical staff traced pond dykes on the satellite images and created polygons showing each pond in a GIS layer. The project then sent those preliminary maps of aquaculture ponds to each CPC for verification and assignment of pond owners' names.

Once the base map preparation was completed, the project trained government officials from the provincial DARD, particularly those from the Sub-Department of Aquaculture and Fisheries Extension Center, as well as district and commune staff, in questionnaire development and interview methodologies. The project together with the provincial DARD developed an interview questionnaire based on an assessment of the data needed for the aquaculture planning and management in the province.

Upon completion of the training of government officials, the final questionnaires were distributed to them, and they conducted interviews with individual pond owners. Most of the interviewers came from commune level, but depending on the availability of such personnel and the number of ponds to be covered, district and provincial officials also participated in the survey. It took over 200 days to cover nearly 10 000 ponds in 31 communes with 49 interviewers – it was indeed a time-consuming and labour-intensive process. Nevertheless, it is worth noting that this interview process was managed almost entirely by the government staff and not by external consultants.

After the collection of all questionnaires, the project provided further training on data input to the provincial DARD staff who later registered the questionnaire data in an Excel sheet. This Excel data was later imported into the GIS. This enabled the questionnaire survey data to be related to the pond polygons prepared in the earlier stage.

**Output: GIS-based database on aquaculture (pond) status and a better and common understanding of the current situation of pond aquaculture along the lagoon among local fishers (including aquaculturists) and authorities**

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## IV. Inception stage

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With target communes for lagoon co-management decided and with an initial understanding of the current status of fisheries activities and their management, the project entered into the next stage, namely the fisheries co-management inception stage. In this stage, the main task was to establish and strengthen local FAs. Mobilizing local fisherfolk to form a local FA was a critical step towards the operationalization of lagoon fisheries co-management as FAs were going to be the major partners of the government authorities in lagoon fisheries co-management (see Figure 19).



**Figure 19** A diagram showing co-management mechanism

The inception stage involved a series of workshop-type meetings and preparatory work among different stakeholders including local fishers, formal and informal pre-existing groups (e.g. cooperatives and management teams) fisherfolk organizations, community groups, commune and district authorities, and others.

Establishing an FA encapsulates more than simply grouping people together. For an FA to function effectively as a proper organization the following key aspects of the FA need to be developed in a process.

1. FA charter (bylaws)
2. FA executive board (EB)
3. FA checking body (CB)
4. FA members (member list)
5. FA subgroups
6. FA establishment approval by PFA/District People's Committee (DPC)/PPC (including the agreement by the CPC)
7. FA congress (decision-making body).

The above list acts as a checklist to assess the status of the local FAs in a process of their establishment and strengthening.

The general work flow for this stage was as shown in Table 11.

**Table 11 General workflow and timeframe in the inception stage**

<b>Activity</b>	<b>Main meeting duration</b>	<b>Timeframe</b>
1. Kick-off meeting	Half day	1 month including preparation
2. Mobilization meeting	One day	3 weeks including preparation and compilation of FA documents
3. Strengthening meeting	One day	3 weeks including preparation and compilation of FA documents
4. Introduction ceremony	Half day	1 month including the waiting time for FA establishment decision, meeting preparation, and meeting organization
5. FA meeting(s)	Half day	2 months including preparation and compilation of FA documents
6. FA congress	One day	1 month including preparation and compilation of FA documents

Note: The above timeframe is a rough estimation of the average time required per FA. IMOLA covered 22 FAs in parallel, and the time requirement for each FA varied depending on the level of understanding and capacity of the FA, support from local authorities, capacity of the project staff in charge, and other factors.

It should be noted that, although major meetings took a short time (half to one day) only, there were many smaller meetings among the FA executive board and CPC in-between the mobilization meeting and the introduction ceremony and before the FA congress. The purposes of these meetings were to discuss and prepare meeting documents, draft regulations and others.

The following sections explain the details of each of the above items.

## **1. Steps towards establishment and strengthening of FAs**

The general steps that need to be taken to establish and/or strengthen local FAs can be found in Annexes 1 and 2. These steps are divided into workshop-type meetings and preparatory work. The workshop-type meetings generally focus on larger groups and have a clearly defined structure and outputs. Preparatory work is done mainly by smaller groups that may frequently change composition and the work itself consists of making arrangements and preparing documents for forthcoming meetings (e.g. charter, plans, and regulations).

Based on local circumstances, the number of key meetings as well as the contents of the meetings may vary. The meetings can be generally divided into four types of workshop-type meetings, namely:

1. commune kick-off workshops;
2. FA mobilization meetings;
3. FA strengthening meetings; and
4. FA introduction ceremonies.

Each of the meetings has its own objectives. These may vary from location to location, but generally their objectives are as presented below.

### **1.1 Commune kick-off workshops**

Following the selection of the six initial target communes, a kick-off workshop was conducted in each of the pilot communes. The objectives of these workshops were to:

- raise awareness on the status of the lagoon resources, local FAs, and fisheries co-management;
- define the number and type of local FAs to be established and/or strengthened with project support;
- discuss and tentatively define the commune water surface area belonging to each local FA; and
- discuss the process of building the co-management model.

### **1.2 FA mobilization meetings**

Following the kick-off workshop at the commune level, a mobilization meeting was held at the FA level. Besides raising awareness and fisherfolk mobilization, the focus was on developing a set of rules to govern the internal management of the FAs (i.e. bylaws), providing the young associations with a tailor-made organizational structure (e.g. executive board, subgroups, and subgroup leaders) and taking the steps necessary for formal establishment and legal recognition as a socio-professional organization. In general, the objectives of the mobilization meetings were to:

- raise awareness on the status of lagoon resources, local FAs, and fisheries co-management;
- mobilize local fisherfolk to participate in the FA and register as a member;
- elect a provisional executive board;
- discuss and declare intent to develop the FA (e.g. membership and structure including subgroups); and
- tentatively name the FA.

### **1.3 FA strengthening meetings**

If an FA(s) had already existed, or following the mobilization meetings of new FAs, the project helped to strengthen the FAs. The main objectives of FA strengthening meetings were to:

- raise awareness on the status of the lagoon resources, local FAs, and fisheries co-management;
- consolidate and strengthen organizational structure (e.g. subgroups, subgroup leaders, subgroup members, and subgroup areas if applicable);
- discuss local FA charter and management regulations; and
- discuss the tentative work plan for developing the local FA.

### **1.4 FA introduction ceremonies**

The introduction ceremony comes at the end of the preparation for the formal establishment of an FA. By this time, all necessary documentation such as charters (bylaws), EB, subgroups, and member list should be ready and submitted to the PFA for the issuance of the official decision on the FA establishment. The introduction ceremony is, as its name suggests, more ceremonial than workshop-type meeting to officially and publicly announce the establishment of an FA and its functions. The main objectives of the introduction ceremonies were to:

- present the FA establishment decision by PFA;
- introduce provisional EB members;
- assign tasks and hand over the official stamp to the EB;
- present the FA charter (bylaws) to the FA members and commune authorities for approval; and
- hear various official statements by relevant stakeholders including line departments (e.g. on provincial fisheries regulations to follow).

It is important to note that these large workshop-type meetings and ceremonies constitute only a small part of the work at the (sub-) commune level as each meeting was preceded and followed by preparatory work in smaller groups supported by IMOLA technical staff and consultants.

## 2. Mobilizing resource users: determining the appropriate size of an FA

Probably the first question related to the establishment of an FA would be regarding its size. The size of FAs that the project is currently supporting varies from 30 to 200 members (i.e. households).<sup>5</sup> The basic principle for determining the size of an FA was that it should be “large enough to be effective, but of manageable size.” An FA needs to be large enough to include a certain extent of water surface and a good number of resource users for its management to have an impact. However, the FA has to be manageable in size as an organization.

As the organizational manageability highly depends on different factors, there is no single appropriate size of an FA. In general, the factors in Table 12 should be considered in determining the FA size.

**Table 12 Factors to be considered when determining the appropriate size of an FA**

<b>Factors</b>	<b>Description</b>
<b>Existing social structure</b>	The best way to define the size and extent of an FA is to utilize the pre-existing social structure in the locale. This could be traditional villages, self-management groups and others. The majority of the FAs in the project’s target communes were established on the basis of existing village(s) or commune(s), in which people more or less knew each other already.
<b>Social cohesion</b>	Social cohesion in a group is quite important and a crosscutting factor to consider in establishing groups like FAs. If the social cohesion is high and strong, such as in a small traditional village, people are more likely to comply with the rules set by the group as the costs of non-compliance are significantly high (e.g. dismissal from the group). When determining the appropriate size of the FA, facilitators should carefully look at this factor. The size of an FA could be big if good social cohesion is observed, typically in traditional social groups like villages. On the other hand, if the community consists of heterogeneous groups and/or individuals, e.g. migrants, or if there are existing conflicts within the group, social cohesion is often weak and the community itself is more difficult to manage. In such a case, it would be advisable to start with a smaller, manageable size (note that FAs can merge any time at a later stage if necessary or the opposite, splitting, is also possible). Fortunately, the project’s target communes were relatively homogenous although there were some pre-existing conflicts in some communes.
<b>Time-distance</b>	Time-distance also limits the size of local FAs as FAs need to organize frequent meetings. If the people live far apart, it is difficult to have frequent meetings. Time-distance is not merely the physical distance, but also depends on modes of transportation that FA members usually use. For example, in poor communities, many people would have to walk to a meeting hall. Or in other cases, the majority of people might have motorbikes. In the project areas, some communes established several FAs because of their wide geographic extent. Some FAs also decided to split into two in the latter stage for the same reason.

<sup>5</sup> In normal cases, one membership means one household as the household head becomes a member of an FA.

<b>Factors</b>	<b>Description</b>
<b>Fishery structure</b>	Although this factor was not very determining in the case of the lagoon FAs, how fisheries are organized could be an important determining factor for other types of FA such as inshore and offshore marine fishing FAs that have a bigger water surface for their operation. As mentioned earlier, to be “large enough to be effective,” a proper understanding of how fisheries are undertaken by local fishers, including their geographic extent, mobility, and origins (where the fishing boats are from) is quite critical.
<b>Activities</b>	If a group of people using the same water surface is deemed too large to manage, another way of dividing the group is by their profession, or their main activity. A typical division would be capture fisheries and aquaculture, but it can be a single activity such as stake trap or fish cage culture, if the number of people engaged in such activities is significant. One disadvantage of having different groups based on profession managing the same water surface is prominent especially when the activities occur at the same time in the same area, e.g. fixed/mobile fishing gears and fish cage culture. In such a case, two or more FAs will be responsible for managing the same area. In some cases this makes the management responsibility unclear and management coordination more challenging.
<b>Leadership</b>	Leadership is an important factor in determining the FA size. If there is a trusted, visionary leader among the fishers, the group size can be relatively big. If the leadership is weaker it is better to keep the size of the group relatively small. One drawback of having a strong, charismatic leader is that he or she is more likely to prevent the development of other management members (future leaders), which is not positive for the continuity of the organization.

There may be additional factors affecting the appropriate size of the FA depending on the local context. The IMOLA approach was to start with something manageable (usually less than 100 people) so the EB of the FA and its members can gain experience and confidence and then scale it up later. It should be noted that the initial arrangement of FAs was not absolute and permanent and it could be adjusted later depending on the particular needs of the FAs by either merging or splitting the FAs.

Internally, FAs were divided into subgroups. These subgroups break the FA into smaller, manageable groups for the sake of easier and more effective organizational management. The choice was to either organize different groups in a commune as separate FAs or different subgroups within one FA. Moreover, even if people are separated into different FAs this does not necessarily mean that they would not work together. Cooperation and networking between FAs is always necessary as they share the water surface of the lagoon. When the number of people is too large to manage under a single FA, the idea is to establish multiple FAs and put shared issues under the partnership of FAs.



### **3. Establishing an FA mobilization group for kick-off**

The first step towards establishing an FA was to identify a core group of fishers with an interest in establishing one. This group then worked closely with IMOLA technical staff and local authorities (CPCs) to prepare a series of meetings and the necessary documents for discussion.

The group then tentatively nominated EB members who would steer the embryonic FA to its official establishment and until the official election of EB members at the FA congress. In the case of FAs supported by the project, the EB consisted of five to seven people depending on the size of the FA.

One immediate task of the provisional EB and pioneering group was to undertake a kick-off workshop (see Figure 20) and to make a work plan for the official establishment of the FA. As mentioned earlier, the objectives of the kick-off workshops were to:

- raise awareness on the status of the lagoon resources, local FAs, and fisheries co-management;
- define the number and type of local FAs to be established and/or strengthened with support from IMOLA;
- discuss and tentatively define the commune water surface area belonging to each local FA; and
- discuss the process of building the co-management model.

Upon completion of the kick-off workshop a six-month work plan was prepared for each FA in order to make the immediate tasks at hand and the road ahead clear to the FA members as well as the local authorities (see Tables 13 and 14).



**Figure 20** Scenes from a kick-off workshop in Hai Duong Commune

**Output: FA mobilization group identified and selected by local fishers**

**Table 13 Consensus achieved in commune level kick-off workshops**

Commune	Establish new FA/ Strengthen existing FA	FA Type
Quang Cong*	Strengthen	High-tide shrimp culture
	Establish	General
Hai Duong*	Strengthen	General
	Establish	General
Loc Dien	Establish	General
	Establish	General
Vinh Hien*	Strengthen	Capture fisheries
	Establish	Aquaculture
Loc Binh*	Strengthen	General
	Establish	General
Loc Tri	Establish	Capture fisheries
	Establish	Aquaculture

\* Four target communes had pre-existing FAs before IMOLA.

**Table 14 An example of six-month work plan for Loc Binh Commune**

#	Activities	M1	M2	M3	M4	M5	M6
<b>A</b>	<b>Initiation of the process</b>						
	1. Kick-off workshop	■					
<b>B</b>	<b>Existing FA (Loc Binh 1)</b>						
	1. Strengthen the FA		■				
	2. Build an FA charter		■				
	3. Organize an FA introduction ceremony		■				
	4. Prepare a management strategy		■				
	5. Create management regulations		■				
	6. Prepare a fisheries and aquaculture development plan			■			
	7. Prepare a financial plan				■		
<b>C</b>	<b>Newly established FA (Loc Binh 2)</b>						
	1. Mobilize and establish the FA		■				
	2. Build an FA charter		■				
	3. Organize an FA introduction ceremony			■			
	4. Prepare a management strategy			■			
	5. Create management regulations			■			
	6. Prepare a fisheries and aquaculture development plan			■	■		
	7. Prepare a financial plan				■		
<b>D</b>	<b>Awareness raising</b>						
	1. Organize traditional festivals						
	1.1. Loc Binh 1 FA			(already done)			
	1.2. Loc Binh 2 FA		■				
	2. Broadcast on radio		■	■	■	■	
	3. Create and display banners		■	■	■	■	
	4. Develop and distribute leaflets		■	■	■	■	
	5. Conduct experience-sharing workshop						
	5.1. Loc Binh 1 FA			■			
	5.2. Loc Binh 2 FA			■			
<b>E</b>	<b>Training</b>						
	1. Organize training on fisheries management regulations and FA establishment procedures		■				
	2. Organize training on participatory planning			■			
	3. Organize training on fisheries and aquaculture development planning			■			
	4. Organize training on credit and savings				■		
	5. Organize training on lagoon fisheries co-management					■	
<b>F</b>	<b>Negotiate management regulations at the commune level</b>					■	■
<b>G</b>	<b>Promote community action</b>						■

#### **4. Raising awareness of resource users: bringing the people into the management**

Awareness raising was an important crosscutting issue for lagoon fisheries co-management. There were in fact many ways to raise people's awareness of lagoon resource management and active participation in FAs. Those opportunities included activities like meetings (small and large), workshops at different levels, a series of training sessions, traditional festivals and commune events. Furthermore, different methods of communication were used such as leaflets, banners, radio and television broadcasts and newspaper articles.

##### **4.1 Formal and informal training sessions**

Apart from the meetings and workshops, which had a built-in awareness-raising objective as well as others, IMOLA supported a series of training sessions to raise awareness of FA members on the following subjects directly:

- Fisheries management regulations and FA establishment procedures
- Participatory planning
- Fisheries and aquaculture development planning
- Credit and savings
- Co-management
- FA financial capacity

The above list is not exhaustive and the awareness was also raised through on-the-job training. As the local fishers in the lagoon were very much action oriented, the project experience showed that their awareness was better raised through a series of joint activities such as field observation and mapping and other lagoon management activities. Training and discussion sessions where fishers could directly raise issues and exchange opinions on potential solutions and strategies were a more interactive way of raising awareness and illiterate people could participate in these sessions.

##### **4.2 Leaflets and banners**

Other tools that were used by the local FAs to raise awareness of their (potential) members were leaflets and banners. Leaflets were prepared and distributed on, for example, the status of lagoon resources, importance in participating in the FA, and need for lagoon fisheries co-management. Banners along the road were often used to show slogans such as "protect the lagoon for our better tomorrow" and in common meeting spots (e.g. schools), especially when some events were organized by FAs. Although they were relatively low-cost options for disseminating information to raise awareness they were less attractive and interactive than meetings and training sessions and they could not convey the message to illiterate populations such as *sampan* (boat-dwelling) populations and some women whose education levels were usually lower than those of men.<sup>6</sup>

##### **4.3 Radio, TV and newspapers**

For important issues such as the transfer of aquaculture rights to local people, FAs used radio broadcasts (including announcement from loudspeakers in communities) to disseminate information and news to the local FA members and the community at large. For official meetings and events, TV and newspaper companies were invited to broadcast or report on them so that not only the households in the target communes and villages but also people in other fishing villages or even in the provincial capital could see and be inspired to take similar actions for lagoon fisheries management.

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<sup>6</sup> *Sampan* (boat-dwelling) people generally have a higher rate of illiteracy as they live on boats and thus do not have easy access to information and services, including education. Because of the preferential provision of education to boys in local families, women usually have lower levels of education, especially in rural areas.

#### ***4.4 Traditional festivities and/or games***

Other opportunities and/or tools for FA awareness raising were traditional festivities and/or games at the FA, village or commune levels, including sporting events like boat racing and lagoon clean-up events on Earth Day (22 April). For more details on this aspect see later section on “enhancing commune solidarity”.

**Output: Local fishers' awareness raised on the existence and roles of FAs, rights and responsibilities of the FA members and importance of fisheries management**

## **5. Preparing an FA charter: setting up the rules for the FA**

The FA charter, or bylaws, was the first document to prepare when establishing an FA. The FA charter describes the organization (name, objectives, etc.), how the organization is structured (bodies), who should be part of it (membership system), how funds should be managed, and other miscellaneous provisions (dissolution, amendment, etc.). In the Thua Thien Hue Province, the existence of an FA charter is one of the requirements for the legal establishment of an FA, i.e. any intended fishers' group must submit a complete FA charter describing the details of the organization and its management to the PFA.

In order to provide a better understanding on the FA charter and to assist local FAs to create their own charters, IMOLA, through its international and national consultants, developed a model charter, which local FAs could use as a template to build their own charters by filling and modifying some parts. Although the basic structure of the charter was more or less the same for all supported FAs, there were several options available for some elements in the charter.

For example, there was a discussion as to whether an FA should allow non-residents of the FA area to be members. There was no right answer to this question – this question needed to be discussed among the fishers, and the answer would depend on the local situation and issues. In cases where the area under the FA was used by fisherfolk from neighbouring communes, for example, the membership could allow heterogeneity in its membership to include and control all resource users within an FA area effectively. Or, if the FA intended to exclude people from other geographic areas to fish in their territories, they might otherwise decide to limit the FA membership to the residents in particular villages or communes. Note that such exclusion might potentially cause conflicts between those included and excluded. Careful assessment of the resource use status was required before making decisions.

IMOLA presented a model charter and available options to the FAs in an inter-FA workshop, which was followed by a series of FA-level discussion meetings to develop and finalize the FA charter.

A charter usually consists of the following chapters and articles:

**Chapter 1: General provisions**

Article 1. Name

Article 2. Legal status

Article 3. Objectives

**Chapter 2: Membership**

Article 4. Membership

Article 5. Rights and duties of members

Article 6. Membership fee

Article 7. Operational fees

Article 8. Honorary membership

Article 9. Suspension or exclusion

**Chapter 3: Bodies of the fisheries association**

Article 10. Bodies of fisheries association

**Chapter 4: The congress**

Article 11. Meetings

Article 12. Functions

Article 13. Voting

**Chapter 5: The executive board**

Article 14. Composition and terms of office

Article 15. Functions

Article 16. Meetings and voting

Article 17. Vacation of office

Article 18. Remuneration

**Chapter 6: The checking body**

Article 19. Composition and terms of office

Article 20. Functions

Article 21. Remuneration

**Chapter 7: The fisheries association fund**

Article 22. Establishment of the fund

Article 23. Financial resources

Article 24. Use of monies

Article 25. Administration of the fund

**Chapter 8: Final provisions**

Article 26. Conditions for dissolution

Article 27. Assets

Article 28. Amendments

Article 29. Entry into force

The details of the model bylaws, including explanatory notes, were presented by Skonhøft (2007b), which can be downloaded from the IMOLA website ([www.imolahue.org](http://www.imolahue.org)).

