Improving information on inland fisheries: lessons from Southeast Asia

David Lymer[1], Simon Funge-Smith[2], Shunji Sugiyama[3], Theo Ebbers[4] and Chumnarn Pongsr[5]

The countries of Southeast Asia are endowed with rich inland water resources provided by extensive river and lake systems, floodplains, swamps and reservoirs. These systems continue to provide rich sources of fish and other aquatic organisms. Despite this abundance, surprisingly, little is really known about the current status of inland water resources and freshwater fisheries in Southeast Asia. There are notable exceptions in cases where intensive studies have been undertaken (such as in the Mekong Basin through the work of the Mekong River Commission). But other basins such as the Irrawaddy system in Myanmar and the extensive inland waters of Indonesia remain poorly covered.

Inland waters and fisheries resources occupy only a marginal space in the public consciousness. Thus, it does not come as a surprise that little reliable information is available about the current status of these resources and the role they play in the lives of rural people. Is it because these resources and their importance for people are simply overlooked, or is it the lack of coverage because they are already exhausted? For the people of the region dependent upon these rivers, lakes, reservoirs, ponds and other inland water bodies, the functions and services of the resources are a given. As part of the backdrop to their daily lives they are often taken for granted, but few, if any, would suggest that these resources are not in decline.

The lack of proper recognition of inland fisheries is a worldwide problem recognized in a number of international fora, but stirring agencies to action to address the needs of this sector proves difficult. Inland fisheries rarely involve international political and territorial disputes, in contrast to some marine fisheries. The multi-stakeholder issues surrounding freshwater use (for power, irrigation, leisure, etc.) also means that fisheries services may not be valued highly and as a consequence, little effort and resource has been allocated to information gathering in and management of inland fisheries. There is a growing awareness that, in certain parts of the world, inland fisheries can be a major source of protein and livelihoods which sparked recent interest in these fisheries. Southeast Asia has vast inland resources and a great number of people depend on these rivers, lakes, floodplains, swamps and reservoirs. However, the lack of information constrains effective advocacy and decision making regarding these resources, upon which the well-being of so many rural people depend.

An FAO Regional Technical Cooperation Project TCP/RAS/3013 "Addressing the Quality of Information on Inland Fisheries" (AQUIIF)[1] has been implemented as part of an effort by FAO to try to assess the needs for information gathering and managing of inland fisheries and assist five Southeast Asian countries to more effectively address the information and management needs which they face in their inland fisheries resources. The long term goal of the AQUIFF project was to assist participating countries to formulate appropriate policies and interventions for living aquatic resource management in inland areas that are based on quality information, and to implement them effectively. The immediate objective was to strengthen the capacity of the participating countries for the sustainable production of quality information on inland fisheries and aquatic resources that are more relevant to current policies. An over-riding principle of the project was to be sensitive to the constraints on increased financing and the need to be applicable to the different contexts and needs of each country and fishery.

A detailed review of existing information and description of the inland fisheries subsector in five participating countries[2] of the project revealed that all had different challenges facing their information systems in inland fisheries[3] and that they differed widely in their level of reporting and approaches used for information and data gathering systems. The diversity of

management challenges, inland water types and status of development or impact on the resources means that there is no 'template' answer to improving information. The national systems of information prevent even simple indications of whether fisheries were over- or under-exploited, or if catch trends were declining or increasing. Generally, a gap that all countries shared was the lack of inclusion of small-scale fishing activities of part-time and recreational fishers. Hence, inland fishery statistics on catch and the number of people involved in fishing activities are most likely underreported in this region. Further, in most countries, the official catch from inland fisheries is almost systematically under-valued.

The AQUIIF project further looked at management and policy issues facing this region. All countries have rules and regulations covering inland fisheries. These cover issuance of permits and licences and the use of specific gear. These rules and regulations are, however, seldom prioritized and therefore not enforced at a high degree. Most countries lack a comprehensive national policy for management and development of inland fisheries. National reviews show that existing policies were directed towards increasing landing and production, mostly through increase in aquaculture production volume or area. Hence, not surprisingly, there are no clear visions of inland capture fisheries, which could be used as a guiding principle for both the management and the collection of relevant data and information of the sector.

