



Assessing the Socio-Economic Conditions of Small-Scale Fisheries: Experience of Thailand in Implementing Development Projects

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Small-scale fisheries play an important role in providing income and employment to a large number of fishers and their families, who form part of the poorest and most disadvantaged communities in society. Small-scale fishers constitute the majority in the fisheries sector but their earnings are limited. The income of small-scale fisheries is in general rather low compared with other sectors such as commercial fisheries or agriculture.

The activities of small-scale fisheries sector both inland and coastal fisheries conducted full- or part-time or just seasonally, are often aimed at supplying fish and fishery products to local and domestic markets, and for household consumption. Small-scale fisheries play a significant role in securing food at the micro-levels especially for the poorest households. Moreover, small-scale fisheries have been the source of protein in local areas that are far from the urban centers (FAO, 2003).

Frequently, small-scale fishers are unable to initiate and carry out the changes that could have brought them the benefits because they are economically, socially and politically marginalized. Given the appropriate conditions however, small-scale fisheries could still contribute significantly to socio-economic development by enhancing

their capacity. This could be a powerful way to reduce rural inequity and poverty in small-scale fishing communities (FAO, 2005).

Problems and Constraints in Achieving Sustainability in Small-scale Fisheries

The main problems and constraints of small-scale fisheries are threefold and are mostly related to social, economic and human rights aspects that lead them to poverty and vulnerability (**Box 1**). In order to address such problems it is necessary that an enabling environment should be created for the small-scale fisheries.

Support for Small-scale Fisheries through an Enabling Environment

Small-scale fishery is one occupation characterized by the uncertainties of change. The resource itself has dynamic characteristics with production of fish being unstable because of the declining resources and unstable market demand. The income from fishing operations fluctuates based on the changing marketing price of fish. Moreover, coastal communities are always confronted with the risk of absorbing the effects from natural disasters. The small-scale fishers therefore require special protection and assistance which could be made possible by creating for them an enabling environment.

Box 1. Major problems and constraints in small-scale fisheries

Social issues

- **Poor living and housing conditions**

Small-scale fishing communities are isolated not only geographically but also socio-economically from the land-based society. Most marine small-scale fishing communities are located along the coastal areas which are far from the government's basic infrastructures and public utilities. The fishers prefer to settle their houses near the sea for convenience in operating their fishing activities. Consequently, the fishing communities are often crowded and are lacking of essential infrastructures such as roads, electricity, water supply facilities, hospitals and schools. Such situation makes the fishers' living standards poor as well as their health in deteriorating conditions.

- **Low education**

As a consequence of low earnings and incomes, the fishers have the least opportunity to get a formal education. Much more, the fishers are mostly not concerned about their children's education, for the reason that the fishers need household labor force to support fishing as well as ancillary activities such as landing, selling, and net repairing.

Economic issues

- **Uncertain income and no savings**

The income of fishing households, especially the small-scale fishing households, comes mainly from fisheries. Fishers are an occupational group closely associated with poverty. Their income is uncertain and lower than the average level which is normally not enough for their daily subsistence or even if their income may be enough for their families' daily needs, there is nothing left for savings to spend for their future needs.

- **Being in debt and no market power**

Most of small-scale fishers have to sell their catch to local middlemen. The price is often dictated by the middlemen and thus, could be lower than the market price because there is no more chance for any negotiation due to the fishers' financial indebtedness to the middleman. Since fishers lack the necessary funds to invest in fishing equipments, their only recourse is to obtain loans from middlemen, which could take various forms such as cash, fuel for boats, boat engines, fishing gear, fishing boats, etc. Fishers pay their loans by deducting certain amount of money from the sale of their catch to the middlemen. Such arrangement results in the fishers' less power in negotiating for the price of their catch.

- **Lack of alternative source of income**

Job opportunities for small-scale fishers are rather limited, and most of them do not have tenure to any piece of land. Consequently, they could not generate alternative income from agriculture. In view of their limited education and lack of other skills, it is oftentimes difficult for fishers to be engaged in other jobs and services.

Human right issues

- **Right to participate in managing local resources**

Being already affected by the socio-economical constraints, small-scale fishers are largely neglected by decision-makers and planners. Thus, they are oftentimes overlooked during the discussions relating to national poverty reduction strategies. By law, they should have the right to get support from public services (e.g. schools, hospitals) but it has remained very difficult for them to access such services. This is caused by the lack of standard services in the rural areas. It should have been ideal if the fishers could also participate in the decision-making process on community development and welfare in the fishing communities. Fishers should also be involved in making decisions on management measures that will affect them. As the main stakeholders, fishers should be prompted to take part in community management more interactively.

