

**Report of the**

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**WORKSHOP ON PARTICIPATORY APPROACHES IN  
AQUACULTURE**

**Bangkok, Thailand, 28 February - 1 March 2000**



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**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS**  
Rome, 2000

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## PREPARATION OF THIS DOCUMENT

The Workshop on Participatory Approaches in Aquaculture was part of an exercise that aimed to demonstrate, in practical terms, how “participatory approaches” had been applied in aquaculture development work and how they might be applied in the future. The idea for the workshop derived from the preparation of the FAO Fisheries Technical Paper No. 358, entitled “*Rapid Rural Appraisal, Participatory Rural Appraisal and Aquaculture*”. While this document looked more specifically at two of the principle tools used in the application of participatory approaches (RRA and PRA), the workshop aimed to take a wider view, addressing the advantages and problems raised by participatory approaches in general.

The Workshop was organized by FAO, ICLARM and the University of Stirling (UK) with a strong involvement of DFID. The meeting was held from 28 February to 1 March 2000 in the Maruay Garden Hotel in Bangkok, Thailand.

Twenty-one participants from thirteen institutions attended the Workshop (See Appendix 2). Some individual presentations were made on participatory methods in general, on tools used in RRA/PRA as well as on some specific applications such as the Mexican one where participatory methods were used in conjunction with GIS studies.

This report aims to review the presentations, discussions and conclusions reached at the workshop and to improve the understanding of participatory approaches among those involved in aquaculture development work.

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Report of the Workshop on Participatory Approaches in Aquaculture. Bangkok, Thailand, 28 February - 1 March 2000.

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#### ABSTRACT

This is the Report of the Workshop on Participatory Approaches in Aquaculture held in Bangkok, Thailand from 28 February to 1 March 2000. The use of participatory approaches was analysed in eight aquaculture case studies from different countries in Asia and one from Africa. The main conclusion was that there are no “absolutes” in participation and a wide range of different degrees and forms of participation may be manifested in the development process. Participatory approaches proved to be particularly helpful in improving understanding of the role of aquaculture in rural livelihoods (as opposed to focusing purely on aquaculture as a technical activity) and in understanding the attitudes and perceptions of the people involved. The real potential of participatory approaches lies not just in the improvement of the understanding of aquaculture development workers but in the building of the capacity of the end-users of aquaculture to make decisions about aquaculture and its place in their livelihood strategies more effectively. Participatory approaches are commonly regarded as an essential part of sustainable livelihoods. The participants agreed that this has been the first attempt to systematize the lessons learned from the application of participatory methodologies (RRA, PRA and others) to aquaculture projects. But they also agreed that this learning process needs to continue as more experience is gained and as the thinking about participatory approaches themselves develops.

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## 1. INTRODUCTION AND GUIDING PRINCIPLES

“Participatory approaches” are used to describe a wide range of development and research approaches, methods and tools that are increasingly proposed as a means of improving the practice of development. With more and more agencies adopting these approaches and attempting to apply them throughout their development programmes, practitioners working in technical fields, such as aquaculture, are increasingly asked to carry out their work in a “participatory” way.

All too often, these participatory approaches are proposed as if they represented a specific methodology that can be applied in any situation in order to resolve development problems. This is misleading. “Participatory approaches” should be thought of as a set of “guiding principles” that can help practitioners to adopt a different mode of working and, in particular, develop a different sort of relationship with the people that are supposed to be benefiting from their work.

The guiding principles that really make up participatory approaches can be reviewed as follows:

<b>TABLE 1 : GUIDING PRINCIPLES OF PARTICIPATORY APPROACHES</b>	
DEFINED METHODOLOGY	While participatory approaches make use of a flexible “basket” of different methodologies, those methodologies are defined and systematic.
SYSTEMIC LEARNING	The methods used in participatory approaches emphasise learning about systems and the relations between different elements in those systems. Participatory approaches need to be “holistic”.
MULTIPLE PERSPECTIVES	Participatory approaches take account of the fact that different people have different perspectives and try to accommodate these different perspectives.
GROUP LEARNING	Participatory approaches emphasise the value of learning by groups of people as a means of coming to consensus decisions regarding action to address commonly identified objectives. (Increasingly the importance of understanding the “group” and the power relations within the group is being recognised so that “consensus” decisions reflect the needs of weak group members as well as the strong.)
CONTEXT SPECIFIC	Each community and its context is different and participatory approaches accommodate their specific characteristics. (From experience, the importance of recognising the differences <b>within</b> communities, and between social and economic groups, is also being emphasised more and more.)
FACILITATING	The use of participatory approaches by development practitioners involves the adoption of a facilitating, or catalytic, role, rather than a role as protagonists.
LEADING TO CHANGE	While participatory approaches accommodate local knowledge and skills, they are focussed on facilitating those changes that people regard as appropriate.

Beyond these basic guiding principles, the ways in which “participatory approaches” can be interpreted are as numerous as the locations where they have been put into



practice. Because they are “context specific”, there can be no “blueprint” for participatory approaches – they **need** to be constantly adjusted, refined and adapted.

It is precisely this adaptability that has led to the large number of variants in participatory approaches. These can be confusing for those not familiar with the vast literature now available on participatory approaches, But all of these can be regarded either as **adaptations** of participatory approaches that have been tailored to particular local conditions, and given context-specific names, or particular **methodologies** that contribute to participatory approaches.

Just some of the different terms that are used when referring to participatory approaches and the methods that are used to implement them are shown below.

<b>TABLE 2 : TERMS FOR PARTICIPATORY APPROACHES AND METHODOLOGIES</b>	
<ul style="list-style-type: none"> <li>• Agroecosystem Analysis (AEA)</li> <li>• Beneficiary Assessment</li> <li>• Development Education Leadership Teams (DELTA)</li> <li>• Diagnosis and Design (D &amp; D)</li> <li>• Diagnóstico Rural Participativo (DRP)</li> <li>• Farmer Participatory Research</li> <li>• Groupe de Recherche et d'Appui pour l'Auto-promotion Paysanne (GRAAP)</li> <li>• Methode Active de Recherche et de Planification Participative (MARPP)</li> <li>• Participatory Learning and Action (PLA)</li> <li>• Participatory Action Research (PAR)</li> <li>• Participatory Analysis &amp; Learning Methods (PALM)</li> <li>• Participatory Assessment, Monitoring and Evaluation (PAME)</li> <li>• Participatory Research Methodology (PRM)</li> <li>• Participatory Rural Appraisal (PRA)</li> <li>• Participatory Rural Appraisal &amp; Planning (PRAP)</li> <li>• Participatory Technology Development (PTD)</li> </ul>	<ul style="list-style-type: none"> <li>• Participatory Urban Appraisal (PUA)</li> <li>• Planning for Real</li> <li>• Process Documentation</li> <li>• Rapid Appraisal (RA)</li> <li>• Rapid Assessment of Agricultural Knowledge Systems (RAAKS)</li> <li>• Rapid Assessment Procedures (RAP)</li> <li>• Rapid Assessment Techniques (RAT)</li> <li>• Rapid Catchment Analysis (RCA)</li> <li>• Rapid Ethnographic Assessment (REA)</li> <li>• Rapid Fisheries Assessment (RAFTS)</li> <li>• Rapid Food Security Assessment (RFSA)</li> <li>• Rapid Multi-perspective Appraisal (RMA)</li> <li>• Rapid Organisational Assessment (ROA)</li> <li>• Rapid Rural Appraisal (RRA)</li> <li>• Samuhik Brahman (joint trek)</li> <li>• Soft Systems Methodology (SSM)</li> <li>• Theatre for Development</li> <li>• Training for Transformation</li> <li>• Visualisation in Participatory Programs (VIPPP)</li> </ul>

Given this diversity of tools and techniques, all of which can be considered different manifestations of participatory approaches, it is clear that there can be no single definition of what, in practice, constitutes a “participatory approach”. One of the guiding principles mentioned above is precisely the capacity to be flexible and adaptive so that local conditions and the priorities of different stakeholder groups can be accommodated.

Many of the approaches or methodologies listed above are themselves made up of very similar “baskets” of tools. This illustrates another important point regarding participatory approaches and the methods used to apply them. While many of the tools used are common to all, it is not possible to talk of a single definitive version of any of these approaches. This is particularly true of the two most widely used

methodologies – Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA). It is extremely difficult (and not really very important) to define a particular methodology as RRA or PRA (or any of the others mentioned above). What is important is that the approach and methodology have been thought through systematically, bearing in mind the guiding principles of participatory approaches. There are many different tools that can be used to help apply these principles in the field and new ones are being developed all the time. The name given to a particular activity that uses these tools to address the objectives set is, in the final analysis, not particularly relevant.

Similarly, the “degree” of participation that is possible in any given circumstance may be difficult to predetermine. A high level of local participation, where the “subjects” of the development process (i.e. the poor or rural fish farmers) are able to control the development process themselves and mobilise their own capacities and resources, may be regarded as an ideal and something that development practitioners strive to achieve. But the context of development, local circumstances and the capacity of local people may mean that such levels of participation are difficult to achieve in the short or medium term.

This does not “invalidate” the process. Development activities may commence with relatively low levels of local participation, either because local people are not in a position to fully take control of the development process, or because local agencies are not institutionally equipped to deal with participation. But adoption of a relatively less “participatory” mode may be the best option available. What is more important is that development practitioners constantly seek out opportunities for involving different stakeholder groups in whatever way seems most appropriate for them and is likely to give them benefit, whether in the form of improved livelihoods, empowerment, awareness or capacity building.

