

CHAPTER 4

Research Activities

4.1 Review of Literature on Fisheries and Livelihoods

A literature review of previous rapid livelihoods assessments and Participatory Rural Appraisals (PRAs) capturing ‘voices of the poor’ was done prior to the first planning workshop of the project in April 2002. Also the national partners collated available information for characterising the main inland aquatic environments in their respective countries. The main points from this have already been presented in Chapter 2 (Background), while the outcomes from the country reviews are summarized and compared in Chapter 5. The remainder of this chapter discusses the methods adopted in this study.

4.2 Planning Workshop

An initial planning meeting was arranged with all the partners to agree on a common framework of activities. The planning workshop agreed on roles and responsibilities, methods, sources of metadata, modalities for delivering outputs, a characterisation of freshwater fisheries. It identified representative environments and sites for PRA sites, finalised the PRA guidelines and country profile framework; and provided orientation to the partners on stakeholder analysis methodology, on the Sustainable Livelihoods framework and PRA methods.

4.2.1 *Process of stakeholder analysis*

Once field sites have been chosen for participatory rural appraisal (PRA) exercises, and any permissions to work there have been secured, researchers must decide whom in the community they are going to obtain information from.

In identifying primary stakeholder groups the key question is “Who has a stake – an interest – in the fisheries?” For categorization it is important to understand the issues that distinguish their involvement, role, dependence and relations with the fishery.

How was this categorisation done? Tentative definitions of different stakeholders were agreed in the workshop as follows.

- 1 **Primary stakeholders** – those who have full or partial dependence on the resource for their livelihood – e.g. fishers.
- 2 **Secondary stakeholders** – those who have influence over / an interest in the resource but do not directly depend on using it for a living – e.g. fisheries department.

Identification of categories can come from community itself or from outsiders/experts. Community stakeholder analysis results in many categories that are unique to each location, but when aggregated up into broader categories these usually show similarities/common features. Outsider categorization can ensure comparability.

For this project we needed to ensure broad categories for which secondary data would be available at national level, and that would allow comparison between countries, between regions within countries, and between fishery/wetland types within each country. Hence outsider categorization was necessary, although the participants in the PRAs also discussed how they characterised and classified themselves and other resource users. Hence this

approach still permits use of participant stakeholder analysis in PRAs, but in the workshop the partners undertook a stakeholder categorization/analysis to build in as part of the framework used in the research. An example considered in helping the partners from Bangladesh fisheries is shown in Table 4.1.

Table 4.1 Stakeholder Analysis from Bangladesh Community Based Fisheries Management Project.

Stakeholder	Involvement in project	Interests	Impact
Primary stakeholders – Communities			
Fishers (significant income source) (hindu and muslim)	Main participants	Long term fishing rights Sustainable catches Increased income Increased role in decision making	+ + + +
Spouses of fishers	May be secondary participants	Increased status and role in decision making Alternative income generating activities if excluded from the fishery in some seasons	+ +
Children of fishers	May be secondary participant or primary participants through the Ministry of Youth and Sport	Increased role in community decision making Alternative income generating activities if excluded from the fishery in the long term	+ +
Fisher leaders/middlemen	Secondary or main participants, aim is to limit their control	Controlling fisheries Maintain/increase share of fishery income Long term fishing rights Sustainable catches	- - +/- +
Landless (<0.2 ha)	Secondary or main participants	Access to fisheries More fish for food Additional income from fish and fish processing	+/- + +
Landowners (>.2 ha)	Consulted/represented, may be secondary participants	Access to fisheries More fish for food Increased supply fish in market	- + +
Richer/influential non-fishers (traders, moneylenders...)	Secondary participants, compromise agreements	Increase share of returns from fishery Power and prestige in community	- -
Secondary Stakeholders – Involved organisations and staff			
NGOs	Main implementors of CBFM activities	Expanding activities Increase incomes of fisher participants	+ +
DOF	Main implementors of CBFM activities	Increased role in fishery management Higher fish production	+ +
MOFL	Oversee project and policy	Influence policy Funds disbursed	+ +
MOL	Project partner also control fisheries	Maintain real revenue	=
ICLARM	Overall research responsibility (with other partners)	High quality research Influence on policy	+ +
Union Parishads	Influence over and represent local communities	Influence/role in resource management	+/-
Local administration (thana and district)	Administer fisheries	Control fisheries Mediate in disputes	+/- +/-
DFID	Donor - improving fishery management	Poverty reduction Improved food security Improved fisheries policies Disburse funds	+ + + +
External Stakeholders			
Fourth Fisheries Project	Lesson learning, sharing experience Joint influence on policy formulation	Effective institutional arrangements for local fishery management Information exchange Complementary ways and alliances to influence other stakeholders	+ + +
Other projects	Lesson learning, sharing experience	Information exchange Complementary influence on fishery management	+ +
Ministry of Youth and Sport	Lesson learning	Responsible for administration of waterbodies under 8 ha	+
Other donors	Lesson learning, sharing experience between projects	Disburse funds Informing and influencing policy	+/- +
Other NGOs	Lesson learning, sharing experience	Information exchange, promote new resource management methods	+

