

WORKING TOWARDS COMMUNITY-BASED WATER WAY MANAGEMENT IN PHU TAN

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INTRODUCTION AND LITERATURE REVIEW

Phu Tan, of Tam Giang Lagoon, is the cradle of the aquaculture movement. In 1977, the first aquaculture activities began with seaweed cultivating. Shrimp culture began in the early 1990s. In 1994, Phu Vang District People's Committee approved the application from fishers to allow those households operating fish corrals to convert their fishing grounds into aquaculture. This time marked a new aquaculture practice: net enclosure aquaculture, a kind of complex of production. It reflects conventional aquaculture in part because a small part of water is surrounded by nets for pen culture while the rest of the area is harvested with the fish corral as if it were natural exploitation. This way of culture was approved by the local government through taxes imposed on the aquaculture production.

Vast areas of shallow water fishing ground are currently completely covered by net enclosure, resulting in the narrowing of waterways. Consequently, several transportation accidents have occurred, sea fry distribution within the lagoon has been limited and there has been less chances for good water exchange. It is suspected that there is certain link between poor water exchange and increase in diseases. Therefore, it is essential that the waterway system be improved to ensure adequate water exchange and space.

In fact, the plan for building a waterway network was mentioned in the resolution of the commune's people committee as early as in 1988. However, due to the complexity of aquaculture activities, especially the failure in the settlement of conflicts and disputes between aquaculturists and fishers, the local authorities hesitated to develop the waterway network.

In 1999, with the cooperation of local fishers and researchers in the Lagoon project, a project "Establishing the waterway based on Community in Phu Tan area" was outlined, presented to local government and all three parties worked towards implementation of this strategy. This research worked towards a process of common management of the waterway system.

According to published statistics, the lagoon community has a population of 220,000 including 100,000 sampan dwellers and 116,786 dwellers on land, which therefore can be divided into the two major groups: inhabitants on land and inhabitants on sampans.

The group of dwellers on sampans are fishers who lives on their sampan on the lagoon and who have no land to build a house are called sampan people. They live together, forming small communities, based on their blood and occupation relations. Their communities are called "van". A leader of the van and a representative board are elected to manage community activities, such as organizing rituals or ceremonies, protecting rights for van people. The poor households earn living by fishing with mobile gear (net, push-net, hook, etc.) which is called minor-fishing requiring small capital and investment. So the communities with this type of livelihood are called "minor-fishers community" (van tieu nghe). On the other hand, the

fishers with fixed-gears such as fish corral, bottom nets form major-fishing communities (van dai nghe) with larger capital and investment. Over the years, sampan people in Phu Tan settled on land and retained their work of mobile gear fishing and fixed gear fishing as well as taking on new activities such as aquaculture in ponds and net enclosures.

During the time of feudalism (before 1945), the lagoon belonged to the state and agricultural communes around the lagoon managed it. All the fishing activities carried out by sampan people were put under a strict supervision of those communes' authorities, who set taxes on various types of fishing. As for fixed-gear fishing, the communes' authorities held auctions for allocating water surface use-right to fishers. The bidding rules have priority to those who were using the water, i.e. the previous bid winner. Therefore, the bid winners used to use the water for a long time and it was often transferred from one to another generation.

Based on this form of using and allocating the water surface, the lagoon water surface can be divided into 3 major parts:

- The fishing area allocated for fix-gear fishing belonging to households, which is a type of private ownership;
- The water surface used as waterways, where fishing activities are not allowed and which is common property;
- The remainder which can be used by any fisher or farmer with mobile gears and which is an open access.

In general, the fishing areas allotted to households in the feudalist time were still accepted by the local government and based on for setting taxes. However, most communes gave permission to arrange some more fixed-gear for fishing. Any way, this form of resource management prove to be less effective.

Lagoons, big lakes and bays were all considered as a kind of "water paddy field" owned by the Feudal Government. However, farming villages around the lagoon were assigned to manage and to collect taxes [Nguyen Quang Trung Tien,1995]. Fishers who fished in the lagoon had to, therefore, pay taxes to the corresponding village. The lagoon mouth were areas put under the control of government [Nguyen Quang Trung Tien, 1995].The feudal government set up an 'inspecting department' aiming at imposing and collecting taxes from the fishers who transported through the lagoon mouth and exploited resources there [Nguyen Quang Trung Tien,1995].