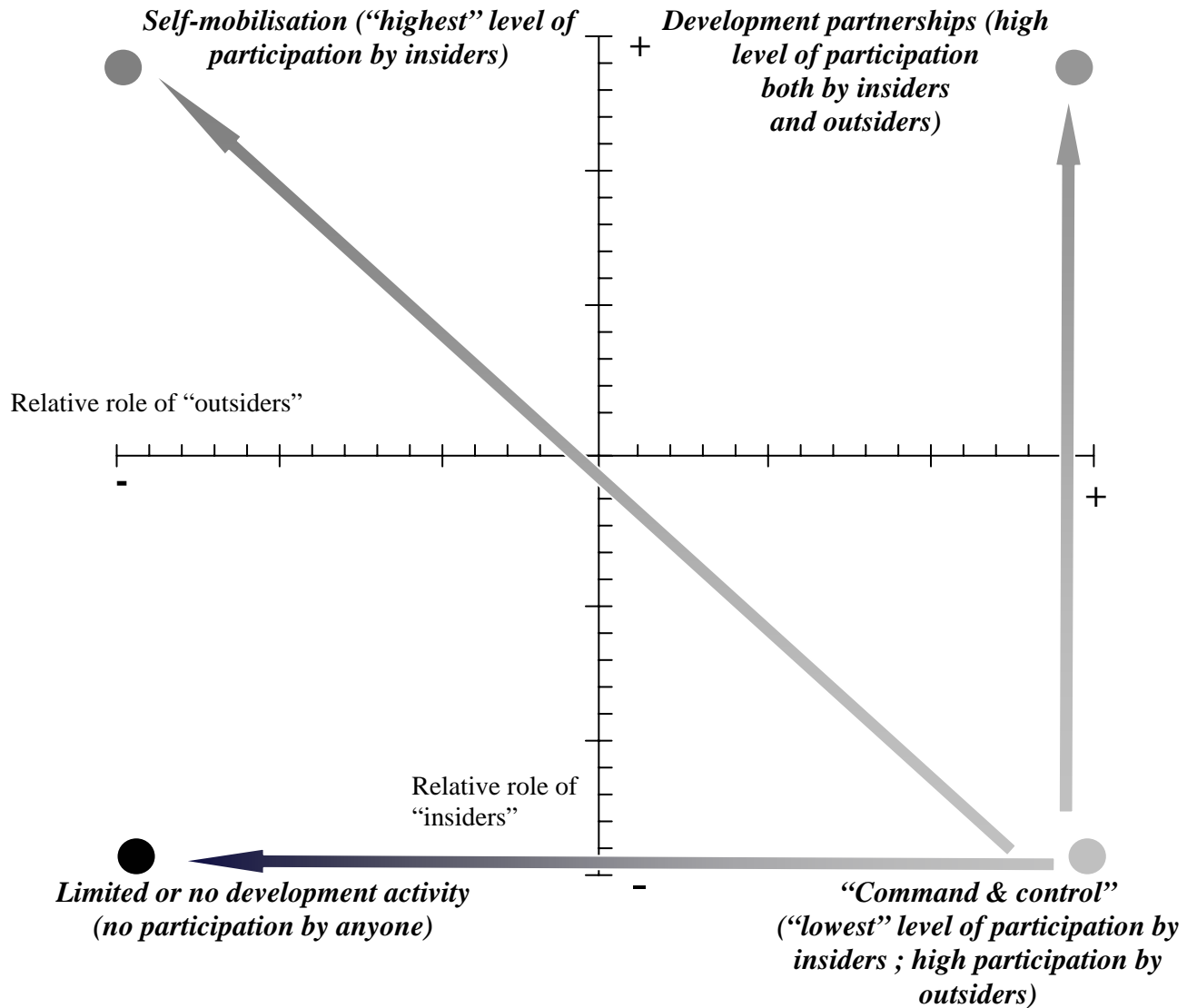
The diagram in Figure 1 illustrates how there are no “absolutes” in participation and a wide range of different degrees and forms of participation may be manifested in the development process. Commonly, different “degrees” of participation are described, often with the implication that the “higher” the degree of participation (shown in the top left-hand corner of the diagram), the “better” the activity involved.

This is an over-simplification. Different development activities may contain different elements that incorporate various aspects of participation. They will seldom fall neatly into one “category” of participation or another and levels of participation by different groups will often change during the course of a development activity. In many cases, higher levels of participation, where direct stakeholders, or “insiders” as they are called in the diagram, are the leaders and mobilise their own resources to undertake development activities, are neither possible nor desirable. The poor are often poor precisely because they do not have this capacity and may need considerable assistance and help by “outsiders”.

Therefore, value judgements regarding the relative levels of participation in development activities should be avoided. Instead, the opportunities that exist for increasing participation should be continually assessed and developed upon, keeping in mind the context and capacities of local people to manage their development

activities effectively and the real contributions that outsiders can make to those activities.

**FIGURE 1 : MEASURING PARTICIPATION?**



## **2. REVIEW OF CASE STUDIES**

In preparation for the workshop, 9 case studies of the use of “participatory approaches” were prepared by a range of practitioners working in aquaculture research and development. The intention behind these case studies was to elicit the perceptions of different practitioners regarding participatory approaches and identify key issues relating to their use.

The 9 case studies are listed below with a brief description of the context and the objectives of the activity that they describe.

<b>TABLE 3 : REVIEW OF CASE STUDIES</b>		
<b>Case study</b>	<b>Context</b>	<b>Objectives</b>
ALCOM - Zambia	Field investigation as part of an aquaculture extension activity of regional aquaculture project	<ul style="list-style-type: none"> <li>• identify factors affecting low yields</li> <li>• propose actions to raise yields</li> <li>• understand farmers' perceptions</li> <li>• evaluate effectiveness of RRA techniques</li> </ul>
ARP fish seed quality - Asia	Research project investigating fish seed quality in Asia	<ul style="list-style-type: none"> <li>• understand importance of fish seed quality in aquaculture</li> <li>• identify causes &amp; strategies for improvement</li> </ul>
CAGES – Bangladesh	CARE cage-culture development project with local NGOs	<ul style="list-style-type: none"> <li>• identify reasons for success or failure of cage-culture</li> <li>• understand processes of intra-household decision-making</li> <li>• understand impacts on local community</li> </ul>
Quirino – Philippines	Farming systems research activity within Community Forestry Project	<ul style="list-style-type: none"> <li>• assess potential of ponds</li> <li>• assess potential of integrated agri-aquaculture</li> </ul>
ICLARM– Bangladesh	Nutrition impact assessment study as part of impact assessment of fisheries extension	<ul style="list-style-type: none"> <li>• assess impact of previous aquaculture extension project</li> <li>• assess &amp; measure impacts on fish consumption</li> </ul>
ICLARM - Malawi	Aquaculture research & extension project	<ul style="list-style-type: none"> <li>• identify constraints on adoption of aquaculture technology</li> <li>• identify research agenda</li> </ul>
DFID – Laos	Research project on rice-fish culture	<ul style="list-style-type: none"> <li>• identify constraints on rice-fish development</li> <li>• understand gender issues</li> <li>• understand resource management &amp; communications systems</li> <li>• identify strategies for maximising benefit</li> </ul>
Epidemiology of White Spot Disease (WSD) - Asia	Epidemiological study of occurrence of White Spot Disease in India and Vietnam	<ul style="list-style-type: none"> <li>• develop strategies for disease control</li> <li>• practice use of techniques</li> </ul>
ICLARM-Cavite, Philippines	Farming systems research project	<ul style="list-style-type: none"> <li>• assess the productivity and sustainability of integrated aquaculture-agriculture systems</li> <li>• improve farmers' skills in experimentation and resource management decision-making.</li> </ul>

A more complete summary of the case studies can be found in Appendix 1, but here some of the key issues relating to the use of participatory approaches described in the workshop are reviewed.

The case studies writers, not all of whom could take part in the workshop itself, did an excellent job in relating their work to the key issues concerning participatory approaches:

- **Teresita Lopez, Jens Peter T. Dalsgaard, and Mary-Ann Bimbao** of ICLARM Philippines. Case study from Cavite in the Philippines
- **Malcolm Beveridge** of the Institute of Aquaculture Stirling and **Kenny McAndrew** of CARE, Bangladesh. CARE Cages case study from Bangladesh
- **Mark Prein, Teresita Lopez, Bert Oficial and Mary Ann Bimbao** of ICLARM Philippines. Case study from Quirino in the Philippines
- **Randall E. Brummett and Fredson J.K. Chikafumbwa** of ICLARM Malawi. Malawi case study
- **K.L. Morgan and F.U. Corsin** of the Department of Veterinary Clinical Science and Animal Husbandry, University of Liverpool, U.K. **N.V. Hao, T.T. Phi, L.H. Phuoc** and **N.T.N. Tinh** of the Research Institute for Aquaculture No.2, Ho Chi Minh City, Vietnam, **C.V. Mohan** of the Department of Aquaculture, University of Agricultural Sciences, Mangalore, India and **J.F. Turnbull** of the Institute of Aquaculture, Stirling, U.K. Case study on the epidemiology of WSD in Asia
- **Jennie van der Mheen** of ALCOM, Zimbabwe. Zambia case study.
- **Parvin Sultana, Paul Thompson and Mahfuzzudin Ahmed** of ICLARM Bangladesh. Case study on nutritional impacts of aquaculture extension in Bangladesh
- **Graham Haylor** of DFID, Bangkok, Thailand. Case study from the DFID aquaculture project in Laos
- **David Little** of the Asian Institute of Technology, Thailand. Case study on fish seed quality in Asia
- **Porfirio Torres-Alvarez** of the Instituto Nacional de la Pesca, Mexico.
- Case study from Mexico presented at the workshop.

***The context in which participatory approaches were used and the objectives set***

- The participatory approaches described in the case studies were mostly applied to research activities, in the sense that they were generally focussed on **learning** about local conditions or topics.
- The activities in most of the case studies aimed to diagnose problems, but most also had some action-orientation – they identified problems **and** strategies for overcoming those problems.
- A few case studies focussed relatively “tightly” on specific issues – notably the study of the epidemiology of WSD in Asia and the ARP fish seeds quality project. But generally the research undertaken using participatory approaches looked at aquaculture –related issues **in context**. In the case studies, participatory approaches to research seem to represent a means of achieving a broader understanding of conditions. The activities described look at a relatively complex set of inter-related issues. It is indicative that three of the case studies – from Quirino and Cavite in the Philippines and from Malawi – refer to aquaculture research undertaken as part of **farming systems research** where the concern was

to understand problems and issues relating to aquaculture in the context of the farming system as a whole. Other projects, such as the work carried out by DFID in Laos and CARE Cages in Bangladesh, also sought to look at a range of technical and non-technical issues relating to aquaculture development.