It was agreed in the workshop that the focus should be on household categorisation (fisher/farmer/landless/etc) and not on individuals (men/women/children), since the household is considered to be the main economic unit with a shared livelihood strategy and shared level of poverty, although this is not to ignore differences by gender and age. So the need was to for each primary stakeholder category to be able to summarise their livelihood asset structure, fishery dependence, vulnerabilities, role in transforming processes, etc.

4.2.2 Stakeholders Categorization

It was clear that each country had a different mix of stakeholders involved in the inland fisheries sector. It was therefore proposed that each partner should form their own stakeholder groups according to the general criteria of the PRA guideline together with locally-significant criteria. Additionally it was hoped that as far as possible stakeholder groups formed at research site locations could be linked to each country's national poverty indices. However, the primary criteria developed during the planning workshop are shown in Table 4.2.

Table 4.2 Primary criteria for categorising livelihoods dependent on inland fisheries

Categories	Characteristics
Bangladesh	
Fishers	Full time fishing and fishing related activities; fully dependent on income from fishing
Part-time fishers	Fishing for income seasonably or part-time
Subsistence fishers	Fishing for food
Fishing gear makers	Usually part-time; women and family members do this as supplementary income
Lease holders/ditch owner	High financial capital; influential; high management skill
Fish processor (mostly women)	Involved in fish processing seasonally; most of the family income comes from fish processing
Fish traders	Fully dependent on fish trading; borrow money to invest money in fish trading
Fishery workers	Wage earners assisting in landing, packing, transferring; poor and unskilled
Cambodia	
Full time Fishers	Depend on fisheries resources, fishing is their main occupation for their livelihoods and they fish almost every day all year round
Part time fishers	Depend on fisheries resource as well other income sources, but fishing is their part time job or secondary occupation. Part time fisher includes seasonal fishing (by time by fishing gear), subsistence fishing for household consumption, and those who do fishing when they have spare time from their first occupation
Fish traders	Those who sell fish either inside or outside the village. They buy fish from fishers and sell in the market. They earn income from this activity and consider it as their first occupation for livelihood.
Fish processors	Those who earn income from fish processing and consider it as their first occupation for livelihood.
Lao PDR	
Full time fishers	There are very few full time fishers. Full time fishing does not provide enough income for any stakeholder group. Those who fish during the peak fishing period are defined as full time fishers. These people are poor and they live on other means of income at other times.
Part time Fishers	Fish during their leisure for food and for income. They are mostly farmers and fish when they have time.
Labourer	Seasonal work; usually landless; may be paid with food (or low amount of money); low education level.
Middleman	Buys fish from village; may supply gear to the fishers; lend money to the fishers.
Vietnam	
Landless	No land; fishing for income (part-time)
Fulltime fishing – Delta	No land; fishing for income (full time); seasonal variation of fishing locations
Fulltime fishing – Highlands	No land; fishing for income (full time); fixed fishing locations
Part-time fishers	With land; large family size; fishing for income and others (part-time)
Fish trader	Involved in fish trading

Based on the initial stakeholder analysis in the planning workshop, the PRAs actually conducted resulted in a set of assessments of livelihood strategies and assets for actual stakeholder types found in the study sites. Over all the sites in each country the categories shown in Table 4.3 were found. Note that there was a greater diversity and sub-division of interests in the fishery in Bangladesh, with its very high population pressure, compared with the other countries. Also the definitions of full time, part time and subsistence fisher vary between countries, with few people in Lao PDR and Vietnam fully dependent on fishing for an income.