- **Gender inequity in fisheries management**

Women have been earning incomes and contributing to the family's well-being, where their involvement in fisheries is not only limited to their family responsibilities such as child caring, doing household chores, etc. In the fishing communities, women work with men in various activities concerning harvesting, processing and marketing. They also take part in household financial control. Such active involvement certainly allows them to take part in decision-making at the household level. Traditionally, men have been considered as heads of households and as decision-makers, while women played the subordinate roles and have not been involved in decision-making at the community level and at higher levels of management planning. Many human capacity developments have been designed for men only, while women could also be capable of effectively dealing with occupational issues. Due to their limited education, women usually lack self-confidence for participating in community meetings. Thus, the status of women in fishing communities should be assessed. The existing roles of women in household responsibilities, income generating, and involvement in community organization in various aspects should be recognized in order to design an appropriate plan for the promotion of gender equity in fisheries management.

Involvement of small-scale fisheries in national policy and legislation

Fisheries policy must provide a long-term vision for the small-scale fisheries through the clear specification of objectives and tools. Legislation should therefore provide the mechanisms for the implementation and enforcement of such objectives (FAO, 2005). National policies should secure the right of the poor small-scale fishers to the resources, considering that such rights are often eroded because of the absence of appropriate legislation. The policy-making process should be formalized to assure the involvement of the small-scale fishers. Such form of practical process should be formally promoted and should

not exclude the fishers' participation considering their involvement through the decentralization process, would bring the decision making process closer to the people.

Participation in fisheries co-management processes

Any management processes can be improved if these are made adaptable and flexible using multiple perspectives and a broad range of ecological knowledge and understanding, including those of the resource users and the fisheries communities. Indeed, it is in combining local and scientific knowledge that makes management even stronger than any community-based management or government management. Such management systems would have the

capacity to adapt to changes and are better able to deal with uncertainties and surprises (Berkes and Folke, 1998; Folke et al, 2002). The management process could then be considered as a co-management strategy.

Co-management could be understood as “the sharing of responsibilities, rights and duties between the primary stakeholders, in particular, local communities and the nation state...” (World Bank, 1999). Wilson et al (2006) defines co-management as an arrangement where the responsibility for resource management is shared between the government and users groups. Such definitions imply that participation of all stakeholders is the key mechanism in co-management system. Thus, co-management is the collaborative and participatory process of regulatory decision-making among the representatives of users groups, government agencies and research institutions (Jentoft et al., 1998). Moreover, co-management is considered to be a more democratic governance system, because it implies increased involvement of users and delegation of decisions to be taken as close as possible to the users.

Decentralization of fisheries management

The management approach currently prevailing is based on a centralized government intervention or top-down approach, and evidences are prevalent to prove that the current management approach is insufficient in dealing with the aforementioned issues (Nielsen et al., 2004). The trend of a greater participation of the resource users in management however, has recently been increasing. In this aspect, community-based management could become a contrary approach to activate the social processes and involve the resource users in resource management (Pomeroy and Berkes, 1997).

Decentralization of governance over fisheries and coastal resources is interestingly getting worldwide attention (Christie and White, 1997) since this approach could overcome the obstacle of a centralized management. Although the definition of decentralization differs from country to country but normally, decentralization could mean an act in which a central government formally transfers powers to actors and institutions at the lower levels in a political-administrative and territorial hierarchy. Decentralization is also justified as a means for increasing the efficiency and equity of development activities and delivery of services, and also for promoting local participation and democracy (Ribot, 2002). In both decentralization and co-management, the central government acts to transfer power and authority to local-level institutions. The objectives of both co-management and decentralization are the mobilization and strengthening of people’s participation in the decision-making processes and procedures that concern their well-being. Various types

of decentralization can be used by national governments to establish conditions that are conducive to co-management. In this article, the experience of Thailand is being advanced as possible model in decentralization and co-management processes.

Small-scale fisheries in Thailand

The Department of Fisheries (DOF) of Thailand defines “small-scale fisheries” to mean a typically traditional, artisanal and subsistence fishery. Fishing is carried out for livelihood and operated with non-destructive fishing gear in areas not further than 3 km from the shoreline, and in a mainly labor intensive way. The small-scale fisheries could also include small areas devoted to aquaculture.