In fact, in the feudal time, the lagoon resources were under the management of the agricultural village. The fishers exploiting the lagoon resources were grouped into vans. Van was considered a self- managed unit having close relation to the village in strengthening the effect of the management of fishing activities. Each van had a head to monitor the fishing activities and had certain power to handle and deal with the violations done by fishers from his van or others in the process of fishing. To some certain, this form of management may be regarded as a community-based one. This kind of management was applied not only in feudal time but also in the time of French domination. According to a law issued by French Colonial government on July 21, 1925, lagoons belong to the French Colonial State, however, state government still assigned management authority to the village level based on the link between village and Van [Nguyen Quang Trung Tien,1995].

In the feudal time and the present time, government has emphasized the role of people in management systems. The notion that "people are the root" is often emphasized by Vietnamese feudal government. That is, according to the theory, local people need to be involved in the management of their communities. Vietnamese village was remarked by Paul Doumer, governor-general of Dong Duong that "is a community which is closely organized, disciplined, and responsible to upper governments for its members, who the upper government may not need to know" [Doumer cited in Nguyen Xuan Hong, Tran Van Tuan, and Ton That Phap, 2000].

At present, the Social Republic Vietnamese government is promoting the role of people involved in management according to the principle "people know, people discuss, people do and people supervise". Especially, in some recent years the Vietnamese government has encouraged the development of democracy at lower levels: communes and villages, aiming at upholding the role of people in management.

"Community Based Resource Management (CBRM) start from the premise that the people have the innate capacity to improve their quality of life. It provides a sense of ownership over the resource which makes the community far more responsible for long term sustainability of resources" [R.S Pomeroy, 1994]. CBRM also "assumes that each community should take advantage of their own knowledge and expertise to build up a suitable management strategy which can meet its own needs and conditions" [R.S Pomeroy, 1994].

However CBCRM is still considered as not entirely appropriate to apply to every community [R.S Pomeroy,1994]. Despite of that, CBCRM is currently applied and showing its effective role in the protection of natural resources in many actives of the word. For example, United States [Acheson 1975, cited in R.S Pomeroy, 1964], Japan [Ruddle 1985, 1989, cited in R.S Pomeroy, 1994], South Pacific[Ruddle and Johannes 1985 cited in R.S Pomeroy,1994] and the Philippines [White 1989, cited in R.S Pomeroy,1994].

In Vietnam the form of CBCRM has been applied to some mountainous communities. For coastal zone, the Tam Giang lagoon is the first place where CBCRM has been introduced to the local people. In 1995-1997, CBCRM was presented to the fisher community in attempt to set a ban on the fishing with electric gears in Quang Thai Commune. At present, in Phu Tan, the second site at the lagoon, CBCRM was applied to manage lagoon environment and resources.

METHODOLOGY

Participatory research was applied and the following tools were mainly used¹:

- Semi-structured interview: a tool for interviewing to get information from fishers and key informants.

¹ In the results section, the specific results of these tools are not presented tool by tool rather the discussion section weaves the information together and then presents an analysis.

- Drawing seasonal calendar was often used in group discussions and meetings aimed at learning seasonal calendar of fishers' production to identify the appropriate time for developing the water way route.
- Ranking was used as a tool for identifying the importance of the fishers' activities related to doing aquaculture and fishing as well as the priority to the impacts of water way on the fishers' activities.
- Time line is a tool used to facilitate discussions about the history of the development of the "van" organization and the roles of fishers in fisheries management.
- Mapping was applied to draw a map of resources and aquaculture areas with waterway systems. Using mapping, the fishers could identify the water ways and plan for changes in waterway management.