Table 4.3 Summary of the primary stakeholder groups across the countries.

Bangladesh	Cambodia	Lao PDR	Vietnam
Full Time fisher	Full Time fisher		Full Time fisher
Part Time fisher	Part Time fisher	Full Time fisher	Part Time fisher
Subsistence/Landless		Part Time fisher	Landless
Fish Traders	Fish Traders	Fish Traders	Fish Traders
Fish Processor	Fish Processor		
Ditch Owner			
Lease holder			
Poor women/ gear making			
Fishery worker			
Fry collectors			

4.2.3 Characterisation of Inland Fisheries

The country partners characterised their country's inland fisheries in terms of the different ecosystems that they believed pertained. Another exercise was undertaken to determine the number of sites, how representative these sites were, the likely number of stakeholder groups there might be for the PRA exercises and the number of persons in each group. Table 4.4 shows the range of environments covered by PRAs in each country, again the Bangladesh partner and WorldFish Center have done PRAs in a greater diversity of environments in Bangladesh, such as oxbow lake, estuary, mangrove forest (Sundarbans) and enhanced lake/floodplain fishery.

Table 4.4 Main inland fishery environments identified in the four countries.

Bangladesh	Cambodia	Lao PDR	Vietnam
Rivers	Main river	Main stream	Main stream
	Downstream river		
		Tributaries	Canal
Floodplain - Stocked (enhanced Beels)			
Floodplain - Deep flooded (Haor)	Great Lake	Back-swamp	Swamp forest
Floodplain - Seasonal		Floodplain/ Rice fields	Rice fields
Oxbow lake			
Reservoir			
Estuary			
Mangrove forests			

Note: beel is a floodplain depression; haor is a large depression that forms an inland sea; the great lake is Tonle Sap Lake and includes a vast area of permanent water, seasonally flooded forest, and seasonal floodplains; back-swamps combine seasonal floodplain with swamp forest

In the analysis workshop in November 2002 the partners jointly reviewed the actual PRAs undertaken and the common environments and stakeholder categories found during fieldwork, and the extent to which they were similar between countries. It was concluded that the common environments found in all four countries were those shown in Table 4.5, while the common stakeholder categories could be summarised as households who fish for an income (whether part time or full time), households fishing primarily for food, and fish traders. These stakeholder types can be found in each of the environments. However, it was

found that the PRAs in Cambodia and Lao PDR did not cover seasonal rice-field fisheries, and only in Bangladesh was a PRA undertaken in the reservoir environment (sole reservoir in the country). It was agreed that for the purpose of country summary reports information on livelihood strategies of these stakeholder categories would be summarised where available from secondary sources for these environments not covered in the PRAs. Nevertheless the PRAs in each country did cover at least a representative site from most of the main components of their inland fisheries.

Table 4.5 Common environments where livelihoods of those fishing for income, fishing for food and fish traders were assessed in all four countries.

Bangladesh	Cambodia	Lao PDR	Vietnam
Rivers	Main river	Main stream	Main stream
FP-Deep flooded Haor	G. Lake	Back-swamp	Swamp forest
FP -Seasonal	Rice fields** - seasonal	Rice fields** - seasonal	Rice fields
Reservoir	Reservoir**	Reservoir**	Reservoir**

** Information from Secondary sources

4.3 Secondary Data Analysis

In each country, a major part of the research activities was to review information collected from secondary sources, previous studies, government documents and other secondary sources. Literature review of previous rapid livelihoods assessments and PRAs capturing 'voices of the poor' were part of the review done by the national partners in order to compile information that included:

- The main categories of poor, their numbers, geographical locations.
- Data on inland fisheries and aquatic resources status, trends and threats, which were compiled into resource inventories.
- Where possible from past studies the role of inland aquatic resources in the livelihoods of rural people and their dependence was summarised by poverty levels.
- Assets and access to capital of rural people were summarised and disaggregated as far as possible.
- Institutional and legal profiles of fisheries and wetland status and access regimes were compiled.
- Gaps in information were identified.