**Output: Customized and completed FA charter for each target FA**

## **6. Creating the organizational structure: establishing an executive board, checking body and subgroups**

According to the model FA charter, there were three bodies to be established within an FA, namely, the congress, executive board, and checking body. Though not required, an FA often needs to create subgroups that are defined on the basis of the geographic locations (e.g. villages) and/or professions (e.g. cage culture, capture fisheries, etc.) for ease of organizational management. As the congress will be explained in detail in the later section, this section focuses on establishment of executive board, checking body, and subgroups.

### **Article 10 – Bodies of the fisheries association**

The fisheries association is organized and operated on the principle of concentrated democracy, collective leadership and individual responsibility, and on a voluntary, self-management and financial self-sufficient basis.

The fisheries association has the following bodies:

1. The congress
2. The executive board
3. The checking body

The executive board can establish sub-groups according to gear type, farming activity etc. as necessary.

(Skonhofs, 2007b, p. 3)

### **6.1 Executive board (EB)**

An EB is a small, core group of fishers who undertake day-to-day administration of the FA. In the IMOLA-supported FAs, the EB usually consists of five to seven people who are elected by the FA members and approved at the FA congress. An EB has a chairperson, vice-chairperson, a secretary, accountant, and commissioner(s).

Some of the key terms for an EB are as follows:

- One term for an EB is two or three years (between two congresses);
- Maximum number of consecutive terms is three terms;
- EB meeting should be organized at least once per month; and
- EB members are entitled to receive remuneration.

In the IMOLA case, EBs actually met more frequently than one month to handle planning and monitoring tasks. As for the remuneration, even though it played a very critical part in ensuring the sustainability of the EB's contribution towards the running of the FA, because of financial constraints EB members did not receive any allowances for many months at the beginning. Finding a willing and trusted group of fishers who could work as an initial EB member (with/without remuneration) has been a challenge in some places.

When IMOLA started supporting local FAs, virtually the only source of income was membership fees, which were only partially collected by the FA. For this reason, IMOLA decided to support the EB with an allowance (100 000 to 200 000VND/month/position)<sup>7</sup> for a limited period of one

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<sup>7</sup> Equivalent to US\$5 to10.

year until the FA would have more financial capacity, especially through the collection of water surface user fees (fees based on fishing activities).

## **6.2 Election of EB members**

There were some variations in the way EB members were elected and approved through the congress of local FAs. In some cases, after the nomination of EB members by FA members, the EB members were approved with only the chairperson elected by the FA congress, whereas the rest of the positions were determined through the later EB meetings. In other cases, all EB members including their particular roles were discussed in advance in FA meetings and approved in the FA congress. Either way, the basic principles were that all EB members should be elected by the FA members through its congress as the highest body of the FA.

An FA is a professional “fisherfolk organization” independent from the authorities, representing the interests of the fishers. However, at the outset, some of the authorities occasionally misunderstood that local FAs were quasi-governmental units whose purpose was to control the local fishers. This misunderstanding or attitude became especially clear when selecting the EB members of some FAs. As a democratic organization of fisherfolk, its own members (member fishers) should elect the EB. However, in some communes, local commune authorities tried to intervene in the selection process by appointing their preferred chairperson. As a consequence, the project had to organize a series of meetings with the local authorities to explain why the process had to be democratic and supported/agreed fully by the FA members. Despite a set of training workshops, awareness raising, and meetings, this type of problem still surfaced from time to time, showing the difficulties in changing the pre-existing attitudes of some “traditional” governmental officials.

## **6.3 Size of an EB**

As mentioned earlier, an EB usually consisted of five to seven EB members who had different roles in its management. Although there is no absolutely correct number of EB members, the range of five to seven seemed to be quite appropriate to manage the FA. As there were always some EB members not working or participating in the FA management actively, the number of EB members could be even smaller in some cases in fact (this would also reduce the unnecessary remuneration to non-active EB members).

It should be mentioned here that the well-known study on group size and group behaviour by Olson (1965) suggested that the average size of the “action taking” groups tended to be much smaller (“4.7-7.8 members”) than “non-action taking” groups. Quoting Simmel (1950), he noted that “small, centripetally organized groups usually call on and use all their energies, while in large groups forces remain much oftener potential” (p.92).

The experience of IMOLA also corroborated the above and would suggest the size of the EB should be less than seven to make it function well. Even with five to seven EB members, the project often noted that some EB members (especially commissioners) were not actively participating in its management, and the daily operations were done by only a few members of the EB.

## **6.4 Checking body (CB)**

As its name suggests, the CB is a body that checks and monitors the operation of an FA by the EB to ensure it is done in a sound and transparent way. A CB is usually composed of about three members elected by the congress for a term of one to two years although the term and size could be flexible depending on the needs and decisions made at the congress. Many FAs do not allow EB members and relatives of the EB members to be in the CB to ensure its independence from the EB.



## **Article 20 – Functions**

The checking body (CB) is responsible for ensuring that the activities of the fisheries association are conducted in line with these bylaws and any decisions and resolutions adopted by the congress. Furthermore, the CB is responsible for conducting an annual audit of the fisheries association fund.

The CB can request that the executive board produce all protocols, documents and information necessary for conducting its control and audit.

The CB shall report annually to the congress on its activities.

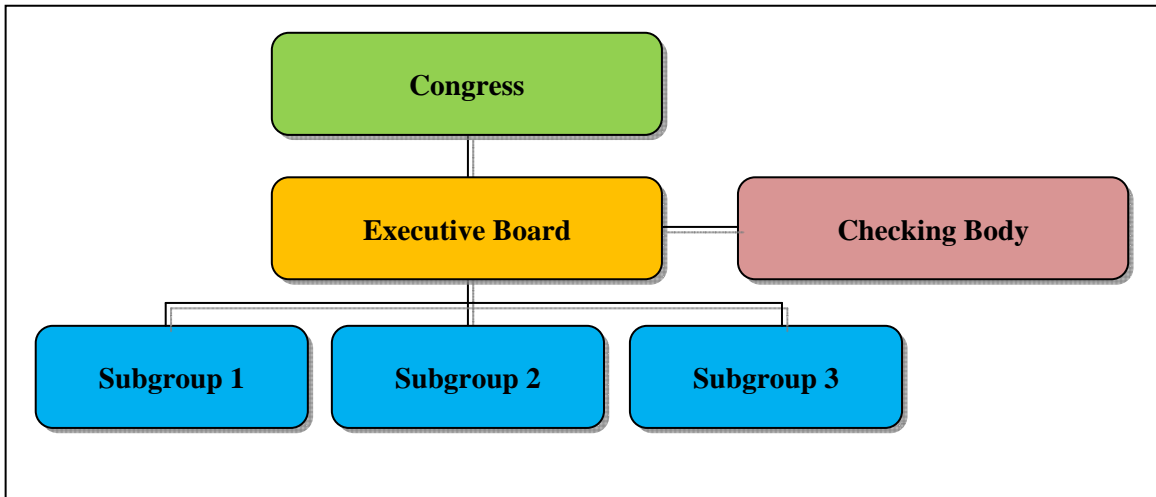
(Skonhofs, 2007a, p.6)

In theory, the CB is an important entity to ensure the sound operation of an FA, especially to prevent misuse of the FA fund. However, IMOLA has quite mixed experience on the effectiveness of a CB. As the local FAs were established on the basis of the pre-existing fishing villages, which were quite small in size, FA members, particularly core members, had very close relationships among themselves, including extended family relations and friendships. Given the above, the risk of collusion was very high, and there was a fear that a CB could not fulfil its responsibilities very effectively. The above issue was sometimes unavoidable given the pre-existing social structure and relationships in fishing villages and probably common in rural areas. In such a case, the project promoted and enhanced the direct responsibility of the EB to report its activities including accounting in front of FA members at large meetings and congresses for scrutiny by FA members at large. The reliance on direct reporting was not the best option but a better option to ensure the transparency of the FA operation.

At the same time, when the FAs were at their initial stage, they seriously lacked financial resources to support checking body members effectively. For this reason, most of the project-supported FAs actually postponed the establishment of CBs until they had enough financial capacity to do so. Again, this was not the best option as the CB had its own role to make the FA operations transparent and accountable, but some flexibility should be allowed at the initial stage of FA development depending on the given circumstances.

## **6.5 Subgroups**

Although it was optional, all project-supported FAs established subgroups within the FAs for ease of organizational management. Subgroups could be defined by geographic areas (e.g. villages), occupations (e.g. fishing gear and aquaculture system), or other factors that define different groups in an FA. Most of the project-supported FAs decided to create subgroups based on the geographic areas for ease of their management (physical proximity, social ties, etc.). Loc Binh 1 FA, for example, has six subgroups, including five for different areas and one for fishers from other communes. However, FA subgroups could be defined by occupations such as stake trap group or fish cage culture group. Each subgroup has a group leader and vice-leader who are selected by the members of the subgroup. Upon the decision of the FA EB, some FA additional tasks such as fee collection and patrolling may also be carried out by the subgroups. Figure 21 illustrates the typical structure of an FA.



**Figure 21 Typical structure of an FA**

**Outputs: EB, CB, subgroups within FAs**

## 7. Formalizing the FA: legal establishment of the FA

Once the above preparations were completed, the legal establishment of an FA was not a difficult step. In Thua Thien Hue Province, the PFA has been approving the establishment of new FAs at the commune and village levels since the project's inception.<sup>8</sup> The documents shown in Table 15 were prepared and officially submitted to the PFA with the agreement of the local authority.

**Table 15 List of materials required by the authority**

Document	Sign & Stamp	
	MG	CPC
1. An application to establish the FA	X	
2. Draft FA charter	X	
3. Brief FA work plan	X	
4. List of people in the mobilization group*	X	X
5. Judicial record of the leader of the mobilization group*	X	X
6. Document indicating working place and properties of the FA	X	X

\* Mobilization group (MG) is a group of volunteer fishers who work together to establish an FA. In many cases, they become provisional EB members.

In addition to the above, the Thua Thien Hue PFA requires the documents listed in Table 16 for establishing an FA.

**Table 16 List of documents required by provincial fisheries association**

Document	Sign & Stamp		
	MG	CPC	PFA
7. A full list of FA members and member registration forms filled in by FA membership applicants*	X	X	
8. Minutes of the mobilization meeting	X	X	
9. Minutes of agreement of the FA establishment between CPC and PFA		X	X

\* The Decree 45/2010/ND-CP requires at least ten members and three mobilization group members to organize a commune-level FA (Government of Viet Nam, 2010).

Based on the above documents, the PFA issued a decision on the establishment of the local FA. Once approval for the official establishment was granted by the PFA, the FA organized an introduction ceremony (see Figure 22). As mentioned at the beginning of this chapter, the objectives of the ceremony were to:

- present the FA establishment decision by the PFA;
- introduce provisional EB members;
- assign tasks and hand over the official stamp to the EB;
- present the FA charter (bylaws) to the FA members and commune authorities for approval; and
- make various official statements by relevant stakeholders including line departments (e.g. on provincial fisheries regulations that will follow).

<sup>8</sup> However, according to Decree 88/2003/ND-CP (Government of Viet Nam, 2003) and Circular 01/2004/TT-BNV (Government of Viet Nam, 2004), it has been always the relevant government agencies that can recognize the mobilization boards, receive applications and approve their establishment. Subsequent Decree 45/2010/ND-CP (Government of Viet Nam, 2010) specifies that the District People's Committees shall recognize the mobilization boards for the establishment of associations at the district or commune levels; provincial Department of Home Affairs (or district DOHA, if PPC authorizes it) shall receive establishment applications; and PPC (or DPC, if PPC authorizes it) shall approve the formal establishment. Despite the above national policies, there have been no claims made against the fact that the PFA has been approving the establishment of new local FAs during the operation of the IMOLA.



**Figure 22 Pictures from the introduction ceremony in Vinh Hien Commune**

According to Article 10 of the Decree 45/2010/ND-CP (Government of Viet Nam, 2010), the FA should organize a congress within 90 days from the date of the legal establishment (as stated on the decision) to formalize the EB and undertake other necessary tasks. This deadline is extendable up to 30 days upon the approval; however, the Decree states that the FA will be dissolved automatically if the congress is not organized within this ultimate deadline. The content of the congress is explained in detail in the next section.

**Outputs: Legally established FAs (FA establishment decision by the authority)**

## **8. Establishing communication channels: organizing small and large meetings and the congress**

FAs need to meet frequently to discuss and decide matters relevant to their operation. There were roughly three types of meetings: the congress, large meetings and small meetings.

### **8.1 The congress**

The congress is the highest-ranking body of an FA. All important decisions are made in the congress with the participation of FA members. Some of its features are as follows:

- The congress is organized every one to three years;
- All FA members should be invited to the congress;
- FA members have rights to propose any agenda for the congress (via the EB);
- FA members should receive the meeting agenda from the EB in advance;
- A quorum of the meeting shall be two-thirds of the members;
- An extraordinary congress can be called upon by the request of two-thirds of the EB members or half of the FA members;
- PFA and CPC have rights to attend the congress, but have no voting rights;
- The decision can be made by simple majority through voting by FA members; and
- Meeting minutes should be prepared and signed by the EB.

The agenda and decision of the congress could, for example, include the following:

1. Annual report and financial statement for the last operational year;
  2. Budget for next operational year;
  3. Proposed activities for next operational year;
  4. The membership fee;
  5. The level of operational fees;
  6. The report of the checking body;
  7. Adoption or amendment of management measures as provided for in national, provincial and local fisheries and aquaculture regulations;
  8. Election of the chairperson and the other members of the EB, and the remuneration of these;
  9. Election of members of the CB and the remuneration of these;
  10. Election of delegate(s) to the congress of the provincial fisheries association;
  11. Amendments of these bylaws;
  12. Adoption of guidelines for the administration and use of money from the fisheries association fund;
  13. The award of honorary memberships;
  14. Any proposals received from members; and
  15. Any other proposals received from the EB.
- (Skonhoft, 2007b, p.4)

### **8.2 Large meetings**

FAs organize a large meeting when they need to discuss the important issues that require the participation and agreement of its members. A large meeting is a less formal meeting involving all FA members. A large meeting can be called upon by an EB whenever needed. This may include annual review meetings for local FAs. For example, a large meeting was organized to discuss the content of lagoon resource management regulations, zoning plan, resource user fee levels, and other planning and implementation issues in hand. The major differences between a large meeting and congress are that the congress is the recognized highest decision-making body, and large meetings cannot be organized to decide and approve certain important matters such as EB

members as regulated in the FA charter. The role of the project was to encourage and to help facilitate those large meetings to support the effective operation of FAs.

### **8.3 Small meetings**

Small FA meetings do not involve the entire membership of an FA. The role of small, frequent preparatory meetings should not be overlooked as the in-depth discussion on particular issues and the preparation of draft plans are usually done in these small meetings. Examples of small meetings are:

- meetings organized to discuss specific issues such as the management of specific areas or gears so only certain people need to attend;
- meetings of EB members and local authorities; and
- meetings to prepare for large meetings and the congress.

The role of the project was to encourage and to help facilitate those small meetings for the effective operation of FAs.

**Outputs: Frequently organized meetings to discuss important issues and the congress**

## **9. Enhancing community solidarity: organizing traditional fisherfolk festivals and community events**

One of the challenges of a co-management process is how to manage relationships among people. Traditional festivities were supported in order to enhance community solidarity; strengthen the role of the EB; and raise awareness of FA activities. These festivities included fisherfolk ceremonies, boat races, football matches, volleyball matches, and quizzes for FA members.

For example, traditional boat racing was organized with the following subevents:

- opening speeches from the local authority as well as the FA (organization board);
- traditional prayers and offerings;
- explanation of game content and rules;
- main boat racing (around five to six races with each race having a different name and prize such as fish prize, shrimp prize, etc. – there are usually one or two races with women participants);
- announcement of the individual race results;
- presentation of prizes to winners;
- announcement of the final results (based on overall team score for all races);
- presentation of champion flag; and
- closing ceremony.

### **9.1 Boat racing festivals**

Boat racing teams were formed on the basis of FA subgroups, if the event was organized by a single FA; or are based on FAs, if the event was organized by a group of FAs or at the commune level. Each team nominated a group of people for each race and a prize was given both for individual races and the final accumulated score for all races (see Figure 23). The team that won the championship could carry back a traditional flag (streamer) of honour, closely linked to local beliefs, displaying a prayer to the Buddha for protection and the well-being of people in a specific area.



**Figure 23 Pictures from traditional boat racing (left) and football match (right)**

In organizing these events, the EB members and the local authorities worked together to make a programme, budget plan, announcement to the local people, and all other necessary arrangements with partial financial support from the project. The event planning and implementation gave a good opportunity for the EB members to work together with the local authorities and gave them more experience in organizing things.

The events were usually announced to the entire community, including fishers, farmers and other people doing non-fisheries activities, attracting several hundred people to watch the event. The event was not only an excellent venue to enhance community solidarity and teamwork among the fishers through joint activities, but also to advertise the FA and its activities within the commune



and raise awareness on lagoon fisheries management and the importance of harvesting lagoon resources sustainably.

### **9.2 Lagoon clean-up day**

On Earth Day (22 April) in 2007 and 2008, the project supported a lagoon clean up event in Loc Binh and Vinh Hien Communes respectively with the participation of more than 100 local people. The event was jointly organized by local FAs and CPCs and involved local schoolchildren. The main objective of the event was to raise awareness of the local population on the importance of lagoon environmental protection and resource conservation through lagoon clean-up activities.

The participants were divided into various groups, and the clean-up was undertaken along the shore as well as on the lagoon with support from boats by the FA (see Figure 24). The accumulated garbage was recorded by its type and reported to the participants at the end of the event to understand where it came from (e.g. a large amount of plastic bags and packages thrown into the water by local people). The local media was also invited to disseminate the message widely to the general public through TV and newspapers.



**Figure 24** Scenes from lagoon clean-up event in Loc Binh Commune

**Outputs: Enhanced community solidarity, raised awareness on the FA and lagoon management, and improved organizational capacity of the EB**



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## V. Planning stage

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Once local fishers are mobilized and FAs are formally established, the planning stage for the lagoon fisheries co-management begins. In the planning stage the following activities/outputs were expected:

- awareness on fisheries resource management is raised further;
- resource management strategies are formulated;
- the water surface is physically demarcated with the areas assigned to the FAs;
- detailed zoning plans are developed with physical demarcation;
- resource management regulations are formulated;
- resource/water surface user fees are discussed and agreed;
- lagoon patrolling teams are established;
- conflict management systems are created;
- roles of supporting institutions (PFA, DARD, DPC, CPC, etc.) are enhanced;
- lagoon/fisheries co-management bodies are established; and
- fishing rights are officially allocated to local FAs.

The most important tasks in this stage were: 1) to demarcate and assign the water surface area to local FAs so that their responsibilities for its management, including monitoring and enforcement, become clear; 2) to develop zone-based management regulations for fishing and aquaculture activities under each FA; and 3) to allocate fishing rights to FAs to legalize their management rights and responsibilities. In short, this process was a transition from an open-access regime of common-pool fisheries resources to a territorial use rights in fisheries (TURF)-based co-management regime, which should prevent the occurrence of “the tragedy of the commons”, i.e. lagoon fisheries resource depletion.

### 1. TURF-based lagoon fisheries co-management

When facilitating the planning process, the proponents of the co-management scheme need to understand the basic characteristics and principles of natural resources (or common-pool resources) management (see Table 17).

**Table 17 Characterization of common-pool resources**

	<b>Rival</b>	<b>Non-rival</b>
<b>Exclusive</b>	Private goods (e.g. cake, food)	Club goods (e.g. highway, golf courses)
<b>Non-exclusive</b>	<u><b>Common-pool resources</b></u> (e.g. fishery resources)	Public goods (e.g. air, sea)

The common-pool resources, including fisheries resources, are characterized by rivalry (i.e. their consumption by one resource user reduces the availability of the resources for other users) and non-exclusivity (i.e. one resource user cannot exclude others from consuming the goods/services).

Under these circumstances, the resources tend to be overexploited because people maximize their benefit by exploiting more. This is a rational decision on the basis of self-interest as the benefit goes directly to the one who exploits the resources whereas the cost of exploitation is shared by all. This is the very reason that common-pool resources (from forestry to fisheries resources) tend to be overexploited, leading to the state often referred to as “the tragedy of the commons” (Hardin, 1968).