Here are the main ways to rapport with community:

- **Visiting households.** For the mobile gear fishing households 6 households were visited, the remaining 4 households were aquaculture households. These visits enabled the researchers to know more about how people's lives depended on the waterway and to discuss the benefits and negative impacts of opening the waterway.
- **Arranging focus group discussions with key informants.** This focus group of 6 persons was designed to bring together people who share similar interest in establishing waterway. These key informants included: the village leader; the leader of the production unit i.e. aquaculture group leader, the household leader with good fishing experience, former fishers with knowledge of the area (3 people). These are the knowledgeable persons who can provide general information as well as their opinion on areas of interest or specific issues.
- **Having regular meeting monthly with fisher collaborators.** These collaborators have met with the project on a monthly basis to review and input into activities. Generally, around 10 people (a mix of men and women depending upon the issue being discussed, although more men attended these meetings) would attend although the membership is flexible and not everyone could attend the same meetings or all the meetings. Once the Government Fishers Joint Committee for research to set up water way system (GFJCR) was formed in May 2000, this monthly meeting format provided a venue for the GFJCR to also meet.
- **Working with commune officials at the commune.** This is an on-going process of communication.
- **Organizing workshop.** Two workshops, with 30 participants each (no women joined these workshops), included a mix of fishers, commune and district government officials, officials from the provincial people's committee, the department of fisheries, the department of science, technology and environment.
- **Workshops** were organized in accordance with the rising the knowledge of the fishers on environment and resources management, the role of fishers in managing resources and sharing the experiences in establishing water way based on community. 3 workshops were held:

Workshop 1, April 2000, "Saving the Tam Giang lagoon from right now and from here (Phu Tan area)" The purpose of the workshop was to draw from lessons from the degradation of environment and resources caused by lack of management in the development of aquaculture in O loan lagoon, in Phu Yen province to serve as warning of the degradation of the Tam Giang lagoon environment in the absence of an appropriate and timely management strategies.

The participants consist of representatives of the Province's People Committee, Department of Science and Technology, Department of Fishery, Phu Vang District's Police Station, Phu Vang District's Fishery Office, Thuan An Town's People's committee, Thuan An Town's Communist Party, the leaders of the production units of aquaculture and fishing-farming and the representatives of mobile gear fishers and aquaculturists doing net enclosure and earth pond rearing in Phu Tan area. The number of the participants were more than 40 persons.

Workshop 2. December, 2000, “Nursing CBCRM in Phu Tan area”. The purpose of the workshop: Arousing the attention from the Government and Fishers to the preservation of the result of the newly-build waterway system. The participants consisted of representatives of the Town's people committee, Communist Party, the leaders of the production units of aquaculture and fishing-farming, the representatives of mobile gear fishers and aquaculturists doing net enclosure and earth pond culture and the collaborator-fishers. The number of the participants were about 36 persons.

Workshop 3. Cultivating CBCRM plants in Sam-An Truyen area. The purpose of the workshop is to strengthen the cooperation of communes in Sam-An Truyen area in a attempt to think of a developing a convenient common waterway system for the whole area under the community-based management. This workshop was planned but not carried out yet.

DEVELOPING RELATIONSHIPS

Researchers work with fishers: creating an appropriate approach

With the life and activities related to and dependent on the natural resources of a distinct ecosystem and having undergone changing management mechanisms since the feudal time, the fishing community has accumulated wide knowledge of the resources and experience in management of the resources. Under pressure of population boom and consequent poverty, the community is in want of material and technical support from outside to improve their production activities. Moreover, the local community in the research sites have received supports from development projects so fishers often work actively with outsiders (researchers) with an expectation of financial support. Therefore, it is not difficult to understand that there were many difficulties in cooperation with fishers in the research project which would be implemented over a rather long time.

Being aware of this, the scientific researchers have built up a procedure of cooperation with local communities based on the six principles: Frankness, Faith, Respect, Trust, Effectiveness and Interest.

FRANKNESS: The fishers must be made to realize the objectives of the project. Patience and efforts are required in the presentation of the scientific research directions and tendencies, and methods are designed with contribution from the fishers. It is necessary to make it clear that the project would not bring the communities or research participants any immediate economic

supports and to emphasize long-term benefits provided for the community by the project. No promises of what the project can not give to the community are made.