The approaches and objectives of the national pilot activities implemented in the participating countries were highly varied. This gave a wide range of experiences to draw from as well as an excellent range of recommendations for good practice:

- **Indonesia** – Participatory data collection through fisheries co-management groups to improve the quality of information in a large volcanic lake with multiple uses (hydro-power, aquaculture, tourism, fisheries)
- **Malaysia** – Establishment of systematic field data collection in demonstration sites where inland fisheries play an economically and socially important role (through model development and implementation of a management plan for the endangered Red/Gold Arowana species in an irrigation reservoir to comply with requirements for international trade under CITES)
- **Myanmar** – Better understanding of the factors and issues that influence production and viability of leasable fisheries by improved data collection in two inland fisheries concessions (one permanent water body, the other - a draw-down floodplain fishery).
- **Philippines** – To achieve an improved integration of authorities and institutions in managing a lake and the fishery activities of the lake by drafting of "Unified Rules and Regulations" and introduction and testing of a Fisherfolk Registration. The lake is established as a protected area, but still has fisheries activities and requires resolution between sustainable exploitation and conservation of habitats for wild birds.
- **Thailand** – To review, qualify and apply available data/information from relevant agencies for fisheries management improvement at Pasak Jolasid Reservoir (a large hydro-electric/irrigation reservoir), an established fishery that has issues relating to the seasonal migration of fishers and the lack of formal management planning for the fishery.

C. PONGSR, THAILAND

Myanmar, Ayerwaddy River - Inland fisheries in Myanmar are operated on a concession basis employing local people in the harvesting and processing of the fish

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Thailand, Songkhla Lake - Tropical inland fisheries are resilient to fishing pressure but very sensitive to environmental changes

C. PONGSRI, THAILAND

West Sumatra - Maninjau Lake - Estimating the contribution of inland fisheries is difficult - many families fish occasionally and often all members of the family are involved in one or more activities. Is the contribution of the fishery significant and are these families dependent for their livelihood - these are key questions

The project aimed to work with members at identifying key management information needs and address these through national pilot activities. The selected pilot sites were in almost all cases restricted to large water bodies[4]. This was partly because the boundaries of a water body make identification of the zone, the stakeholders and the issues somewhat more straight forward. The participating countries recognized that there are significant challenges to addressing information needs in the 'open fisheries' such as floodplain fisheries, rice-field ecosystems, rivers and wetlands. The Myanmar case study does cover one draw-down floodplain fishery (in the Ayerwaddy delta); although in this case there is still a single unit under consideration (which is a concessional fishery).

The challenge in the future will be to take the learning processes started through the AQUIIF project and apply this to these different fishery types.

The end output was the development of national strategies which was intended to mainstream the lessons learned and different approaches into a nationwide way of working. All participating countries developed, at a minimum, a draft national strategy for inland fishery statistics. In all cases, there is clear evidence of increasing recognition of the role and value of inland fisheries and that there is an apparent need for more effective management, typically through decentralized systems of local resource management. It was also recognized that inland fisheries cannot be dealt with effectively in a 'stand alone manner' and that it is critical to engage other users and stakeholders in the inland water sector in order to achieve real understanding and compromise to ensure that inland fisheries are not simply minor inconveniences when promoting agricultural development, drainage, flood mitigation, hydropower and road development.

A draft set of general guidelines for improving information on inland fisheries has been developed as a final joint output by the participating technical resource persons of the project. These guidelines were based on the synthesis of lessons learned and experiences gained by participating countries. The guidelines are aimed at providing a practical guiding framework for national fishery agencies for generating quality information on inland fisheries. Specific conditions and requirements of different types of water bodies are addressed by the guidelines by taking tailor made approaches for each water body type. FAO, through its global strategy for improving information on status and trends of capture fisheries will continue to work on these guidelines.

In conclusion, it is important to look outwards from the fishery sector to engage with other stakeholders in aquatic resources management. The reality of the inland fisheries sectors in Asia is that it is generally ignored or overlooked by other more (economically) powerful sectors. There is great room for advocacy on the important role of inland fisheries and pushing for adequate resources and recognition, since there is the undeniable fact that there are still significant numbers of rural people who are still reliant on the wild fisheries resources in the region.

