

Towards Rights-based Fisheries: **the Case of Bang Sa**

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The Failure of Conventional Fishery Management in Southeast Asia

The conventional view of fisheries resources, especially those in marine and coastal areas, is that they are a common resource, belonging to everybody. This understanding presents considerable difficulties for those responsible for controlling the level of fishing effort by placing limits on current or potential resources users. Many coastal fisheries in the world are in fact state property under an open access regime, meaning that no-one controls access to the resource and that anyone can exploit it. Because the exploitation level cannot be controlled, open access typically leads to over-exploitation, as no individual or body, with the exception of a state with the political will and resources to do so, can exclude new users from accessing the resources. Without a sense of ownership and clear responsibilities to manage the resources, fishers see short-term losses rather than long-term benefits resulting from resource conservation and sustainable exploitation. In other words, fisherfolks try to catch as much fish as they can in the shortest time possible, before someone else does the same.

Where access is free to all, increased fishing effort is attracted and encouraged, and fishery resources gradually decline. As this process takes place, conflicts among users over the diminishing resources increase. Improving or enhancing the status of resources makes little sense to fisherfolks as long as there is no mechanism to control the number of users, or to set a maximum catch limit for each individual.

The state's failure as the resource manager to control fishing efforts and the numbers of resource users results in difficulties setting up new management rules and regulations to limit fishing efforts and to compel fishers to follow existing rules. The problem is exacerbated by the limited human and financial resources at the state's disposal to enforce its mandate.

When fishers attempt to sustainably manage and conserve the resource, it is usually on a voluntary basis and can rarely if ever be sustained, as the benefit of their efforts is taken by other less scrupulous fishers. These open access problems are issues of paramount importance for Thai fisheries.

The Bang Saphan Bay Community-based Fisheries Management Pilot Project

Over recent decades, the Thai Department of Fisheries (DoF) has attempted to improve the development and management of its predominantly small-scale coastal fisheries by means of several important projects. One such project, the Coastal Small-scale Fisheries Development Project (CSFD), has provided most coastal fishing communities of Thailand with critical infrastructure. Among other actions, it has provided small-scale fishers with piers, gear storage facilities, maintenance buildings, artificial reefs, and the release of juveniles into the coastal fishing grounds in order to improve fishing efficiency and living standards. As part of the project, fishing or aquaculture revolving fund groups have also been established.

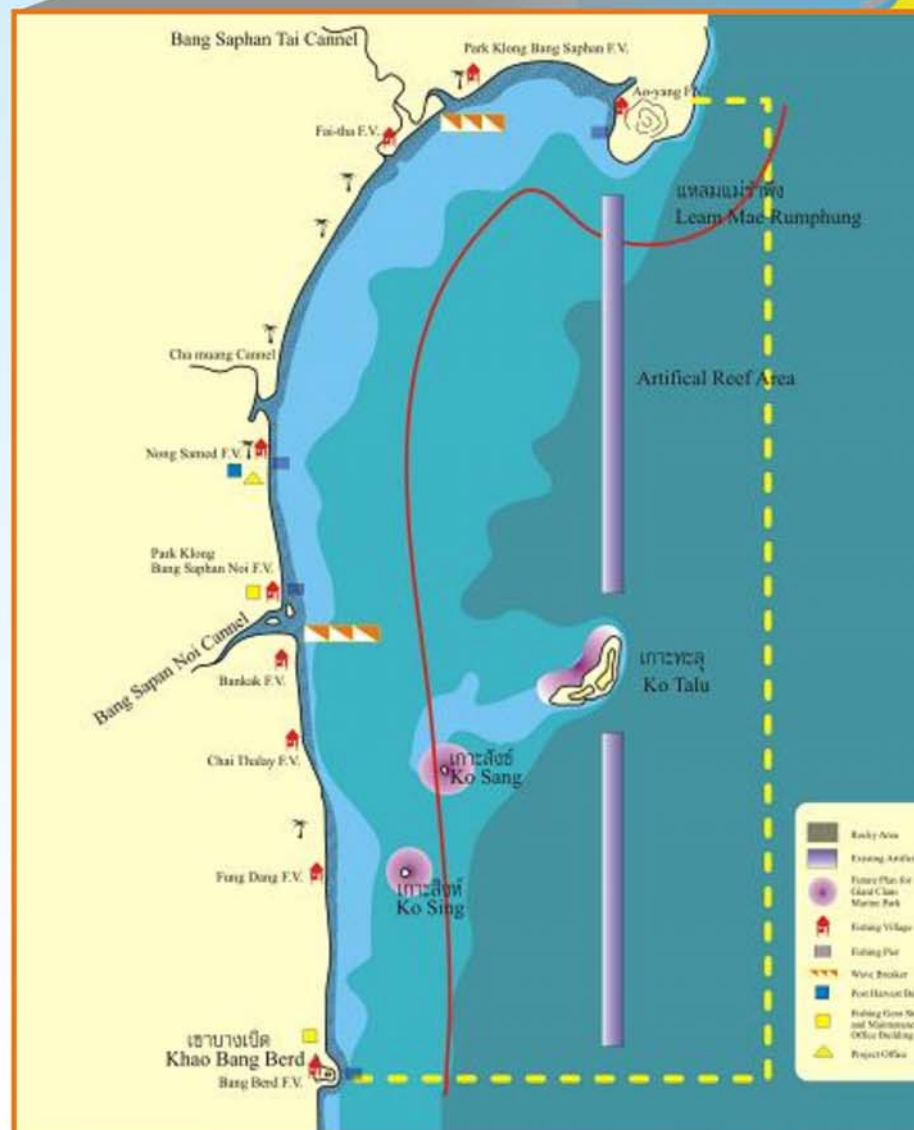
But because the core problems of the fisheries sector have not yet been tackled, these government-supported projects providing fishers with infrastructure and financial help on their own are not sufficient to ensure sustainable livelihoods for small-scale fishers, as an increasing number of coastal fishery resources are damaged or even depleted. The continued depletion of fisheries resources has led to an increasing number of increasingly violent conflicts among resource users. Apart from fighting for fishery resources, another main issue behind the conflicts is damage or even loss of fishing gear by small-scale fishers caused by commercial fishing operations, causing serious financial problems to coastal fishers as they not only lose their direct source of income but must also incur considerable extra expenditure to fix or replace their gear.