However, common-pool resources are not always overexploited – under certain management systems such as traditional local forest management systems, common-pool resources can be relatively well managed (Poffenberger, 1990; Hardin, 1994; McKean, 2000).

The management of natural resources has different options (see Table 18) including: a) state control; b) private control; and c) communal control, although the distinction between these management types is not always clear (Hardin, 1968; Hardin & Baden, 1977; Hardin, 1978).

**Table 18 Characteristics of control over the common-pool resources by different entities**

No control (open-access)	Government control	Private control	Communal control
Resources overexploited (tragedy of the commons)	Often malfunctioning because of a lack of capacity and resources for monitoring and enforcement, leading to <i>de facto</i> no control	Could be successful if long-term ownership and management responsibility are assigned and one could find a valid way to exclude others	Many successful cases of community-based management under certain conditions (e.g. existence of local communal rules) have been reported

Whoever the owner/manager is, the management of common-pool resources such as fisheries resources often requires the demarcation and assignment of certain geographic areas (e.g. water surface) to the resource users. This is the very basic assumption behind TURF. Although the term “TURF” indicates management based on geographic areas, i.e. territories, the term “co-management” suggests the joint or collaborative management between the state/authorities and a community/private entity.

In the context of lagoon fisheries resource management in Thua Thien Hue Province, the partners in fisheries co-management, i.e. legally eligible recipients of fishing rights, were local FAs. This made it closer to communal control according to the above classification. The “TURF-based co-management” facilitated under the project thus can be understood as a geographic area-based management approach undertaken jointly by the authorities (state) and local FAs (community).

As in the above table, often top-down government control is only effective when the government has solid capacity and resources (both human and financial) to monitor and enforce the management rules, which is often not the case (see also Ostrom, 1990). Even in developed countries the government often does not have enough resources to undertake the massive monitoring and enforcement without the participation of the resource users. Moreover, in developing countries like Viet Nam, where most of the fishers and aquaculture farmers are small-scale and the government capacity and resources are lacking, the top-down government control often results in *de facto* “no control” leading to resource overexploitation and depletion.

Another option, private management including market-based systems (e.g. auction systems for stake traps in Hai Duong) has two major weaknesses. First, private management assumes excludability in its resource management, but in most cases in fisheries, this assumption is not applicable, especially in marine fisheries (see Clark, 1980). Second, if a market-based system is applied as in the case of individual quotas/individual transferable quotas (IQ/ITQ), the system tends to offer preferential access to richer fishers leaving poorer ones behind without any access to the resources. This is incompatible with the objective of poverty reduction, particularly in the

context of developing countries (but not only developing countries, for example see Olson, 2011, and Guyader & Thébaud, 2001, on the potential impacts on fisheries privatization more generally).

In the above conditions, TURF-based fisheries co-management was one of the few viable ways (or the only possible way) to manage fisheries resources in the lagoon. Discussion on some traditional fisheries management systems, e.g. *van chai* system in Viet Nam, provides empirical support to this discussion (see e.g. Ruddle, 1998a). There are many other examples to show that the communal control (including community-based management and co-management) are among the best options for the management of small-scale fisheries (see e.g. Ruddle, 1998b, for the Pacific Islands; Poffenberger & Smith-Hanssen, 2004, for Cambodia).

It can be argued that the lagoon has certain advantages for TURF-based management as the extent of the lagoon is geographically limited and well-defined while the sea extends virtually without limit.

## 2. Timeframe required for co-management planning

Preparing for fisheries co-management operationalization is a time-consuming process that cannot be achieved overnight. In the case of IMOLA, it took about four years (2006 to 2010) just to complete community mobilization and FA establishment and strengthening and the zoning and regulation making. As the preparation was a learning process for local fishers as well as government officials, the process could not be accelerated artificially because this could result in unintended outcomes and consequences (see for example Gibbs *et al.*, 1990).

Although it is difficult to define precisely the timeframe as several steps were overlapping, overall the time required for the key steps in the planning stage was as shown in Table 19.

**Table 19 Time required for key steps for the co-management planning**

Activity	Timeframe	Note
Development of resource management strategies	3 months	Including several FA meetings
Lagoon water surface demarcation	5 months	Including the time required to clarify legal commune boundaries, to reach inter-communal agreement on the border, and to make inter-FA agreement on the boundaries through GPS field surveys and meetings
Development of zoning plans	4 months	Including field visits with GPS and several FA meetings
Formulation of resource management regulations	4 months	Involving many FA meetings including large meetings to agree on the regulations
Development of a user fee system	2 months	These were discussed in preparation for the fishing rights allocation document through several meetings
Establishment of a patrolling team		
Establishment of a conflict management system		
Establishment of co-management bodies	1 months	Including several meetings and agreement signing among key stakeholders
Fishing rights allocation	3 months	This is the time required for preparing the application through to its approval by the district authority

Note: The above timeframe is a rough estimation of the average time required per FA. IMOLA covered 22 FAs in parallel. The time requirement would vary highly depending on size/number of the target areas/FAs, staff availability, and the local contexts.

### ***3. Sharing and analysing challenges: developing resource management strategies***

The first step in the planning stage was to develop FA lagoon management strategies (management strategies in short) with the participation of FA members. Formulating the management strategies is an important process of sharing ideas and building a common understanding among FA members on current lagoon status, existing issues, future management objectives, key solutions, implementation strategies and their requirements.

#### ***3.1 Meeting to discuss the management strategy***

In order to discuss and come up with the management strategies, several meetings were organized with FA members using the steps outlined below. Depending on the capacity of the participants and the progress of the work, these steps were covered either in one meeting or in several meetings, but usually multiple meetings were necessary to formulate, verify, revise, and agree on the strategies. The following sections briefly explain the steps in developing a management strategy.

##### ***Step 1) Identify existing fishing and aquaculture activities to be managed in the FA area***

Fishing gears (fixed and mobile) and aquaculture facilities/types were mentioned and listed by the participating FA members to understand what should be managed under the FA. In the case of a specialized FA such as a capture fishing FA, only capture fishing activities were listed. Similarly, an aquaculture FA listed only aquaculture activities. Those were filled in the first column of the table (see Table 20).

##### ***Step 2) Understand the current status***

Once the activities were identified, the FA members were asked to provide the detail of each activity including the number of existing gears/facilities and households conducting fishing and aquaculture activities, average size/length of the gears, current mesh size, description of users (e.g. are they commune residents?), existence of management regulations (government and FA), and others. The discussion should only include facts and objectively assessed data and information. These items were listed in the second column of Table 20.

##### ***Step 3) Analyse the current status***

Once the current status is clear, the FA members were requested to analyse the current situation including evaluation of selectivity or destructiveness of the gear or aquaculture activities, evaluation of current number of gears or aquaculture facilities, existing issues and conflicts (with different people and activities), management difficulties, and others. These items were listed in the third column of Table 20.

##### ***Step 4) Formulate management objectives***

Based on the analysis of current status in Step 3, the participating FA members were requested to come up with a set of management objectives. Each objective was a rather general statement of “WHAT” needed to be achieved by the future lagoon management. The objective would, for example, include gear number control, mesh size enlargement, conflict management and zoning. These items were listed in the fourth column of Table 20.

##### ***Step 5) Develop community solutions***

Once a set of objectives was agreed on, the participating FA members needed to identify “HOW” to achieve them. Such statements were called community solutions and listed in the fifth column of Table 20.

### ***Step 6) Agree on implementation arrangements***

The most important thing to discuss in this step was to make it clear “WHO is going to do what” for the implementation of community solutions to achieve the management objectives. These items were listed in the sixth column of Table 20.

### ***Step 7) Identify the requirements for management implementation***

Lastly, implementation requirements, including important assumptions and conditions, were discussed and listed in the seventh column of Table 20.

## **3.2 Developing a management strategy matrix**

The above FA level discussions were eventually summarized in a matrix format as in Table 20. The draft strategies should be represented to the FA members for review and feedback before making them final. At least one verification meeting for strategy finalization was organized involving FA members and CPC officials to complete the process.

## **3.3 Management strategies development as a process**

The real importance of the above strategy-making process, other than developing the matrix (=strategies), lay in the process itself. By sharing ideas and discussing a series of issues, the FA members as well as the CPC officials developed a common understanding of the issues surrounding the lagoon fisheries and aquaculture and management directions under the co-management regime. The management strategies were generally broad, indicating the overall objectives and directions of the future lagoon fisheries management. The management strategies alone, therefore, could not serve as a document providing sufficient guidance for field level management implementation. The management regulations, which are explained in a later section, supplemented the management strategies by providing detailed regulations for each fishing and aquaculture activity.

**Outputs: Resource management strategies discussed and developed among FA members**

Table 20 Example of resource management strategies by Loc Binh 1 FA

Activity	Status	Analysis	Objective	Solution	Implementation	Requirement
Stake trap	<ul style="list-style-type: none"> <li>There are 85 HHs (52 member HHs and 33 non-member HHs).</li> <li>HHs carried out the stake traps rearrangement according to the district plan in 2007.</li> <li>Current mesh size is 2a=6mm.</li> <li>Fishing season is throughout the year with June-October being the high season.</li> <li>Conflicts exist with mobile fishing activities such as gill nets and Chinese trap (<i>tu</i>).</li> <li>There is no specific FA regulation on stake traps (current management is based on the district regulations).</li> </ul>	<ul style="list-style-type: none"> <li>The total number of stake traps is still relatively high.</li> <li>Current mesh size is too small.</li> <li>The above factors will cause effects on resource availability.</li> <li>Lack of FA regulations will cause difficulties in stake trap rearrangement and conflict management.</li> </ul>	<ul style="list-style-type: none"> <li>To seriously implement stake trap rearrangement according to the district plan.</li> <li>To increase mesh size to 2a=18 mm.</li> <li>To reduce conflicts with other fishing activities.</li> </ul>	<ul style="list-style-type: none"> <li>Apply a regulation on larger mesh size (2a=18mm).</li> <li>Develop an FA management regulation on stake traps and conflict management.</li> </ul>	<ul style="list-style-type: none"> <li>FA members frequently monitor and control stake trap activities.</li> <li>FA establishes a patrolling group.</li> <li>FA mobilizes the community and supports the implementation of the solution.</li> </ul>	<ul style="list-style-type: none"> <li>Work with local people to come to an agreement on the management regulations.</li> <li>Comply with stake trap rearrangement plan of the district.</li> <li>EB builds a monitoring, control, and surveillance plan for implementation.</li> <li>FA and CPC mobilize people and raise awareness of the resource users to conform to the regulation.</li> </ul>

Activity	Status	Analysis	Objective	Solution	Implementation	Requirement
Chinese trap ( <i>Lu</i> )	<ul style="list-style-type: none"> <li>There are 47 HHs (22 member HHs and 25 non-member HHs).</li> <li>100 units/HH on average.</li> <li>7 m/unit.</li> <li>Current mesh size is 2a = 10 to 14 mm.</li> <li>Many HHs come from other communes such as Vinh Hien, Loc Tri.</li> <li>Current status not assessed by DOFI.</li> <li>No management regulations on this activity prepared yet.</li> </ul>	<ul style="list-style-type: none"> <li><i>Lu</i> is a mass exploitation activity with small mesh sizes and clever formation.</li> <li><i>Lu</i> is difficult to manage.</li> <li><i>Lu</i> development has negative effect on stake traps.</li> <li><i>Lu</i> makes the lagoon resources decline greatly.</li> </ul>	<ul style="list-style-type: none"> <li>To develop specific regulations on this gear by competent organizations.</li> <li>To limit the number of gear per HH to 70 units/HH.</li> <li>To enlarge gear mesh size to 2a = 18 mm.</li> <li>To define specific fishing area for this gear.</li> </ul>	<ul style="list-style-type: none"> <li>Reduction of the number of <i>lu</i> HHs and average number of units per HH.</li> <li>Apply a regulation on larger mesh size (2a = 18 mm).</li> <li>Propose to competent agencies to undertake an assessment of <i>lu</i> and issue the guidance documents on its management.</li> <li>Registration of <i>lu</i> under the CPC.</li> <li>Develop FA management regulations on <i>lu</i>.</li> </ul>	<ul style="list-style-type: none"> <li>FA members frequently monitor and control <i>lu</i> activities.</li> <li>FA establishes patrolling teams in subgroups.</li> <li>FA mobilizes the community to support solutions.</li> </ul>	<ul style="list-style-type: none"> <li>Work with local people to come to an agreement on a specific management regulation for <i>lu</i>.</li> <li>EB builds an M&amp;E plan for implementation.</li> <li>Organize meetings at the commune level to raise awareness on <i>lu</i> management regulations.</li> </ul>

Note: The above list only includes two fishing gears to show an example of how the management strategies are formulated. The original version also covers other gears such as lift net, gill net, electric drag net, FAD, shrimp pond, fish cage, and freshwater fish pond.

#### ***4. Demarcating water surface areas and allocating them to the FAs: the first step out of open-access***

Under the TURF system clear demarcation of water surface areas and allocating them to the FAs were critical tasks. Without the areas for each FA clearly defined, rights and duties could not be properly assigned and transferred to the local FAs.

##### ***4.1 Mapping commune administrative boundaries***

As all of the FAs in the project areas were operating at the commune or sub-commune (village) levels, the project first investigated the official administrative boundaries with government agencies. In the province, there were two departments involved in administrative boundary management. The first was the DONRE. DONRE had one division in charge of survey and mapping and was technically in charge of measuring and verifying the official administrative boundaries. The second was the DOHA. DOHA was mainly in charge of managing the official boundaries based on the survey done by DONRE.

The project first obtained the official boundary coordinates (so called Document 364) for the target communes from the provincial and district level DONRE and mapped the areas into the GIS. Field verification was undertaken by technical staff of the project initially and later by the district level DONRE right before the fishing rights were allocated.<sup>9</sup>

##### ***4.2 Establishing FA boundaries***

Once the commune boundaries became clear, the project organized a series of meetings with local FAs in each target commune (in total eight communes) to discuss and agree on the boundaries for each FA. The meetings were attended by local FAs and the CPC and were facilitated by the project staff who also provided technical support. The negotiations on FA boundaries in some communes were very smooth whereas in some communes conflicts among local FAs, particularly with regard to the extent of the water surface area, were observed.

One of the challenges that many FAs encountered was the heterogeneity of resource users and the complexity of gear layout on the lagoon water surface, which made the drawing of a single line between two FAs difficult. For example, assume a simplified situation where there are two villages next to each other (see Figure 25). They could initially draw a rough line dividing the water surface of Villages A and B based on the location of their respective villages. However, whereas 70 percent of Village A fishers operates on the water surface of Village A, 30 percent of the people fish on the water surface of Village B, and vice versa. The above case is a hypothetical example just to explain the nature of the complexity, but in reality there were usually more than two communes or FAs involved in a similar situation, which made the definition of FA boundaries even more complicated.

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<sup>9</sup> The project encountered a series of technical issues including inconsistent coordinates in the official documents that required discussion between DONRE and DOHA before a conclusion could be reached, and an unfamiliar local coordinates system.



(lagoon) 70% fishers from the Village A 30% fishers from the Village B	(lagoon) 70% fishers from the Village B 30% fishers from the Village A
(land) FA A	(land) FA B

Tentative boundaries between FA A and FA B (bold line)

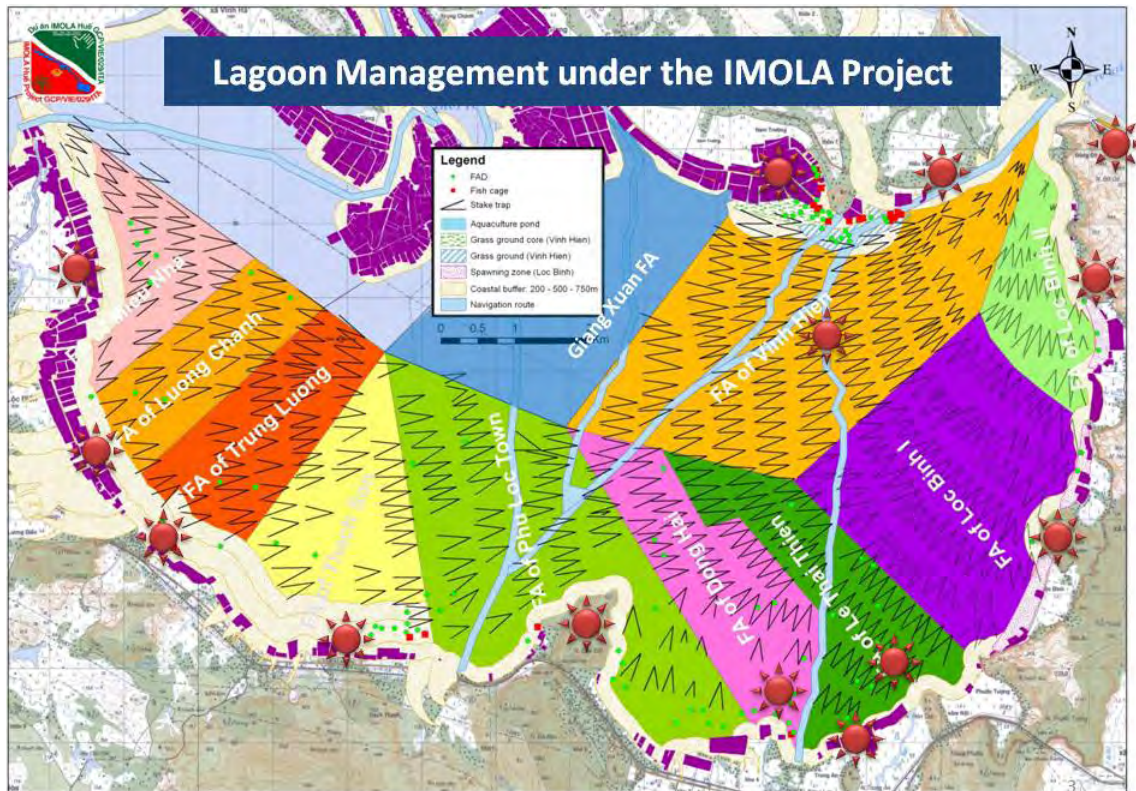
**Figure 25 Simplified user distribution situation on the FA water surface**

Because of the heterogeneity as well as the mobility of the lagoon water surface users, the project repeatedly insisted that the most important principle for the area-based management was that “whoever uses the water surface of the FA should be registered under that FA and bound by the FA rules (regardless of village/commune residents and non-residents).” Although there was initially some misunderstanding among the FA members and CPC staff members that FA membership should be restricted to the village/commune residents,<sup>10</sup> local FAs eventually understood that all resource users should be included in the management for it to be effective. Once this principle was understood among FAs and the CPC, the discussion on FA boundaries went much smoother.

After a series of local meetings, FAs eventually determined and agreed on the FA boundaries based on the actual extent of village(s), distribution of resource users and gears, distribution of fishing and aquaculture activities, equality of water surface divisions, and other factors raised by FAs or the CPC (see Figure 26). Based on the agreed-on boundaries manually drawn on the base map, the project technical staff then plotted the boundaries into the GIS to obtain geographic coordinates and field-verified the coordinates with the GPS with the participation of the FA EB and the CPC staff, who eventually signed the boundary agreement.

**Outputs: Water surface demarcated and allocated to each local FA with clear coordinates identified and agreed among FAs and CPCs in writing**

<sup>10</sup> Exclusive membership for the local residents was still technically possible if the FA wished to exclude outsiders from the FA water surface. However, as most of the FAs stated that it was practically difficult to exclude people from other village/communes, the project suggested they include all water surface users in its management regardless of their origin for more inclusive management. The FA members were also afraid that if they excluded people from other village/communes, the same would happen to them in retaliation as many of them were also operating in other villages/communes.



**Figure 26 A map of FA boundaries for Cau Hai Lagoon**

Different colours show water surface area allocated to each FA and red dots indicate the location of local FAs.

## 5. Establishing a zoning plan

By this time, the water surface to be managed by each FA was clear with an agreement signed among local FAs and certified by the local authorities (CPCs). Then the project provided assistance to each FA to develop a zoning plan that allocated uses of the lagoon water surface. As each of the sub-zones had a specific function (allocated use), they were called “functional sub-zones.”

The composition and definition of functional sub-zones highly depended on how the water surface had been used and the kinds of existing fishing and aquaculture activities. In the Tam Giang–Cau Hai Lagoon, the functional sub-zones were roughly defined as shown in Table 21.