More information about this project can be obtained by writing to Mr David Lymer via e-mail at David.Lymer@fao.org.

[1]David Lymer
FAO Regional Office for Asia and the Pacific (FAORAP)
Bangkok, Thailand
E-mail: David.Lymer@fao.org
[2]Simon Funge-Smith
FAO Regional Office for Asia and the Pacific (FAORAP)
Bangkok, Thailand
E-mail: Simon.Fungesmith@fao.org
[3]Shunji Sugiyama
Fisheries and Aquaculture Economics and Policy Division (FIED)
FAO Fisheries and Aquaculture Department, Rome
E-mail: Shunji.Sugiyama@fao.org

Recent changes in policy and management of inland fisheries in participating countries

COUNTRY	RECENT CHANGE	INDICATORS/EVIDENCE OF CHANGE
Indonesia	Change in management regime for inland fisheries More attention to inland capture fisheries on national level Improve national inland fisheries statistics National committee of stock assessment issues guidance for improved information and management in inland fisheries	- Introduction of Act No 31/2004 on Fisheries - Establishment of a national annual forum on inland fisheries - Creation of a specialized inland fisheries unit in Directorate-General Capture Fisheries - Shortening of processing time of data and information (from 2 to 1 year) - More specific and complete information on inland fisheries for some key environments and especially for aquaculture - Introduce concept of "Inland fisheries management area" as part of implementation of national guidelines for fisheries management -Development of national guidelines for introduction of inland fisheries management plans
Malaysia	Government formal recognition of inland fisheries Increase of awareness by the government on endangered fish species More state governments to formulate new enactment on inland fisheries	- Inland fisheries management is included in 9th Malaysian plan (2006-2010), with budget allocation - Establishment of Inland Fisheries Section in DOF in 2004 - Establishment of demonstration site for endangered inland fish species - International regulation by UNDP for Friends of Sungai Nengiri on Mahseer (*Tor spp.*) conservation - Sabah (2003) - Selangor (Draft) - Increase number of Tagals from 200 to > 300 - 400 by 2010 (Sabah)
Myanmar	Changing management regime Continuation/extension of pilot project in other areas	- Appropriate "TOR" for lease owners issued by DG/Minister: longer term leases (3 – 9 years) if habitats are managed - An increasing number of leasable fisheries are changed to culture-based fisheries (as a mandatory requirement for obtaining longer-term concession) - Due to these changes there is no severe competition for leases - Value now recognized and Government interest to monitor an additional 800 water bodies in the coming years
Philippines	More emphasis on inland fisheries and aquaculture	- Government recognition of inland fisheries and aquaculture - AQUIIF objectives and strategy to be adopted into national policy - Recognition that aquaculture must be integrated in wider ecosystem and quality information is essential to this process - Thrust to strengthen co-management of aquaculture and inland fisheries
Thailand	Greater integration among concerned agencies for inland fisheries information collection Improved information realized at the policy makers level Greater awareness of the need and methods for improved information collection among stakeholders	- Inter-agency cooperation on fisheries and environmental management of Songkhram river basin - Using bottom-up approach to management in Songkhram River basin - Local authorities are willing to cooperate in information collection - DOF Five year plan for routine data collection in inland fisheries across a range of habitats approved - Capacity building activity at national level for fisheries officers - Recognition of socio-economic data as important part of inland fisheries management

[4]Theo Ebbers
Consultant
Bangkok, Thailand
E-mail: thebbers@yahoo.com
[5]Chumnarn Pongsr
Consultant
Bangkok, Thailand
E-mail: chumnarnp@gmail.com

[1]Addressing the Quality of Information on Inland Fisheries, started in 2005 and concluded in 2007
[2]Indonesia, Malaysia, Myanmar, Philippines, and Thailand
[3]Ebbers, T. & Funge-Smith, S. 2006. Inland fisheries resources: treasures already lost or simply over-looked? FAO TCP/RAS/3013, Field Document 12. FAORAP, Bangkok, Thailand. 9 pp.
[4]Funge-Smith, S. Sugiyama, S., Ebbers, T. Pongsri, C. & Lymer, D. 2007. Report of the Third Regional Workshop. FAO TCP/RAS/3013, Field Document 21, FAORAP, Bangkok, Thaiand. 48 pp.