FAITH: Good relation between the researchers and fishers must be kept from the beginning to the end. Once 'Hello' is said to each other at the first meeting for starting the project. There must be "Good bye" and "Thank you" to be said for leave-taking when finishing the project.

RESPECT: The researcher must learn to listen to the fishers for gathering their information, ideas and opinions, respect them and their opinions and at the same time win their respect and friendship through the manners and capabilities of a facilitator who knows how to keep the fisher playing the role of propaganda and sharer of knowledge rather than an information supplier.

TRUST: There must be a strong belief and trust in the fishers' skills, knowledge and experience.

EFFECTIVENESS: Feasibility of research topics must be put into thorough consideration. Persistence is required to effectively accomplish the targets and tasks of research work. Never leave any task unfinished or half-finished.

INTEREST: The project has many working meetings with the local fishers so they easily create a saturation of being interviewed by the fishers and even make them bored. Meeting with fishers or a group of fishers once is easy but repeated meetings are really difficult. It is hard to maintain interest if working meetings are boring. Therefore, optimum ignorance (ignore what you need not know) has been applied to avoid abusing fishers over-interviewed and getting unnecessary information and already-collected information. The meetings with the fishers were built up and constructed as a long story with many episodes. And finishing a time of study monthly was considered like finishing an episode of the story. It needs characteristic of interest and continuation. Thanks to this, the meeting with fishers were always in a warm and willing-to-cooperation spirit of the fishers.

The above-mentioned have helped the scientific researchers in creating an appropriate approach of the fishers in which the fishers are willing to cooperate and exchange their knowledge and experience with the researcher. The tools for sharing information with the fishers have been used skillfully and effectively. Tools such as mapping, ranking, semi structured interview, seasonal calendar, focus group working... have proven to be suitable and beneficial for fishers to share information.

The research results obtained from cooperation working with fishers are reported monthly. The reports are designed and presented at a minor lecture, abridged but sufficiently illustrated with figures, charts, maps and/or color pictures/drawings which raise the listeners' interest and involvement and help them to acquire easily. Through their activities the fishers have improved their knowledge of natural research and environment in general and their roles in the management of resources in particular. They realize that the information with they have provided are used and processed by the researchers in their reports, which encourages them to participate in the research and which makes them see that their participation is significant.

They, therefore, become more and more responsible for the information they supply. Most importantly, the fishers understand that they are contributing to some research that is trying to find a better solution to the management of the natural resources which the community life depends on. For such recognition the fishers have given up the attitude of "passively waiting" for certain immediate economic support from the project and become more active in working with scientific researchers, raising their voices and opinions. They have become more involved and self-confident in discussions with the local government on the management of resources and production activities at meetings and seminars, where there is local authorities' participation.

Researchers work with local government officials

According to Vietnamese political system, all the production activities in the communities must be approved of or permitted by local authorities. Activities receiving the local government's approval and facilitation have been, as a rule, successful. The local authorities are interested in the project not only because of the economic benefits brought to local people but also from the way in which the researchers approach and work with the fisher's community. It must be noted that there never was such a project in which there was a close coordination of the researchers and fishers and which was carried out over such a long time. At the beginning of the project, the local authorities still kept a reserved attitude at the meetings and seminars with fishers, especially when dealing with the information and opinions related to rights to water use, land-used, giving licenses for aquaculture, tax collection and conflicts, claims and complaints of conflicts arising in the exploitations activities between fishers, which the local authorities had no satisfactory and fair settlement or judgement.

However, after some time of co-working especially through the monthly meetings of researchers and fishers, the local government became more aware of the benefits of the project objectives and how to achieve them. The results from the research with the participation of local people provided essential data and figures which give the local authorities a deeper understanding of the current state of the local resources and aquatic production. For instance, the map of planning rearing ponds in Phu Tan commune, suggested and designed by the fishers is one of the research result which most impressed the local authorities. The map has provided a remarkable amount of up-to-date information on the locations and numbers of net-enclosures, the names of their owners, and the subdivisions of aquaculture water surface and aquaculture water transfers. Information of these kinds are very useful for the local government in the planning, development and management of the local aquaculture. That is why, the local authorities who at first kept reserved and cold to scientific research activities have come to acknowledge and respect them and the researchers. They have changed their role from that of an inspector or host to the role of an active supporter and most important of all, an active participant in the project. The three parties - researchers, local fishers, and local government - have worked in the cooperative and understanding spirit and made up a unified research body in which each party has successfully performed their responsibilities.