***The scope of the activity where participatory approaches were used***

- As used in the case studies, participatory approaches have been regarded as a means of improving information collection and so improving the quality of research work. It is significant that all of the case studies described start with “research” - a process of collecting information and learning from it. This is significant as there is nothing inherent in participatory approaches that suggests that this should necessarily be the starting point. However, it is clear that participatory approaches are, at least initially, regarded as a means of achieving a better understanding of conditions.
- Participatory approaches seem to be particularly helpful in improving understanding of the role of aquaculture in rural livelihoods (as opposed to focussing purely on aquaculture as a technical activity) and in understanding the attitudes and perceptions of the people involved. The various ICLARM farming systems activities described, the ALCOM study in Zambia, the CARE Cages research in Bangladesh and the DFID Laos study all fall into this category.
- The potential of using participatory approaches for more action-oriented research was specifically recognised in some cases. This was particularly the case in the DFID work in Laos and the ICLARM project in Cavite in the Philippines where the process of undertaking the research itself aimed to produce benefits for participating farmers.

***The institutions involved and the different disciplines that participated***

- In most of the activities described, researchers, and research institutions, took the lead. This is not surprising given that most of the case studies are, as noted above, related to research activities. However, it is also indicative of the limited familiarity with participatory approaches among field agencies working in aquaculture. Participatory approaches have generally been introduced by outside researchers.
- In several of the case studies, the activities involved a mix of institutional levels but not the mix of disciplines often advocated in participatory approaches. The DFID work in Laos and the study of the epidemiology of WSD in Asia are notable in this respect as they involved a relatively broad mix of institutions ranging from the international and central government levels to the local level.
- Social scientists took little part in the research activities. This is largely a reflection of the institutions involved and the fact that few of those agencies involved in aquaculture have social scientists on their staff. However, it is significant because most of the research also looked at social science-related issues. The work in the Philippines carried out by ICLARM seems to be somewhat different in this respect because it took place within farming systems research activities where social science skills were present. The ICLARM nutrition study also included stronger social science skills because these skills were already well-developed within the project concerned.
- Several of the activities made special efforts to include women in their research teams. This was particularly important in the DFID work in Laos, in CARE Cages

and in the ICLARM nutrition study in Bangladesh where the importance of differentiating the perceptions of women was specifically recognised.

- For most of the institutions and researchers involved, participatory approaches were new. Because of the relative unfamiliarity of many of the people involved with participatory approaches, there was often an element in the activities of “learning about the approach”. This was made specific in the ALCOM study in Zambia but appears to have also been important in most of the case studies. The WSD epidemiology study also paid specific attention to the methods being used, largely because they had never been attempted before for an epidemiological study of this kind. This is significant because close attention to the methods being used is an important part of the participatory approach in general. Because participatory approaches need to be adaptive, constant review of the approaches themselves is an integral element that seems to have been recognised, although not always explicitly.

### *Participation by local people*

- Local participants in the research activities were mainly involved as respondents, although in some cases they had played an important role in identifying issues to be researched. This was inevitable given the research focus of most of the case studies.
- Several of the activities described did create opportunities for the involvement of local people in planning, implementation, monitoring & evaluating the activities that were generated. The DFID rice-fish project in Laos led to the involvement of local people in planning and identifying strategies for on-going work.
- The involvement of local people in validating and sharing the results of research was highlighted as important. While farmers were primarily involved as “respondents”, almost all the case studies included some element of validation where the team of researchers leading the activity presented their findings back to their informants for discussion and “checking”.
- In a few cases, the potential of involving fish farmers in farm-based research was identified. This was particularly the case for the ICLARM project in Malawi, where one of the objectives of the research was to identify a research agenda, and for the rice-fish work in Laos.
- There was generally no analysis involved of the social and economic features of local participants. Although most of the case studies look at some social and economic issues related to aquaculture, it is significant that the local participants involved are not very clearly differentiated according to their social and economic characteristics. They tend to be regarded as “fish farmers” and potential differences between different groups of fish farmers are not elaborated upon.

### *The techniques used*

- Despite the diversity of tools available for use in participatory approaches, a relatively limited range of field techniques were used.
- Visualisation techniques, that are often seen as an important tool in participatory approaches, were generally used by researchers to visualise their **own** ideas rather than as a tool to analyse issues with local participants. This is probably a reflection of the relative unfamiliarity of many of the researchers involved with the full range of participatory methods available, but it can also be seen as a significant shortcoming. One of the most important features of participatory approaches to



research is precisely that it can provide tools for the “subjects” of research to analyse their own conditions as a means of stimulating ideas for positive action.

- Maps and resource flow diagrams were the most commonly used visualisation techniques. The ALCOM work in Zambia and the ICLARM projects in the Philippines and in Malawi particularly make use of a specific set of visual tools that had been relatively well developed in the context of farming systems research.
- For those implementing the activities described in the case studies, the most important element in participatory approaches seems to have been the semi-structured approach to field work.

#### ***The analysis of findings***

- Data processing and analysis were mostly carried out by researchers.
- Local participants often played a role in validating results of research.
- In several research activities, the possible role of local people in analysis and monitoring of eventual activities were recognised.
- Analysis of findings was carried out at several different levels in some of the research activities.

#### ***The outputs produced***

- The principle output from most of the activities described in the case studies was information and improved understanding for researchers.
- In some cases, the research conducted using participatory approaches directly generated a process that was of more immediate benefit to local people.

#### ***Problems and inadequacies encountered***

- Most of the activities described in the case studies operated under time constraints and this was seen as an important problem as participatory approaches generally required more time.

### 3. WORKING GROUPS

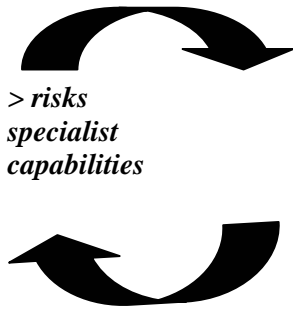
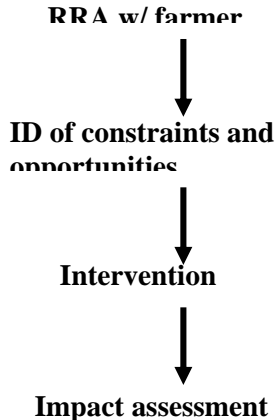
From the review of case studies and the subsequent discussion, two key areas of application appeared to be relevant for workshop participants:

- research activities
- the implementation of aquaculture development.

Two working groups then focussed on these two areas. Each were given a set of key questions to address. These are listed below.

<b>TABLE 4 : WORKING GROUP TASKS</b>	
<b>Working Group 1 Research Activities</b>	<b>Working Group 2 Implementation of aquaculture development</b>
<p><b>Context</b> In what context do you feel that participatory approaches to research in aquaculture are appropriate / inappropriate?</p> <p><b>Objectives</b> What sort of objectives should be set for participatory research in aquaculture?</p> <p><b>Scope</b> What scope of research in aquaculture is most appropriate for using participatory approaches</p> <p><b>Institutional participation</b> What institutions need to be involved in participatory research in aquaculture?</p> <p><b>Disciplinary participation</b> What disciplines need to be involved?</p> <p><b>Participation by local people</b> How can participation of stakeholders be ensured?</p> <p><b>Outputs</b> What sort of outputs can be expected?</p> <p><b>Problems &amp; inadequacies</b> What problems and inadequacies are there?</p>	<p><b>Context</b> In what context do you feel that participatory approaches to implementation in aquaculture are appropriate / inappropriate?</p> <p><b>Objectives</b> For what sort of objectives are participatory approaches to implementation appropriate?</p> <p><b>Institutional participation</b> What institutional context is participatory implementation in aquaculture appropriate?</p> <p><b>Disciplinary participation</b> What disciplines need to be involved?</p> <p><b>Participation by local people</b> How can participation of stakeholders be ensured?</p> <p><b>Outputs</b> What sort of outputs can be expected?</p> <p><b>Problems &amp; inadequacies</b> What problems and inadequacies are there?</p>

The main issues brought up by the two working groups are shown in Tables 5 and 6 below.