Based on the Thailand’s National Statistics Record in 2000, small-scale fishers live along the coastal areas in 23 provinces comprising 93,418 fishery households and 29,122 employed households. The fishery households comprised 429,894 individuals (218,171 male and 211,723 female) while the employed households about 128,520 individuals (68,268 male and 60,252 female). For the inland capture fisheries, rivers, lakes, swamps and reservoirs constitute the important fishing grounds. Fisheries in these areas have long been part of the Thai culture and serve as an important source of animal protein for the rural people. Most of the people in this sub-sector are also considered small-scale fishers, with the fishing households estimated to have over 2 million individuals.

Small-scale fisheries play an important role for providing the sources of protein in the local areas that are far from civilization. This group is mainly immersed in poverty, poor health, uncertain occupational safety, and short life expectancy. The fishers usually spend a lot of time fishing in some seasons but making only low production. The lack of technology in fish post-harvest and processing also results in the low selling price of their catch. Meanwhile, the problem of declining marine resources happens fully and with the fishers having insufficient knowledge in marine resource conservation, the resources continue to be degraded.

Past experiences in small-scale fisheries development projects

During the past two decades, a number of projects in small-scale fisheries or coastal resource management have been implemented in Thailand with various objectives and approaches. The most important projects implemented by the DOF in collaboration with other organizations are shown in **Box 2**. It should be noted that such small-scale fisheries management projects were designed towards decentralization where the participation of the local people

Box 2. Small-scale fisheries and coastal resource management collaborative projects in Thailand

The Small-scale Fisheries Development Project (SSFD) was implemented under the 6th and 7th National Social and Economic Development Plans (1987-1991 and 1992-1996). In order to improve the living standard of fishers and their communities, fisheries-related infrastructures such as small fishing piers, facilities for keeping and repairing fishing gear, and water supply tanks, were built. The project activities were aimed at promoting alternative sources of income for the fishers' families, which included fish cage culture, shell culture and fishery product processing. Moreover, artificial reefs (ARs) installation was done to provide fish shelters as well as spawning and nursing grounds for fish stocks (Saraya, 1997). The activities were implemented in communities along the coastlines of the Gulf of Thailand and the Andaman Sea, and designed to address the general problems of the coastal communities. The package of activities was designed for implementation in suitable areas however in practice some activities were in fact not suitable in certain situations. The officers and project staff obtained the information to plan the activities through survey and interview with the people in the community, while the people did not have much opportunity to participate in the decision making process or in the development of activities that would suit their communities and needs. Thus, the people paid less attention to the project, because they did not understand the overall goals and purposes of such government-sponsored projects. As a result, the project activities ceased immediately after the project staff were transferred since no other official and local people took over.

The Bay of Bengal Program (BOBP) in Phang Nga Bay was a collaborative project between the DOF and the BOBP under FAO. It was initiated in 1995 with the aim of building sufficient resource management skills within the bay communities where majority of the fisheries management responsibilities would be eventually transferred to the villages (Nickerson-Tietze, 2000). The activities were designed to address the identified problems like mangrove reforestation to solve the degradation of the coastal habitats. The fishers had additional sources of income by introducing eco-tourism in the mangrove areas and operating passenger boats. Besides tourism business activities, the fishers started to manage the central markets in their communities, where they could sell their catch comprising mainly shrimps, at much higher prices than before.

The Fishing Right Pilot Project (FRPP) in Bang Sa Phan Bay, Prachuap Kiri Khan Province was developed from the SSFD in order to establish a fishers group in each village. At the beginning of the FRPP, the fishers groups were engaged in the implementation of a revolving fund for the members' fishing or aquaculture activities. In 1999, FRPP was given a demarcated coastal area of about 150,000 rai² or 240 km² (one rai = 1600 m²) of Bang Sa Phan Bay in the Gulf of Thailand (Anuchiracheeva et al., 2003). Nine fishers groups in the project site had the role and function as management body for the demarcated area. A regulation of the FRPP provided that inside the demarcated area the operation of trawls and luring light purse seines using less than 2.5 cm mesh size are prohibited. Monitoring of the prohibited fisheries inside the demarcated area was conducted using a patrol boat and fisher volunteers. Great effort in terms of manpower and budget was put in place for monitoring. The local fishers and stakeholders were encouraged to be involved in the management of the project area through the public hearings conducted and continuous exchanging of necessary information on the management procedures. Day after day the fishers and local people gained understanding about the need to protect their coastal resources and area.