Fishers, government officials and researchers work together to approach to CBCRM

An overall picture of the lagoon's resources and environment, its exploitation and aquaculture activities, the local fishery management system, the local fishers' livelihood at Phu Tan commune are some of the result achieved from the cooperative working of the outsiders and insiders, of the fishers' and their local authorities. It is this impressive result that serves as a motivation for an attempt to develop a waterway system in the aquaculture area of Phu Tan area.

Despite the line highlighting the people's democracy based on the principles "people know, people have opinions and people supervise", the local government have not found an appropriate mechanism of management based on the people. Enforcement and top-down orders have been preferred, the people's role in management ignored. Even as a grass-root level of management was abolished. The people have lost their active role and self-management, becoming completely reliant and dependent on the local government's decisions. These attitudes and behaviours themselves have resulted in a deep gulf between the government and the people, or rather an absence of active cooperation in the management of lagoon's resource and environment.

The practice of working together in the project have helped the government and the people to understand better the indispensable participation of fishers in local resources management and has suggested to them a way of resources management based on the people's participation. With new awareness of the community's role in the work of management, the local authorities has come to a decision on the development of the above-mentioned waterway system. This can be considered as a new way of solving local problems, an initial step which, hopefully, will lead to further similar management of other local activities. It can be said that through the participation in the project the local government and people have acquired a new approach to the management based on community cooperation. And applying what they have learned from the project they have solved a local pressing problem which they could do nothing about before.

EDUCATION AND NEGOTIATION

Despite of their awareness of the important role of the waterway system to their production activities, yet not all the fisher are ready to uphold yet development. The aquaculturists did not want to lose their area for the establishment of the waterway system. In initial steps to work with the local government, the fishers tended to raise opinions in favour of their own interests especially those who would suffer the damage caused by the establishment of the waterway system (including even some members of the research committee). Consequently, no agreement in the size and scope of the waterway system was reached. For example, the government suggested to widen the route Ha Dao-Con Tho to 40 metres but the aquaculturist wanted only 20m. Some other routes must be straightened for safety purpose but this was strongly protested by the aquaculturists who suggested only the widening of the routes. Because of these difficulties, the Government Fisher Joint Committee for research on developing the new water way system had to spend much time discussing the problems to come to a planning scheme accepted by both sides without applying unnecessary enforcement measures as suggested by some of the local authorities.

In this situation the role of the researchers was very important. They worked as an environmental educators and as well as negotiators and intermediaries for both sides to reach a compromise.

To strengthen the fishers' awareness of the advantage of a widened waterway, the researchers held monthly community activities and workshops with the fishers to discuss the status of the environment of aquaculture. A workshop was organized: "Saving the Tam Giang lagoon from right now and from here (Phu Tan area)". This workshop was considered as a chance using the crisis of the degradation of the environment and resources caused by unmanaged development of aquaculture in Oloan lagoon² as a warning to the environment of the Tam Giang lagoon and as a lesson for the local government and fishers to think of an appropriate management way for the current situation Tam Giang lagoon.

The researchers also created opportunities for some specialist from NACA, Institute of Aquaculture of the Stirling University to get in touch with the local fishers and help them with further understanding of the interrelation between rearing environment and aquatic diseases, the disadvantage of treating diseases with chemical preparations as well as the introduction of the best current trends of disease prevention by means of keeping the rearing environment healthy.

