Capacity Building for Innovative Coastal Fisheries Management:

Addressing the Changing Role of Fisheries Extension and Development

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The changing nature of fisheries in Southeast Asia poses tremendous challenges for all those who are involved in the management of the sector. Faced with severe resource degradation and widespread poverty among fishing communities, both governments as well as the private sector are struggling to cope with the social, economic and environmental transformation the fisheries sector in Southeast Asia is undergoing. Increasing numbers of fishers are fiercely competing for decreasing resources, thereby escalating tensions and conflicts over aquatic resources. New stakeholders such as tourism and environmental conservationism claim responsibilities and competence for aquatic resources management from traditional fisheries management agencies.

Having no room left for a further expansion of the sector, these fisheries agencies are increasingly shifting their focus from fisheries development to management and conservation of fisheries resources. This change in direction poses new for fishers, fisheries officials and managers and other stakeholders in the sector, who have to rethink the ways they approach and view the sector and use fisheries resources. To cope with these challenges, stakeholders need new skills that will enable them to take up new roles and responsibilities arising from these changes. Considerable capacity building and human resources development for fisheries stakeholders, particularly for fisheries officials and extension workers are needed to prepare traditional fisheries agencies for their new roles and responsibilities.

Flashback: development and fisheries as engine for growth

With the "invention" of development and during the post-war growth optimism of the 1950s and 1960s, ocean and fisheries scientists enthusiastically proclaimed the oceans and their fisheries resources as the basis for satisfying the world's ever increasing hunger for protein; optimistically they predicted global fish production to reach 500 million mt annually. Facing seemingly limitless resources, the world welcomed and promoted the arrival of new technologies, which promised to increase and improve the harvest from the riches of the oceans. Echo-sounders, synthetic fibers, powered winches, on-board refrigeration and other technological advances were eagerly taken up by the fisheries sector to increase production. Encouraged by developments in other countries, newly independent and so-called developing countries discovered fisheries as an important source for rural growth, income generation, food supply and foreign exchange earner. Aid and development programs for these countries included extensive measures to build up modern motorized and mechanized fishing fleets.

One well-known and studied example of such modernization and expansion of the fisheries sector is the tremendous growth of fisheries in Thailand during the early 1960s, which started with the introduction and promotion of otter-board trawlers in the Gulf of Thailand. The following explosion-like expansion of the Thai trawler industry saw an increase in the number of trawlers operating in the Gulf from 99 in 1960 to 2700 in 1966; landings rose from 59,000 to 360,000 mt during the same period (J.G. Butcher, 1999 and D. Pauly and R. Chuenpagdee, 2003). This development of the Thai fishing industry reflects and typifies the optimistic atmosphere of ostensibly unlimited growth and development.

Impressed by such tremendous growth rates as were witnessed by the Thai fishing industry, governments in Asia and elsewhere were encouraged to further promote fisheries as a tool for the emerging development objectives of poverty reduction and food security. Not only large-scale commercial fishing operations, but coastal small-scale fisheries and aquaculture were seen as crucial in creating employment and increasing rural incomes. Providing small-scale, artisanal fishers, with outboard engines for their traditional crafts was the least one could do to improve their livelihoods. If and where traditional boat designs were deemed unsuitable for these new technologies, new boat types were introduced and provided by benevolent donor and aid agencies. Just one of the many examples of this

view on fisheries and fishery development is reflected in the "Report of 1st Advisory Committee Meeting, October 28 and 28, 1976, Colombo, Sri Lanka" of what was to become the Bay of Bengal Programme. The countries represented during this meeting identified, among others, the "inadequate gear and equipment", "inadequate technological know-how" and "low level mechanization" as the main constraints and issues affecting the development and functioning of the fisheries sector. Consequently, the mechanization of craft and suitable engines, supply of boats, the introduction of synthetic nets and mechanical as well as electronic aids for better fishing were identified as priority issues to be supported by technical inputs and training.

"Teach a man to fish...

…and you will feed him for a lifetime" as a synonym for helping people to help themselves became something like a basic paradigm for fostering development in general. Taking this literally, national fisheries agencies established extension systems for the promotion of a further expansion of the sector and for improving the fishers' capacity to catch more fish. Taking the lead from countries like Japan and the Soviet Union, fisheries schools and colleges emerged in many developing countries, to provide the knowledge and skills deemed necessary to support this drive for maximizing fisheries production.