Bang Saphan Bay Community-based Fisheries Management (CBFM) is a pilot project that was started in 1999, to deal with the issue of fishery conflicts in the area. The project was backed by both DoF staff and local fishers. This specific project in Bang Saphan is quite different from other CBFM projects which have been implemented in various coastal areas of Thailand. Indeed, it aimed at testing a rights-based fishery management approach.

Before the project started, most fishers in the Bang Saphan Bay area were experiencing serious trouble in maintaining their standard of living. Considering the number and the nature of small-scale fishing operations these days, the three kilometres limit from the shoreline reserved for them, as set by the Thai Fisheries Law, does not grant access to sufficient fishing grounds to sustain a livelihood, especially when the coastline is shallow. Although small-scale fishers are authorized to go fishing beyond the 3-km limit, they rarely do so in order to avoid expensive damage to their fishing gear by commercial fishing operations, especially trawlers and purse seiners, that were often destroying local fishers' nets and traps, as well as damaging the fishing grounds traditionally used by small-scale fishers, notably by

Where is Bang Saphan Bay?

Bang Saphan Bay is located in Prachuab Khiri Khan Province, which is located in the middle of the Malay Peninsular, with Myanmar to the west and its east coast facing onto the Gulf of Thailand. The bay is in the coastal area of Bang Saphan and Bang Saphan Noi districts, which are in the southernmost part of the province, including five sub-districts (tambons). There are nine fisher groups located around the bay. The Bay stretches some 23 km from Mae Ramphung Mountain in the north to Bang Berd Mountain in the south.





catching juveniles of important species. Such commercial fishing operations tend to violate the Thai Fisheries Law: trawlers were coming to fish within the prohibited area of 3 km from the shoreline, fishing operations using purse seine nets were conducted using luring lights, and the mesh size of nets used frequently less than 2.5 cm.

The project planned to deal with one of the most difficult and sensitive problems in fisheries, namely conflicts over the resources, by setting new regulations and ensuring an effective enforcement system. To get consensus on project regulations at the beginning was practically impossible. Fisheries problems needed to be clearly identified, and it took much effort and time to bring stakeholders to an understanding of the objectives, the importance of fishery resources management, and the long-term benefits of the project. Reaching an agreement on a demarcated sea area that would be reserved for small-scale fishers was indeed one of the most difficult and important tasks of the project. The local fishers, who used to moving freely, were afraid that new regulations that also covered gear would have a negative impact on their fishing activities. Several protests were organized by fishers, who considered they would lose their fishing grounds to larger scale fisherfolks, putting a lot of pressure on the project and local government.

Through several meetings and discussion between the project staff, interested and dissenting local fishers, the project concepts, including the idea of demarcating a sea area and the long-term benefit for local fishers, were finally accepted. It took more than one year before a consensus on the project regulations was eventually reached.

As more than 70% of the local fishers in the bay are small-scale, commercial-scale operators finally agreed to move out of the project designated site.

Based on this local agreement, project regulations were ratified. These extended the fishing ground of small-scale fishers to an average of 10 km from the shoreline, giving small-scale fishers the opportunity to catch more fish and earn a better income for their families. This was enacted as a provincial ordinance to be enforced within Bang Saphan Bay, with a demarcated area of about 150,000 rai¹ or 240 square km.

Equally important was the prohibition of some destructive fishing gear. In the case of Bang Saphan Bay, destructive fishing operations are mostly carried out by commercial fishers (namely trawlers, luring light purse seines, clam draggers and push netters), and these were banned from operating inside the demarcated area as a result. Trawlers, push netters, and luring light purse seiners can now operate only outside the project area, while daytime anchovy purse seine can now operate only beyond the 3 km limit.

The fishers of Bang Saphan Bay CBFM pilot project

There are approximately 400 fishing households in Bang Saphan Bay. Most of the local fishers were born in the area. Fishing activities in Bang Saphan Bay are divided by local fishers and fishery officers into three scales of operation.

Slightly more than two thirds of the fishers can be considered as **small-scale fishers**. Small-scale fishers are those who use boats without engines or with long-tail or mid-engines up to 85 hp. Their fishing grounds are mostly within the project-demarcated area. One to three persons, mostly family members or relatives, provide labour for fishing. Small-scale fishers use two or three types of fishing gear in the course of the year, depending on the fishing season. These include several kinds of gill nets, hook and line, squid jigging, scoop nets, anchovy and squid casting nets (all small enough for boats driven by long tail outboard motors), and squid and fish traps, and they also practice diving for sea cucumber and seashell.

Medium-scale fishers comprise about a fifth of the fishers. They use mid-engines of 85 – 165 hp, with a labour force of four or five persons, including the boat owner. Labourers might be family members or people hired in the village. Fishing gear used are larger anchovy and squid casting nets, deep-sea swimming crab gill nets and trawlers (at present, there are no trawlers operating in the bay, because of the project regulations and strict enforcement by the officers and local fishers).

Semi-large scale fishers use larger engines of 165 – 300 hp. Their labour force ranges from 6 to 25 persons per boat, and comes mostly from outside the village and most labourers are Burmese.² The fishing gear employed in this class is anchovy purse seines for those fishing during daytime or purse seines with luring lights for those operating during night time. The latter must be used outside the project area, as it has been prohibited by the provincial ordinance mentioned above.

¹ One rai equals 1,600 square meters.



Mr. Kittisak Pakdeephachum,
MCS volunteer group

“As a part of our village fisher group activities, we have a volunteer group to assist officers from the Department of Fisheries in their monitoring, control and surveillance (MCS) tasks.”