**Table 21 Different functional sub-zones and their descriptions**

Functional sub-zone	Description
Waterways*	As defined by the national policy. This area shall be free from fishing gears and aquaculture activities for the smooth passage of boats.
Lagoon shore buffer	As defined in the provincial regulation. An area of 50 to 500 m from the lagoon shore shall be free from fixed fishing gears.
Commune boundary buffer	As defined in the district regulations. An area of 50 to 75 m from the administrative boundaries shall be free from fixed fishing gears to avoid conflicts.
Conservation	FA-defined. The area closed fully or seasonally to fishing and aquaculture activities. More restrictions on fishing and aquaculture activities.
Fish cage	FA-defined. Area usually exclusively allocated for fish cage culture.
Net enclosure (pen)	FA-defined. Area usually exclusively allocated for net enclosure.
Mollusc culture	FA-defined. Area usually exclusively allocated for mollusc culture.
Stake trap	FA-defined. Area usually exclusively allocated for stake traps (a traditional fixed fishing gear).
Common fishing	FA-defined. Area allocated for mobile fishing and a limited set of fixed fishing gears. The common fishing sub-zones may have several types depending on the combination of allowed fishing activities. For example: 1) mobile fishing + bottom nets (a fixed fishing gear); 2) mobile fishing + fish aggregating devices (a fixed fishing gear), 3) mobile fishing + lift nets (a fixed fishing gear), 4) exclusive mobile fishing, etc.

\* As waterways are officially under the jurisdiction and management of the Department of Transport, fishing rights were not allocated to these areas.

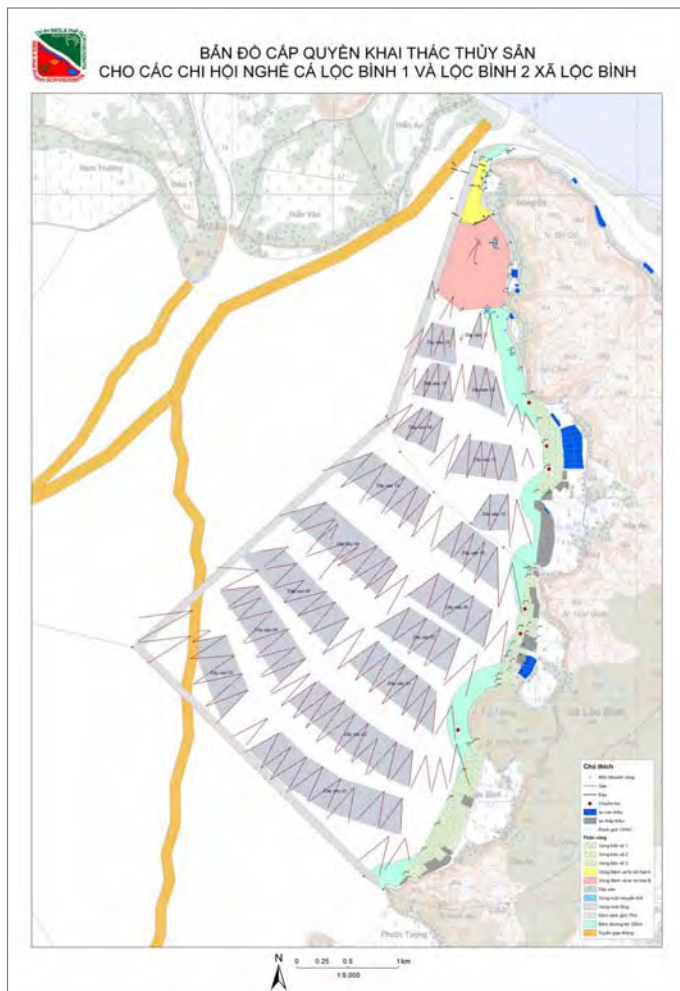
\*\* Aquaculture ponds – largely for shrimp culture - were not included in the fishing rights as they were managed under an individual lease under the red book (official lease document) according to the Land Law (Albisinni, 2006).

To identify the functional sub-zones, with the facilitation of the project staff, FAs went through the following steps:

1. Identification of rough distribution of the fishing and aquaculture activities on the lagoon water surface using topographic maps;
2. Mapping of main fishing gears and aquaculture facilities with the GPS and plotting on topographic maps;

3. Discussion on potential zoning based on the current gear and aquaculture situations including the identification of gear and aquaculture rearrangement needs (this step required several meetings and field trips);
4. Agreement on the zoning; and
5. Development of a final zoning map with the GIS.

The interesting and important aspects of the above mapping and zoning process were that, first, the local knowledge of fishers on potential conservation areas (e.g. fish spawning and nursing grounds) and gear locations were combined organically with scientific data and findings provided by the project, including gear aquaculture distribution data derived from satellite images and GPS field surveys. Second, this process greatly helped the local FA members visualize the current situation and associated issues (and their distribution) in the lagoon. Local and scientific knowledge and data were overlaid and integrated on a GIS platform and presented in a form that all FA members could understand (e.g. simple maps as shown in Figure 27). This combination greatly facilitated the process of discussion and decision-making by the FA members and the authorities.



**Figure 27 A map showing the FA zoning plan**

Note: V-shaped lines indicate stake traps whereas light grey boxes show newly established stake trap sub-zones; light blue areas are shore-buffer zones; green areas are seasonally-protected conservation (fish spawning and nursing) zones; blue and dark grey areas on the shore are aquaculture ponds; the yellow, pink, and white areas are common fishing sub-zones with mobile and limited fixed fishing gears allowed; orange lines are waterways for boat navigation.

In addition to the above, the project's use of GPS/GIS was necessary to obtain geographic coordinates for sub-zones as FAs had to include those coordinates in their fishing rights



allocation documents as legal documents. The clear identification of geographic coordinates was also necessary for conflict reduction and management during the operation.

Agreed-on zones, including FA boundaries, were physically demarcated whenever necessary with the installation of concrete or wooden/bamboo poles with signboards as shown in Figure 28.



**Figure 28 Concrete pole being installed for FA boundary demarcation by FAs in Loc Dien Commune**

**Outputs: Zoning plan for the FA area, including functional sub-zones, defined and agreed among FAs and the CPC in writing**

## 6. Developing resource management regulations

Once functional sub-zones were defined and uses allocated to particular water surface areas, regulations for each functional sub-zone had be defined to regulate the uses.

### 6.1 Developing the regulation structure

There were roughly three sets of regulations that needed to be prepared. The first covered general rules that were applicable for all fishing and/or aquaculture activities such as minimum harvestable fish size, prohibited activities in the FA water surface area, and general stipulations on conservation of the lagoon environment. The second category included regulations specific to each functional sub-zone. The last encompassed administrative rules and regulations such as the ones for establishing a user fee system, conflict management and others.

The general structure of the regulations is shown below:

<b>Example of the structure of the regulations pertaining to lagoon resources management</b>	
1.	Regulations on lagoon resources management for each sub-zone
1.1.	Sub-zones for waterways, commune boundary buffers, and lagoon shore buffers
1.2.	Sub-zones for conservation
1.3.	Sub-zones for cage culture
1.4.	Sub-zones for pond culture
1.5.	Sub-zones for stake traps
1.6.	Common fishing sub-zones
2.	Regulations related to a user fee system
3.	Regulations on patrolling and handling violations
4.	Regulations on conflict management
5.	Coordination with other FA regulations

### 6.2 Preparing the regulation contents (stipulations)

In general, to be effective the regulations should provide answers to the key questions in Table 22.

**Table 22 Key questions to be answered when preparing the contents of the resource management regulations**

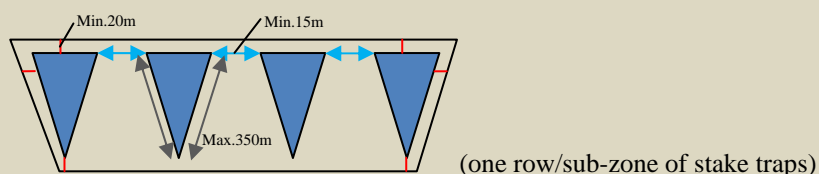
<b>Key Question</b>	<b>Description</b>
<b>1. Where?</b>	Where are the regulations applicable? This is already defined by zoning; however, in case functional sub-zones are of different types (e.g. common fishing areas), the area should be clearly indicated.
<b>2. Who?</b>	Who should be allowed or entitled to conduct fishing and/or aquaculture activities in each functional sub-zone? Define eligible users (e.g. FA members) for each sub-zone.
<b>3. What?</b>	What fishing gears or aquaculture facilities are allowed/regulated to operate in each functional sub-zone?
<b>4. How?</b>	How are those gears and facilities allowed? Specification of the gear/facilities including number, mesh size, layout, and other specifications should be mentioned.

Key Question	Description
5. When?	Does the sub-zone have a seasonal restriction, e.g. seasonal banning of fishing activities? If so, indicate such. In the case of Viet Nam, it is important to indicate whether the stated time is based on a solar or lunar calendar to avoid confusion.
6. Why?	Full statements of reasons are not always necessary, but adding a brief description of the reason would be helpful in some cases.

The regulations on stake traps for one FA are shown in Box 2.

**Box 2: Example of regulations for stake trap sub-zone for Loc Binh 2 FA**

- Stake trap sub-zones are exclusive areas for stake traps, and no other fishing and aquaculture activities are permitted in these sub-zones.
- Only FA members are permitted to own, operate, or use the stake traps.
- All stake trap owners should register their gears under the FA with full payment of a user fee.
- Minimum distance from each stake trap to the shore is 200 m.
- Minimum distance between two nearby stake traps is 15 m.
- Minimum distance between two stake trap rows is 150 m.
- Maximum wing length of a stake trap is 350 m (one wing).
- A stake trap has to have a V shape, i.e. only two wings.
- Two neighbouring stake traps cannot share a common wing.
- Minimum net mesh size shall be  $2a = 18$  mm.
- All other fishing and aquaculture activities should be at least 20 m away from stake traps (a stake trap is defined as a triangle connecting the trap and two ends of the wings – see the diagram below).



- The total number of stake traps should be reduced from the current 34 to 19 (-44%). The timing of the reduction shall follow the implementation schedule of stake trap rearrangement by the Phu Loc District.
- The number of stake traps permitted in each stake trap zone is as follows:

Zone ID	Permitted Stake Traps
NS12	2
NS13	4
NS14	3
NS15	3
NS16	3
NS17	1
NS18	3
<b>TOTAL</b>	<b>19</b>

(Loc Binh 2 FA, 2010)

### 6.3 Use of local rules in developing management regulations

In developing resource management regulations, it was important to understand and incorporate the pre-existing local rules. For example, there was an unwritten rule among local capture fishers in the lagoon that no fishing activities should take place in the water surface enclosed by stake trap wings. Although the lagoon water surface in general was a common property that anyone could use, the local rule gave *de facto* private ownership to the water surface surrounded by the stake trap (see Figure 29) on a first-come, first-served basis.



**Figure 29** A picture showing the water surrounded by stake traps

From the economic perspective of stake trap owners, this rule made a lot of sense as the existence of other fishing activities in a stake trap reduced the catch with the stake trap. This common rule was to ensure the productivity of the gear.

When the FAs started the planning for lagoon co-management, the lagoon was densely installed with stake traps already and good water surface available to non-stake trap owners was quite limited. The conflict between stake traps and other gears had been increasing. There was an urgent need to develop a common rule to reduce conflicts among capture fishers.

The lagoon management rules were therefore made in a way that reflects the rights of stake trap owners as in the local rules while clearly demarcating the common water surface for mobile fishing within the FA area. As a part of the provincial programme on stake trap reduction and rearrangement, the FAs also agreed to reduce the number of stake traps on the lagoon. This made more water space available for mobile fishers who were often poorer than the fishers with fixed fishing gears and aquaculture.

### 6.4 Management rules and fishing capacity

In making management rules, due attention was paid to finding an acceptable way of reducing fishing capacity. As the lagoon resources had been overexploited with declining catch per unit effort, one of the main objectives of the management regulations was to reduce fishing capacity in and fishing/aquaculture pressure on the lagoon. This could be done in many ways including limitation of gear (type, quantity and specifications such as mesh size), season, area, species, harvest (e.g. maximum harvest per day per boat) and so on. Although it was not



always easy to regulate all of these variables the attempt to regulate different variables was necessary.

### **6.5 Considerations for mobile fishing areas**

Many mobile fishers regularly moved across the FA boundaries to “follow the fish.” If the FA restricted its water surface use for mobile fishing strictly to its members, it would create hardship for local fishers who had to move around to catch a sufficient amount of fish. Moreover, many mobile fishers actually came from other communes, and exclusion of those fishers was not always a good idea for FAs as they were interdependent.

Reflecting this reality, most of the FAs decided to share the water surface (sub-zones) for mobile fishing with other FAs within the same commune. For example, in Loc Binh Commune, two FAs shared a common water surface for mobile fishing. If a fisher belonged to Loc Binh 1 FA and paid the required resource user fees to the FA, this fisher could fish also in the mobile fishing areas in Loc Binh 2 FA without additional payment to the Loc Binh 2 FA. At the same time, non-FA members including the people from other communes were also allowed to conduct mobile fishing in Loc Binh 1 and 2 areas, but with advance registration at either FA and full payment of resource user fees (which was usually twice as expensive as fees for FA members to give an incentive to join the FA).

The above was a very practical local arrangement reflected in the resource management regulations under the FA that enabled a certain level of control over the mobile fishing activities while minimizing the conflicts among different FAs or communes over the use of the lagoon water surface.

**Outputs: Resource management regulations corresponding to the FA zoning plan developed and agreed among FAs and the CPC in writing**

## ***7. Developing a user fee system and economic activities of the FA***

When operationalizing fisheries co-management with local FAs in the Tam Giang–Cau Hai Lagoon, one of the most critical issues was how to make the co-management system financially sustainable and self-reliant without much external support from aid agencies. A user fee system and FA economic activities, in addition to membership fees, were among the many potential sources of income for the local FAs to self-finance and sustain their activities.

### ***7.1 Registration and membership fees***

Membership fees were the fees that fishers should pay to be members of an FA. Although the amount varied from one FA to the other, an FA usually collected VND 20 000 to 120 000 (US\$1 to 6) per year from each member, which were installed semi-annually or quarterly. In addition to the membership fee, some FAs also collected a registration fee of VND 20 000 to 30 000 (US\$1 to 1.5) per member that was collected only once at the beginning.

It was quite important to set the appropriate level of registration and membership fees. The registration and membership fees should generate at least a portion of the operational costs of the FA, but at the same time they should not prevent the participation of local fishers in the FA, especially the poorer fishers. The appropriate fee levels were discussed among the FA members at the time of FA establishment and written clearly in the FA charter.

It was also important to consider fee collection rates. In most of the project-supported FAs, the initial issue was the relatively low fee collection rates. EB members of some FAs were not strong enough to insist or not active enough to encourage their members to pay their membership fees for the operation of the FAs.

The fee collection frequency was another important aspect to consider in order to increase the collection rates. If it was too infrequent, the per-time contribution (payment) from each member would be high. Given that many people were spending money day by day, it would not be practical to collect a large amount at a time, especially from poorer members. On the other hand, if the frequency was too often, there would be too much administrative burden on the EB members. The above two considerations had to be balanced in deciding the most appropriate fee collection frequency. As can be seen from Figure 30 the annual income from the membership fee ranges from VND 1 260 000 (US\$ 66) to VND 20 880 000 (US\$ 1 099) with the average amount being VND 5 917 000 (US\$ 311).

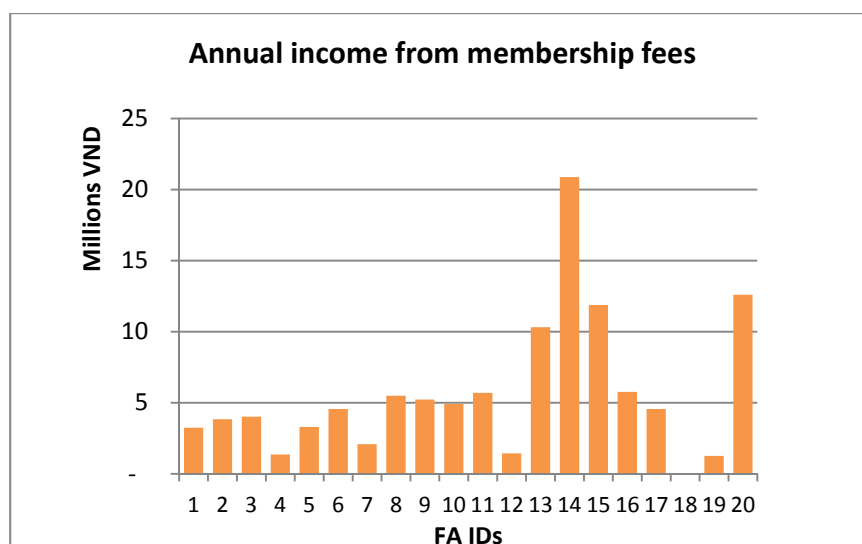


Figure 30 Annual FA income from membership fees

## 7.2 Lagoon/resource user fee

Another important category of fees was the lagoon/resource user fee, which was paid by lagoon/resource users depending on the extent of their use/exploitation. The basic principle underlying this fee was the “user pays principle” – meaning that whoever exploited the resources of the lagoon had to pay the user fee, which would be used for the lagoon resources management and maintenance by local FAs. Whereas in former times the lagoon had been regarded generally as everyone’s resource by local fishers, the project promoted the idea of paying back a portion of the individual profits obtained from exploiting this common resource to the FAs for its management.

User fee was defined on the basis of the fishing and aquaculture activities, i.e. inputs-based. As shown in Table 23, capture fishing gears and aquaculture facilities (except aquaculture ponds as they were not under the fishing rights system) were listed with the specific fee for each gear or facility. In some cases, different levels of fees were defined for different size, length, or quantity of fishing gears or aquaculture facilities.

Table 23 Example of user fee system (Loc Binh 2 FA)

Fishing activities	Fee level (VND/year)	
	FA member	FA non-member
Stake trap		
Good one	300 000/trap	Not permitted
Normal one	200 000/trap	
Bottom net*		
Good one	300 000/unit	Not permitted
Normal one	200 000/unit	
Stone FADs	2 000/m <sup>2</sup>	Not permitted
<i>Lu</i>	150 000/household	300 000/household**
Gill net	80 000/household	150 000/household
Incandescent gas-lamp		
Line fishing	80 000/household	150 000/household
Crab net		
Cage	20 000/unit	Not permitted

\* The fee will be 50 percent of the stated amount for net mesh size larger than 2a=18mm.

\*\* These households must be the residents of Loc Binh Commune.

The determination of the actual user fee level varied by FA, but it was largely based on the productivity of the fishing gear or aquaculture facility through discussions among FA members. The production cost was also considered. When the productivity of a particular gear was high (i.e. when annual income from the gear was high), a higher user fee was set for the gear. But even for the same type of gear (e.g. stake traps), some FAs decided to charge different fee levels for highly productive ones and normal ones. The gear productivity was more or less determined by the gear location (as they were fixed fishing gears, their productivity highly depended on the location in the lagoon). Although initial user fee levels as agreed by FA members were not as high as the project expected and were not enough to cover all necessary expenses by FAs for the initial years, it was more important to develop a habit of user fee payment among the local fishers at the initial stage. The user fee levels could be reviewed and revised through FA meetings and the congress annually, if necessary.

User fees could be better defined if they were based on the output, i.e. actual amount of harvest, particularly for capture fisheries. However, in the Tam Giang – Cai Hai Lagoon, as in many developing countries with small-scale fisheries, the monitoring of the catch was extremely difficult and beyond the existing capacity of the local FAs as well as the authorities. Under such conditions, the input-based user fee system provided a reasonable option to charge resource users without overloading the FAs.

Although fixed fishing gears and aquaculture were only permitted for FA members, all project-supported FAs decided to allow FA non-members, including the people from other communes, to conduct mobile fishing activities under the FA rules. The FAs, however, decided to charge user fees that were double those for FA members to give more incentive for the non-members to become FA members when conducting fishing and aquaculture activities on the FA water surface. Some FAs also provided an option for non-members to pay a monthly user fee instead of an annual user fee. This was because some fishers, including poorer ones, were not full-time fishers, and those FAs wanted to reflect this reality in their user fee systems.

Upon the registration of fishing gears and/or aquaculture facilities and user fee system payment, FAs issued user certificates, which actually were cards indicating name, address, and registered gears/facilities with the authorized stamp from the FA in charge.

Income from user fees was shared between the FA and the CPC. Usually the ratio was 80:20. The money for the CPC would be used by the CPC to assist with lagoon co-management activities such as assignment of police officers to the patrolling team and other associated tasks.

As most of the FAs decided to allow neighbouring FAs to share the water surface for mobile fishing, the fees collected from mobile fishers were usually reported and pooled at the co-management body at the commune level and redistributed among the participating FAs.