Helping local governors to get a good behaviour in co-working with fishers was a focus in an attempt to put governors and fishers to sit beside each other. The researchers frequently exchanged opinions with the local authorities to help them realize the complexity in cooperative work with the community, and encouraged them to be patient and willing to listen to the people's opinions and suggestions. They persuaded the local government to apply practical and acceptable solutions without resorting to enforcement measures but motivating the fishers' active and responsible involvement in coping with their pressing problems. Besides, the researchers also held open meetings with fishers and local government to discuss the matter of ensuring equality and justice in sharing the lagoon's resources between the major-gear fishers and minor-gear (or mobile gear) fishers. Mobile-gear fishers have no fishing ground to catch fish because of they lost access to the lagoon due to the rapid expansion of aquaculture. Therefore, while helping to advance aquaculture the local government should perform their responsibility for creating certain opportunities of sharing the resources for them, not ignoring the mobile-gear fishers' benefits during the process of establishment of the waterway system.

By providing the fishers with necessary knowledge of environment researchers really made them easily realize the importance of the waterway system to their life. Its significance is not limited to creating a safe transportation system but extends to the safety of the aquaculture production system and aquatic life. Through working with researchers, local government officials have come to understand the lagoon environment and the production activities of the fishers. Gradually, they have realized the necessity of the active participation of the fishers in managing the waterway system, and they have learned to combine different measures in dealing with local problems, not relying on only enforcement measures as before.

² Olan lagoon is situated in Phu Yen province, to the south of Hue province, near Nha Trang province.

By combining each of the parties' strengths, the project has resulted in close ties between the researchers, the local government and local communities with each party trying their best to perform their tasks, leading to the success of the implementation of the action plan.

ACTION

To reach an agreement on the establishment of the waterway system, the local authorities held a meeting with the fishers to present the significance and roles of the waterway network and how to develop it. The researchers worked together with the local government to carry out a survey of the existing state of the network which was recorded and described with visual equipment (photos, video tapes) in their field studies. The researchers helped the local government to deal with the data obtained from the field studies and provided by fishers, which resulted in the awareness of the significance and necessity of the development of the waterway system and its feasibility in the current status of aquaculture. The new way of working has helped the community and local government to be able to reach an agreement on the study, establishment and preservation of the waterway system.

Members of the Government Fisher Joint Committee on Research (GFJCR) were nominated by participants of an open meeting of the government and fishers who were themselves representing the fishing community and government officials. The research committee has 14 members including 3 from the local government and 11 from the fishers. The 3 persons from government included: Vice-Chairman of the Town People Committee, the Chairman of Fisher and Farmer Union, the Chief of the Land Administration Office. The 11 fishers represented different aquaculture groups whose nets were located along the waterway route. Each group nominated one fisher to represent them in the GFJCR.

The GFJCR tried to design a plan for constructing the waterway network based on the principle which guaranteed the benefits of both the community and individuals while preserving a good environment for aquaculture activities, providing transportation, and limiting to the minimum level the consequent damage to the aquaculture and aquatic life.

The GFJCR held monthly meetings at the meeting room of the Town's People Committee after some field studies. With the experience achieved during the process of feasibility study for developing the waterway system the participants of the committee become more skilled in mapping. The committee considered the present water way system, the current conditions of aquaculture, the important role of each route in transportation, water exchange in aquaculture area and the loss of culture surface area for some aquaculturists as a result of the extension of the waterway. Based on those considerations, the research committee suggested an enlarged size of the network. Combining the opinions and suggestions from the fishers and the results of the field research the research committee adjusted and amended the draft outline and plan for constructing the waterway system.

GFJCR decided to develop waterway in a 3-step process: i) To choose a certain route as a pilot, ii) To put the route into trial operation and draw the lessons, the strength and weakness of the pilot route development; iii) To apply the experience achieved from the pilot route to the establishment and preservation of the rest of the waterway system. This way of working

was called the way of "Cultivating rice" which consist of 3 stages: i) putting seed into the soil, ii) nursing seed plants, and iii) moving them to the field.

GFJCR discussed the appropriate time for the establishment so as to minimize affect on local production activities according to the local seasonal calendar. The earliest time to start the development waterways may be in June – between the end of the VIII lunar month and XI month.

The three criteria given by the GFJCR to select a pilot route include: i) the fishers working on the pilot route have more experience in team work for management of their production activities; ii) The extension of the pilot route would involve the least impact on the cultured area and aquaculture activities; iii) The site is favorable for the establishment.