“All members from the volunteer group are fishers, and we are concerned that illegal fishing affects us all. We get no pay for our activities, but we don't care, we know we will have indirect long-term profits if we are successful in keeping illegal fishing at bay. What we do is activating a network of monitoring, in which every fisher can report illegal fishing activities. We then call the government officer (who must come from far away, as nobody is based in the bay anymore) and assist him to proceed with the arrest. Operation funds for the volunteer group are borne by the fisher group revolving fund. We use that money to purchase consumables and even sometime fuel for the patrol boat! We really need some support from the government, at least gasoline.

If you ask about my feeling concerning the current situation on MCS in our area, I would say the penalties are not strong enough. In most cases, even if they are arrested, which happens rarely because of the time the officer need to come to our area and political issues, illegal fishers still get profits from their daily catch! The fine is so tiny, and they can still keep their fish. Since the gear and the boat are not confiscated after the arrest, operations can resume a day later, and most of the time this will be illegally again! The law says that recidivists in illegal fishing will go to jail, but in reality they know how to escape that: once a boat is arrested, the owner will be changed quickly, so there will be no problem if caught again. These are serious gaps in the regulations, and it undermines our activities and saps our morale. Our volunteer group is a good thing, but we are tired of the situation... what is the point for all these efforts if they results in nothing in court? Now, we will continue anyway because we can note that the frequency of encroachment by trawlers in the bay has been reduced. Nowadays most of the trawlers we apprehend illegally fishing are newcomers although we know there are trawlers still fishing illicitly in the bay, who know the area very well and can operate without being detected.”

Slightly more than half of the fisher households exclusively depend on fishing for their livelihood, while fishing activities are the main source of income for more than 70% of the fishers in the bay. Other sources of income are from agricultural products, mostly from coconut, rubber and livestock husbandry.

Reasons for the success of the project

Managing fishing activities and monitoring and enforcement on illegal fishing

Some fishers operating destructive fishing gear, especially trawlers and luring light purse seiners, are forced out of the demarcated area by the project's distinctive regulations and local enforcement

system. This gives bigger fishing grounds and hence more opportunities in the project site and vicinity to small-scale fishers operating non-destructive fishing gear. It was clear from the start, in light of past experience, that a strict enforcement system would be needed to enforce project regulations. The project officers and local fishers have been collaborating in this essential enforcement activity since the project inception, and a fishery conservation volunteer group was established to assist DoF officers in monitoring and controlling illegal fishing. In order to do so, the members of the group have been trained on the Fisheries Law and on the project regulations, as well as on procedures for arresting fishers conducting illegal fishing operations. As a result, most of the violation cases were actually reported to the project staff by local fishers, both volunteers and non-volunteers. It is important to note that the a fishery conservation volunteer group or fishers in general have not the mandate to proceed with arrests alone, which would endanger their lives, but do assist the government officials in their duties.

Resource enhancement

Several resource enhancement activities have been implemented since the project started, namely releasing juvenile of aquatic animals, establishing crab banks, installing fish aggregating/enhancing devices and installing an artificial reef. The latter also helps as a barrier against some destructive and illegal fishing gear such as bottom trawlers. There has been very high participation of local fishers in most of the activities, especially in installing fish aggregating/enhancing

devices. Fishers not only contributed ideas and manpower, but also money to support activities. Resource enhancement activities have helped in building up and safeguarding resources, have been critical as a community-building exercise, and have contributed greatly towards strengthening fishers' sense of ownership of aquatic resources in the bay.

Institutional building

Nine fisher groups were already established in the bay before the project started, about eight years ago on an initiative from the Thai Government to establish seed funds. The main activity of these groups was to set up and operate a revolving fund as

² Burmese fishing labourers are found in most of commercial fishing operations in Thailand. Because of a lack of Thai labour in the fishing sector, Burmese labour has become widespread. In Bang Saphan Bay, their wages are about 10% - 30% less than Thai labourers. Work permits are required for legal employment.

well as a money saving scheme for households who are members of the group. Six of the nine fisher groups have been very successful. Two groups have additionally established convenience stores where their members can purchase everyday commodities at a cheaper price, and some groups have also expanded their membership to non-fisher members and have therefore increased group funding.

Having such a strong group basis to start with has been a major asset for the execution of the project. All nine groups have been used by the project officers as representatives of the local fishers in the project area. The leaders of the fisher groups play a very important role as focal points for the project staff and as facilitators for the implementation of the project's activities.

To keep the newly established management system operating effectively, local institutions needed to be established and progressively strengthened. Therefore, existing local fisher groups were further developed, educated, informed of the issues and involved in the project activities. This required a sincere and lasting commitment from the project officers and local fishers, who needed to work hand in hand for many years. As it stands now, they agree that the project would not have succeeded as it has without support from each other.

Achievements: changes to fishery resources and livelihoods

Since the pilot project started in 1999, fishers feel that the project regulations and activities have not only responded to their needs and addressed their fishing problems but have also in many ways improved their livelihoods. The following section and figures present how the project has made changes in fishing activities in the bay from the local fishers' points of view. These are based on a Weight Average Index (WAI), which measure the attitude of fishers in 1999, before the project started, and in 2003, allowing measurement of their perception of changes during the period.

Impacts on fisheries resources

As a result of new regulations set in place in the project's framework, fishers recognize that trawler operations have been greatly reduced in the coastal area of Bang Saphan Bay, the demarcated area of about 10 km from the shoreline of the bay being protected as exclusive fishing grounds for small-scale fishers and a nursing ground for fish juveniles. Fishers believe that this management measure has allowed fisheries resources in the area

Mr. Suntorn Rosdi, Crab Bank Project

"We started the swimming crab bank in July 2005. Technically, it is simple: we use fibreglass tanks and seawater from the nearby canal. The water is first treated with chlorine and then oxygenated for three nights."