### ***7.3 Initiating economic activities of FAs***

As the initial income of local FAs solely or largely relied on membership fees, the project organized a workshop on economic activities to provide ideas on potential business activities that local FAs could engage in to enhance their financial bases as well as to provide more tangible benefits (see Box 3 for more discussion) to their members (IMOLA, 2009).<sup>11</sup> Some of the ideas presented at the workshop were:

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<sup>11</sup> Economic activities by local FAs such as credit & savings, fish processing and sale, material supply, are permitted under Article 8 of the Provincial Regulation 4260/2005/QĐ-UBND (PPC, 2005).

- Group purchase of fishing/aquaculture inputs (nets, fingerlings, feeds, etc.)
- Group sales of fisheries and aquaculture outputs
- Fish processing
- Hatcheries and nurseries operation
- Feed production
- Lime production (for aquaculture)
- Specialized seafood shops and restaurants directly run by the FA
- Savings and credit scheme
- Mutual help or local insurance schemes.

Getting the required inputs to initiate some of the above might prove difficult, but some options such as group purchase and sales could be started immediately by mobilizing and coordinating groups without much initial investment.

The project supported some economic activities such as fish nurseries operation by providing initial inputs, training, and extension services for the FAs. Those nurseries provided cheaper fingerlings at approximately 70 percent of the market price to the FA members and created income for the local FAs for their operation. As the FAs had a lot of business ideas (e.g. operation of a tourist boat on the lagoon) to enhance their economic status, more will be undertaken either with or without the support of the project in the near future.

**Outputs: User fee system agreed among FA members, and FA-based economic activities identified**

### **Box 3: What do the fishers gain and lose by becoming FA members?**

Local fishers become members of the FAs when they perceive the benefit of doing so. Enhancing the benefits of being a member of the FA is among the important considerations when operating the FA. The FA, as a socio-professional organization, has its roles and responsibilities in ensuring the sustainability of fisheries activities through fishing rights allocated by the authorities. The fulfilment of these responsibilities often goes against the short-term benefit of the fishers.

By becoming FA members, the fishers have to pay different fees and be bound by a set of FA rules and regulations for fisheries resources management. If only the fishers have to face these obligations, no fisher would join the FA as obviously they would stand to lose (i.e. because of the high cost of participation). This is especially apparent when one considers that non-FA members could operate without being subject to the regulations issued by the FA (i.e. free-riding).

In the Tam Giang–Cau Hai Lagoon, the participation in local FAs at least initially provided the following benefits:

- Legitimate access to lagoon water surface (rights to fish – especially for fixed fishing gears and aquaculture facilities);
- Access to mutual support system (e.g. condolence funds, emergency funds, mutual help among members, and others);
- Access to small-scale loans operated by FAs;
- Access to training (by the project and other support providers); and
- Access to other types of project support (aquaculture models, cheaper fish fingerlings, equipment support, and others).

In order to increase the benefit to the FA members further, IMOLA has been channelling its support through local FAs to the extent possible as well as promoting the FA-based economic activities. It is too early to conclude on the impacts of fishing gear rearrangement on fish stocks in the lagoon; however, after the rearrangement of fixed fishing gears, a number of fishers claimed an increase in fish catch and a change in fish composition in their catch, particularly in favour of native lagoon species such as Tam Giang carp, *Cyprinus centralus*. These claims depict partly the perceived benefit (i.e. improved fishing ground) of being a part of the FA and taking joint action for fisheries resources management.

The provision of more tangible benefits to FA members is still an ongoing challenge for each FA. IMOLA is continuously looking for ways to support ideas from local FAs for their economic/business activities. These activities would also enhance the financial base of the local FAs and ensure their sustainability.

## 8. Establishing a co-management body and a network of associations

As mentioned earlier, co-management is a sharing of management responsibilities between authorities and fishers (FAs). To facilitate this joint initiative, the project supported the establishment of co-management bodies (CMBs) at the commune level to provide a forum of coordination between those two entities. One CMB was established in each project target commune involving all local FAs and local authorities.

A CMB consisted of a core group and an advisory board (Figure 31). The core group usually included a CPC representative and staff (including the chairperson/vice-chairperson and the officer in charge of fisheries), commune police/military, related mass organization(s) leaders such as Women's Union and Farmers' Union, and FA leaders to coordinate the lagoon activities within the commune. They had regular meetings with the frequency depending on the situation and amount of work to be done (the frequency can be increased in the future when the management activities get more intensive).

The advisory board consisted of relevant technical agencies and departments at provincial and district levels including the Sub-Department of Aquaculture (SDA), the Sub-Department of Capture Fisheries and Resources Protection (Sub-DECAFIREP), the district Department of Agriculture and Rural Development (district DARD), the district Department of Natural Resources and Environment (district DONRE), the PFA and IMOLA.

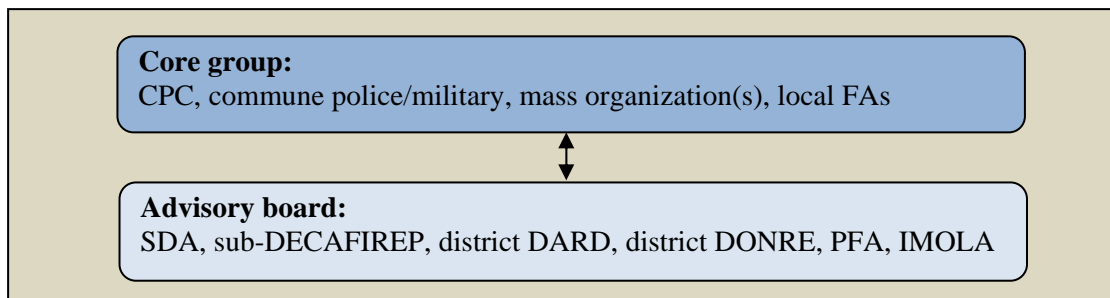


Figure 31 Structure of a co-management body

The main task of a CMB was to handle the inter-FA issues within the boundaries of one commune such as movement of fishers, mobile fishing, illegal, unreported and unregulated (IUU) fishing, conflict between people from different FAs. The establishment of a CMB was also meant to formalize working relationships among relevant stakeholders, particularly FAs, CPC, and technical agencies in lagoon co-management and to clarify the roles and responsibilities of FAs, the CPC, and other relevant parties in lagoon co-management. Externally, the CMB could be a common reference point for receiving external assistance for the lagoon's management.

Besides establishing CMBs as coordination bodies at the commune level, the project assisted FA networking at district and provincial levels with the PFAs, which were the umbrella organizations for local FAs.

**Outputs: CMB officially established with a clear function**

## **9. Establishing a water surface patrolling team**

### **9.1 Monitoring and enforcement**

Good and effective monitoring and enforcement (M&E) were equally important to good planning. In the Tam Giang–Cau Hai Lagoon, M&E had been one of the weakest aspects of the lagoon management. During the project operation, a number of lagoon policies had been in place by the authorities, but many of those were either not implemented or not implementable because of the lack of attention to M&E. This was also partly a result of the lack of financial and human resources to undertake effective M&E.

### **9.2 Patrolling as a joint effort**

Under the project supported lagoon co-management scheme, a patrol team was formed under each FA or a group of FAs (except the ones solely focusing on pond culture). A patrol team usually consisted of about ten members including FA members from different subgroups, a commune police officer, and a commune military officer. The participation of the military officer was initially optional, but some FAs expressed the need to include a military officer for the protection of the members of the lagoon patrol team who feared for their safety.

The patrol team jointly developed a patrolling plan that included the team members, the frequency of patrols, and the season (high fishing season is patrolled more frequently). Based on the general plan, the patrol team decided the actual timing (date and time) of the patrolling in the field in a way that such information was never leaked to other fishers and so might more effectively detect violations.

According to the commune authorities, the participation of local fishers in the lagoon patrol team had a lot of advantages. The most significant of those was the fact that the local fishers knew best where and when violations or IUU fishing would take place and who would most likely be the perpetrators. In addition to this knowledge, the fact that fellow fishers were keeping eyes on other fishers gave more incentive for the local fishers to follow the regulations. Most likely they would be friends or neighbours.

### **9.3 Initial constraints on patrolling**

Initially patrolling activities faced a series of challenges, which included:

- **Lack of a common patrol boat:** a common patrol boat was not available and not enough funding for one was available at FAs. In some FAs, the patrolling was initially carried out using a boat belonging to an FA member, but there was a constant fear of the boat being damaged by detected violators during or after the patrolling.
- **Safety of the patrol team:** the patrol team members from FAs feared that they were not fully protected if violators became violent. For this reason, some FA patrol teams requested training on basic self-protection methods by commune military. For the same reason, some FAs avoided selecting old members for their patrol team.
- **Risks of revenge:** some patrol team members feared that some detected violators would take revenge on them by destroying their fishing gears or aquaculture facilities as they were known to the people within the same communes.
- **Lack of allowances:** although this issue would be solved when FAs would start collecting user fees, initially, because of the lack of FA funds, lagoon patrol teams did not receive allowances for their work although the risks were quite high as mentioned above.



#### **9.4 Patrolling regulations in the fishing rights allocation document**

To make the rights of the FA in patrolling clear, the project included some clauses on patrolling in the fishing rights allocation documents as well (see Box 4).

##### **Box 4: Regulations on handling violations**

- The FA as well as the lagoon patrol team has the right to confiscate fishing gears and aquaculture facilities and apply fines when the violation of management rules is detected in the Loc Binh 1 area.
- The violating fishing gears and aquaculture facilities can be confiscated by the FA or lagoon patrol team without any prior notice to the owners.
- The FA or lagoon patrol team shall not be held responsible for any damage or loss of confiscated, violating fishing gears and aquaculture facilities.

The handling of confiscated fishing gears and aquaculture facilities as well as the level of fines for violations shall be determined on the basis of the following principle:

- If the violation falls under the national regulations, and if administrative sanctions are to be applied, the fine level should follow Decree 70/2003/ND-CP, which stipulates the sanctioning of administrative violations in the aquatic resource domain.

Other violations should be handled locally by the FA and the CPC, on the basis of the following principles:

- For the first violation, the violator has to pay 50 000 VND for the FA fund and is warned by the FA subgroup.
- For the second violation, the violator has to pay 100 000 VND for the FA fund and is warned by the FA.
- For the third violation, the violator has to pay 200 000 VND for the FA fund and is to be expelled out of the FA.
- If the violator is a non-member, they shall pay the fines as above and shall not be allowed to fish in the FA lagoon area in the future.

Any serious violation will be submitted to a higher level for solution.  
All violations shall be reported to the CMB in its regular meetings.

(Loc Binh 1 FA, 2010)

In sum, the following points were made clear:

- the patrolling team has the right to confiscate gear;
- confiscation will be done without prior notice to the owners;
- the patrolling team will not be responsible for any damage to or loss of gears violating the regulations;
- the determination of fines for violations; and
- reporting to the authorities.

As some people might not be fully informed of the FA regulations, some FAs decided not to impose fines on the violators the first time they were apprehended, but would simply warn these people to raise their awareness.

**Outputs: Lagoon patrol teams established with clear functions with the collaboration of the local FAs and the authorities**

## **10. Creating a conflict management mechanism**

At the planning stage, it was important to undertake discussions and decide how the FAs and local authorities would like to handle conflicts arising from the lagoon co-management.

In principle, any conflict within the capacity of the FA should be solved by the FA in accordance with the charter and regulations of the FA and it should be coordinated and mediated by the EB members. Those conflicts typically included ones between FA members on the location of their gears.

In case there was any conflict that the FA considered to be beyond the existing capacity of the FA to solve, the matter was referred to the CPC or the co-management body for a solution. Those issues typically included conflicts between fishers from different FAs within a commune; conflicts between FAs in a commune; or cases where violators were not willing to listen to the opinions and suggestions of local FAs.

Some cases might still need to be brought to the attention of higher authorities (i.e. district or provincial levels) for handling. Those cases might include conflicts between communes (or co-management bodies) on commune boundaries for example, or issues that spread across commune/district boundaries.

All of the above were mentioned both in the fishing rights allocation documents as well as in the co-management body agreement so that the procedures and responsibilities would be clear when conflicts occur.

**Outputs: Conflict management mechanism/system agreed between local FAs and the authorities**

## **11. Enhancing the roles of supporting institutions**

Although local FAs played significant roles in lagoon fisheries co-management, making the co-management system sustainable was the task not only of local FAs, but also of all relevant stakeholders, including different levels of government and provincial fisheries associations. Occasionally, in the course of implementing the co-management regime, some stakeholders misunderstood that the management tasks could be simply handed over to the local FAs without providing much support. This in fact went against the very idea of co-management, which advocates joint efforts (“sharing of responsibilities”) and partnership by relevant stakeholders, particularly the authorities and the local FAs.

### **11.1 Government support to local FAs**

When tasks and responsibilities are delegated, it is important to ensure the resources, especially the financial resource, are provided to the local FAs for effective implementation (see Dubois & Fattore, 2009 for a more general discussion on decentralization). This point is clearly mentioned in the national policy:

Funding for the operation of associations shall comply with the principle of self-financing. In cases where the associations have their activities associated with the State’s tasks, they shall be rendered with support from the State budget (Article V.3, Circular No.01/2004/TT-BNV).

The newer decree also includes a statement on state support to associations:

A particular association shall be allocated funds for operation according to its assigned payroll, be guaranteed funds for performing its tasks assigned by the State and receive supports in physical foundation and means of operation ... (Article 35.1, Decree No.45/2010/ND-CP).

The provincial regulation (Decision 4260) also has particular clauses regarding financial decentralization:

Fisheries Associations have to act as management agencies on behalf of government agencies at all levels in management of the tax on lagoon capture fisheries ... (Article 7)

The State encourages Fisheries Associations at the local level ... [to] deal with relevant issues such as ... the collection of the tax on capture fisheries ... (Article 11)

Natural aquatic resources exploitation tax in the lagoon fully contributes to commune budgets. The People’s Committee of Communes defines the percentage of tax that is left for fisheries associations at the local level to cover the expenses of tax collection in the community, management, organization and implementation of aquatic resources protection and development activities (Article 16).

Nonetheless, up to the middle of 2010, there had been no specific, structured financial support from the authorities to the local FAs for lagoon fisheries co-management. The project is currently in the process of discussing the following types of support from the authorities: the provision of patrol boats to FAs for M&E, allowances to FA EB members, sharing of natural resources exploitation tax with FAs, and other subsidies/allowances for FA activities.

## **11.2 PFA support to local FAs**

The PFA is the umbrella organization of local FAs in Thua Thien Hue Province with the absence of district-level FAs. Although the PFA in Hue was officially established in July 2003, i.e. before the project was initiated in 2005, the PFA was extremely weak and was without full-time staff and office premises. The financial capacity of the PFA was also not sufficient to provide effective support to the local FAs.

Although the PFA was a part of the fishers' organization, the chairperson of the PFA was the former director of the Provincial DOFI, who was in that position for more than ten years. The vice-chairperson was the incumbent director of the Sub-Department of Capture Fisheries and Resources Protection (under DARD) and the incumbent vice-chairman of DARD.

In the context of the Vietnamese political environment, the above arrangement had obvious pros and cons. One of the challenges concerned whether it was appropriate for the people's (fishers) organization to be represented by former and current government officials from DARD/DOFI, although not all EB members had a government background. In the second term of the PFA (2009–2014), 14 out of 25 EB members had a non-government background, but the chairperson and vice-chairperson had a government background. To date, the project has not observed cases where the PFA has imposed government decisions unilaterally on local FAs, and the PFA has been facilitating meetings and discussions in a participatory manner.

The obvious advantage of having the former DOFI director as a PFA chairperson was that it made coordination and negotiation with the authorities much easier for the PFA when representing the interests of local FAs. This was particularly true because the government's authority is substantial and centralized in Viet Nam.

In order to enhance the roles and capacities of the PFA, the project has been constantly engaging the PFA in its work with local FAs in the target areas combined with the provision of both material and financial support to the PFA (including salary support to one staff of the PFA). In some cases, the project signed a contract with the PFA to facilitate meetings and workshops so that the PFA would get enough resources to fulfil their responsibilities. It is expected that the PFA will take over the project's tasks upon project completion. This should enable sustainable support to local FAs.

**Outputs: External support (from the authorities and PFA) secured for local FAs**

## **12. Allocating fishing rights from the government to the FA**

The allocation of fishing rights was the final expected output of the planning stage. Fishing rights were allocated on the basis of Decision 4260, which specifically defines the allocation of fishing rights by the DPC to local FAs.

According to Decision 4260, fishing rights are allocated only to FAs as groups and not to individuals. Therefore, individual fishers were mandated to be members of FAs to undertake their fishing activities legally and according to the fishing rights regime.

Each FA (or groups of FAs) should prepare a set of allocation documents and submit them to the DPC, often through the district DARD. The fishing rights allocation documents comprise the following (see also Annex 3 for a sample table of contents of the main document):

1. **Main fishing rights allocation document** including: a) the status of the FA; b) status of lagoon water surface use; c) geographical areas proposed for fishing rights allocation (including definition of sub-zones); d) resource management regulations for each functional sub-zone as well as management administration (fee, violation handling, M&E, conflict management, and others); and e) work/activity plan.
2. **Decision on the FA establishment**
3. **FA charter**
4. **FA EB member list**
5. **FA member list**
6. **Signed agreement on co-management body establishment**
7. **Status map of fishing gears and aquaculture in the FA area**
8. **Zoning map of the FA area** with indication of functional sub-zones.

Note: (#2–8 are annexed to the main allocation document).

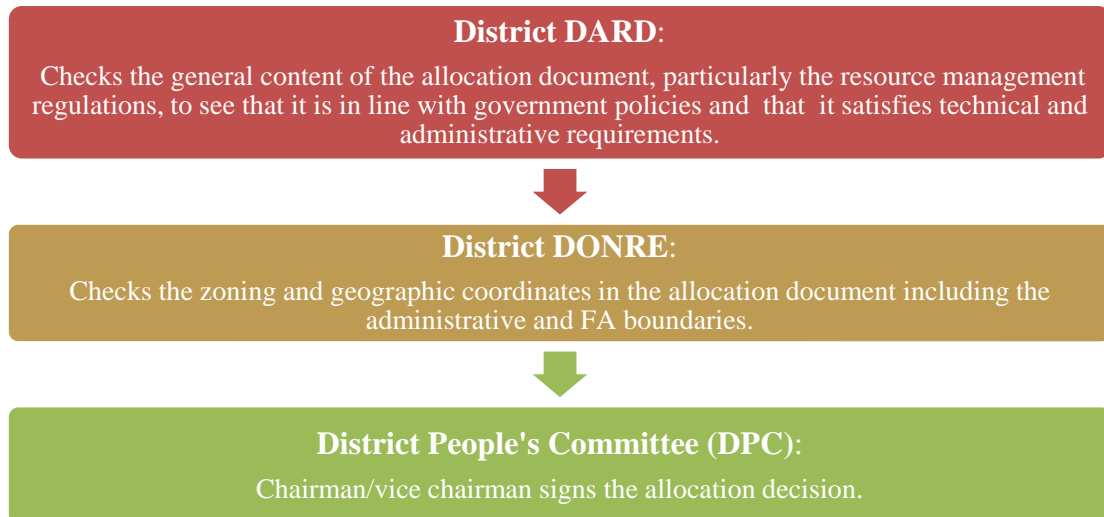
It is important to note that the above allocation documents were prepared through a series of small and large meetings with the involvement of FA members as well as commune and district authorities as described in the earlier sections. General steps in formulating the allocation documents were as follows:

- (a) On the basis of the available management regulations and strategies together with a lagoon status map, all of which were developed in the earlier stage of FA-based planning, the project staff initially facilitated a participatory group work session with key fishers representing different kinds of fishing and aquaculture activities to formulate a first draft zoning plan and regulations;
- (b) The first draft was typed up and refined by the project technical staff in consultation with the FA EB and the CPC staff to make a second draft;
- (c) The second draft was presented to all FA members in a large meeting to obtain feedback and agreement;
- (d) The second draft was revised on the basis of the discussions with the FA members together with the FA EB and the CPC to create a third draft. The advice from district or provincial government offices was occasionally necessary to clarify some legal issues in relation to government policies. The steps (c) and (d) were repeated at least several times until the FA had a decent draft allocation document, which was agreeable to the FA members;
- (e) Once the draft document was agreed on within the commune, it was unofficially forwarded to the district DARD for preliminary feedback; and
- (f) Upon revision on the basis of the inputs from the district DARD, the CPC approved the allocation document and officially submitted it to the district DARD.

The above process usually took at least several months to complete with frequent and extensive consultation with different stakeholders (see Box 5 for a comment on this process).

The process should not be pushed for the sake of expediting the allocation process as a good regulation formulation process – although it might sometimes look a bit redundant and time-consuming – not only improves the awareness of people who are involved in the process on lagoon fisheries management, but also ensures higher compliance and less conflict in its implementation phase.