<b>TABLE 5 : OUTPUT WORKING GROUP 1 - AQUACULTURE RESEARCH</b>	
<b>Questions</b>	<b>Key issues</b>
Context : <i>In what context do you feel that participatory approaches to research in aquaculture are appropriate / inappropriate</i>	<ul style="list-style-type: none"> <li>• more appropriate for more applied/adaptive research topics</li> <li>• less applicable to “basic” research</li> <li>• social sciences? (can it be “non-participatory”?)</li> </ul>
Objectives : <i>What sort of objectives should be set for participatory research in aquaculture?</i>	<ul style="list-style-type: none"> <li>• needs assessment</li> <li>• identification of opportunities for positive change</li> <li>• identification of researchable constraints</li> <li>• evaluating options for effecting change</li> <li>• development of indicators</li> <li>• conducting trials</li> <li>• impact assessment</li> </ul>
Scope : <i>What scope of research in aquaculture is most appropriate for using participatory approaches?</i>	<ul style="list-style-type: none"> <li>• most appropriate for research on: <ul style="list-style-type: none"> <li>- systems</li> <li>- resource allocation</li> <li>- social sciences aspects</li> </ul> </li> <li>• in some cases it may be less appropriate to involve farmers at the level of intervention (e.g. breeding programmes, food manufacture)</li> </ul> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;"> <p><b>Non participation</b></p>  <p>&gt; risks specialist capabilities</p> </div> <div style="text-align: center;"> <p><b>Participation</b></p>  <p><b>RRA w/ farmer</b></p> <p>↓</p> <p><b>ID of constraints and opportunities</b></p> <p>↓</p> <p><b>Intervention</b></p> <p>↓</p> <p><b>Impact assessment</b></p> </div> </div>

<b>TABLE 5 : OUTPUT OF WORKING GROUP 1 - AQUACULTURE RESEARCH (continued)</b>	
<b>Questions</b>	<b>Key issues</b>
<b>Institutional participation</b> : <i>What institutions need to be involved in participatory research in aquaculture?</i>	<ul style="list-style-type: none"> <li>To implement participatory research the minimum requirements are               <ul style="list-style-type: none"> <li>- an enabling environment</li> <li>- the farmer</li> <li>- the researcher</li> <li>- an intermediary (where needed)</li> </ul> </li> <li>There is a need for capacity building for participatory research with NGOs, Gos, Pos, Universities, Schools etc.</li> </ul>
<b>Disciplinary participation</b> : <i>What disciplines need to be involved?</i>	<div style="text-align: center;"> <p style="text-align: center;"><b>Need for much greater interaction between social and biophysical sciences as relevant</b></p> </div>
<b>Participation by local people</b> : <i>How can participation of stakeholders be ensured?</i>	<ul style="list-style-type: none"> <li>proper identification and characterization of stakeholders is critical</li> <li>involve different categories of stakeholders as “appropriate” in the different stages of the participatory research process</li> <li>ensure that stakeholders “buy-in” to the process (but how?)</li> </ul>
<b>Outputs</b> : <i>What sort of outputs can be expected?</i>	<ul style="list-style-type: none"> <li>sustainable positive change</li> <li>generate new, higher quality knowledge, providing greater understanding</li> <li>communication of outputs of research among stakeholders</li> <li>greater appreciation of participatory research process</li> </ul>
<b>Problems and inadequacies</b> : <i>What problems and inadequacies are there?</i>	<ul style="list-style-type: none"> <li>insufficient awareness of participatory research</li> <li>not enough skilled practitioners in research institutions</li> <li>not enough appropriate training opportunities for researchers</li> <li>problems of scale (can methods be applied or extrapolated?) to large audiences</li> </ul>

<b>TABLE 6 : OUTPUT OF WORKING GROUP 2 - IMPLEMENTATION OF AQUACULTURE DEVELOPMENT</b>	
<b>Questions</b>	<b>Key issues</b>
<b>Context :</b> <i>In what context do you feel that participatory approaches to implementation in aquaculture are appropriate / inappropriate?</i>	<ul style="list-style-type: none"> <li>• participatory approaches are always appropriate in small-scale rural development</li> <li>• they offer greater flexibility regarding <b>what</b> is implemented</li> <li>• the degree of participation will depend on the <b>scale</b> and <b>level</b> of operation, and the <b>type</b> of project involved</li> <li>• design of projects using participatory approaches needs to be iterative and adjusted continually during the course of implementation</li> <li>• participatory processes need to be managed, and skills need to be developed to do this</li> <li>• logical frameworks might have difficulty in accommodating participatory approaches.</li> </ul>
<b>Objectives :</b> <i>For what sort of objectives are participatory approaches to implementation appropriate?</i>	<ul style="list-style-type: none"> <li>• participatory approaches are particularly appropriate for application to: <ul style="list-style-type: none"> <li>- stakeholder identification</li> <li>- institutional analysis</li> <li>- targeting</li> <li>- livelihoods analysis</li> <li>- gender analysis</li> <li>- impact assessment</li> <li>- monitoring &amp; evaluation</li> </ul> </li> <li>• participatory approaches allow objectives to be progressively refined and modified during the course of implementation</li> <li>• they can also help promote the objectives of an aquaculture development activity among potential stakeholders and achieve greater consensus around those objectives.</li> </ul>
<b>Institutional participation :</b> <i>In what institutional context is participatory implementation in aquaculture appropriate?</i>	<ul style="list-style-type: none"> <li>• institutional involvement in implementing participatory approaches will depend on objectives and functions (i.e. participation for participation's sake needs to be avoided)</li> <li>• the institutional context can obstruct the use of participatory approaches (i.e. many institutions are <b>not</b> participatory)</li> <li>• the impact of using participatory approaches on the institutions involved needs to be taken into account (i.e. conflicts can be created between practice in the field and institutional planning procedures)</li> <li>• effective introduction of participatory approaches is often obstructed by the continual turn-over in staff and personnel</li> <li>• the political environment also influences the acceptability of participatory approaches</li> <li>• different levels of institutional participation are likely to be required at different stages of implementation</li> </ul>

<b>TABLE 6 : OUTPUT OF WORKING GROUP 2 - IMPLEMENTATION OF AQUACULTURE DEVELOPMENT (continued)</b>	
<b>Questions</b>	<b>Key issues</b>
<p><b>Disciplinary participation :</b> <i>What disciplines need to be involved?</i></p>	<ul style="list-style-type: none"> <li>• expertise in the use of participatory approaches is needed where the agencies involved are unfamiliar with these approaches</li> <li>• specific disciplines that need to be incorporated in order to use participatory approaches include: <ul style="list-style-type: none"> <li>- gender specialists</li> <li>- social scientists</li> <li>- economists</li> <li>- technicians/ scientists</li> </ul> </li> <li>• differences in language and culture between local people and implementation teams need to be recognised and addressed</li> <li>• attitude can be as important as specific expertise and a participatory attitude needs to be promoted</li> </ul>
<p><b>Participation by local people:</b><i>How can participation of stakeholders be ensured?</i></p>	<ul style="list-style-type: none"> <li>• implementation from throughout the activity</li> <li>• effective local participation depends on an understand of the livelihoods systems in which aquaculture is being introduced. Particular care should be paid to: <ul style="list-style-type: none"> <li>- local social, institutional and political structures</li> <li>- local knowledge</li> <li>- people's work schedules</li> </ul> </li> <li>• possible impacts on local livelihoods and the real benefits that aquaculture activities will produce need to be understood</li> <li>• effective exchange of information between local people and outsiders is critical, particularly the means and media for communication</li> <li>• local participation needs to be viewed as a continuous process and should be integrated into</li> </ul>
<p><b>Outputs :</b> <i>What sort of outputs can be expected?</i></p>	<ul style="list-style-type: none"> <li>• the kind of outputs produced through the use of participatory approaches can include: <ul style="list-style-type: none"> <li>- better institutional linkages</li> <li>- improved capacity among local people to manage their own activities and to make demands on support services</li> <li>- better capacity to respond to local demands by institutions</li> <li>- participation not just by those involved in aquaculture directly but also of those involved in marketing and input provision</li> </ul> </li> <li>• the relations between the outputs achieved and the objectives of project need to be clear</li> </ul>

<b>TABLE 6 : OUTPUT OF WORKING GROUP 2 - IMPLEMENTATION OF AQUACULTURE DEVELOPMENT (continued)</b>	
<b>Questions</b>	<b>Key issues</b>
<p><b>Problems &amp; inadequacies :</b>  <i>What problems and inadequacies are there?</i></p>	<ul style="list-style-type: none"> <li>• the relative costs in terms of time and money from using participatory approaches need to be considered</li> <li>• participatory approaches may require larger, more diverse, implementation teams</li> <li>• the availability of appropriate skills in participatory approaches may be a problem</li> <li>• the political context and existing power relations may make the use of participatory approaches difficult</li> <li>• the role of expatriate expertise needs to be considered</li> <li>• the effective accommodation of gender issues may be difficult given the make up of aquaculture agencies</li> <li>• approaches to effective monitoring of participatory processes need to be developed</li> <li>• means of dealing with conflicts need to identified</li> <li>• the agendas of the various institutions involved may differ</li> <li>• participatory approaches may be regarded as part of an external (i.e. global or international) agenda</li> </ul>

#### 4. THE POLICY AND PLANNING ENVIRONMENT

While looking at these issues relating to the use of participatory approaches in aquaculture research and in the implementation of aquaculture development activities, the importance of the policy and planning environment in which aquaculture development is taking place was raised on several occasions. Subsequently the workshop participants focussed their attention on those aspects of policy and planning that might influence the possibility of effectively using participatory approaches.

During the discussion, concerns were voiced that there may be circumstances, influenced by either the political or the institutional environment, where the use of participatory approaches to aquaculture development might **not** be appropriate. An extreme case might be where the political regime is authoritarian and fundamentally uninterested in encouraging greater participation at the local level.

A more common situation might be where the organisations involved in aquaculture development are not equipped to be responsive to the needs of local communities. This situation is relatively common as many bureaucratic organisations have in-built features (such as strict decision-making hierarchies, inflexible budgeting procedures or rigidly defined institutional roles), that make it very difficult for them to adopt a more participatory mode of operation. Where aquaculture practitioners are working in this kind of institutional environment, an indiscriminate application of participatory approaches at the field level can lead to expectations among local people that may be very difficult to satisfy.

This does not necessarily mean that participatory approaches are to be completely discarded in such circumstances, but critical approach is required. The approaches used need to be adapted to the context and the implications of their use made clear to the organisations involved. Sometimes changes can be introduced within organisations to make them more participatory themselves so that they can use participatory approaches more effectively in the field, but the time required for such changes to take place should not be underestimated.

There are several “conditions” that are liable to have an important influence on the extent that participatory approaches can be applied.

##### **Community/group level**

At the level of the community or the particular group of people involved in aquaculture, people’s **capacity and skills** will effect their ability to participate in different types of activity associated with aquaculture development. If there is considerable local experience in managing development activities, taking decisions and resolving conflicts, a considerable degree of autonomy can quickly be given to local people. Where this capacity is lacking, greater support for longer periods from external agents may be required. The general **level of education and awareness** among the population involved will obviously effect this considerably. Experience in **farmer-led extension** can be a considerable asset. Higher levels of participation will be easier to achieve where there is a **clear understanding of local needs**. Achieving this understanding can be assisted using participatory appraisal methods, but the process of achieving local consensus about priorities and action to be taken can be time-consuming. If there is already a broad consensus within the community or the particular group of people involved, participation will be easier to achieve.