"Our members are crab fishermen, who use crab gill nets. Each member will bring one large gravid crab female every day he harvest his nets. That female must have eggs that are going to be released shortly; we can identify these crabs by looking at the colour of the eggs, which must be dark or black. The gravid females are then released in the tanks, which are oxygenated, for one day. Once we have released the eggs, the crabs are sold and the profit is given back to the fishers. The water with the eggs is drained in the canal, which is closely connected to the sea. We got this knowledge from the Research Centre of Samut Sakorn, where there is a hatchery for swimming crabs. It is still early to estimate the benefit of the activity, but the members are all keen to continue, even though there is currently no support from outside for their activities. For example, it is not always possible to get water from the canal, as the sea level can go down and the canal become nearly dry for long period of time. We need a pump and pipes to bring the water directly from the sea but it is not easy to find the money. In the future, we might use the profits from selling the crab to finance our activity. We can already rely on the dividends from our fisher group revolving fund, and that has helped us a lot!"

to increase. Even though they perceive the fisheries resources situation to have improved since 1999, fishermen mention that their catches increase since has not been that significant. This can be explained by the fact that the number of fishermen has been increasing yearly, and so fisheries resources are shared among a growing number of fishers. Several new outsiders nowadays also come to fish in the project area. For example, several boats come from Rayong province, on the other side of the Gulf of Thailand, during the fishing season for cuttlefish. There are also several day-time anchovy purse seiners from other Prachuab Khiri Khan districts, or from nearby provinces coming regularly in the area. This confirms the need to consider some management issues:

1. Whatever efforts have been put into increasing coastal fisheries resources the resources will not be sustainably utilized, or significantly increase without appropriate monitoring and control of fishing activities.
2. One management measure or approach alone does not add up to successful fisheries management. Two types of management measure are needed here: increasing fisheries resources and utilizing resources sustainably, including control measures on fishing efforts.

Fishers also recognize that they have benefited from the project from a socio-economic point of view, with increased income and overall household well-being. This was mostly achieved through a reduction of investment costs in fishing activities through bulk-



Mr. Kritsana Klinnoi, fisher group's revolving fund

"We operate a revolving fund activity. We got the seed money from the government eight years ago – that was about THB 140,000. This sum, through savings, is now THB 430,000!"

"The members of the fisher group must contribute THB 100 per month, as a personal saving. In return, they can borrow from the fund. Basically, we have a monthly meeting during which we allocate loans to those who need money. The maximum amount that can be borrowed by a family is equal to their saving plus THB 2,000, and they have to pay back interest at 2% per year.

Now, we also have emergency loans. Mostly, this is needed if a fisher loses his fishing gear or some other critical equipment, like an engine or the boat. This entitles him to borrow THB 10,000 from the fund, for one year, with no interest at all, so that he can get back his source of income. Another possible emergency can be a health problem or education for children. Again, we will provide a THB 10,000 loan with no interest, but we expect the sum to be paid back in three months. Now, we also have other activities, that we have developed based on our revolving fund. At the demand of our members, we now have a general store that caters to their daily needs at slightly lower prices than other shops. Anybody can purchase goods and fuel here, not just our members. We used THB 40,000 from the revolving fund for creating this store. In return, beside the lower prices, we share the yearly profits among the members. Last year, that was THB 190,000 of net profit! People who are not members of the fisher group can also subscribe to become an extended member of the general store; they just have to pay THB 1,000, as if their were buying stock shares.

The important point, I would say, is that although we needed initial counselling and guidance on how to proceed, we are now completely self-reliant. When we need professional help such as accountants, we hire them ourselves using our own funds. The fisher group organized through these activities is a great thing: it promotes altruism. We work together, fix problems together, talk and share information regularly, and fishers start to think like a group when it comes to fishing, looking at long term impacts and benefits. We can also escape middlemen: our members do not need to borrow from them anymore, and then do not have to sell their fish to them at a very low price to pay back their loan."

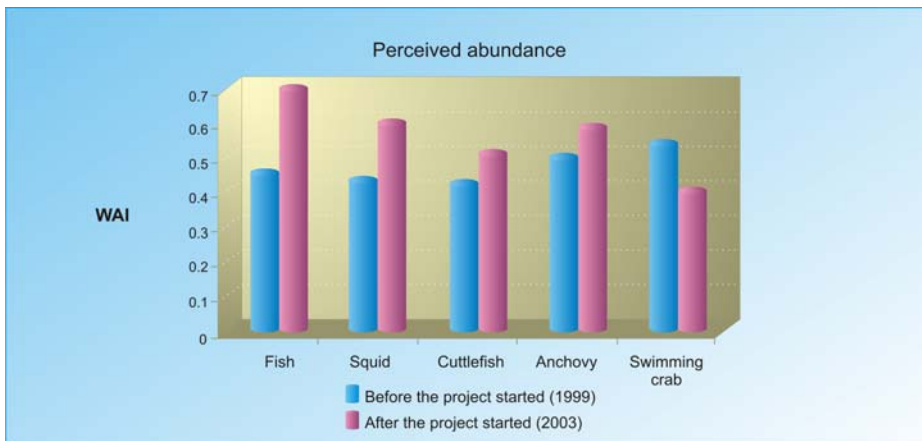
purchase, and a reduced likeliness of having fishing gear destroyed by larger-scale fishers.