Upon the official submission of the allocation document to the district, the approval process went as described in the diagram shown as Figure 32. In this process, again, there were a lot of back-and-forth communications between district, commune, and local FAs to modify the regulations. All stakeholders also made a boat trip to verify and mutually agree on the critical boundaries in the field so as to avoid future conflict.



**Figure 32 General flow of approval process of fishing rights allocation document at the district level**

Once the fishing rights were officially allocated, the project supported the FA and CPC to organize an announcement meeting, which also included people from neighbouring communes, to ensure correct understanding of the arrangements.

**Outputs: Fishing rights officially allocated by the authorities to local FAs**

***Box 5: Raising awareness of local governments and standardizing the fishing rights allocation procedure***

When the project started working on fishing rights in the province, there had been no cases of fishing rights previously allocated to local FAs. Together with the lack of clear guidance on the particular requirements and procedures from the provincial authorities, many district and commune authorities were hesitant to take initiatives in allocating fishing rights. The only guidelines available for the subject were the Guidelines 159/HD-STs, issued in April 2006 by DOFI that were not detailed enough to provide clear guidance on fishing rights allocation. At the same time, because of unclear procedures, the local FAs and CPCs were not sure of what documents should be submitted in order to obtain fishing rights. Moreover, there was a lack of common understanding on what would be allowed and what entitlements local FAs would have under the fishing rights regime.

To tackle the above issues, the project organized a number of workshops and meetings at different levels to clarify the concept of fishing rights and co-management, fishing rights allocation requirements and procedures, and rights and responsibilities of local FAs under a fishing rights regime. In this process, the project developed draft district guidelines on fishing rights allocation as well as the guidelines for preparing fishing rights allocation documents for local FAs and CPCs. Although these documents have not received the official stamp of the authorities, they have been serving as guidance documents. It is expected that these documents will be adopted by the authorities to streamline the fishing rights allocation process.



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## VI. Implementation stage

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### ***1. Registering resource users, fishing gears, and aquaculture facilities and collecting fees***

#### **1.1 User and gear/facility registration**

The first step in the implementation is the registration of resource users (fishers and aquaculturists) and fishing gears or aquaculture facilities as well as the collection of fees from the members. The registration of resource users (i.e. FA members) was done throughout the inception and planning stages as part of the continuous efforts to include all resource users in the FA; however, it is important to have a campaign to raise awareness of local resource users at this stage especially as the implementation of FA resource management regulations will result in the exclusion of non-members from certain fishing activities. Local fishers need to understand the consequence of being non-members and the opportunities to be members if they wish to continue their fishing under the management of FAs.

The FAs also launched a campaign to register fishing gears and aquaculture facilities that each member household uses in the lagoon. The lagoon fishers use a wide variety of fishing gears, but the registration is done for major fishing gears that are identified in the fishing rights document (that includes resource management regulations and annual fees to be paid for different types of fishing gears and aquaculture facilities). The registration of gears should be done for:

- (a) type of fishing gear (e.g. stake trap, bottom net, lift net, gill net, etc.);
- (b) number of fishing gears (e.g. two units of stake traps);
- (c) size of each unit of fishing gear (e.g. 350 m/wing for a stake trap, 80 m for a gill net);  
and
- (d) registration date.

#### **1.2 Gear/facility registration and user fee collection**

The above data are necessary not only for the sake of gear registration, but also for the collection of annual user fees.<sup>12</sup> An annual user fee is usually defined for a unit and/or length of fishing gear, so it is important that the resource users provide the above information to the FA in order to determine the annual use fee level for each member household. The user fee level in some cases is defined on the basis of the productivity of the gear. For example, many FAs decided to define different fee levels for highly productive gears or for gears with average/low productivity (e.g. fixed fishing gears such as stake traps and bottom nets), which are largely determined by the area where the gears are located. As the geo-database was developed by the project with the paper maps provided to the FAs (see earlier chapters on the participatory geo-database creation), the local FAs as well as the authorities could easily identify the location of each fixed fishing gear.

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<sup>12</sup> The annual user fees are different from the membership fee. The annual user fees are charged to the resource users for fishing gear or aquaculture facility in addition to the membership fee.

### **1.3 Issuance of fishing certificates**

Upon registration and payment of user fees for fishing gears and aquaculture facilities, the FA issues a certificate/card indicating what fishing gears and/or aquaculture facilities are permitted for what time period. The fishers are requested to carry this certificate when they conduct their fishing/aquaculture activities so that the FA, when monitoring and controlling the overall fishing capacity, can check if the activities are undertaken with the permission of the FA.

### **1.4 Experimental use of armbands for registered resource users**

There is a plan for an experiment on the use of armbands for ease of monitoring by the FA. The armband is brightly coloured for easy identification from a distance on the lagoon water surface (see Figure 33). The certificate, as mentioned above, is inserted in the armband so that it is easily seen and the FA patrolling members can check it whenever necessary.



**Figure 33 Sample design of the armband**

## **2. Organizing water surface patrolling and conflict management**

### **2.1 Patrolling and related issues**

Conducting regular patrolling of the lagoon water surface is a critical part of the implementation stage. The resource management regulations will not improve the lagoon resources status without effective monitoring and enforcement.

As mentioned in an earlier chapter, the patrol team is usually composed of FA members, the commune authority (CPC), and a commune police officer. In some cases where violent encounters are expected, the team includes a commune military officer for protection (Figure 34).



**Figure 34 Patrolling by the FA in Hai Duong Commune**

There has been a long debate on the legal rights of the patrol team as these have not been clear in existing legal documents, especially when it comes to the imposition of fines, the confiscation of fishing gears or aquaculture facilities and/or the detention of those that are violating the regulations. While discussions were ongoing on this issue, a temporary solution was arranged by including a commune police officer in a lagoon water patrol team so that temporary confiscation could be carried out under the responsibility of the commune police. In serious cases, the FA patrol team should still have to record the case and seek a solution from the local authority (CPC) after the patrolling activities. This arrangement would work for violators from the same commune, but would not work with intruders from other communes. Although FA-based patrol groups have been patrolling the lagoon, the discussions on legal rights are still ongoing.

Another practical issue with the FA-based patrolling was that of the provision of patrol boats and the costs associated with the patrolling. Although in principle, these costs should be covered by the income from membership and resource user fees that the FAs collected from the FA members and resource users, the financial bases of the FAs were not strong enough to cover all the expenses of the regular patrolling.

Some FAs used private boats of FA members for patrolling, but many members were hesitant to provide their boats for this purpose in case they were damaged during the patrolling or damaged later because of revenge by illegal fishers. Support to provide patrol boats for local FAs has thus been requested by local FAs, and this is under consideration by the provincial authority as well as existing international projects in the lagoon areas.

## 2.2 Conflict management

With growing resource pressure and scarcity, there have been many conflicts and disputes among fishers and aquaculturists from the same or different communes. Typical conflicts are for overlapping fishing areas (e.g. two gears from different owners installed in the same place) and removal of or damage to the gears and fish cages (either stolen or damaged by trespassing boats). According to the local fishers, those conflicts usually occur with fishers from other communes, which make the detection and solution of the violations and conflicts even more difficult and complicated.

In the fishing rights document, the mechanism of conflict management is roughly defined – the primary role of FAs (their executive boards) is to receive and handle the complaints and claims from its members or non-members within the lagoon areas of their competence according to the FA rules. However, the limited experience and skills of FA EB members in conflict management and the involvement of people outside the FA or commune in conflicts make the conflict management by FA EB members very challenging.

There are also the coordinating entities called co-management bodies, which consist primarily of local FAs and the CPC (see Chapter V for more details), for coordination and facilitation of lagoon co-management activities at the commune level. As a co-management body includes all local FAs and the CPC in a commune, it is an appropriate forum to discuss and handle the inter-FA conflicts within a commune.

For example, in Vinh Hien Commune there was ongoing disagreement between the capture fishery FA and the aquaculture FA as to how the lagoon water surface should be demarcated and over the management of seaweed beds in an area where capture fisheries, seaweed harvesting, and fish cage culture all took place. The seaweed harvesting areas were also being adversely affected by wastewater from pond aquaculture. This issue was discussed in the co-management bodies with the participation of both FAs and the local authority (CPC), and an agreement was reached by all and was reflected into the fishing rights documents.

If the conflict cannot be solved within an FA or among FAs, the issue is referred to the authorities at the commune, district, and even provincial levels depending on the seriousness, complication, and people involved in the conflict (e.g. inter communal issues should be reported to the district level so that the issue can be discussed and solved by the facilitation of the district authority).

### **3. Reduction and rearrangement of fishing gears**

As a part of efforts to reduce fishing capacity in the lagoon, the FA resource management regulation included a plan to reduce and rearrange (in this publication, the term “rearrangement” is used to include both) certain fixed fishing gears. The rearrangement of fixed fishing gears presented potential as well as challenges for fishing capacity management under the co-management approach.

#### **3.1 Background to fishing gear reduction and rearrangement**

With the growing number of fishing gears and their uncontrolled installation in the lagoon, the provincial authority of Thua Thien Hue issued Decision 3677/2004/QD-UB in 2004, which regulates the reduction of stake traps in the lagoon by 40 to 50 percent by 2010. The decision was made because of the urgent need to reduce fishing pressure in the lagoon, but without a scientific basis for the reduction percentage and without the participation of the local fishers. The Decision sets the reduction target only for stake traps (*đăng* or *sáo*) and bottom nets (*đáy*) as they are traditional and the major fishing gears in the lagoon, amounting to thousands of units distributed throughout the lagoon (see also the description of stake traps in Chapter III). The stake traps and bottom nets were fixed to the lagoon bottom throughout the year and recognizable on the water surface unlike some other gears that were submerged under the water.

#### **3.2 First gear rearrangement**

In 2007, with the support from IMOLA in mapping stake traps and developing rearrangement plans, the first gear rearrangement took place in Cau Hai Lagoon (Phu Loc District). In 2007, the local FAs were still in the process of being established or strengthened. Even with the involvement of local individual fishers in the discussion of planning options through the local authorities (CPCs), the participation of the local fishers was still limited to information and consultation at best. In this first exercise, some 10 percent of the stake traps were reduced with the remaining stake traps reorganized into blocks (rows).

The first rearrangement posed a series of issues and concerns that jeopardized the legitimacy of the rearrangement decision. First, the decision to reduce the stake traps by up to 50 percent was made without providing information to or consulting with local fishers (the issue of participation). Second, the high percentage of reduction was decided without a clear basis (the issue of rational decision-making). Third, the impacts of such a large reduction on the socio-economic conditions of many people, often artisanal, small-scale fishing households were not assessed before the decision (the issue of policy impacts on people’s livelihoods). Last, the decision did not come with a viable implementation plan in order to mitigate the unnecessary and undesirable socio-economic impacts (the issue of implementation planning).

The provincial target set for reduction (50 percent) was communicated from the Provincial People’s Committee to the District People’s Committees, which were requested to steer the rearrangement in the communes under each district. In response to the above PPC direction (through DARD), the Phu Loc DPC issued a rather unilateral order to each commune authority (CPC) to achieve the target at one shot in a limited time. On the other hand, the project insisted on phased implementation with the participation of the gear owners to mitigate the adverse socio-economic impacts, but the idea was eventually not incorporated into the plan because of pressure from local authorities to achieve the pre-announced reduction target of 50 percent within a short space of time.

### 3.3 Second gear rearrangement

As the reduction target of 50 percent was not achieved in the first gear reduction, in 2010, the provincial authority planned further rearrangement of stake traps in the lagoon. By this time, most of the local FAs in the project target communes had been consolidated with support from the project and could now provide a basis for better participation of local fishers in the rearrangement planning.

In the second phase of gear rearrangement, the project worked with two districts, namely Phu Loc and Huong Tra Districts. Both districts were in critical locations in the lagoon, covering two lagoon inlets of Tu Hien and Thuan An respectively. They were with different fishery situations – the Phu Loc District had stake traps as major fishing gears whereas Huong Tra District had more bottom nets as primary gears. In addition to these traditional fishing gears, the emerging use of a new gear called *lu* (Chinese box traps) had been a big issue throughout the lagoon. *Lu* was a relatively low-cost, but highly productive and non-selective gear. Worse, the gear was submerged under the water, making it invisible from the water surface. Because of its convenience, the number of households using *lu* was said to be booming with an increasing length deployed in the lagoon. It was not unusual for one household to have several hundred meters of *lu* installed under the water. Because of its invisibility, the conflicts related to this gear (e.g. overlapping gears) had been on the rise among local fishers too.

In both Phu Loc and Huong Tra Districts, the project started with GPS remapping of target fishing gears for the rearrangement. With the involvement of local FAs and commune authorities (CPCs), the project technical staff went to the lagoon to check and map the location of each gear to update the geo-database (see chapter III for more details on the mapping procedures). Although the provincial policies for gear rearrangement were only for stake traps and bottom nets, communes and FAs usually decided to map out other key fixed fishing gears such as lift nets as a part of their planning exercise for the fishing rights allocation. Huong Tra District also wanted to understand the current status of bottom nets as they were more abundant and significant to the local fisher's economy than stake traps in the district. Eventually, the total number of different fixed fishing gears, their location and size, ownership, and whether they violated existing government regulations became clear to all stakeholders, including local FAs, CPCs, and district line departments and the PPC.

In Huong Tra District, the above status data were presented at the stakeholders meeting, which was chaired by the vice-chairman of the DPC, attended by district line agencies including DARD, DONRE, and DOT, as well as CPCs and local FA representatives. A representative from the provincial Sub-DECAFIREP also attended many of these meetings. On the basis of the common understanding on the gear status, a series of back-and-forth discussions were organized at district, commune, and village/FA levels. At the district level, key parameters such as buffer zones for lagoon shore, commune boundaries, and width of waterways (where fishing activities are either limited or banned) were discussed. The project supported this process through providing different simulated options to the stakeholders to show how many fishing gears would have to be removed/rearranged for a given set of parameters. Simulated options were also brought down to village and FA levels for discussion among gear owners until the owners could reach a reasonable agreement not only in terms of how many gears to be rearranged, but also how specifically the reduction/rearrangement should be conducted (e.g. limiting the number of gears a household can own, making an arrangement whereby two households would share one gear, etc.). This local consensus making took several months with a number of meetings. One of the key enabling factors for this local consensus making process was that the leaders of district DARD and DPC in Huong Tra District allowed sufficient time and space for the local FAs rather than rush them too much. The reason behind this was the understanding within the district authority that good consensus making for the rearrangement plan was the best way to reduce socio-economic impacts on the local gear owners and to increase the post-rearrangement compliance. The

agreed on rearrangement plan at the village and FA levels was summarized in each commune and submitted to the district authority so that the district could consolidate it into a district gear rearrangement plan to be funded (i.e. provision of support funds for households rearranging their gears) by the PPC.

In Phu Loc District, the process was quite different from that in the Huong Tra District. Although the initial process of joint geo-database making was similar, communal discussions on the rearrangement plan experienced varying levels of fishers' participation or non-participation. In Loc Binh Commune, where local FAs were relatively strong and the understanding and political support for co-management from the commune authority (CPC) was relatively high, the commune and FA level discussions on the rearrangement option went well with participation of gear owners jointly facilitated by the CPC and FA EB members. Consequently, fewer conflicts and disputes were observed during the gear rearrangement. However, in several other communes, although the project assisted the initial discussions among local gear owners, FAs and CPC, eventually the conclusion was imposed by the commune authorities (CPCs), which were pressured to reach the conclusion as soon as possible by the district authorities. The experience of the gear rearrangement in Phu Loc revealed some ongoing challenges and the vulnerability of the fisheries co-management arrangement.

Key lessons learned were:

- There should be consistency between the fisheries co-management promotion at the commune and village levels with the policy decision-making at provincial and district levels. Although co-management was promoted at the commune and village levels, the decision-making for lagoon fisheries management was done in a top-down manner without enough participation of local FAs;
- Overall policies from the province should have a reasonable timeframe, strategies, and instruction to the district and commune authorities to ensure enough participation of local FAs in the planning;
- The provincial and district authorities should allow more space and flexibility for the local FAs to discuss and choose their own option or arrangement for a particular policy objective;
- An understanding of and political support for fisher's participation and for the co-management process within the authorities at different levels is critical. Without such, co-management would have a mere shell of participation (manipulation up to consultation at best in Arnstein's (1969) ladder of participation); and
- There should be clearer definition in the legal documents as to what particular rights and responsibilities are delegated to the local FAs (e.g. to what extent authorities will plan and to what extent local FAs can plan as a part of co-management).

#### 4. Protecting the environment and enhancing the fish stock

Apart from implementing lagoon resource management regulations under a fishing rights regime, local FAs, together with the authorities, have been undertaking a series of activities related to lagoon conservation and protection. They include the official and unofficial establishment of conservation areas and the organization of lagoon clean-up events.

##### 4.1 Establishment of conservation areas

In many places, local FAs decided to allocate certain areas for total or seasonal protection (either a no fishing period or a limited fishing period) on the basis of the local knowledge on fish spawning and nursing grounds. They are typically located in shallow lagoon shores, seaweed/seagrass areas, or in and around mangrove estuaries.

In Loc Binh Commune, three shallow lagoon shores (58 ha) were identified as conservation areas as local fishers claimed that these calm, warm-water areas function as cradles for a variety of juvenile fishes. These areas were demarcated with GPS and concrete poles (see Chapter V) and included in the fishing rights documents as seasonally protected areas where all capture fishing activities are prohibited from December to May to protect juvenile fishes.

Later in May 2011, one of the local conservation areas in Loc Binh was upgraded into a provincial conservation area with Decision 1008/QĐ-UBND (PPC, 2011) whereby the FA could obtain more support from the Provincial DARD in maintaining the conservation area (Figure 35).



**Figure 35** Bamboo fish aggregating device installed (left) and notice board (right) on the edge of the conservation area in Loc Binh Commune

In the Vinh Hien Commune, 87.5 ha of seaweed (*Gracilaria*) beds are demarcated as a conservation area under the management of two FAs (Figure 36). These seaweed beds are close to the lagoon inlet from the sea and not only provide seaweed to local people, but also clean the lagoon water and offer shelter for small juvenile fish coming back from the sea or spawning in the lagoon, particularly for rabbitfishes that are used not only for direct consumption but also for making a local specialty fish paste called *mam ro*.





**Figure 36 Conservation area with seaweed (*Gracilaria*) in Vinh Hien Commune**

In Huong Phong Commune, small patches of the last remaining mangrove (about five hectares) and the neighbouring seagrass areas were set aside as a conservation area (Figure 37). Although mangrove areas could not be under the fishing rights regime as they were not regarded as lagoon water areas under the government law, this mangrove patch locally called *Ru cha* (literally meaning “milky mangrove [*cha*] forest”) has been regarded as an integral part of the local conservation area.



**Figure 37 Mangrove (*Ru Cha*) conservation area in Huong Phong Commune**

## 4.2 Lagoon clean-up

The lagoon FAs together with the local authorities (CPCs) also organized lagoon clean-up events as mentioned in Chapter IV. The events are usually organized as a joint effort between local FAs and the commune authorities involving local school children, district and provincial authorities and the local media.

The main objectives of the lagoon clean-up events are to raise awareness of local residents on the importance of lagoon resources and to clean up the lagoon. The event participants were divided into two groups, one for water surface clean-up and the other for lagoon shore clean-up. For the former, the local FA arranges boats to carry the participants to remove waste floating in the lagoon and stuck to the fishing gears and aquaculture facilities. The latter group collects the solid wastes accumulated on the lagoon shore such as plastic bags and other household wastes.

Waste matter was recorded by category and later presented at the gathering point to the event participants to show how much waste had been accumulated and where it came from (mostly from residential areas). With the invitation extended to the local media, the results were broadcast subsequently on local TV and reported in the local newspapers.

## **5. Running economic activities of FAs**

As most of the local FAs were relatively new, their financial base and capacities were still immature, and the funds available for FA operation and lagoon management activities were quite limited. FAs were heavily reliant on the collection of membership and user fees in most cases and it was realized that funding sources should be diversified and enhanced to make these FAs financially sustainable in the long run.

Apart from financial sustainability, there is another important reason for FAs to undertake economic activities, namely as an incentive for the local fishers to join the FAs. Fishers become and continue to be FA members if they perceive it brings net benefits to them. FAs require a series of duties of its members such as payment of various fees and compliance with the FA rules. However, if the members are required to perform their duties consistently without any reward, they would most likely discontinue membership as the costs of being FA members are higher than those of non-members. Then, there would be an incentive to be free riders, which would jeopardize the legitimacy of the FAs and eventually the lagoon co-management system in the long run.