Country status reports were prepared on the basis of all such collected information. The availability of information varied greatly. For Bangladesh a large and dispersed literature is available combining official sources and a range of specific studies and project reports. For the other countries data is much more limited and the range of studies is similarly limited, with most of those located produced in recent years. Overall the review of secondary information was less comprehensive than expected due to non-existence of information in some of the countries, and also due to the limited number of past studies which investigated in any detail poverty related to inland fisheries and aquatic resource use.

4.4 Participatory Rural Appraisal (PRA)

The PRAs were done in order to:

1. fill in gaps in national data and to focus on primary stakeholders and understand their livelihood strategies.

2. to obtain the opinions of primary stakeholders on problems and threats facing their livelihoods.

They were complemented with key informant discussions and secondary sources (reports) from secondary stakeholders.

For the PRA study, households having different primary socio-economic activities were selected deliberately and separate focus groups were held with representatives from each relevant stakeholder category. The households' incomes and livelihoods strategies based on water resources were the main criteria for selection of participants. Steps for PRA included:

- reconnaissance survey,
- secondary information from local authority, and
- PRA following a prepared checklist and set of tools.

The team for each PRA comprised of more than one facilitator. Facilitators used primarily Participatory Rural Appraisal (PRA) tools to understand rural people whose livelihoods depend on inland fisheries and how they define their *well-being*, or what characterizes *good life* (rich) as opposed to a *bad life* (poor). The study also tried to find out the priorities and concerns of fishers and other stakeholders in order to understand how they identify and implement strategies for sustaining their own lives. In addition, it was important to learn about various support networks that the stakeholders depend or rely upon.

A proposed PRA framework (and the participatory tools that could be used) designed to capture the information sought from stakeholder groups as regards their livelihoods was discussed in the workshop in April 2002. It was noted that seasonal diagramming was an activity by which each group could bring out the main parameters of their livelihoods (giving a list of strategies they pursued, when they did it, what inputs they required, and so on). The seasonal diagram could then be used as the basis for further discussion and PRA exercises with each group both on their livelihood strategies, and on their vulnerability context. Other tools that could be used included ranking of strategies, timelines of major events impacting positively or negatively on their livelihoods, three-level cause-effect diagramming and an opportunity and constraint-solution census.

Finally the range of tools used for the PRAs were:

1. Timeline
2. Mapping
3. Venn diagram
4. Seasonal calendar
5. Daily activity
6. Gender analysis
7. Trend analysis
8. Matrix ranking and scoring
9. Flowchart
10. Strength weakness opportunity constraint analysis
11. Wealth ranking
12. Constrains/problems ranking
13. Problem tree

Activities to ensure the reliability of information included cross-checking the data given by individual informants. It was also ensured that the stakeholder categorisation criteria were linked where possible to some national indicators (for example in Bangladesh land as a proxy for wealth/poverty had been used), since this would enable external agencies to identify whether the groups described were similar to their target groups and the information

are applicable in their context. In each country the following process was adopted:

- Villages/sites to represent key aquatic environments for participatory livelihoods assessments were identified,
- Reconnaissance survey was done and some secondary stakeholders were consulted in order to identify fisheries stakeholders in appropriate villages,
- PRAs conducted to analyse resource use and dependence within livelihood strategies, and the influence of social capital, transforming structures, institutions and processes.
- Opportunity and constraint censuses with stakeholder groups and ranking and prioritisation of problems of which some qualify as issues for future research undertaken.
- National reports on PRAs for each country were prepared.

4.5 PRA Coverage

The PRAs were a substantial part of the overall research activities and form a set of participatory livelihood assessments covering in a systematic way major inland fishery environments and major fishery stakeholder categories, each having contributed their own analysis of their livelihood bundle of assets, trends, problems etc. In summary the stakeholder categories and environments actually covered in the PRAs in each country are shown in Tables 4.6-4.9.

Table 4.6 Stakeholders covered by environment in livelihood assessment PRAs in Bangladesh.