The Locally Based Coastal Resource Management Project (LBCRM-PD) in Pathew District, Chumphorn Province was a collaborative pilot project on coastal resource management between the DOF and the Training Department of the Southeast Asian Fisheries Development Center (SEAFDEC/TD). The project aimed to establish a practical framework for sustainable coastal resource management at local level through the fishers' participation. This prompted the people to join in the decision making process on coastal fisheries management at the community level by providing the opportunity for training and education programs (Yamao, 2003). The project activities included a baseline survey to obtain the necessary information and data for the establishment of sustainable coastal resource management, extend and encourage locally based coastal resource management with the participation of stakeholders to achieve a consensus for the demarcated zone for fishing and aquaculture, and encourage local businesses by improving the techniques and marketing of processed fishery products of the women's group. From these activities, the local people have learned how to achieve a consensus for their management measures. The role of the local organization in supporting the peoples' consensus was also enhanced. However, since LBCRM-PD was still a new concept, the local people still needed guidance from the project officers or researchers in the discussion of their problems and in finding possible solutions.

The Coastal Habitat and Resources Management Project (CHARM) was a 5-year project (2003-2007) of the Royal Thai Government co-funded by the European Union and implemented by the DOF of Thailand. The CHARM project was aimed at promoting a co-management approach at the national, provincial and local levels between government, private sector and local communities. Institutional arrangements and technical operations for co-management have been tested and progressively developed in two project areas, namely: in Phang-nga Bay in the Andaman Sea (Phuket, Phang-nga, Krabi, and Trang Provinces) and in Ban Don Bay (Surat Thani Province) in the Gulf of Thailand. Some achievements presented interesting points where the local people participated in the co-management through the institutional process by linking the occupational groups with the local government in the organization of planning activities. Meanwhile, a partner's network was set up to exchange experiences and to coordinate their activities in the same sub-district. Human capacity building was conducted through the many training programs which dealt with a number of issues such as community organization and strengthening, monitoring, control and surveillance, and community-based tourism.

has been increased and where their interactive involvement has been in the project management process not only in the implementation stage. Local knowledge had been considered a key input to the management measures that have been promoted.

In order to prevent the fisherfolk from going against the regulations in the implementation of the activities, they should believe in the essential data used in making decisions by encouraging them to participate in the data collection and analysis. Consequently, this would make the fisherfolk understand the causes and the reasons for

developing such regulating measures. Moreover, since the trend of the activities in coastal resource management projects is towards reduction of subsidy such as infrastructure construction, promotion of alternative jobs to fishers should be done in order to increase their incomes. Training and capacity building could be provided based on the needs of the communities.

In the decentralization policy, the people's capacity is raised by devolving the authority for management to local organizations or village committees. This could lead to the promotion of activities that encourage fishers to make self-

rule management and help solve the problem of inadequate enforcement. The projects implemented by DOF have successfully enhanced the fishers' awareness of the need for the sustainable use of the coastal resources. One example of this attempt was to ban trawlers and push nets, which often caused conflict with the other types of small-scale fishing operations. These gears are very destructive in terms of over-harvesting the marine resources and degrading the sea-grass beds. The ban was agreed upon by the government and the communities. A combination of activities supported this attempt which includes public education by convincing the push net fishers to change their fishing practices, increasing enforcement and economic incentives (Nickerson-Tietze, 2000). The people supported such measure in order to increase their incomes and since illegal fishing operations using push nets have caused serious conflicts among the fishers, their indication of support was meant to address such conflict.

National Policies to Secure Social, Economic and Human Rights Aspects

Socio-economic assistance in small-scale fisheries

Socio-economic assistance for the fisheries sector was facilitated by DOF through the promotion of community-based fisheries management (or co-management) activities for small-scale fisheries targeting the fishers groups. The

activities included: (1) promotion of small business for local fishery products as well as ready to eat products, and promotion of One Tambon, One Product (OTOP); (2) conduct of training on alternative jobs and site visits; (3) promotion of the fishers group' revolving funds for loan purposes to secure their livelihoods; (4) promotion of fishers group co-op shop for cheaper essential daily needs; and (5) organization of the fisher wives as women's groups to do small business on fishery or agriculture products.

Provisions in the Thai Constitution related to natural resource management

In the Constitution of the Kingdom of Thailand, many sections deal with the management of natural resources and the environment. Some sections in the Constitution also provide the empowerment of people and communities to participate in the management as well as maintenance, conservation and exploitation of the natural resources. Thus, the government has been encouraging public participation in the conservation and exploitation of natural resources. The Constitution also stipulates the duties and authorities of local government organizations to maintain the quality of the environment and natural resources.

Specifically, the law contains the following substance (Chenkitkosol et al., 2003): (1) management, preservation and exploitation of the natural resources and environment



in the area of the locality; (2) participation in the preservation of natural resources and environment outside the area of the locality specifically in cases where the living conditions of the inhabitants in the area may be affected; and (3) participation in consideration with the initiation of any project or activity outside the area of the locality which may affect the quality of the environment, health or sanitary conditions of the inhabitants in the area.