### **District level**

By “district” level is intended the administrative immediately above the community – obviously the exact term used for this level may differ from place to place. This is often the level at which field extension work is organised and implemented. Where the skills of staff operating at this level is high, with good **extension capacity** and adequate ability to **manage** field activities, participatory approaches will be greatly facilitated. This is particularly important because the use of participatory approaches will invariably require greater ability to respond rapidly to changing conditions on the ground and incorporate changes into the management of field operations. Where field operatives are used to simply “carrying out orders” received from higher administrative levels, capacity to effectively manage participatory approaches in the field is likely to be less. Where these skills are strong, participation will be facilitated. Clearly, **familiarity with participatory approaches** is an asset as the process of training staff to use these approaches in the field requires time and expertise. Where **NGO capacity** at this level is strong, and they have experience and skills in applying participatory approaches, these can be used as a source and tapped to help other organisations become familiar with them.

### **Provincial level**

The “provincial” level is taken to refer to any sub-national level where there is some degree of independent decision-making regarding resource allocation and development planning. The extent to which people working at this level are **familiar with participatory approaches**, their ability to **manage** and their **capacity in decision-making** will be as important as it is at lower administrative levels.

### **National and international levels**

At the national level, a high level of **co-ordination between different agencies and sectors** will facilitate the participatory process as integration between sectors is a basic principle of participatory approaches. Co-ordination between sectors will mean that **policies in different sectors, different sets of interests and international obligations are more effectively harmonised**. Where this is not the case, participatory processes initiated at the ground level in aquaculture may face obstacles as policies in other sectors may negatively effect the process and render it useless. Better integration will also permit integrated responses to the problems identified by people at the local level, problems that will often not be confined to single sectors but cut across a range of areas of activities. An appropriate **legal framework** is also important. Where **rules and regulations** make it difficult to for groups at the local level, communities and local-level staff to take decisions and be responsive to local needs, it may be difficult to make use of participatory approaches. Linked to this, the **level of devolution** is very important. A higher degree of devolution of political decision – making creates greater opportunities for participation at the local level. Where key mechanisms of political representation are located far from the local level, it will be more difficult to get the local needs and priorities generated by using participatory approaches reflected in the allocation of development resources.

### **Issues that cut across levels**

In addition to the issues mentioned above, there are other issues that need to be taken into account where the application of participatory approaches is being considered.

Ready **access to appropriate expertise** to provide aquaculture operators with the technical support, knowledge and skills will be possibly more important when using participatory approaches than with more traditional approaches. In particular, this expertise will need to be available as close as

possible to the areas where aquaculture operators work so that support services can be responsive to locally expressed needs and priorities.

The **role of the private sector** will also be important. If the private sector is relatively underdeveloped and is not given opportunities to develop, many of the basic supporting mechanisms that are needed to support participatory aquaculture development may be missing. Substitution by state-run services may be justified in some places, but it will invariably require resources and may not be sustainable. Therefore the presence of the private sector and its capacity to provide supporting services for aquaculture development will have an important influence on the effectiveness of participatory approaches. Private sector development will depend on both local conditions and national policy.

The degree of **cross-sectoral integration** has already been mentioned, at the national level, as it will be effected by national policy. However, the extent to which this integration is put into practice will depend on conditions at all levels. Participatory approaches need to be supported by an integrated capacity among service agencies to respond to needs and priorities expressed at the local level, whatever the sector they refer to.

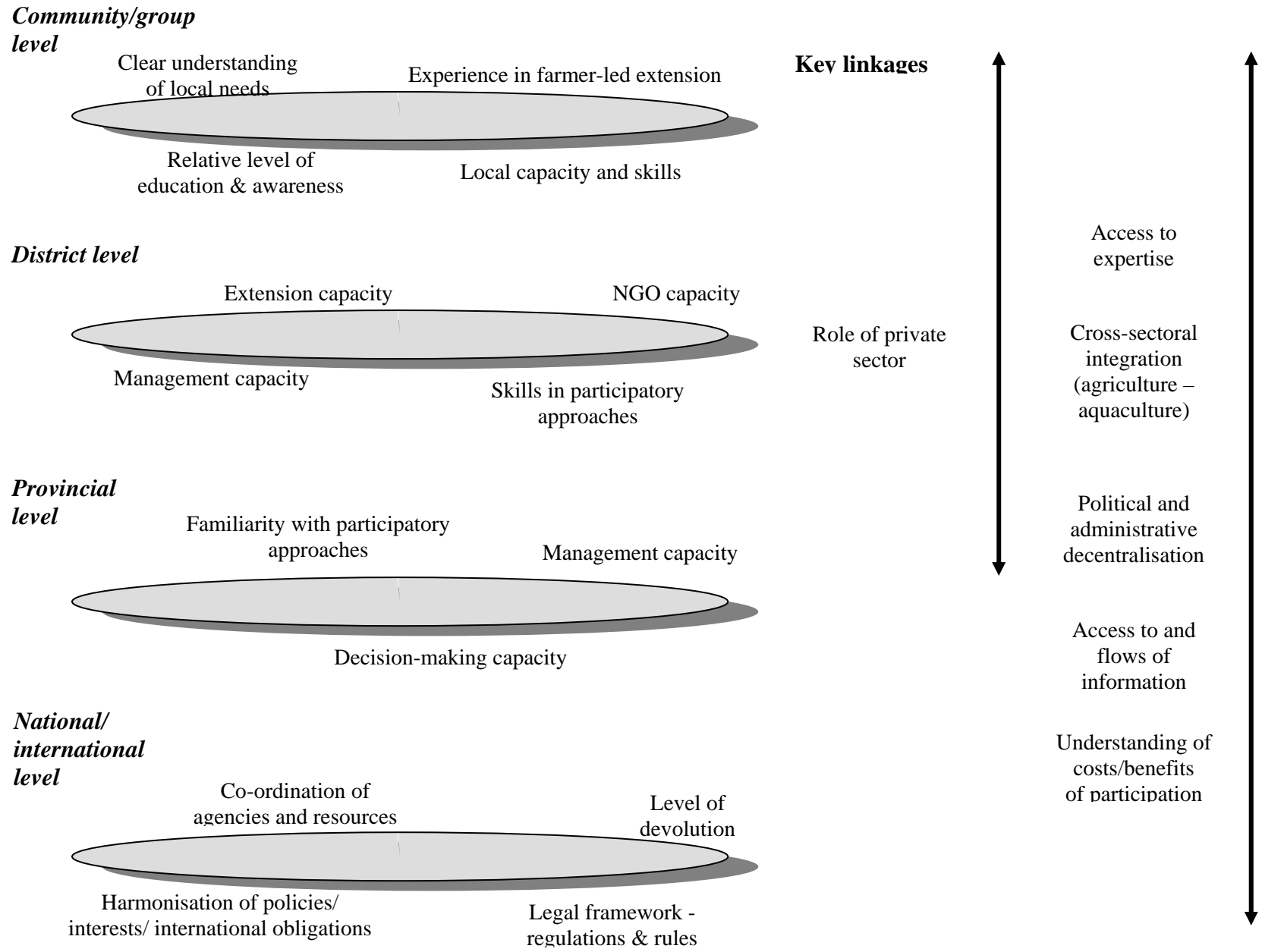
**Political and administrative decentralisation** will create a more enabling environment for the effective implementation of participatory approaches. If decisions on field-level activities need to be constantly referred back to higher levels of decision-making that are relatively distant from the field, it will be more difficult to adopt the adaptive strategies to work at the local level that are an important element in participatory approaches.

Where decision-making is decentralised, the **flow of information** between the level of aquaculture operators in the field, the services that support them and administrators and decision-makers is facilitated. However, this flow of information cannot be taken for granted. Where mechanisms exist to ensure that information moves in both directions between the field and centres of decision-making, participation will be easier. Information also needs to be accessible to those that require it.

Besides these various features of the institutional and decision-making environment, the use of participatory approaches will also be greatly facilitated if there is a general understanding of the **potential benefits of greater participation**. Where the use of participatory approaches is encouraged purely for “rhetorical” reasons – for example, to satisfy donor requirements – support for some of the basic changes in approach required to facilitate participation is unlikely to be forthcoming. Therefore the general perceptions of participation among actors at different levels need to be understood when the use of participatory approaches is being considered.

The diagram below illustrates these various issues in the planning and policy environment that are likely to effect different “levels” of activity in aquaculture development and the applicability of participatory approaches.

**FIGURE 2 : INSTITUTIONAL AND POLITICAL ISSUES INFLUENCING THE USE OF PARTICIPATORY APPROACHES IN AQUACULTURE**



## **5. SCENARIOS FOR PARTICIPATORY APPROACHES IN AQUACULTURE DEVELOPMENT**

The case studies prepared for the workshop, the working groups' presentations of participatory approaches in research and implementation, and the discussion of the policy and planning context for participatory approaches, all highlighted the complexity of the issues surrounding the use of participatory approaches. Acceptance of the "principles" of participatory approaches involve significant changes in attitude and "working culture" compared to that encountered in many of the institutions and agencies involved in aquaculture development. It would be unrealistic, and perhaps not constructive, to expect these institutions to shift overnight into a "participatory mode of operation". Current approaches used in development are a product of the culture in which they have developed, whether they are being used by multi or bi-lateral donors, NGOs, government agencies or research institutions. Similarly, participatory approaches need to be adapted to local circumstances and become a reflection of the political and institutional "culture" that is seeking to use them. This can be a long process which involves a range of factors all of which can contribute to a greater or lesser degree of applicability of different features of participatory approaches.

The "scenarios" described in Tables 7-10 below illustrate how participatory approaches might be adapted and applied in different contexts, taking into some of these "cultural" aspects into account. The complexities of the factors that can play a role defy simplification. As has been discussed above, one of the key features of participatory approaches is precisely that they can be, and need to be, adapted, modified, refined and constantly "criticised" by those making use of them so that they become part of the "culture". These scenarios try to offer examples of how these different factors might play a role in different situations.