There has been a series of FA-based economic activities implemented at the request of local FAs with the support of the project. They included a savings and credits scheme, fish nurseries, and fish aggregating device operation through the FAs.

### **5.1 FA savings and credit scheme (Hai Duong Commune)**

Vinh Tri is a small FA that was established in October 2008 with 68 members in Hai Duong Commune. During the FA meetings, FA members recognized a need to have some locally managed savings and credit scheme for very small, short-term loans (US\$50 to 100/loan) to support the fishing activities of its members. With technical assistance from the project, the FA developed management rules for the savings and credit scheme as well as a simple saving book and loan recording sheet for its operation. An obvious advantage of the FA savings and credit scheme, especially for this small village-based FA, was that its members know each other very well as they are neighbours and extended families, which made the assessment of bankability easier for the group and the breaking of promises by the borrowers more difficult and unlikely.

The Vinh Tri FA asked for a contribution (savings) of VND 100 000 (US\$ 5)/year/member household, which led to the financial availability of VND 6 800 000 (US\$ 340) per year for loans. The FA receives applications for the FA loan from its members every year and these are evaluated and decided by the FA EB. As mentioned earlier, the usual loan level is small with VND 1 000 000 to 2 000 000 (US\$ 50 to 100) per application with an interest rate of 0.5 percent per month or 6 percent per year with a relatively short repayment period of several months to one year. The FA-based loan has an interest rate significantly lower than the commercial banks, requires less paper work (and time) by borrowers, is easily accessible by the local FA members within their village, and does not require collateral.

As the issue of loan accessibility and availability is among the top interests of local fishers, the FA-based savings and credit scheme provided a good incentive for the local fishers to be a member of the FA in Vinh Tri Village.

### **5.2 FA-based fish nurseries (Loc Tri and Loc Dien communes)**

Loc Tri and Loc Dien communes are lagoon communes but also have a large area available for agriculture and freshwater aquaculture on the land with clean water flowing in the communes from the mountains. A local FA in Loc Tri and Loc Dien proposed a project to

support the establishment of FA-based freshwater fish nursery as a part of the FA economic activities and service provision to its members.

With a lot of freshwater aquaculturists in the area (i.e. a potential market), those FAs decided to buy fish fries of commonly cultured species such as Nile tilapia, common carp, and grass carp, and nurse them to fingerlings. The FAs identified several pond owners among the FA members and made an arrangement with the owners for the fish nursery operation under the FA. Under the agreement, a certain percentage (30 percent) of net profits went to the pond owners for pond rental and caretaking during the nursing period and the other significant part (70 percent) was saved in the FA funds.

With the support from the project in terms of fish nursing techniques (training), weekly extension, and provision of initial inputs (e.g. fish fries and feeds), those FAs successfully produced the fish fingerlings from their nurseries. The fingerlings produced were sold to their members at prices that were 50 to 60 percent cheaper than the market prices.<sup>13</sup>

Although there was no net profit for the first year, and some improvements were needed in terms of their marketing and business management, the FAs were willing to continue to nurse freshwater fish fingerlings continuously.

### **5.3 FA-based FAD operation (Loc Binh Commune)**

Loc Binh Commune is an innovative commune with capable FAs and a supportive local authority (CPC). The Loc Binh FAs established three conservation areas in the commune where fishing activities are banned seasonally to protect fish nursing areas.

In order to cover the running cost of the conservation areas and to enhance the FA income, two FAs in Loc Binh Commune proposed to the project to run a pilot installation of fish aggregating devices (FADs), which function as an artificial reef during the off-season and FA-controlled fishing gears during the on-season.

Three FADs of 500 m<sup>2</sup> were installed on the border of the conservation areas with the development of FAD use regulation under the FAs, which regulates the FAD design, no-harvest season (November to April), the frequency of harvest during on-season (three months), mesh size of the harvesting net (30 mm), and others. Although only 25 percent of the net profit was saved as the FA funds (another 25 percent was saved as maintenance costs and the other 50 percent was shared among participating FA members), the FA also rents the harvest nets to its members to supplement their income.

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<sup>13</sup> This was the reason for no profit margin for the first year of their operation, and the FA decided to increase this percentage in the following production cycles.



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## VII. Monitoring & evaluation stage

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One of the common challenges and questions for practitioners is how to monitor and evaluate fisheries co-management. As co-management is a process, a monitoring and evaluation (M&E) system should properly reflect this by capturing the process in addition to the resulting changes in fisheries inputs and outputs.

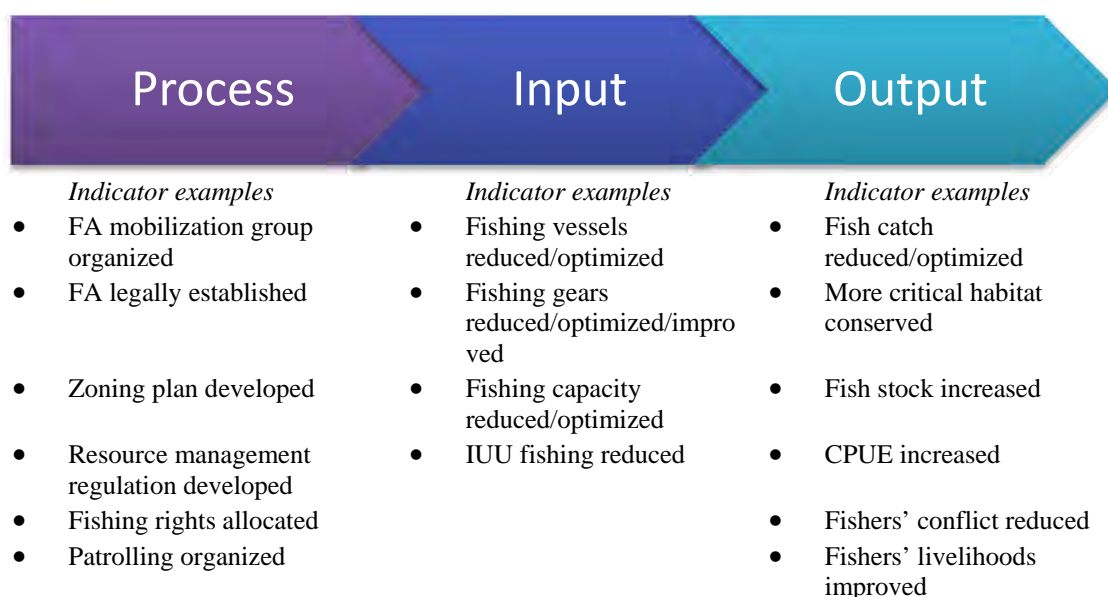
This chapter explains how IMOLA monitored and evaluated the co-management process by introducing a process monitoring framework. Note that the framework introduced in this chapter is particular to fisheries co-management in the Tam Giang–Cau Hai Lagoon, and a different M&E framework should be defined for other places/cases depending on the local conditions and contexts. Nonetheless, the IMOLA experience offers some hints and ideas as to how an M&E system should be designed to look at process, inputs, and outputs.

### *1. Developing process, input and output indicators*

There are three categories of M&E indicators, namely process indicators, input indicators, and output indicators (see Figure 38). The ultimate goal of fisheries co-management is sustainably managed fisheries resources after all and the M&E have to contribute toward this goal such as reduced fish catch (of overfished stock), recovery of certain fish stock, more critical habitat conserved. These indicators are output indicators that are expected to come at the end of the process. There are also socio-economic impacts expected from the co-management process such as reduced conflict among resource users and improvement in fishers' livelihoods.

There are also the input indicators. They include the indication of changes in inputs to the fisheries such as reduced/optimized number or capacity of fishing vessels, reduced/optimized number of fishing gears (or their improvements), reduction/optimization of overall fishing capacity, reduced IUU fishing. They do not reflect the ultimate impacts (e.g. recovery of fish stock) intended as a result of the management actions and control of inputs to fishing.

However, operationalization of co-management takes a certain time before its impacts are seen and there is a need to recognize and monitor its progress to properly understand and facilitate the process. The definition of the process indicators requires the clarification of the co-management operationalization process first. As described in this document, the operationalization of lagoon fisheries co-management in the Tam Giang–Cau Hai Lagoon has many steps. Each of the key steps (milestones) should be listed down in an indicator form (examples presented in Figure 38). Each process indicator should have data typology showing how the indicator should be measured and recorded. For example, the indicator “FA legally established” should have data typology of “yes/no,” and the establishment date as mentioned on the establishment decision by the authority should be recorded. Table 24 shows examples of process indicator definitions. A full list of process indicators and their definitions should be listed to produce a complete data dictionary.



**Figure 38 Different levels of M&E indicators for fisheries co-management**

**Table 24 Example of detailed definition of co-management process indicators**

Process indicator	Data typology	Data to be recorded
FA legally established	Yes/No	Date of the establishment (as stated on the official decision)
At least 80% of the target fishers represented at the FA	Yes/No	Representation rate expressed as number of FA members against the number of target fishers/households
Zoning plan developed	Yes/No	Date of the FA/CPC agreement on the zoning plan
Fishing rights allocated	Yes/No	Date of the fishing rights allocation (as stated on the official decision)
Patrolling organized	Yes/No	Frequency of patrolling

## 2. Deciding the M&E framework and schedules

Once a list of co-management indicators is defined, an M&E framework/matrix should be formulated in a chronological order. Table 25 shows the co-management M&E framework for IMOLA. The matrix includes the list of FAs on the y-axis and the name of the indicators on the x-axis. The status (yes/no) is indicated with a colour (e.g. green for yes and red for no)<sup>14</sup> whereas the detail (e.g. date, percentage, frequency, etc.) is recorded as text in each column.

As the co-management process is also a learning process even for the project implementer, the M&E framework should be flexible and adaptable. In IMOLA, the M&E framework was constantly reviewed and modified by adding new process indicators and/or refining the existing ones. Note that some process indicators such as establishment of FA mobilization board and development of FA charters/bylaws were defined on the basis of the legal document on the establishment of the FAs (see section IV.1 for more details on the requirement). Some other process indicators such as FA water surface demarcation, development of zoning plan and management regulations and establishment of co-management body were formulated on the basis of the authorities' requirement for fishing rights allocation (see Section V.10 for more details on the requirement).<sup>15</sup> It is thus important that the *de jure* and *de facto* requirements in relation to fisheries co-management are reviewed in detail before defining the process indicators.

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<sup>14</sup> If needed, ongoing activity can be indicated, for example with yellow to distinguish the activities that are ongoing from those that have not started yet. It is important that the framework is adjusted to suit the needs of the project implementer.

<sup>15</sup> Those requirements for the fishing rights allocation in Thua Thien Hue were not legal requirements and as such were not clearly defined in the legal documents or government guidelines, but rather *de facto* requirements according to government instructions.

**Table 25 IMOLA M&E framework/matrix for lagoon fisheries co-management process**

#	FA name	Commune	# Villages	# Members	Rep Rate	# Sub-Groups	Type	Co-mgmt Asmt	CPC Agreement	EB	CB	Structure	PFA Agreement	Charter	Stamp	Est.	Intro Ceremony	FA Festival	Congress
1	Huong Giang	Hai Duong	1	60	91%	5	Gen	Yes	Signed	Yes	No	Yes	Signed	Signed	Yes	22/09/2006	15/11/2006	27/11/2007	25/11/2007
2	Thuong Tay	Hai Duong	1	100	91%	3	Gen	Yes	Signed	Yes	No	Yes	Signed	Signed	Yes	10/05/2007	22/11/2007	18/11/2007	15/02/2009
3	Vinh Tri	Hai Duong	1	68	84%	2	Gen	Yes	Signed	Yes	No	Yes	Signed	Signed	Yes	10/12/2008	16/12/2008	No	18/03/2010
4	Vinh Hien lagoon	Vinh Hien	6	192	76%	5	Cap	Yes	Signed	Yes	No	Yes	Signed	Signed	Yes	29/09/2006	28/10/2007	02/09/2007	01/06/2009
5	Vinh Hien Aquaculture	Vinh Hien	3	117	78%	3	Aqua	Yes	Signed	Yes	No	Yes	Signed	Signed	Yes	19/10/2007	21/12/2007	21/12/2007	16/02/2009
6	Vinh Hien fish cage	Vinh Hien	3	83	97%	3	Aqua	Yes	Signed	Yes	No	Yes	Signed	Signed	Yes	01/05/2010	No	No	14/01/2011
7	Loc Binh 1	Loc Binh	4	93	113%	5	Gen	Yes	Signed	Yes	Yes	Yes	Signed	Signed	Yes	17/07/2003	No	01/09/2007	30/10/2008
8	Loc Binh 2	Loc Binh	2	97	100%	4	Gen	Yes	Signed	Yes	Yes	Yes	Signed	Signed	Yes	10/10/2007	10/10/2007	28/11/2007	20/12/2008
9	Loc Binh 3	Loc Binh	1	32	100%	2	Gen	Yes	Signed	Yes	Yes	Yes	Signed	Signed	Yes	25/03/2008	25/04/2008	02/09/2007	23/04/2009

#	FA name	Mgmt. Strategy	Mgmt Regulation	FA Map	FA Area Demarcation	Zoning Plan	Member List	CMB	FR	Patrolling Team	Patrolling Impl
1	Huong Giang	Completed	Signed	Yes	Yes	Yes	Signed	Yes	No	Yes	Yes
2	Thuong Tay	Completed	Signed	Yes	Yes	Yes	Signed	Yes	No	Yes	No
3	Vinh Tri	Completed	Signed	Yes	Yes	Yes	Signed	Yes	No	Yes	Yes
4	Vinh Hien Lagoon	Signed	Completed	Yes	Yes	Yes	Signed	Yes	No	Yes	Yes
5	Vinh Hien aquaculture	Completed	Completed	Yes	Yes	Yes	Signed	Yes	No	Yes	Yes
6	Vinh Hien fish cage	N/A	Completed	Yes	Yes	Yes	Signed	Yes	No	Yes	Yes
7	Loc Binh 1	Signed	Signed	Yes	Yes	Yes	Signed	Yes	Yes	Yes	Yes
8	Loc Binh 2	Signed	Signed	Yes	Yes	Yes	Signed	Yes	Yes	Yes	Yes
9	Loc Binh 3	Signed	Signed	Yes	Yes	Yes	Signed	Yes	Yes	Yes	Yes



### IMOLA M&E framework/matrix for lagoon fisheries co-management process

[M&E framework particular to the fishing rights allocation process]

No	FA name	Step & status of fishing rights allocation document (FRAD)													
		Meeting with EB to discuss generally on zoning	FA large meeting to discuss zoning and regulation development	Zoning plan agreed by FA	FA meetings to finalize FRAD	IMOLA staff complete FRAD	Minutes confirming the commune boundaries	IMOLA technical clearance on FRAD	FA large meeting to endorse FRAD	Final adjustment of FRAD	FRAD commented on by District DARD	FRAD submission from CPC to DPC	FRAD approval by District DARD	FRAD approval by District DONRE	FR allocation decision by DPC
1	Huong Giang	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Not yet	Not yet	14
2	Thuong Tay	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Not yet	Not yet	13
3	Vinh Tri	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Not yet	Not yet	12
4	Vinh Hien Lagoon	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	11
5	Vinh Hien Aquaculture	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	10
6	Vinh Hien Fish Cage	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	9
7	Loc Binh 1	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	8
8	Loc Binh 2	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	7
9	Loc Binh 3	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	Done	6

### ***3. Conducting M&E and facilitating feedback to the stakeholders***

According to the M&E framework, IMOLA collected and obtained the data from the field for updates. As the project's technical staff were in the field (fishery communes and villages) several times a week, the data collection frequency was not specifically defined for those indicators, but the necessary data according to the M&E framework were updated whenever necessary, i.e. when any milestone was achieved, on a common database file shared on a computer network. The issued decisions and agreements were systematically filed in the project office for M&E purposes.

As the M&E matrix was developed in an easy-to-see format to enable the progress to be checked at a glance, the project could detect any delay in the process in a timely manner, and the associated issues were reported back to the project office on a day-to-day basis. The progress review meeting was also organized among the coordinator and field technical staff monthly to check the detailed progress of co-management operationalization in each target commune (or at the FA level), discuss issues in hand, and plan for the following month.

The project field staff then provided guidance for the future steps for lagoon fisheries co-management as well as technical advice and facilitation to the local FAs, commune authorities (CPCs), DPC and district line departments, and occasionally to the provincial government agencies and PFA.

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## VIII. A way forward

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As explained in this report, the IMOLA pilot project on lagoon fisheries co-management largely concentrated on preparation, inception, planning, and implementation. M&E have been done largely for the process and to a lesser extent at the input level. At the time of writing IMOLA is still ongoing, continuously learning and adapting itself to the rapidly changing environments in Thua Thien Hue Province in particular, and in Viet Nam in general. There are some additional considerations that the authors would like to put forward before concluding this report.

### ***1. Recognizing and rewarding the process***

IMOLA has been assisting local authorities and FAs in operationalizing lagoon fisheries co-management through facilitating its implementation process. It has been a long six-year process to have the co-management arrangement established and running, and now the project has started seeing some changes at the input level (and probably at the output level as claimed by the fishers). As each step in the implementation process is a learning opportunity and a building block towards the achievement of impacts, and it takes time and encouragement to go through all the steps in the process, there should be some mechanism to recognize and reward the progress made toward the operationalization of fisheries co-management.

IMOLA has been providing different kinds of supports and inputs (e.g. meeting hall renovation, seed funding, support to FA economic activities, equipment provision) as a part of its incentive scheme to make further progress in the implementation process. Although the project did not use the established and systematic criteria for the above incentive provision, it did assess the status of each local FA and discussed and agreed on the types of support to be provided to the local FAs on the basis of each FA's particular needs and requests. The achievement of some milestones and the provision of key supports from the project were often linked with each other to create incentives for the FAs to continue to make progress and to create a sense of achievement.

It is also worthwhile noting that there are wider ongoing discussions and proposals on the establishment of an incentive or recognition scheme for a fisheries co-management process (see Leadbitter, 2011).

### ***2. Assessment of impacts at the output level***

As mentioned earlier, the ultimate goal of fisheries co-management is sustainably managed fisheries resources. To measure this ultimate impact at the output level, the monitoring of catch, CPUE, fish stock and other factors are necessary. However, in Thua Thien Hue Province as in many other developing countries, accurate data for these output indicators were either not available or of very doubtful quality even when such were available. With the majority of fishing boats below 16.5 horse power in the lagoon (as regulated in the provincial regulation), those small-scale boats land their catch at many points on the lagoon shore rather than at a few centralized fishing ports. With the limited number of government officials in charge of monitoring fishing activities, it is nearly impossible to obtain a proper estimation of the amount of fish landed daily in the province.

IMOLA thus did not go too far to measure the output indicators. The project used largely the process indicators as described in the previous chapters and a small number of input indicators such as the number of certain fixed fishing gears (e.g. stake traps and bottom nets) installed.

### ***3. Adaptive approach***

One way to deal with uncertainty involved in the data-poor fisheries situation in many developing countries such as in Viet Nam is the application of an adaptive approach (see e.g. Wilson *et al.*, 2006; Raakjær *et al.*, 2007). IMOLA has assisted local FAs to formulate the local resource management regulations in a way that would allow them to be adaptable and adjustable year by year. Based on the fishers' current understanding of fish stocks and the status of key fisheries resources (assessed as catch per day, catch composition and availability and average size of certain fish species and others as claimed by FA members), local FAs could modify and adjust their lagoon management regulations including the fishing season, area, number of particular kinds of fishing gears, and permitted number of boats per day. The impacts of these actions in a year would then be discussed by FA members to determine the regulations for the subsequent year.

### ***4. Institutionalizing support to FAs and co-management for sustainability***

Throughout IMOLA operation, there has been a discussion as to how we could extend the government support to the FA operations and lagoon management activities. Under the lagoon co-management arrangement, with the issuance of fishing rights to the local FAs, some management tasks have been delegated to those FAs; however, to date, no fiscal allocation or support has been forthcoming from the government agencies for the operation of these local FAs and this has been one of the limiting factors and reasons for weak financial capacity of local FAs.

Apart from financial support to the local FAs, it would be ideal if the support to the local fishers such as training, material provision, and implementation of pilot models is systematically channelled through local FAs. In order to achieve this, the popularity of FAs as fishers' organizations should be promoted further and enhanced among the different stakeholders not only locally but also with external support agencies. This system would eventually provide more benefits to the FA members and therefore create more incentives for local fishers to be members of FAs and be bound by FA regulations.