After the analysis of the criteria and ranking all the routes based on the given criteria, GFJCR chose Xa Bac waterway as a pilot site on May 18, 2000. Xabac is the route joining Phu An area and Phu Tan aquaculture area. Phu An fishers came here to fish and frequently conflicted with Xa Bac aquaculturists. Therefore, the 49 households joined together into a group to defend themselves and maintain the safe production activities. The experience in self-management helped the fishers in planning and coming quickly to a unanimous opinion of where to develop the waterway. Fishers and GFJCR worked together in the field to identify the route and how to set up it. In order to establish and manage the new system a Government Fisher Joint Committee for Development of waterway and Fisher Management Committee for Xa Bac Area was formed in July 2000. The staff of GFJCD were formed based on the formula: 2 government officials + 1 fisher who are from GFJCR + a number of fishers representing of fisher group affected by the widening of the water route. The numbers of the new fishers varied with the number of households operating net enclosures on the water route developed. The staff of XABAC GFJCD are 2+1+6. The staff of Fishers Management Committee for Xa Bac Area consists of 10 persons who were nominated by the XaBac fishers themselves. The committee was divided into two small groups of 5. Each group would be responsible for managing a half Xa Bac newly developed water route.

The regulation for preserving the waterway outlined by the GFJCR and fishers' representative of XABAC aquaculture group consists of the following 5 articles:

1. The waterway is considered as a public property and a fishing ground for mobile gear fishers fishing. Those involved in net enclosure aquaculture are prohibited to exploit the aquatic products in the waterway.
2. Mobile gear fishers must not cause any damage to net enclosure or poach fish within the aquaculture areas. Anyone who breaks the law will not get permission to continue fishing.
3. Any action expanding the aquaculture area into the waterway area will be dealt with by the fisher Management Committee. In the case of breaking the regulations for the second time, the case will be dealt with by the Town People's Committee.
4. Government is responsible for supporting the management committee to properly operate the waterway as well as co-working to solve in a timely way any problems using the basic principle "Do not ignore any case for any reason".
5. In the case members of committee are attacked by the fishers who are armed with knives, swords, etc. Town Police are responsible for setting the case and giving appropriate punishment to the attackers.

Issues in preparing the regulations

When the aquaculturists were preparing the regulations, they did not want the mobile gear fishers to have access or fishing rights in the waterway. That is, they did not want the waterway to be used as a fishing ground for mobile gear fishes because they felt that mobile gear fishers could easily break into the aquaculture grounds to steal fish. Some local government officials and aquaculturists felt that the waterway should only be used by local aquaculturists to ensure that the benefits from water resources in the waterway would support GFJCR.

The researchers acted as facilitators, explaining the needs of mobile gear fishers and ensuring that they too had rights in the waterway areas. Mobile gear fishers were encouraged to explain their situation so that aquaculturists would understand the needs of the mobile gear fishers. Since the aquaculturists have enclosed in most of the water ways, the surface area for mobile gear fishers is very limited. No one has the right to occupy all the water, and therefore mobile gear fishers need waterway areas to earn their livelihood. After this issue was discussed, both government and aquaculturists agree that mobile gear fishers have the right to use waterway areas.

Researchers worked with mobile gear fishers to emphasize that they couldn't break into aquaculturists nets and if the law was broken they would be arrested by the GFJCR. For those people that break the law, on the second or third time they would be sent to government. The GFJCR emphasized the fact that local government needs to do something, not just ignore these problems. If local government does not support local management initiatives, the system cannot work. During the discussion, local government members accepted this but wanted this point emphasized so that local government would help in solving illegal activities.

At the end of the first workshop, the regulations were accepted by the GFJCR to be applied to the entire waterway system. The Xa Bac Fishers Management was also considered as a suitable model for the remaining waterways.

There is no regulation board yet, however, there is a name for the board in the waterway area. When the regulations are approved at the Town Level, they regulations will be posted in three points around the waterway: 2 in the water area and 1 on the land. The regulations were submitted to the Town's committee and given to the key informants for them to collect opinions before the second workshop was organized.