TABLE 7	SCENARIO 1 : GENERIC NEEDS ASSESSMENT AND PARTICIPATORY PLANNING
<p><b>Participatory approaches are highly appropriate in this scenario as they mesh well with the prevailing political and institutional climate and contribute directly to the achievement of national development goals. Significantly, participatory approaches may not be applied specifically to “aquaculture” but are used to undertake an overall assessment, led by local people, to identify key problems and potential that might include aquaculture along with a range of other developments.</b></p>	
<p><b>National political context :</b> In order to satisfy growing demands for increased regional autonomy and greater empowerment of local-level institutions, the government has initiated a process of decentralisation. Local representative assemblies have been given greater responsibilities for controlling and allocating resources and determining natural resource and social policies. Decision-making and the control of key administrative functions, including control over technical services such as fisheries, has been devolved to district-level administrations.</p>	
<p><b>Regional context :</b> District administrations are used to carrying out sets of instructions issued from central government. Faced with direct responsibility for identifying key interventions, and greater accountability to voters in the district, the administration decides to build up the capacity and responsiveness of its services by establishing integrated mechanisms for assessing and prioritising needs at the local level. They want to encourage integrated area development planning, improve linkages between district agencies and lower-level administrative bodies, and build up the capacity of local-level bodies to identify issues, mobilise local resources and make demands on higher level support.</p>	
<p><b>Local context :</b> The district administration assembles a series of sub-district teams, led by staff from the district-level planning unit, to carry out participatory needs assessments. The intention is to carry out a series of meetings in each community in the sub-districts and assist local people to identify their priorities. The teams are initially supposed to consist of specialists from a range of different disciplines so that potential in different sectors can be identified “on the spot” and technical issues discussed and addressed directly with local people. In several areas, there is known to be aquaculture potential although, as yet, aquaculture development has been limited. The reasons for this are not clearly understood. As there are limited fisheries staff available, these join the teams visiting areas with known aquaculture potential.</p>	
<p><b>Application of participatory approaches :</b> Few of the staff working in the various local government agencies concerned have any experience of participatory approaches. Some members of the district level planning unit have had limited exposure to participatory principles during a previous externally-funded project, but they have never had to apply them in the field. However, there are some social science researchers at a local university that have had a few years experience in carrying out “action-research” using participatory approaches and a local NGO recently trained by a foreign donor in the use of participatory field tools. The district planning unit assembles a training team from these two sources and organises a training programme for all the officers who will be involved in the process. This training is also used to plan the process in detail and, during this planning, several new issues are identified. Firstly, whereas the initial planning had focussed on “communities”, it quickly becomes clear that the communities in the area are not homogenous and that there is a need to identify different stakeholder groups within communities and develop ways of addressing their specific concerns. To do this, an initial research phase is planned where the various teams will carry out participatory research in the field along with local people in order to understand different stakeholder groups and the different livelihood strategies that distinguish them. This is particularly useful for the aquaculture specialists on the team as it enables them to understand how aquaculture might fit into existing livelihood strategies. After this initial research, the teams carry on to identify problems, needs and priorities both with specific stakeholder groups and with communities as a whole and this becomes the basis for local level planning of development activities, including aquaculture where local people see the need for diversification and have the basic resources available.</p>	

TABLE 8	SCENARIO 2 : SPECIFIC IDENTIFICATION OF AQUACULTURE POTENTIAL
<p><i>This scenario is more “realistic” in that it reflects the situation commonly encountered in most national planning systems. Problems and needs are identified sector-by-sector. While there are mechanisms in place for co-ordination between the various sectors, these are often of limited influence. Aquaculture is considered part of the fisheries sector although the key issues facing aquaculture development are more closely linked to agriculture. In this context, the use of participatory approaches by the agency responsible for aquaculture development presents some problems. The people involved are aware that they need to use an approach that allows local people’s real needs and priorities to be reflected in development planning, but they are nervous that, by using participatory approaches, they may be faced with sets of needs and priorities that they themselves are not equipped to address.</i></p>	
<p><b>National political context</b> : The extension of the area under aquaculture has been identified as a priority in the new National Fisheries Plan. At the same time, the alleviation of rural poverty has been identified as a national development priority. The Department of Fisheries has identified small-scale rural aquaculture as the principle means by which it can contribute to these two national-level objectives. Provincial and District fisheries services have been instructed to identify areas with aquaculture potential or areas where existing small-scale production might be improved and intensified.</p>	
<p><b>Regional context</b> : At the regional level, there is a general dissatisfaction with previous rural development efforts that have tended to focus on the delivery of inputs and training. As a result, fisheries staff want to use more participatory approaches to identify not only the physical potential for aquaculture development, but also the interest and appropriateness of aquaculture for rural people. Within the fisheries service there is a recognition of the need to integrate rural aquaculture with agricultural development in general, but the mechanisms for co-ordinating with agricultural services are weak as they come under a different line ministry and have a different set of sectoral priorities. However, the provincial fisheries service has good contacts with some agricultural services at district level in areas where they have previously worked together on a past integrated area development project.</p>	
<p><b>Local context</b> : The fisheries service is able to interest people from several services in their activities at the district level, where co-ordination between technical services is easier. They make use of some staff in the extension service who have had training in Rapid Rural Appraisal techniques to provide training for the team. In addition, they draw in staff from the co-operatives and social services to help them analyse problems related to markets and social constraints.</p>	
<p><b>Application of participatory approaches</b> : The training given to the team concentrates on the tools that the team can use to help local people express their ideas and analyse problems related to aquaculture and, at the same time, allow local people to identify a broader range of problems. While the fisheries service is not in a position to address all these problems, they undertake to establish linkages with other services that can play a role in dealing with them. Initially, little attention is paid to participatory processes and the focus is largely on getting better information from local people that can help the fisheries service to identify possible interventions. However, once the fisheries service starts working with a few local people to develop rural aquaculture, they also develop participatory tools to involve local people in monitoring and evaluating the impacts of the activities. This in turn develops local people’s capacity to interact with outside agencies and leads to a more active relationship developing over time.</p>	

TABLE 9	SCENARIO 3 : PARTICIPATORY APPROACHES TO TRAINING AND EXTENSION
<p><i>This scenario looks at some of the common issues that occur when participatory approaches are applied to extensions activities within a particular sector such as aquaculture. Where agencies are concerned with implementation, as in extension programmes, participatory approaches are often seen as a means for ensuring better achievement of objectives (changes in behaviour) and uptake of sets of technology. However, the application of participatory approaches can often lead to a shift in the “mode” of extension – from dissemination of technology to the establishment of a process that allows farmers greater choice from a range of development options and technical support to implement those choices.</i></p>	
<p><b>National political context</b> : A national aquaculture extension and training project has been established to increase the capacity of the fisheries service to support the sector. The main impulse for this project is technical. There is a perception that generic technologies for small-scale rural fish culture exist that need to be disseminated in rural areas and that they can be used to increase the utilisation of existing waterbodies in the country. On the other hand, previous efforts at aquaculture extension have generally not been successful. This is perceived as being the result of insufficient preparation of extension staff and failures in the approaches used at the grass-roots level. The strategy developed by the new project is more adaptive, using a variety of mechanisms for farm-based research and extension to develop locally appropriate technologies.</p>	
<p><b>Regional context</b> : The provincial fisheries services that play the key role in co-ordinating fisheries extension are used to a highly structured, T &amp; V style of extension. This has focused mainly on the activities that extension staff carry out and on the management of the extension system as a whole. However, the institutional analysis and training needs assessment carried out at the start of the new project indicates that not enough attention has been paid to impacts of extension. Most of the staff involved in aquaculture extension staff admit that they have little idea of what effects their extension work have on local people’s livelihoods and that there is no time or resources available for investigating those impacts.</p>	
<p><b>Local context</b> : Fisheries staff from the local level are given intensive training in extension approaches. This training includes the upgrading of their technical, aquaculture skills but focuses above all on communication and facilitation skills. The extension staff are given a range of participatory tools to use in the field and encouraged to be adaptive and innovative in their approaches, rather than applying preconceived extension models. Training opportunities for these staff are repeated throughout the life of the project and structured in such a way that extension workers’ experience in the field is used as the basis for new learning and the development of new tools and approaches.</p>	
<p><b>Application of participatory approaches</b> : On the ground, the participatory approaches to aquaculture extension developed by the project are initially used to improve “uptake”. By using on-farm research, assessed by local farmers, generic technologies are adapted and improved to fit better with local people’s capacities. Although the original purpose was to develop “appropriate technologies” for wider dissemination, the participatory mechanisms for assessing results that are built into the research lead the project to realise that it is the process of facilitating local people to adapt technology that is most important, rather than the development of a single “appropriate” model for replication. As a result, as the project develops, it focuses more and more on developing the skills of extension agents as facilitators of this process of participatory monitoring, evaluation and adaptation rather than on the technologies and “extension messages”. Among the problems that arise during the course of implementation are the lack of skills in dealing with conflicts, especially those over the use of common property resources such as water. As a result several training activities are organised to focus on these problems and develop appropriate means of dealing with them.</p>	