Fishers' perceptions and knowledge

Fishers' perception and knowledge of how coastal resources are allocated, fisheries management and the Thai Fisheries Law have improved greatly since 1999. During the regular group talks, it was apparent that the majority of local fishers nowadays have a good understanding of problems related to their fishing activities, both in the past and present. They have become very knowledgeable about the project's regulations, the Thai Fisheries Law and the Closed Areas for Indo-Pacific Mackerel Spawning Season Law. They are also able to assess the advantages and disadvantage of these laws. Fishers express quite well how fishing boats from



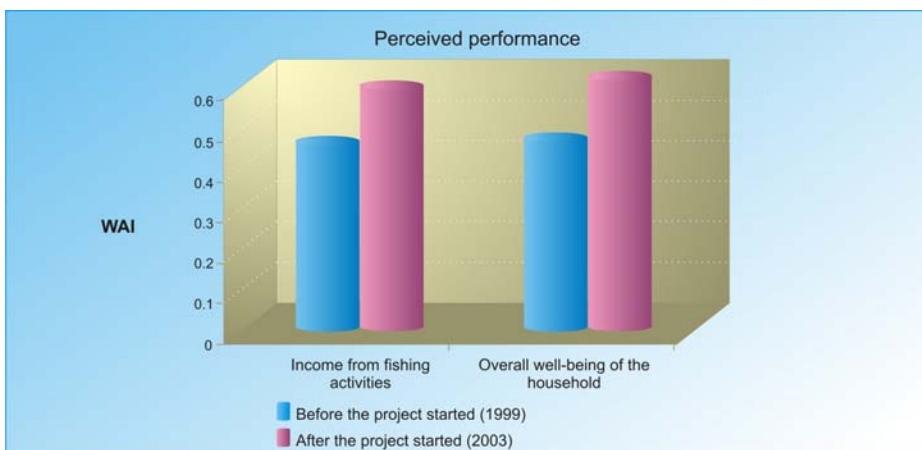




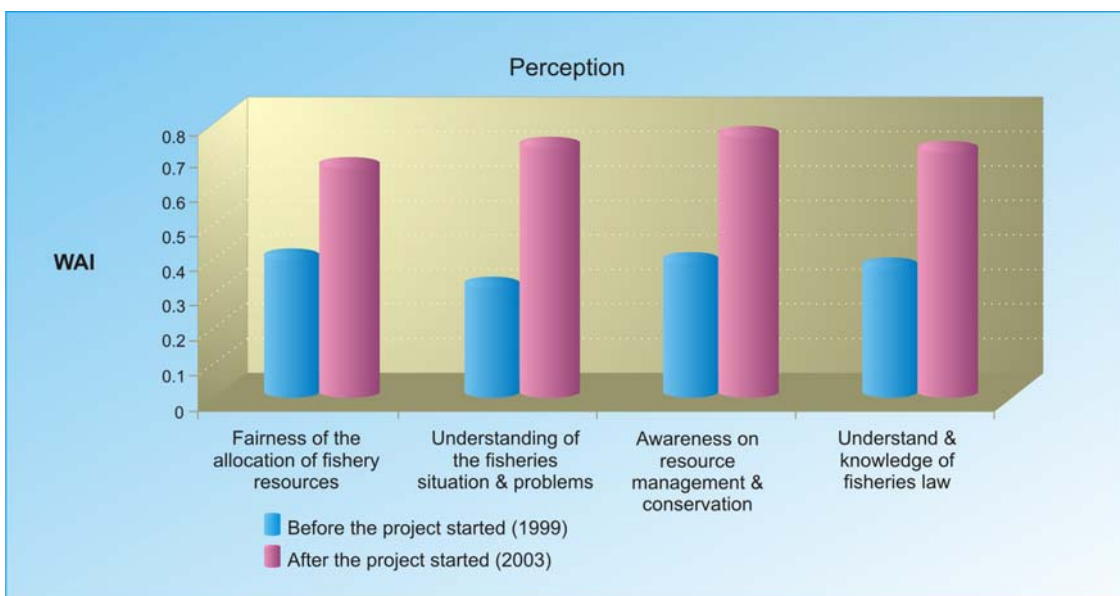
local fishers on their problems and concerns, helping fishers to help themselves using a problem-solving approach, strengthening local fisher institutions, and encouraging people's participation. But in order to take over as co-managers of coastal fisheries, fishers still need to be properly equipped with proper knowledge and understanding.

Fishers' participation in fisheries management

The project has significantly improved the participation and collaboration of local fishers in fisheries management. As a result, fishers frequently report illegal fishing activities in the demarcated area to the project office. Several fishers are volunteering to go out with the officers for patrolling and enforcement activities, and so helping to meet the limited capacity of local government enforcement. Fishers regularly and readily come to discuss and exchange their ideas with the project officers on fisheries management issues and activities in the bay.



Most of the local fishers are convinced that their participation and contribution to the activities are necessary for the project's continuity. In return, the success of project activities encourages fishers to be further committed, and to expand the project's activities and their responsibilities for the management of their fisheries resources.



Resolving conflicts

Conflicts between fishers have been drastically reduced since the beginning of the project's activities. Three main types of conflicts used to occur in the bay. The first conflict issue was related to small-scale

outside the bay have an impact on their fishing activities and resources, and often elaborate on how fisheries should be managed in the demarcated area in the future in order to accommodate outsiders. In other words, they not only have a good working knowledge of the project, but also have the skills to analyse events.