Workshop #2, "Nursing CBCRM in Phu Tan area" was organized with the purpose to Arouse the attention of the Government and Fishers to the preservation of the result of the newly-build waterway system and evaluate the result of the way of development of the waterway system based on the cooperation of the government and fishers and draw the experience lesson.

Some lessons drawn were:

- Everyone at this workshop accepted the efficiency in the approach to develop the waterway. That is, this is the first time that the government worked and discussed

directly with fishers and went to the field to promote the fishers to develop the waterway. This is different from before when government made plans, sent to the community and expected fishers to learn and understand the plan. Both fishers and local government learned a lot from working together and this was seen as a positive benefit.

- The local government realized, through working with the researchers, that researchers asked local government officials not to use force but to actually listen to fishers. They felt that this is a better approach.

The process of waterway development, the issues that need to be addressed and then the regulations to ensure local benefits were discussed. Everyone at the workshop understood the regulations and agreed that the next step was to wait for approval of the regulations from the Town Communist Party. All regulations related to the activities of fishing communities must be submitted to the Party. The Town Communist Party has not yet approved the regulations, saying that they need time to understand the regulations.

Strategies

Sam An Truyen area is part of the Tam Giang Lagoon with a high density of fish corrals shared by 3 communes (Phu An, Phu My and Phu Xuan) and 1 town (Thuan An Town). This area is shallow, from 1 to 1.8 m in depth, with a rather flat bottom suitable for building culture ponds and net enclosures. Therefore, when net enclosures were born in Phu Tan (belonging to Thuan An town) and became a means to get more income, they quickly spread to the above-mention neighboring communes, resulting in the same environmental problem: waterway system problems. The birth of Phu Tan Waterway system is considered as "CBCRM seeds" germinated and looked after at a nursing stage. How they develop depends on the conditions in which they live. The answer will be known when the regulations of preserving the waterway system are approved by Thuan An Town' Party Committee and when the Fisher Management Committee is put into operation.

Hopefully, the results of the community-based development of waterway system in Phu Tan could be introduced to the other communes in Sam-An Truyen area so as to strengthen the cooperation of communes in Sam-An Truyen area. This would develop a convenient common waterway system for the whole area under the community-based management and will be discussed in a future workshop (workshop 3) "Cultivating CBCRM plants in Sam-An Truyen area".

CONCLUSION

The process of the waterway system constructing at Phu Tan Town is really a 3-step cooperation: a process of education, negotiation and action to create the corner stone in the cooperative work of government officials and fishers as each other's partners, solving certain local problems related to the lagoon environment and resources.

The project results on developing waterway system can be seen as rather an impressive and fundamental achievement in an attempt to construct CBCRM in a coastal Vietnamese community. The CBCRM process may be summarized in 4 steps:

1. Building up a good cooperation between the fishers and researchers supported by the local government.
2. Building up a good cooperation between the 3 parties: The fisher - the local government - and the researcher in which the government plays the roles as a supporter and member of the research group.
3. Building up the 2- party cooperation between the fishers and the local government on the principle that they are equal counterparts to each other while the researchers play the roles of facilitators.
4. Empowering responsibilities and rights to the fishers and the government's supporting the fishers' management activities.

The 4 steps with extensive involvement of each party at all stages in the development of CBCRM can be symbolized as follows (see Figure 2):

- Fisher-Researcher Cooperation
- Fisher-Government-Researcher cooperation
- Fisher-Local Government Cooperation
- Fisher-Local Government's share of responsibility and authority.

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Figure Captions

Fig. 1. Map of Aquaculture system in Phu Tan area.

Fig. 2. The steps with the extent of involvement of each party in each stage of CBCRM:

- + Fisher-Government-Researcher cooperation
- + Fisher-Local Government Cooperation
- + Fisher-Local Government's share responsibility and authority

Fig 3. The steps of the progress of the setting up the waterway system.

Fig 4. A part of the waterway with straight route

Fig 5. A part of the waterway with a sharp bend route

Fig 6. Fishers of XABAC are discussing on how to set up new route and how to preserve it

Fig 7. A representative of fishers in GFJCR and, behind, the plan for the XABAC waterway

Fig. 8 Representative of government in the GFJCR