TABLE 10	SCENARIO 4 : PARTICIPATORY APPROACHES TO AQUACULTURE RESEARCH
<i>Research activities present special problems regarding the use of participatory approaches. This scenario looks at some of these and shows how participatory approaches might be incorporated in aquaculture research.</i>	
<b>National political context</b> : National development policy has made the reduction of poverty a priority policy objective for all sectors. In response, national fisheries policy aims to develop a research strategy that responds directly to the needs of the poor. This is a change for fisheries researchers who have generally established their own research agendas and have had limited direct contact with the field. In response, researchers in central research institutions related to aquaculture look for ways of identifying issues directly related to the needs of the poor. They approach the fisheries services at lower administrative levels to ask for help in identifying research issues relevant to the poor.	
<b>Regional context</b> : The priorities of provincial fisheries services with research has been generally limited. Research is regarded as a process that produces technologies that the provincial services are then asked to “disseminate”. To be actually asked what sort of issues need to be researched is a new experience. In practice many of the provincial level staff in the fisheries department have limited contact with the problems of grass-roots fisheries farmers as well, so they recommend that the process of identifying research needs be taken down to a lower level still and that a local person should be asked directly what their “research needs” are.	
<b>Local context</b> : Local fisheries services are generally far more concerned with the implementation of programmes of action than with identifying researchable issues. But at the same time, the officers working in the field have a wealth of experience in the kinds of problems that poor farmers and fishers encounter and are quite familiar with many of the principle problems encountered by poor people involved in fish farming. In several cases, fisheries officers are able to pass on issues specifically raised by local fish farmers that may require further research. The approach by central researchers to identify key issues for research produces a series of issues that are felt to be important, as well as the locations where these issues have arisen. Based on this preliminary identification, researchers are able to identify locations where specific issues have been raised and where opportunities for field based investigations might be present.	
<b>Application of participatory approaches</b> : Prior to going down to field level to discuss research issues with local people, researchers from the central research agencies involved organise a short training session with a local university that has had experience in participatory research with rural communities. In this training, a variety of approaches to involving local people both in the identification of research needs and in the carrying out of research are discussed. When researchers go to apply these participatory tools in the field, it quickly becomes apparent that the key issue is not the <b>identification</b> of a few important issues to investigate in laboratory conditions, as had been originally envisaged. Instead, a range of issues are raised that seem to require a variety of different research strategies. Some issues can be solved by guided experimentation in the field. To do this, researchers work out arrangements with local farmers to use their own ponds for experiments to develop appropriate solutions to their problems. Other issues require more in-depth research in controlled environments. The objectives of this research are discussed in detail with local farmers and research objectives are established with them before taking the issue back to central research institutes for further investigation. During this process, it is seen that the most important development is the mechanism by which the needs of the poor can be fed back into the research system. As research both at the field level and at central institutes produces results, researchers also have to develop means of disseminating these findings in a way that is accessible to local fish farmers. Appropriate media for presenting findings are developed and an extensive network of visits between participating farmers and research institutes. Research partnerships are also developed with NGOs working in the field to support local level research and help with communication between the field and researchers.	



## 6. MAIN CONCLUSIONS

The discussions held during the workshop were wide-ranging and covered many issues. Below are a few of the key pieces of learning that can be distilled from those discussions. Clearly there can be no definitive “conclusion” regarding the appropriateness or otherwise of using participatory approaches in aquaculture but the points listed below can be taken as issues and, in some cases, indicators that can help them to decide how to incorporate participatory approaches into their work.

- The use of participatory approaches in aquaculture development activities can add value to those activities. During the research phase, they can ensure a better understanding of a wider range of issues and the context in which aquaculture is being considered or applied. They can also help ensure that aquaculture development addresses real issues and needs of potential users. During the implementation phase, they can ensure better implementation and better monitoring of impacts.
- In research, participatory approaches cannot be applied across the board to **all** types of research at **all** stages. They can make an important contribution to the identification of the **subject** of research by helping researchers to understand what the problems and priorities of potential users are. However, some forms of “basic” research are better carried out in a “non-participatory” way as participation by people in the field, particularly the poor, may expose them to increased risk. Once the results of basic research have been established, participatory approaches are an essential part of the **adaptive research** needed to refine solutions and make them appropriate to local conditions.
- In the implementation of aquaculture development activities, participatory approaches are important for ensuring that activities are implemented in an appropriate way and can increase the sustainability of activities by giving users the leading role in developing and adapting new activities. But participatory approaches require different forms of management compared to more “traditional” or top-down approaches. This management requires changes in skills and attitudes among those involved in aquaculture development and this requires time.
- The adoption of participatory approaches, and the specific approaches used, needs to take into account the capacity of the institutions and practitioners involved. Familiarity with the principles of participation, an acceptance of adaptive management of field activities, good planning and decentralised decision-making are all important in effectively supporting participatory activities. This importance should not be under-estimated and time and resources need to be devoted to developing these skills and capacity.
- The adoption of participatory approaches is not a panacea. It does not make other approaches unnecessary and is not necessarily the “best” approach in all situations. The costs and benefits compared to alternatives need to be carefully assessed.
- Participatory approaches, and particularly RRA and PRA (which are just two of the methods that make up participatory approaches), have been used primarily to contribute to research. Their use as a means of improving understanding of conditions, problems and issues is important but, by concentrating on participatory research, some of the wider potential of approaches may be missed. The real potential of participatory approaches lied

not just in the improvement of the understanding of aquaculture development workers but in the building of the capacity of the end-users of aquaculture to make decisions about aquaculture and its place in their livelihood strategies more effectively. This area of application of participatory approaches needs to be further developed in the aquaculture sector.

The participants agreed that this has been the first attempt to systematise the lessons learned from the application of RRA/PRA methodologies to aquaculture projects. But they also agreed that this learning process needs to continue as more experience is gained and as the thinking about participatory approaches themselves develops.

Particular mention was made of the increasing importance of the “sustainable livelihood approach” as an overarching framework being increasingly used bilateral and multilateral donors as well as some NGOs to structure their development approaches. Participatory approaches are commonly regarded as an essential part of sustainable livelihoods. In the future, it can be expected that people working in a specific sector, such as aquaculture, will find themselves asked to incorporate their work into a general sustainable livelihoods framework and justify their interventions in terms of their sustainable livelihoods impacts.

Some clarification can perhaps be offered in this regard.

The Sustainable Livelihoods Approach (SLA) can be thought of a development upon participatory approaches. Much of the theoretical work underpinning the SLA was carried out by people who had previously played an important role in developing participatory approaches. The SLA represents an attempt to place participatory process within a more all-inclusive framework that can be readily used by development agencies to think through their interventions, identify key points of entry for their work and understand the consequences and impacts of what they do.

Participatory Approaches are an important **component** of the SLA. Participatory approaches will often (some might say **always**) be essential to achieving the desired impacts on people’s livelihoods that the SLA aims to achieve. The SLA is an **inclusive** approach that aims to involve and engage all the important actors in the development process and channel their energies to achieving more sustainable livelihoods for those most in need. To achieve this inclusiveness, participatory approaches will often represent a set of guiding principles for implementation of SLA in the field and the various participatory methods that make up participatory approaches will provide useful tools for achieving the desired outcomes.

RRA and PRA are diagnostic tools used in sustainable livelihood approaches but its use and modalities are being revised in the light of the whole conception of this new paradigm. This applies particularly to project formulation strategy. Projects with new open-ended flexible interventions will determine new participatory feedback mechanisms.

## **APPENDIX 1**

### **REVIEW OF CASE STUDIES**

The following appendix summarises the 9 case studies prepared for the workshop by a range of institutions and individuals working in aquaculture development. This is done in more detail than the review presented in Section 4 of this report. These case studies were selected as illustrations of how participatory approaches of one sort or another have been used during the course of different aquaculture development activities. They are not intended to be models nor is the analysis below intended as any sort of “ranking” of the various projects involved according to their relative “levels” of participation. The cases are simply examples of how people working in the field have made attempts to carry out their work in a participatory way.

For the preparation of these case studies, a questionnaire was circulated to the people involved containing a series of questions that asked the case study writers to focus on particular sets of issues that are important from the point of view of participation. The review presented below is organised more or less according to the headings that were developed for this questionnaire.

The review cannot do justice to the richness of many of the case studies. The cases were drawn from very different parts of the world and very different sorts of aquaculture development activity and the attempt to draw out common issues inevitably oversimplifies some of the cases.

The review is preceded by a brief description of the different cases and projects of which they were part.

CASE STUDY	CONTEXT AND OBJECTIVES
<b>ALCOM - ZAMBIA</b>	<p><b>Context :</b> Field investigation as part of aquaculture extension activity of regional aquaculture project</p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• identify factors affecting low yields</li> <li>• propose actions to raise yields</li> <li>• understand farmers' perceptions</li> <li>• evaluate effectiveness of RRA techniques</li> </ul>
<b>ARP FISH SEED QUALITY - ASIA</b>	<p><b>Context :</b> Research project investigating fish seed quality in Asia</p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• understand importance of fish seed quality in aquaculture importance</li> <li>• identify causes &amp; strategies for improvement</li> </ul>
<b>CAGES- BANGLADESH</b>	<p><b>Context :</b> CARE cage-culture development project with local NGOs</p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• identify reasons for success or failure of cage-culture</li> <li>• understand processes of intrahousehold decision-making</li> <li>• understand impacts on local community</li> </ul>
<b>QUIRINO- PHILIPPINES</b>	<p><b>Context :</b> Farming systems research activity within Community Forestry Project</p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• assess potential of ponds</li> <li>• assess potential of integrated agri-aquaculture</li> </ul>
<b>ICLARM- BANGLADESH</b>	<p><b>Context :</b> Nutrition impact assessment study as part of impact assessment of fisheries extension</p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• assess impact of previous aquaculture extension project</li> <li>• assess &amp; measure impacts on fish consumption</li> </ul>
<b>ICLARM - MALAWI</b>	<p><b>Context :</b> Aquaculture research &amp; extension project</p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• identify constraints on adoption of aquaculture technology</li> <li>• identify research agenda</li> </ul>
<b>DFID – LAOS</b>	<p><b>Context :</b> Research project on rice-fish culture</p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• identify constraints on rice-fish development</li> <li>• understand gender issues</li> <li>• understand resource management &amp; communications systems</li> <li>• identify strategies for maximising benefit</li> </ul>
<b>EPIDEMIOLOGY OF WSD - ASIA</b>	<p><b>Context :</b> Epidemiological study of occurrence of White Spot Disease in India and Vietnam</p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• develop strategies for disease control</li> <li>• practice use of techniques</li> </ul>
<b>ICLARM – CAVITE, PHILIPPINES</b>	<p><b>Context :</b> Farming systems research project</p> <p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• assess the productivity and sustainability of integrated aquaculture-agriculture systems</li> <li>• improve farmers' skills in experimentation and resource management decision-making</li> </ul>