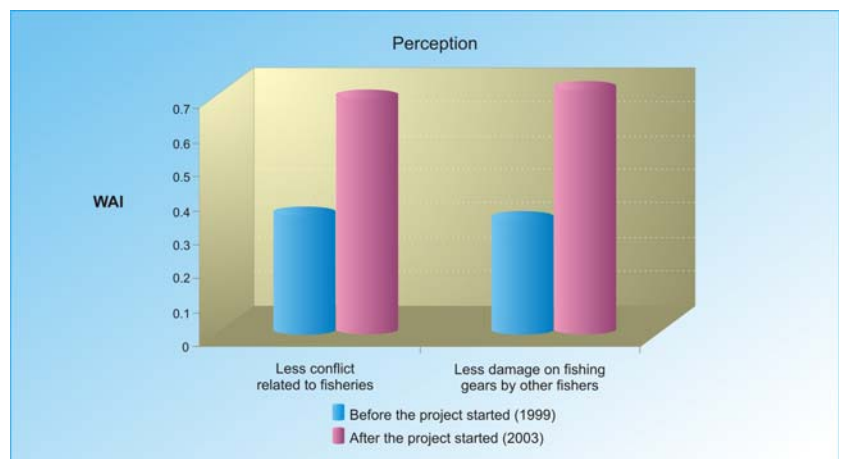
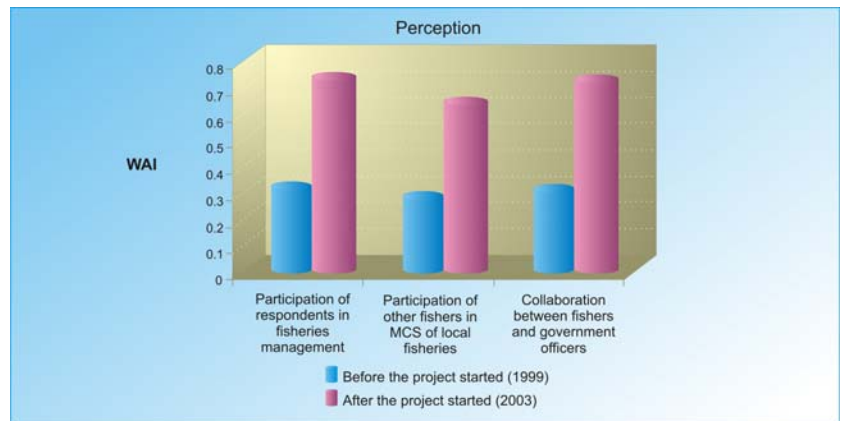
The Bang Saphan project therefore provides a good example of how extension work can strengthen the ability of local fishers to deal with their problems. It is important to understand how the project's extension services have been carried out in order to effect such significant changes in the fishers' knowledge, perceptions and attitudes. The project officer has played a critically important role in providing extension services to the local fishers – working with

fishers' fishing gear being damaged or even destroyed by trawlers, luring light purse seiners or daytime anchovy purse seiners. The second issue was encroachment into the three km zone by anchovy fishing and trawling operations. The third issue was conflict between anchovy cast net and daytime anchovy purse seine operations.

But since the beginning of the project, all three types of conflicts have become less common. Damage caused to small-scale fishers' gear has decreased thanks to the new regulations and stricter enforcement, with daytime anchovy purse seine operations now moved outside the three km limit, and trawlers have been completely eliminated from the project area. Since the management system was established, local fishers have built up a relationship with each other, with more dialogue and a better understanding of each others' needs. Issues that might have caused conflicts in the past no longer do so as a result. For instance, daytime anchovy purse seiners now mention that they are more careful and aware of other fishers' passive fishing gear deployed in the sea, and if they damage them, they agree to compensate the owners of wrecked gear.

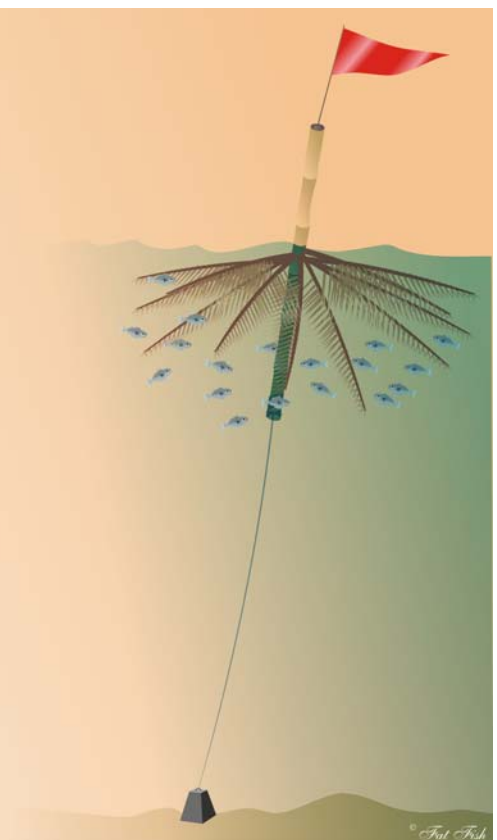
How can the pilot project move forward?

At present, the pilot project has come to a point where it should move forward, or stop. Although enthusiastic about the project's achievements and at being involved in further activities, local fishers are not satisfied with the present situation. The reasons can be concluded from what has been expressed above. It is not just the problem that fishers – like most other human beings – are never completely satisfied with what they have got. Rather, the issue is that the project has not yet



A recent example of fishers' talk

Recently, there was one instance in particular that was very impressive. One evening at the project office, as dinner was taken, a few fishers came to join the officers. Soon, the fishers and project staff started to discuss the potential of deploying fish aggregating devices (FAD) in the bay. The objective was to give shade for fish to lay eggs in the coastal waters. They started to discuss the advantages and the disadvantages of such an activity. Some fishers expressed the fear that the devices would lure fish and fishers, and that the resource would get quickly depleted as a result. In other words, they considered FADs not to be a sustainable way of utilizing the resources as such. Later on, this discussion took place several times with different fisher groups, and a final decision was reached on this activity. FADs would be installed, but to fulfil the objective of the activity – namely resource enhancement – a specific regulation was added: fishing operations must take place at some distance from the devices and are therefore forbidden in the direct vicinity. In this context, Fish Aggregating Devices really became Fish Enhancing Devices (FEDs). The day the FEDs were deployed, several hundred people, fishers and their families, joined in the activity. All the devices, which are made from bamboo and sandbags, were purchased, assembled and deployed by the local fishers.



Apart from the direct impact of the project on local fishers' lives and work, several lessons for future policy formulation on CBFM can be learned from the Bang Saphan Bay pilot project.

The boundary of the project area, and so the common pool resources, is clearly defined, with a delimited spatial dimension for specific resource users.

The project boundary has demarcated a clear area of common pool resources in which management measures and activities take place, such as implementing and enforcing regulations and resource enhancement activities. It also provides a clearer definition of targeted resource users, who in turn need to be educated and empowered to take part in fishery management functions.

The boundary of the project area can provide a clear definition of user-rights and delegation of management functions to regulate fishery activities.