Graduate and post-graduate courses in fisheries sciences were established during which the students were taught fishery biology, fishery technology and fishery economics. Fishery biology and its various models for stock assessments served to predict potential yields, while fishing technology provided increasingly efficient means for realizing these. In other words, technological advances in increasing the efficiency of fishing operations were promoted enthusiastically.

Thus equipped with the latest knowledge on how to make optimal use of fisheries resources, graduates of these courses joined fisheries institutions like national Departments or Ministries of Fisheries and started to implement extension programs aimed at modernizing the sector. Research and technical advancements in fishing and related technologies determined the content of the extension programs; transfer of new knowledge on fishing gear, efficient fishing methods, fish handling, processing was seen as the driving force for fisheries development. Guided by a vision of progress, fisheries institutions and their extension agents were convinced that the knowledge and skills they had to offer to fishers would enable them to create growth and both contribute to and benefit from the increases in wealth thus generated.

When it became apparent, that the benefits of this growth were not always distributed equally, with some communities and sections of the population being left out, extension services became "target-group oriented", with the objective of extension shifting from promoting the growth of the sector to meeting the needs of the fishers and resource users. Extension programs were now ideally built around the real (and not the perceived) needs of the resource users, with expert agencies providing the solutions people and communities were asking for.

The following excerpt from "Fisheries Extension Services for Coastal Provinces - Learnings from a Project in Ranong, Thailand" nicely describes and typifies this kind of extension services approach nicely. According to this, extension activities could be classified as:

"- Adapting, demonstrating and extending capture fisheries and aquaculture technologies;
- Facilitating credit to fisherfolk;
- Promoting income-generation activities for women in the fishing communities;
- Enabling fisherfolk access to social services provided by other cooperating agencies; and
- Providing support to fisherfolk in the creation of infrastructure.
….Broadly speaking, a pattern emerged:

When an activity was identified, either due to fisherfolk requests or due to suggestions from the DOF and/or BOBP, discussions were held with the community and, in some cases, further studies were undertaken to better understand the problem and its context. There followed a technology development stage, particularly where a technology had to be adapted to the local ecosystems, and this was more pronounced in the case of aquaculture; where a technology already existed in some other part of the country, video films were used to explain to the fisherfolk the technology and its implications. This was also found to be an excellent way to identify potential fisherfolk and farmers for participation in trials and as beneficiaries. The group was then taken on a study tour to give them a hands-on view of the technology functioning and also to enable them to discuss the technology and its pros and cons with fisherfolk more experienced in the practice. Extension through demonstration followed, often with some credit support. Parallel activities were conducted to mobilise the fisherfolk into groups for credit. A variety of training programmes were held to build up capacity. Finally, the activity was continued over a period of time, under supervision, until the capacity was built up by the fisherfolk to sustain it on their own" (R. Roy, 1994).

The extension processes described here, reflect the changes that occurred in the sector during the 1980s and a further orientation towards what was then called "integrated development". The process described here reflects some basic changes in extension services away from a purely technical fisheries focused orientation to a wider approach of livelihood development and poverty alleviation. Pilot projects and activities were initiated and supported to improve the living conditions of coastal communities and fishers.

This new target group orientation and focus on the real or perceived needs of fishers and their communities, however did not change the general mode by which extension services were carried out. Very much in line with the existing conventional ways of administering fisheries management, extension services were built on a top-down approach through which experts provided what they thought were solutions to local issues and problems. Just as fishers and fishing communities were expected to follow fishing regulations formulated by management experts working with national fisheries agencies, they were supposed to receive and follow advice provided to them through the extension services. The poverty of farmers and fishers made them appear resource poor and the average lack of formal educational achievements among these disadvantaged sections of the population supported the view that extension services have to provide the answers to the problems these communities are facing.

The winds of change

Continuous poverty among fishing communities, mounting evidence of resource degradation and deterioration of critical coastal habitats are generally seen as evidence for these conventional approaches to fisheries management and extension services having failed, or, if not failed, being inappropriate to provide the solutions people need for improving their livelihoods. With the growing consensus that tropical multi-gear, multi-species and multi stakeholder fisheries cannot be adequately managed through centralized conventional fisheries management mechanisms which are based on single species models of "Maximum Sustainable Yield", decentralization, localization and co-management emerged as promising alternative approaches to fisheries management.