Ecosystem	No. of PRA sites	Poor full time	Poor part time	Subsistence	Fish traders	Women	Leaseholders/moneylenders	Kua Owner	Total
Main River-Jamuna-Ganges confluence	1	X	X	X	X		X		6
Estuarine-Bhola	1	X	X	X	X		X		6
Sundarbans-Khulna	1	X	X	X	X		X		6
Beel- (Enhanced) Naogaon	1	X	X	X	X				4
Haor-Floodplains (Sunamganj)*	1	X	X	X	X	X	X		6
Floodplain Beel-Narail*	1	X	X	X	X	X		X	5
Oxbow lake-Jessore (Enhanced)	1	X	X	X	X				4
Reservoir (Kaptai)	1	X	X		X				3
Total	8	8	8	7	8	5	4		40

Note: PRA carried out by BCAS - clear rows, PRA carried out by WorldFish Center – shaded rows.

Table 4.7 Stakeholders covered by environment in livelihood assessment PRAs in Cambodia.

Ecosystem	No. of PRA Sites	Fishers		Trader	Processor	Poor	Total
		FT	PT				
Main Stream	1	X	X				2
Downstream	1	X	X			X	3
Tonle Sap	1	X	X	X	X		4
Total	3	3	3	1	1	1	9

Table 4.8 Stakeholders covered by environment in livelihood assessment PRAs in Lao PDR.

Ecosystem	No. of PRA sites	Full time	Part time	Total
Tributaries	1		X	1
Main stream	1	X	X	2
Main stream	1	X	X	2
Tributaries	1		X	1
Back swamp	1		X	1
Rice field			X	1
Total	5	2	6	8

Table 4.9 Stakeholders covered by environment in livelihood assessment PRAs in Vietnam.

Ecosystem	Number of PRA sites	Full time	Land Owner	Landless	Part time	Fish trader	Total	Responsibility*
River (S)	1	x		x	x	x	4	AGU
Canal (S)	1	x		x	x	x	4	CTU
Swamp/forest (S)	1		X	x			2	AGU
Rice field/flood plain (S)	1			x	x	x	3	CTU
Total	4	2		4	4	4	14	

Note: AGU = An Giang University; CTU = Can Tho University

4.6 Secondary Stakeholder Analysis

The objectives, procedure and expected outputs from consultations and review of secondary data were agreed in the planning workshop in April 2002. It was also noted that, in terms of project outputs, information from these sources needed to be accessed, reviewed and reported by country partners to fill in gaps in secondary information and to obtain views on current threats and trends, opportunities and researchable constraints affecting the lives of poor people dependent on inland fisheries. Additionally, however, visits to secondary stakeholders also represented an opportunity to build linkages with them, and to draw them into the uptake and dissemination process.

4.7 Partnership and Capacity Building, Synthesis and Reporting

An important aspect of the project was to introduce the sustainable livelihoods analysis framework, develop with partners a simple way of building up such analysis through PRAs, and to then compile assessment for inland fisheries. The national partners had limited experience of conducting PRAs and very little experience of the sustainable livelihoods framework prior to this study. As the methods and study were built up in a participatory way with all the partners contributing, it gave a chance to develop skills within the national partners, particularly those in the Mekong region, which it is hoped will be used further by these organisations in guiding their future research and development activities. Resources and time limited the scope to fully involve all partners in comparative analysis of livelihood strategies, dependence, status and trends in inland fisheries and wetlands as had been hoped. But regional workshops were held with partners and collaborators to compare the progress and agree on analysis and reporting structures. There would, however, be benefits to follow up activities to draw together findings and raise awareness more broadly, particularly in the Mekong countries, or through regional forums.

Consultations were held as far as possible with collaborators and other organisations in the concerned countries on poverty and fisheries, including their assessments of researchable needs and priorities. National workshops were intended to be held to disseminate findings in

Bangladesh and the three Mekong countries to target institutions. They were held to disseminate findings in Bangladesh and in Cambodia, and in the other two countries will be held in May/June 2003. Summary reports have been prepared, but are still to be translated and distributed in national languages. The summary documents should then be distributed among the donors, other relevant projects, government and NGOs, and by the partners to grass roots levels during their own meetings and future research and development activities with fishing communities and local government. It is also expected that the partners will help take up dissemination of findings to grass roots levels through national and regional networks (e.g. STREAM).