As project implementation took place, and local fishers made many efforts and committed resources, it started to occur to them that they should have some authority and responsibilities to protect the fishery resources in the demarcated area from illegal fishing operations that might put their efforts in jeopardy. At present, local fishers are strongly and clearly suggesting that part of the management functions within the demarcated area of the project should be delegated to them. They agree that user-rights of the resources can be shared between local and outside small-scale fishers, but insist that outsiders must follow the project regulations and contribute to management of the resources in the bay, possibly in the form of taxes, fishing fees, or other kinds of contribution to management activities. The establishment of such user-rights could lead to progressively better control of fishing efforts once the modalities of user rights are defined, such as who is a member of a user rights project or group, types and numbers of fishing gear allowed, amount of fishing effort than can be exercised, where and when to fish, and so on. If such regulations were clearly stated and rights granted to fishers, it would lead to the control, and thus limitation, of the fishing capacity of the bay in the future.

Stop the use of destructive fishing gear in the demarcated area, effectively leading to zoning for different types of fishing operation.

Three layers of fishing zones are defined in the pilot project. First, trawlers, luring light purse seines, push nets, and clam dragger are excluded, and must operate outside the project area, approximately beyond the 10 km. limit from the shoreline. Second, daytime purse seines and anchovy cast nets are allowed to operate within the project area, but beyond the three km. limit from the shoreline. Third, other types of fishing gear, typically small-scale, are allowed to operate everywhere within the project area. In other words, some fishing operations that are more destructive to fish juveniles and coastal habitats are pushed outside in order to reduce the damage they can cause to resources, while less damaging operations will have more opportunity to fish in near-shore areas. This renders the fishery regulations more specific and reasonable, and makes sense to the fishers. Furthermore, we no longer deal with a generic set of regulations, and now have a set of management measures which reflect the reality and problems of a particular area.

Project regulations could back up the initiatives of local fishery regulations imposed by the local fishery management body.

Local fishers appreciate the project regulations, which they think are more adequate than national fishery regulations. They feel that the project regulations respond to their problems and are adapted to the situation of their fishery resources and their utilization pattern.

Although Bang Saphan is a good example of local specifications being considered, there remains plenty of scope for further improvement of the local regulations, based on the fishers' knowledge of the local fishery settings and fishers' willingness to get involved in the process. Yet to get a set of local fishery regulations takes time, and needs a high level of involvement by local fishers. They must provide precise information, and a consensus from them must be obtained before a new regulation is adopted. This is not a quick process.

Learning from the Project's Success

Achievement of the project's prime objectives contributes to a high level of participation by local fishers, and leads to the establishment of a local fishery institution for the management of fishery resources and fishing activities in the bay.

In the co-management context, it might be difficult to implement a coastal fishery management project that has only long-term objectives, because these are difficult to achieve and demonstrate no immediate positive effects. The success of the Bang Saphan Bay project in motivating its fishers can be translated in the following terms: short-term objectives as steps to achieve each of the longer term objectives are necessary to ensure that local fishers are motivated and kept interested in participating to the process. With this short-term progress, fisherfolk feel that their needs are taken into account and that their problems are being tackled gradually.

Greater participation from the local fishers in project implementation leads to the sharing of duties and functions among government officers and local fishers on the management of fishery resources.

There are many cases of local participation in the Bang Saphan pilot project, including the participation of local fishermen in monitoring illegal fishing, several hundreds of fishers participating in the deployment of fish aggregating devices, and fishermen informing and advising on issues of illegal fishing operations. This participation shows the willingness of local fishers to take part in future management functions. This raises many hopes, as we see DoF officers and local fishers working together, a very rare occurrence elsewhere. However, responsibilities and roles to be Learning from the Project's Limitations Failure to support and monitor the project's activities.

Failure to support and monitor the project's activities.

In general, a pilot project is treated specifically and separately from the normal working context of the organization, in our case, the Department of Fisheries of Thailand and the Thai Fisheries Law. The expected life span of the pilot project is strictly a function of the budget, and the timeframe of the donor or implementing agencies. There are very few cases of pilot projects that have actually had impacts on policy implications. This is true of the Bang Saphan Bay CBFM pilot project. It is isolated from the central coastal fishery management body, planning and policy framework. The project did not have any outside funding, and was implemented solely by DoF. As such, the project received very limited support in terms of manpower, technical expertise and funding.

Despite this, the project continues to operate because the project regulations are kept valid and the monitoring and enforcement

need clear answers. Implementing a regulated entry regime must be a forthcoming step in Bang Saphan pilot project's activities, in order to relieve the problems related to over fishing and excess capacity, which in turn jeopardize the whole spectrum of activities.

No delegation of management functions to local fishers.

Even though local fishers have been very much encouraged to participate in fisheries management activities of the project, they still do not have any authority to take action on many crucial management functions. They are allowed to provide information and suggestions but they do not have any part in the decision making process, which is still very much in the hands of government agencies. If it is beyond the project staff authority, if it concerns the legal and policy framework, their initiatives and suggestions are often diluted, and action only slowly taken, if ever.

The co-management concept stresses that fishers should have roles and responsibilities to play in fisheries management, apart from being users of the coastal resources. It is not that they should only participate in management activities, an excellent first step but certainly not a goal. They should also take an active role and be part of the decision making body at the local level. To delegate the management function entirely depends on government will, as it requires full policy and legal support.

Not giving local organization some legitimacy.

At present fisher groups are informally organized to conduct fishery development activities, and actively participate in the project activities. They are recognized by the group members and project staff but are not legitimised by law, thus they are not able to act as formal representative of the local fishers to take authority in fisheries management functions. The day management functions are delegated to the local level, it will require a legitimate organization representative of the local fishers, to act on behalf of these folks. It is necessary to find ways to develop and legitimise these fisher groups, before user-rights and management functions are delegated.