Way Forward

Under the 10th National Socio and Economic Plan, the DOF developed the 10-year Thai Marine Fishery Management Master Plan (2007-2016) with the vision of “sustainable marine fisheries development attainable with the people at the center of the sufficiency economy”. The Plan proposed to enhance the quality of life of the fishermen, develop sustainable marine fishery corresponding to the code of conduct for responsible fisheries, increase the efficiency of co-management and collaboration of networking, and capacity building for fishery enterprises corresponding to the situation and changes in the fisheries conditions. The target of sustaining and securing the marine fishery, collaborating and networking, and human capacity building should support the changes in the conditions of marine fisheries.

References

- Anuchiracheeva, S., Harvey, D., Ganesh, P.S. and Kenneth, R. 2003. Systematizing local knowledge using GIS: fisheries management in Bang Saphan Bay, Thailand. *Ocean & Coastal Management*, 46(2003), pp.1049-1068
- Berkes, F. and Folke, C. (Eds.). 1998. *Linking Social and Ecological Systems, Management Practices and Social Mechanisms for Building Resilience*. Cambridge University Press, Cambridge
- Chenkitkosol, W., Somchanakij, H., Eiamsa-ard, M. and Supongpan, M. 2003. Strategic Review of the Fishery Situation in Thailand, pp 915-956. In Silvestre, G. and et al. (Eds.). *Assessment, Management and Future Directions for Coastal Fisheries in Asia Countries*. WorldFish Center Conference Proceedings 67
- Christie, P. and White, A. 1997. Trends in development of coastal area management in tropical countries: from central to community orientation. *Coastal management* 25: 155-81
- Department of Fisheries. 2008. Draft of Thai Marine Fisheries Management Master Plan (2007-2016). Department of Fisheries, Ministry of Agriculture and Cooperatives, Thailand, September 2007, 83 pp (in Thai)
- FAO, 2003. Strategies for increasing the sustainable contribution of small-scale fisheries to food security and poverty alleviation. Committee on Fisheries, Rome, Italy, 24-28 February 2003, COFI/2003/9
- FAO, 2005. Supporting small-scale fisheries through an enabling environment. Committee on Fisheries, Rome, Italy, 7-11 March 2005, COFI/2005/5
- Folke, C., Carpenter, S., Elmqvist, T., Gunderson, L., Holling, C.S. and Walker, B. 2002. Resilience and sustainable development: building adaptive capacity in a world of transformations, International Council for Science, ICSU Series on Science for Sustainable Development No. 3. Available online at: <http://www.sou.gov.se/mvb/pdf/resiliens.pdf>.
- Jentoft, S., MacCay, B.J. and Wilson, D.C. 1998. Social theory and fisheries co-management. *Marine Policy* 22 (4-5): 423-436
- Nickerson-Tietze, D.J. 2000. Community-Based Management for Sustainable Fisheries Resources in Phang-nga Bay, Thailand. *Coastal Management* 28, pp. 65-74
- Nielsen, J.R., Degnbol, P., Viswanathan, K.K, Ahmed, M., Hara, M. and Abdullah, N.M. 2004. Fisheries co-management – an institutional innovation? Lessons from South East Asia and Southern Africa. *Marine Policy* 28: 151-160
- Pomeroy, R.S. and Berkes, F. 1997. Two to tango: the role of government in fisheries co-management. *Marine Policy* 21(5): 465-80
- Saraya, A. 1997. Situation analysis of Thai marine fisheries and the DOF policy for the rehabilitation and management of the sector, Thematic Report of Feasibility Study for the Definition of a GIS based Decision Support System for Coastal Area Management in Thailand, 23 pp
- Wilson, D.C., Ahmed, M., Siar, S.V. and Kanagaratnam, U. 2005. Cross-scale linkages and adaptive management: Fisheries co-management in Asia. *Marine Policy*. Available online at www.sciencedirect.com
- World Bank. 1999. Report from the International Workshop on Community-Based natural Resource Management (CBNRM), Washington, DC, 10-14 May 1998. Available online at URL: <http://www.worldbank.org/wbi/conatrem/>
- Yamao, M. 2003. Backgrounds and Planned Activities of Locally Based Coastal Resource Management, Proceedings of the Toward Further Development of Coastal Resource Management: Lesson Gained Through Locally Based Coastal Resource Management in Pathew District, Chumporn Province, Thailand, pp.63-72

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