### ***5. Streamlining the legal system to support co-management***

Another challenge that IMOLA faced in the course of lagoon fisheries co-management operationalization was the inconsistent and not-fully-streamlined government policies to support the delegated activities by local FAs. For example, there has been a long debate as to whether FAs have rights to catch and detain violating fishing gears or violators during their patrols. For the patrolling and other enforcement activities to be effective, FA patrol teams should be delegated some authority to control the violators. However, there are no specific national and provincial legal documents delegating this authority or rights to the local fisheries associations in coordination with the government. Although there is still ongoing confusion and debate on this issue, the project has solved this issue tentatively by including the CPC staff and commune police in the local patrol team so that appropriate actions can be taken in a timely manner.

Another area of dispute was related to a natural resources exploitation tax as set by the national government vis-à-vis lagoon user fees as defined by local FAs. As mentioned in an earlier chapter, to cover operational costs for lagoon management activities under the FAs, local FAs charged lagoon user fees. But, according to the national policy, there is a natural

resources exploitation tax that is applicable to resource exploitation activities, including fishing in the lagoon. As there were ongoing discussions on whether local FAs would be entitled to a share of the tax income, the project circumvented the issue by using the term “fee” to distinguish it from the official tax imposed by the government, making it a local agreement among the participating fishers for the management of the lagoon. When the discussion on collection and use of natural resource exploitation tax was raised, the tax collection had actually been exempted for 2006 to 2010 by Resolution 47/2005/QH11 of the National Assembly. However, there might be a potential conflict in the future between the local “fees” and the official “tax” if the policies are not streamlined to reflect local co-management arrangements.

## **6. Recommendations for further promotion of fisheries co-management in Viet Nam**

To date, the Vietnamese government has been talking about co-management for a number of years and has addressed it in a number of policies. In June 2009, the Minister of Agriculture and Rural Development sent a letter to all provinces in Viet Nam endorsing co-management as a fisheries management strategy and encouraging them to implement co-management.

Since the mid-1990s, there have been a number of co-management projects implemented in Viet Nam. The Mekong River Commission implemented a co-management project in reservoirs in the south central region of the country in Dak Lak Province. The IDRC of Canada supported Hue Agriculture University to develop co-management in the Tam Giang–Cau Hai Lagoon beginning in the mid-1990s. IMOLA, implemented by the FAO, has been working on co-management in the Tam Giang–Cau Hai Lagoon since 2005. IFAD funded the WorldFish-led CBFM-SEA Project and supported the An Giang DARD to promote co-management at two sites from 2002 to 2007. The DANIDA supported the Strengthening of Capture Fisheries Management (SCAFI) Project, a part of the FSPSII programme that has been implementing co-management in eight pilot provinces (An Giang, Ben Tre, Binh Dinh, Dak Lak, Thua Thien Hue, Nghe An, Son La, and Quanh Ninh) since 2006.

Much of the innovation in fisheries management in Viet Nam is now occurring at the provincial and district levels. These innovative approaches range widely and include the fishing rights programme in the Tam Giang–Cau Hai Lagoon in Thua Thien Hue Province, locally managed clam fisheries through fishing cooperatives in Ben Tre Province, community managed Marine Protected Areas supported by a local non-governmental organization, Centre for Marine Life Conservation and Community Development (MCD), in Khanh Hoa Province, and the co-management of a lagoon system by core groups and district level government in Binh Dinh province.

Given the above, the following are the key recommendations, particularly for the government, to promote and encourage fisheries co-management further in the country:

- Ministry of Agriculture and Rural Development (MARD) has prepared a set of guidelines on implementing co-management (based on a range of experiences and projects in Viet Nam since the mid-1990s) to support the process. These need to be developed further and officially endorsed by MARD to provide guidance to provincial sub-DECARIREPs;
- There is a real need for the MARD legal department to make some movement to develop a legal framework for co-management and fishing rights. The lack of such a framework is limiting progress toward co-management;
- MARD must develop a co-management team composed of staff from different departments and institutes to provide support to the provinces. Department of Capture Fisheries and Resources Protection (DECAFIREP) should give priority to

establishing a co-management team of experts to support the provincial co-management activities;

- DECAFIREP should also push MARD for greater policy support for co-management;
- Stakeholder participation in management should be a central focus of the fisheries co-management arrangements;
- The provinces and district governments should continue to lead in fisheries management innovation in the future;
- Resources need to be put into developing the capacity of and providing adequate budget for the provincial DARD staff to implement sustainable fisheries management;
- FAs should be established as fishers' organizations solely representing the interests of the local fishers. The selection of the executive board members and any decision-making should be done through the free will of the participating fishers democratically. FAs should not be regarded as a part of the government administrative system;
- The rights and obligations of the FAs under the fishing rights regime should be clarified further, particularly in relation to fee/tax collection and patrolling so that the FAs can perform their tasks effectively in managing the fishing activities in their area of competence;
- Financial delegation to the FAs should be promoted under the co-management scheme. Appropriate financial resources should be transferred from the authorities to local FAs in order for them to perform their duties and responsibilities;
- FAs should not only be a fisheries management unit, but should also develop themselves as an economic entity through business activities and necessary service provision to its members to enhance the livelihoods of the member fishers. The diversification of FA activities would provide stronger incentives for the local fishers to participate in the FAs and consolidate the financial foundation of the FAs;
- Co-management is a process that takes time to implement. If the process of establishing co-management in the provinces is not supported by both national and provincial governments and is terminated before it has led to a sustainable, locally based management system, all prior efforts and achievements could be lost. The support of the government to maintain the process for the mid- to long-term period is vital; and
- The above process does not need to be expensive. It is a process of building social institutions. Time is most important.

Before closing, the authors would like to highlight again that fisheries co-management is a process, which requires the participation and collaboration of different stakeholders, including the fishers, the authorities at different levels, and other key players. There is no end to co-management in this sense, and the co-management process should evolve over time, adjusting itself to the changing environment and ecosystem. Trust is a binding factor among different stakeholders, based on which the appropriate level of power should be delegated so that local fishers can make their own decisions as to how their resources should be managed.

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# **ANNEXES**



### ANNEX 1: Procedures for establishing and strengthening new local fisheries associations

Steps	Meeting	Desired participants	Content	Documents	Expected outcome	Note
I	Commune authorities	<ul style="list-style-type: none"> <li>- Commune leaders and agencies (CCPC, People's Council, CPC, Commune Front, Women's Union, Farmer's Union, commune police, Youth Union, village leaders)</li> <li>- District DARD</li> <li>- PFA Standing Unit</li> <li>- IMOLA representative</li> </ul> Number: 20	<ul style="list-style-type: none"> <li>- Brief the commune on FA and co-management.</li> <li>- Discussion on work to be done to strengthen and/or establish one or more FAs in the commune</li> </ul>	<ul style="list-style-type: none"> <li>- VINAFIS charter</li> <li>- PPC decision on approval of TT-Hue PFA charter</li> <li>- Network of TT-Hue FAs</li> <li>- PPC decisions pertaining to:               <ul style="list-style-type: none"> <li>- regulation on management of lagoon fisheries activities</li> <li>- regulation on management of centralized aquaculture area</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- CPC and IMOLA agreement on [village/group name] selected for support on FA establishment</li> <li>- One CPC official appointed as local resource person</li> </ul>	Half day
Preparatory work 1: Make available the leaflets prepared on FA and co-management, VINAFIS & PFA charter, Draft FA charter, membership application form to persons participating in activity II prior to the activity. Request them to provide issues of concern, if any, related to provided documents prior to activity II. Allow reasonable time for them to prepare. Send the technical staff to collect the written issues of concern prior to activity II. Request participants to raise issues of concern at the meeting if not submitted previously.						
II	Village or professional group	<ul style="list-style-type: none"> <li>- Village leader</li> <li>- Production unit representative, self-management group / team representative</li> <li>- CPC resource person</li> <li>- Key fishers (well-known or enthusiastic individuals)</li> </ul> Number: 30	<ul style="list-style-type: none"> <li>- Discussions with the participants on the issues arising from the documents provided.</li> </ul>	<ul style="list-style-type: none"> <li>- VINAFIS charter</li> <li>- PFA charter</li> <li>- Draft charter for local FA</li> <li>- List of TT-Hue FAs</li> <li>- Draft membership application form</li> <li>- Draft leaflet on FA and co-management</li> </ul>	<ul style="list-style-type: none"> <li>- Raised awareness on FA and co-management</li> <li>- Agreed FA charter</li> <li>- Agreed membership application form</li> <li>- List of provisional EB members &amp; tasks assigned</li> <li>- Initiation of obtaining membership</li> </ul>	One day
Preparatory work 2: Prepare final draft of FA charter, lists of FA members & EB members and include in the report of outcomes activity II for dissemination. Prepare negotiation form for CPC-PFA. Agreement on CPC-PFA negotiation form may be arrived at by one-on-one meetings. Provide stipulated existing relevant regulations (e.g. stipulated fishing gear regulations, environmental regulations, aquaculture siting regulations & other relevant regulations) for participants prior to activity VI.						

Steps	Meeting	Desired participants	Content	Documents	Expected outcome	Note
III	Village or professional group	<ul style="list-style-type: none"> <li>- Provisional EB</li> <li>- Village leaders</li> <li>- CPC representative/s</li> <li>- PFA official</li> <li>- Department of Fisheries representative/s</li> <li>- Existing management groups, clubs representatives</li> </ul> Number: 15 to 20	Identification of management objectives and management rules together with information required for FA to implement management rules	<ul style="list-style-type: none"> <li>- Stipulated fishing gear regulations, environmental regulations, aquaculture siting regulations &amp; other relevant regulations</li> <li>- Development of management objectives and management regulations will be largely participatory</li> </ul>	<ul style="list-style-type: none"> <li>- Identified management objectives</li> <li>- Identified management regulations</li> <li>- Identified information needs to implement management regulations</li> </ul>	One day
Preparatory work 3: Make arrangements to confirm establishment of FA and its provisional EB, announcement of the decision to establish FA & permission certificate and stamp issued by Department of Police through one-on-one meetings and pre-arrangements for the ceremony to commencement of FA functioning						
IV	FA introduction ceremony	<ul style="list-style-type: none"> <li>- Commune leaders and agencies (CCPC; People's Council, CPC, Commune Front, Women's Union, Farmer's Union, commune police, Youth Union, village leaders)</li> <li>- PFA representative</li> <li>- District FU representative</li> <li>- District DARD representative</li> <li>- DOFI representative</li> <li>- IMOLA representative</li> <li>- Official members of the local FA</li> <li>- Other management group representatives</li> </ul> Number: 60	Local FA introduction ceremony and commencement of its activities	<ul style="list-style-type: none"> <li>- Decision of local FA establishment and its provisional EB</li> <li>- Local FA permission certificate and stamp issued by Department of Police</li> <li>- Speech on mission of local FA by PFA standing unit</li> <li>- Speech by CPC chairperson on strategy of local FA activities</li> <li>- Speech on acceptance of mission by EB</li> <li>- Introduction of provisional EB and speech of acceptance of mission</li> </ul>	<ul style="list-style-type: none"> <li>- Public reading of decision of local FA establishment</li> <li>- Speech by CPC chairperson on strategy of local FA activities</li> <li>- Speech on acceptance of mission by EB</li> <li>- Introduction of provisional EB and speech of acceptance of mission</li> </ul>	Half day

<i>Steps</i>	<i>Meeting</i>	<i>Desired participants</i>	<i>Content</i>	<i>Documents</i>	<i>Expected outcome</i>	<i>Note</i>
V	Village leader, Provisional EB	<ul style="list-style-type: none"> <li>- Village leader</li> <li>- Provisional EB</li> <li>- CPC resource person</li> <li>- PFA representative</li> <li>- Department of Fisheries representative</li> </ul> Number: 12 to 15	<ul style="list-style-type: none"> <li>- Build FA financial plan</li> </ul>		<ul style="list-style-type: none"> <li>- Financial plan for FA</li> </ul>	Half day
VI	FA meeting	<ul style="list-style-type: none"> <li>- Village leader</li> <li>- Provisional EB</li> <li>- FA members</li> </ul> Number: 45 to 50	<ul style="list-style-type: none"> <li>- Fine tuning the following:               <ul style="list-style-type: none"> <li>- local FA charter</li> <li>- financial plan</li> <li>- management objectives and management regulations</li> </ul> </li> </ul>	Documents generated from previous activities related to: <ul style="list-style-type: none"> <li>- local FA charter</li> <li>- financial plan</li> <li>- management objectives and management regulations</li> </ul>	Adjusted and / or fine tuned versions for approval	Half day
VII	FA congress	<ul style="list-style-type: none"> <li>- Communist party</li> <li>- People's Council</li> <li>- CPC</li> <li>- CPC Front</li> <li>- Farmer's Union</li> <li>- Women's Union</li> <li>- Commune police</li> <li>- Youth Union</li> <li>- PFA representative</li> <li>- District Farmer's Union</li> <li>- District DARD</li> <li>- DOFI representative</li> <li>- IMOLA representatives</li> <li>- Official members of the FA</li> </ul> Number: 60	<ul style="list-style-type: none"> <li>- Report on FA operation and work plan for the term by the FA chairperson</li> <li>- Local FA charter</li> <li>- Management regulations</li> <li>- Elect new EB</li> <li>- Elect FA checking body</li> </ul>	Documents generated from activity VI	<ul style="list-style-type: none"> <li>- Approved FA charter</li> <li>- Approved management objectives &amp; regulations</li> <li>- Elected new EB</li> <li>- Elected FA checking body</li> </ul>	One day

<i>Steps</i>	<i>Meeting</i>	<i>Desired participants</i>	<i>Content</i>	<i>Documents</i>	<i>Expected outcome</i>	<i>Note</i>
VIII	Community participatory planning	Village leaders EB members Representatives Other management groups Other resource users PFA CPC Department of Fisheries DOARD Number: 30	Participatory planning	Existing master plan Collected available information Land use & lagoon maps	Fisheries and/or aquaculture development plan  Identified inputs for the existing master plan	



## ANNEX 2: Procedures for strengthening existing local fisheries associations

Steps	Meeting	Desired participants	Content	Documents	Expected outcome	Note
I	Commune authorities	<ul style="list-style-type: none"> <li>- Commune leaders and agencies (CCPC; People's Council, CPC, Commune Front, Women's Union, Farmer's Union, commune police, Youth Union, village leaders)</li> <li>- District DARD</li> <li>- PFA Standing Unit</li> <li>- IMOLA representative</li> </ul> Number: 20	<ul style="list-style-type: none"> <li>- Brief the commune on FA and co-management.</li> <li>- Discussion on work to be done to strengthen and/or establish one or more FAs in the commune</li> </ul>	<ul style="list-style-type: none"> <li>- VINAFIS charter</li> <li>- PPC decision on approval of TT-Hue PFA charter</li> <li>- Network of TT-Hue FAs</li> <li>- PPC decisions on:               <ul style="list-style-type: none"> <li>- regulation on management of lagoon fisheries activities</li> <li>- regulation on management of centralized aquaculture area</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- CPC and IMOLA agreement on [village/ group name] selected for support on FA establishment</li> <li>- One CPC official appointed as local resource person</li> </ul>	half day
II	Village or professional group	<ul style="list-style-type: none"> <li>- Village leader</li> <li>- Production unit representative, self-management group / team representative</li> <li>- CPC resource person</li> <li>- Key fishers (well-known or enthusiastic individuals)</li> </ul> Number: 30	<ul style="list-style-type: none"> <li>- Awareness raising on FA and co-management</li> <li>- Review membership and organizational groups</li> <li>- Review FA documents</li> <li>- Agree on grouping and strengthening plan</li> <li>- Review membership application forms</li> </ul>	<ul style="list-style-type: none"> <li>- VINAFIS charter</li> <li>- PFA charter</li> <li>- Model charter for local FA</li> <li>- List of TTH FAs</li> <li>- Membership application form</li> <li>- Negotiation form</li> <li>- Leaflets</li> </ul>	<ul style="list-style-type: none"> <li>- Consolidated list of FA members and branches</li> <li>- Preliminary understanding of FA and co-management</li> <li>- Improved membership</li> <li>- Agreement on grouping and strengthening plan</li> </ul>	Half day
II.A	CPC Village leader	<ul style="list-style-type: none"> <li>- CPC chairperson and vice-chairperson</li> <li>- Representatives of agencies</li> <li>- Village leaders</li> <li>- Provisional EB</li> </ul> Number: 10	<ul style="list-style-type: none"> <li>- Announcement of the decision to establish the FA.</li> <li>- Prepare for the introduction ceremony of the FA</li> </ul>	<ul style="list-style-type: none"> <li>- Decision on local FA establishment and its provisional EB</li> </ul>	<ul style="list-style-type: none"> <li>- Tasks assigned for organization of introduction ceremony (e.g. speeches and talks to deliver in ceremony)</li> </ul>	Half day

<i>Steps</i>	<i>Meeting</i>	<i>Desired participants</i>	<i>Content</i>	<i>Documents</i>	<i>Expected outcome</i>	<i>Note</i>
II.B	FA introduction ceremony	<ul style="list-style-type: none"> <li>- Commune leaders and agencies (CCCPC; People's Council, CPC, Commune Front, Women's Union, Farmer's Union, commune police, Youth Union, village leaders)</li> <li>- PFA representative;</li> <li>- District FU representative;</li> <li>- District DARD representative;</li> <li>- DOFI representative;</li> <li>- IMOLA representative;</li> <li>- Official members of the local FA</li> </ul> Number: 60	Local FA introduction ceremony and start of activities	<ul style="list-style-type: none"> <li>- Decision of local FA establishment and its provisional EB</li> <li>- Speech on mission of local FA by PFA standing unit</li> <li>- Speech by CPC chairperson on strategy of local FA activities</li> <li>- Speech on acceptance of mission by EB</li> <li>- Introduction of provisional EB and speech of acceptance of mission</li> </ul>	<ul style="list-style-type: none"> <li>- Public reading of decision on local FA establishment.</li> <li>- Speech by CPC chairperson on strategy of local FA activities</li> <li>- Speech on acceptance of mission by EB</li> <li>- Introduction of provisional EB and speech of acceptance of mission</li> </ul>	Half day (only in Vinh Hien)
III	Village or professional group	<ul style="list-style-type: none"> <li>- Provisional EB</li> <li>- Village leaders</li> <li>- CPC representative/s</li> <li>- PFA official</li> <li>- Department of Fisheries representative/s</li> <li>- Existing management groups, clubs representatives</li> </ul> Number: 15 to 20	Identification of management objectives and management rules together with information required for FA to implement management rules	<ul style="list-style-type: none"> <li>- Stipulated fishing gear regulations, environmental regulations, aquaculture siting regulations &amp; other relevant regulations</li> <li>- Development of management objectives and management regulations will be largely participatory</li> </ul>	<ul style="list-style-type: none"> <li>- Identified management objectives</li> <li>- Identified management regulations</li> <li>- Identified information needs to implement management regulations</li> </ul>	One day

<i>Steps</i>	<i>Meeting</i>	<i>Desired participants</i>	<i>Content</i>	<i>Documents</i>	<i>Expected outcome</i>	<i>Note</i>
IV	Village leader, Provisional EB	- Village leader - Provisional EB - CPC resource person - PFA representative - Department of Fisheries representative Number: 12 to 15	- Build FA financial plan		- Financial plan for FA	Half day
V	FA meeting	- Village leader - Provisional EB - FA members Number: 45 to 50	- Revisit local FA charter - Revisit financial plan - Revisit management objectives & regulations	- Minutes and texts of meetings III, IV	- Adjustment, modification of texts for approval	Half day
VI	FA Congress	- Communist party - People's Council - CPC - CPC Front - Farmer's Union - Women's Union - Commune police - Youth Union - PFA representative - District FU - District DARD - DOFI representative - IMOLA representatives - Official member of the FA Number: 60	- Report on FA operation and work plan for the term by the FA chairperson - Local FA charter - Management regulations - Elect new EB - Elect FA (vice-) chairperson - Elect FA checking body	Texts approved in meeting V	- Approved master plan - Approved FA charter - Approved management regulations - Elected new EB - Elected FA (vice-) chairperson - Elected FA checking body	Half day

<i>Steps</i>	<i>Meeting</i>	<i>Desired participants</i>	<i>Content</i>	<i>Documents</i>	<i>Expected outcome</i>	<i>Note</i>
VII	Community participatory planning	<ul style="list-style-type: none"> <li>- Village leaders</li> <li>- EB members</li> <li>- Representatives</li> <li>- Other management groups</li> <li>- Other resource users</li> <li>- PFA</li> <li>- CPC</li> <li>- Department of Fisheries</li> <li>- DOARD</li> </ul> Number: 30	<ul style="list-style-type: none"> <li>- Participatory planning</li> </ul>	<ul style="list-style-type: none"> <li>- Existing master plan</li> <li>- Collected available information</li> <li>- Land use &amp; lagoon maps</li> </ul>	<ul style="list-style-type: none"> <li>- Fisheries and/or aquaculture development plan</li> <li>- Identified inputs for the existing master plan</li> </ul>	One day

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