Learning from the Project's Limitations

system, conducted by local fishers and project staff, is still ongoing. The greatest shortcoming has been the failure of the DoF to monitor the project's impacts, with nobody clearly knowing or at least reporting what have been the successes and failures, and what has been learned from this project. In these conditions, it was impossible to see how the project could move forward, and more importantly, how it could contribute to national policies.

This was so until the doctoral research carried out by one of the authors (see Reading), and which is the basis of this article. Research support is clearly essential for any pilot project to have a constructive impact on management policies.

The lack of resources, especially skilled and knowledgeable manpower, makes it very difficult for the project to continue to be implemented properly, and impossible to expand its activities into new areas. Even though the participation of the local fishers has been quite high, there are some functions which can only be taken by authorized and capable government staff, positions that obviously cannot be taken by local fishers.

No regulation of entry to fishery.

The fisheries management measures implemented under this project obviously do not deal with the problem of open access. Local fishers believe that the project regulations stopping trawlers and some other destructive fishing gears do help to improve fishery resources in the bay, but that they do not guarantee an increase in catch. As mentioned above, this is due to an increasing number of fishing boats in the area, mostly coming from outside and attracted by the local abundance of fish. In short, the benefits from the local fishers' efforts in managing the bay's fishery resources accrue to these outsiders. If this situation continues, it will in the long run discourage local initiatives and attempts to sustain the management system. Regulating entry to the fishery, especially by outsiders, is urgently required. Such regulation is in fact essential to managing fishing activities in the bay. Who utilizes what, when, where and how are critical questions that

achieved the aim of reaching some form of sustainable coastal fishery management. After five years of implementation, the fishery situation in the area has been rescued from one problem loop (conflicts), but is now struggling in another – free riders. The problem of free riders is twofold:

- There are an increasing number of outside fishers accompanied with a surging total fishing effort. With no control of the level of fishing effort that can be employed, the problem is becoming critical and urgently needs clear management measures.
- There is no contribution from outsiders to local fishery resource management efforts, which are being undertaken only by local fishers.

To achieve sustainable coastal fishery management, one must not only ensure that fishery resources are exploited sustainably, but must also attain an improvement of the living standards of the local fishers' families. This cannot be achieved by imposing one management measure alone. So far, it seems the pilot project has been moving in the right direction, towards rights-based and co-management approaches. In Bang Saphan Bay, these two approaches are considered to be innovative approaches that can help in moving from open access to limited access.

Towards Co-management through Group User Rights

To further facilitate the development of the co-management concept, SEAFDEC has recently developed a set of guidelines (see the paper on the development of SEAFDEC regional guidelines on co-management by means of group user rights, also in this issue). The Centre plans to promote and verify these guidelines through the implementation of pilot projects in some member countries.

There are several issues in the guidelines that relate to the Bang Saphan Bay pilot project. The guidelines could in fact guide and support how the project should move on from, by setting up a fishery entry policy, legitimising the local organizations, promoting local institution building, and legal support to delegate management functions to the local level. These issues have been long discussed by the project staff and the local fishers, and they correctly conclude that the project cannot move ahead with these issues without support and legal backing from the central government authorities. But it is also not easy for DoF (at the national level) to make a move or to support the project, as changing the policy and legal framework involves others government agencies. This would be a massive undertaking, which would take a lot of lasting commitment, political support, and many years without any guarantee of a positive outcome.

A way out of this stalemate would be for DoF to consider that the Bang Saphan Bay Project could continue with a second phase, this time as a pilot project for the implementation of the regional guidelines prepared by SEAFDEC. It would help, not only to test and verify the guidelines, but also to support the project and DoF in developing a management approach model that could ensure sustainable coastal and small-scale fisheries management in the country. In addition to the similarities between the issues faced in Bang Saphan Bay to those discussed in the regional guidelines, the readiness of local fishers and their groups in participating in fishery management is exceptionally high, making it an extra advantage in selecting the bay as a pilot site.





Conclusion

The Bang Saphan Bay CBFM Pilot Project shows that the potential of local fishers can be developed through their participation in fisheries management activities and by their practicing responsible fishing. This has been achieved by recognizing the immediate needs of local fisherfolks, and by addressing these in an acceptable timeframe. An important action was to clearly demarcate an area from which the most destructive fishing gear operators would be excluded, therefore tackling the most important initial issue – conflicts. The development of a strong understanding and trust between local fishers and project staff combined with these short-term achievements quickly raised the hopes and motivation of local folks, and contributed to a high level of participation by fishers living in the bay in the management of local resources, including the sharing of responsibilities with government officers.

The pilot project has led steadily to the establishment of local fishery institutions for the management of fishery resources and fishing activities, although it still needs legal backing to come formally into existence. The most serious omission while implementing the project has been the failure to establish some forms of regulation to fishery entry. This has led to the current problem faced in the bay, with the increasing number of free-riders coming in to get fish without participating to the efforts done by the locals. This underlines a need for further action if the current situation is to be sustained, not to speak of a sustainable management system.

The presence of strongly motivated and organized fisher groups and a demarcated area with clear boundaries is the backdrop to another much needed potential phase for the pilot project. This would lead into looking at a possible co-management system between local resource users and the government, with actions taken as required from the related national government agencies to ensure an effective supporting policy and legal framework.

This is a colossal undertaking, in which the regional guidelines prepared by SEAFDEC could actually play a role in directing and supporting how the project should move on. If a second phase for the pilot project is agreed, Bang Saphan Bay fisherfolks would see the setting up of a fishery entry policy, the legitimisation and strengthening of their local groups, and the development of an adapted legal support from the government that would delegate management functions to the local level. This could become a stepping stone in the development of a management approach which could later be used as a model for the promotion of sustainable coastal fisheries management across Thailand while the experience accumulated and lessons learned would benefit to all other ASEAN-SEAFDEC member countries.



For further reading:

Anuchiracheeva, S., et al., 2003. Systematizing Local Knowledge using GIS: Fisheries Management in Bang Saphan Bay, Thailand. *Ocean and Coastal Management*. 46 (2003) 1049-1068.

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