Not only are these conventional approaches to fisheries management unable to effectively address these basic features of tropical coastal fisheries, their centralized, top-down approach also leaves fishing communities completely out of the decision-making process and builds up barriers between the fisheries administrations and the fishing communities. As a result, government institutions are unable to solve the problems facing the fishing communities, and the fishing communities are not empowered to seek their own solutions to these issues.

The Millennium Conference "Fish for the People" organized by SEAFDEC in 2001, addressed this issue and confirmed the emerging co-management concept for fisheries as the new policy thrust for the region. These innovative approaches to fisheries management, which are founded on the principles of decentralization and devolution of fisheries management functions to local level institutions, as well as on the establishment of rights-based fisheries are now widely accepted as the guiding principle for establishing fisheries management systems that promise to effectively address both bio-physical and socioeconomic concerns of fisheries.

Establishing such co-management systems and making them functional requires capacity building efforts for all key players, i.e., government agencies and fishing communities to take up their respective responsibilities under such systems. This includes fundamental changes in the orientation and functions of extension services. While technical expertise and advice is still needed, the role of extension workers changes from outside experts and advisors to fishing communities becoming partners of resource users in mobilizing local expertise and capacity for identifying solutions to coastal fisheries and resource use problems.

This new approach of extension respects traditional local knowledge and encourages resource user communities to become their own active agents of change. The skills needed by extension officers go far beyond the traditional extension skills of providing technical advice; instead, extension officers need to be able to facilitate dialogue and community processes. Community organization skills and participatory approaches to solving local resource use and livelihood problems, mediation and conflict resolution skills are needed to strengthen local resource management systems and empowering local communities to find and test solutions for their immediate needs and concerns.

SEAFDEC's Training Courses on Coastal Fisheries Management and Extension Methodologies

Recognizing the needs for such new and innovative skills among fisheries managers and extension workers, the SEAFDEC Training Department over the last years has developed and conducted international training courses for fisheries managers and extension workers from South and Southeast Asia.

Study tour to the project site in Bang Saphan during the International Training Course on Coastal Fisheries Management for Fishery Managers

The International Training Course on Coastal Fisheries Management for Fishery Managers focuses on sharing experiences and lessons from various pilot projects in co-management for policy formulation and designing fishery management plans addressing locally specific management needs.

The lecture session of the training provide the participants with an opportunity to refresh their knowledge on topics related to the management of small-scale tropical coastal fisheries. During the field trips to the pilot projects, the participants engage in active research on each project to generate the information base for management plans for local fisheries management. From 2005 to 2006, two sessions were conducted with a total of 51 participants.

The International Training Course in Coastal Fisheries Management and Extension Methodology is designed to familiarize the participants with co-management principles for small-scale fisheries and the necessary extension skills for establishing and supporting participatory fisheries management approaches on the local level. Through a mixture of lectures, innovative classroom activities, and extensive field practices that promote active learning, the participants learn to first understand the need for local level participatory fisheries management approaches. Then they are familiarized with approaches and tools that can help them facilitate community and stakeholder dialogues for analyzing local resource use patterns and livelihood issues and for formulating solutions for these issues.

Practices of facilitation, communication and presentation skills during the course, effectively prepares the participants for their role as mediators between resource user communities, higher-level government authorities and other stakeholders. During the four weeks training, the participants have ample opportunities to verify the course messages through field visits to pilot projects; field practice of participatory tools for analyzing local issues and problems allowing them to get some deeper insights into the functioning of local communities and their way of thinking. With many of the participants having been formed by conventional top-down approaches to extension, the course successfully initiates a rethinking of their role as extension agents.

Since 2000, 175 trainees have successfully concluded this training. This number may seem to be relatively small when compared to the vast coastal areas where co-management mechanisms need to be promoted and established. Nevertheless, given the right circumstances and a general openness to greater community involvement, each of the course's graduates can play an important role in strengthening local fisheries co-management by applying the newly acquired skills and knowledge in their daily work with fishing and resource user communities.

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