<b>CASE STUDY</b>	<b>SCOPE</b>
<b>ALCOM - ZAMBIA</b>	<ul style="list-style-type: none"> <li>• Limited to aquaculture</li> <li>• Focus on farmers attitudes</li> <li>• Information collection</li> </ul>
<b>ARP FISH SEED QUALITY - ASIA</b>	<ul style="list-style-type: none"> <li>• Focus on aquaculture, seed production and marketing</li> <li>• Also understanding role of aquaculture in livelihoods</li> <li>• Information collection</li> </ul>
<b>CAGES – BANGLADESH</b>	<ul style="list-style-type: none"> <li>• Aquaculture in context of household livelihoods</li> <li>• Broad coverage of factors affecting success</li> <li>• Information collection</li> </ul>
<b>QUIRINO-PHILIPPINES</b>	<ul style="list-style-type: none"> <li>• Covering farming system as a whole, traditional knowledge, understanding of mechanisms</li> <li>• Action-oriented, to improve farmers’ practice and capacity</li> </ul>
<b>ICLARM–BANGLADESH</b>	<ul style="list-style-type: none"> <li>• Focussed on fish consumption and impact assessment</li> <li>• Information collection</li> </ul>
<b>ICLARM - MALAWI</b>	<ul style="list-style-type: none"> <li>• Focussed on aquaculture and constraints</li> <li>• Information collection (though with action impacts)</li> </ul>
<b>DFID – LAOS</b>	<ul style="list-style-type: none"> <li>• Farming system and livelihoods focus</li> <li>• Aquaculture only one element in project</li> <li>• Information collection</li> </ul>
<b>EPIDEMIOLOGY OF WSD - ASIA</b>	<ul style="list-style-type: none"> <li>• Focus on fish disease</li> <li>• Information collection / action-orientation to design management strategies</li> </ul>
<b>ICLARM – CAVITE, PHILIPPINES</b>	<ul style="list-style-type: none"> <li>• Farming systems focus</li> <li>• Information collection</li> </ul>

<b>CASE STUDY</b>	<b>INSTITUTIONAL AND DISCIPLINARY PARTICIPATION</b>
<b>ALCOM - ZAMBIA</b>	<ul style="list-style-type: none"> <li>• Fisheries Department and Project staff</li> <li>• Social scientist from project</li> <li>• Limited experience of participatory approaches</li> </ul>
<b>ARP FISH SEED QUALITY - ASIA</b>	<ul style="list-style-type: none"> <li>• Fisheries Departments, Universities, Aquaculture Institutes</li> <li>• Range of institutional levels</li> <li>• New to participatory approaches</li> </ul>
<b>CAGES- BANGLADESH</b>	<ul style="list-style-type: none"> <li>• Aquaculture Institute researchers, project staff, local NGO staff</li> <li>• Some participatory approaches already introduced under project but participating NGO staff unfamiliar</li> </ul>
<b>QUIRINO- PHILIPPINES</b>	<ul style="list-style-type: none"> <li>• ICLARM research team, project staff</li> <li>• Range of disciplines including economists</li> <li>• Most participants familiar with participatory approaches</li> <li>• Research team 50:50 women/men</li> </ul>
<b>ICLARM- BANGLADESH</b>	<ul style="list-style-type: none"> <li>• ICLARM, Fisheries Department</li> <li>• Project team mostly social scientists with some technical staff</li> <li>• Core research team with experience of participatory approaches</li> <li>• 1 woman on team</li> </ul>
<b>ICLARM - MALAWI</b>	<ul style="list-style-type: none"> <li>• Project and Fisheries Department staff, extension staff, biologists</li> <li>• Little previous experience of participatory approaches</li> <li>• 1 woman on research team</li> </ul>
<b>DFID – LAOS</b>	<ul style="list-style-type: none"> <li>• Livestock &amp; Fisheries staff, Women’s Union, project staff, mixture of institutional levels</li> <li>• No previous exposure to participatory approaches</li> <li>• Specific involvement of women’s organisation</li> </ul>
<b>EPIDEMIOLOGY OF WSD - ASIA</b>	<ul style="list-style-type: none"> <li>• Universities, Fisheries Departments, Animal Health &amp; Veterinary Institutes extension staff</li> <li>• Mix of institutional levels</li> <li>• Mostly technical specialists, no social scientists</li> <li>• Mix of women &amp; men</li> </ul>
<b>ICLARM – CAVITE, PHILIPPINES</b>	<ul style="list-style-type: none"> <li>• ICLARM research team, IIRR research team</li> <li>• Limited previous exposure to participatory approaches except for project leader</li> <li>• Mix of disciplines, including economists</li> <li>• Team mostly male</li> </ul>

<b>CASE STUDY</b>	<b>PARTICIPATION BY LOCAL PEOPLE</b>
<b>ALCOM - ZAMBIA</b>	<ul style="list-style-type: none"> <li>• Local farmers and leaders</li> <li>• Respondents</li> </ul>
<b>ARP FISH SEED QUALITY - ASIA</b>	<ul style="list-style-type: none"> <li>• Representatives of different stages in production and marketing of fish seed</li> <li>• Easier participation by wealthier people</li> <li>• Stakeholders involved in initial workshop to analyse State of the System</li> </ul>
<b>CAGES- BANGLADESH</b>	<ul style="list-style-type: none"> <li>• Women, children, men from target communities</li> <li>• Both cage operators, fishers and other people</li> <li>• Varied socio-economic level</li> <li>• Respondents</li> </ul>
<b>QUIRINO- PHILIPPINES</b>	<ul style="list-style-type: none"> <li>• Farmer co-operators</li> <li>• No specific criteria for participation</li> <li>• Respondents, involved in analysis, monitoring and validation</li> </ul>
<b>ICLARM– BANGLADESH</b>	<ul style="list-style-type: none"> <li>• Adopters of technology promoted by previous project as respondents</li> <li>• Local people as field researchers involved in design &amp; implementation</li> <li>• All pond owners, therefore generally wealthier members of communities</li> <li>• 48% respondents women</li> </ul>
<b>ICLARM - MALAWI</b>	<ul style="list-style-type: none"> <li>• Farmers involved in design, implementation and as respondents</li> <li>• Men and women generally involved together</li> <li>• Farmers further involved in adoption of new technologies</li> </ul>
<b>DFID – LAOS</b>	<ul style="list-style-type: none"> <li>• Mostly as respondents, but some local involvement in planning, monitoring and evaluation</li> <li>• Range of socio-economic levels involved</li> </ul>
<b>EPIDEMIOLOGY OF WSD - ASIA</b>	<ul style="list-style-type: none"> <li>• Not involved in initial planning</li> <li>• Participation and compliance critical during study</li> <li>• Special requirement of epidemiological studies</li> </ul>
<b>ICLARM – CAVITE, PHILIPPINES</b>	<ul style="list-style-type: none"> <li>• Involvement in planning, implementation and research activities at farm level</li> <li>• Farmer researchers involved in analysis and validation workshops</li> </ul>

CASE STUDY	TECHNIQUES
<b>ALCOM - ZAMBIA</b>	<ul style="list-style-type: none"> <li>• Ranking used with respondents</li> <li>• Conceptual tools (mapping, seasonal calendars) used out by team as means of presentation</li> <li>• Semi-structured interviews as main tool</li> </ul>
<b>ARP FISH SEED QUALITY ASIA</b>	<ul style="list-style-type: none"> <li>• Semi-structured interviews</li> <li>• Diagrams used to present data for validation</li> </ul>
<b>CAGES-BANGLADESH</b>	<ul style="list-style-type: none"> <li>• Semi-structured interviews, community meetings</li> <li>• Mapping</li> </ul>
<b>QUIRINO-PHILIPPINES</b>	<ul style="list-style-type: none"> <li>• Combination of semi-structured interviews &amp; structured survey</li> <li>• Monitoring carried out by local people</li> <li>• Village maps, village transects, resource flow diagrams</li> <li>• Regular participatory monitoring &amp; resource flow diagrams rated highly as participatory tools</li> </ul>
<b>ICLARM-BANGLADESH</b>	<ul style="list-style-type: none"> <li>• Combination of semi-structured interviews &amp; structured surveys</li> <li>• Fish consumption monitoring carried out by local people themselves</li> </ul>
<b>ICLARM - MALAWI</b>	<ul style="list-style-type: none"> <li>• Semi-structured interviews</li> <li>• Transects, resource flow diagrams</li> <li>• Resource flow diagrams most useful</li> </ul>
<b>DFID – LAOS</b>	<ul style="list-style-type: none"> <li>• Semi-structured interviews, focus group discussions, direct observation, village walk, multiple case studies</li> <li>• Validation with local people</li> <li>• Adaptive approach, developing &amp; testing new tools to address new issues</li> </ul>
<b>EPIDEMIOLOGY OF WSD - ASIA</b>	<ul style="list-style-type: none"> <li>• Semi-structured interviews, formal surveys, secondary data review, direct observation</li> <li>• Direct observation &amp; Delphi method most useful</li> </ul>
<b>ICLARM – CAVITE, PHILIPPINES</b>	<ul style="list-style-type: none"> <li>• Combination of semi-structured interviews &amp; structured survey</li> <li>• Monitoring carried out by local people</li> <li>• Village maps, village transects, resource flow diagrams</li> <li>• Regular participatory monitoring &amp; resource flow diagrams rated highly as participatory tools</li> </ul>



<b>CASE STUDY</b>	<b>ANALYSIS</b>
<b>ALCOM - ZAMBIA</b>	<ul style="list-style-type: none"> <li>• Overall analysis by team</li> <li>• Validation in the field as data collected</li> </ul>
<b>ARP FISH SEED QUALITY - ASIA</b>	<ul style="list-style-type: none"> <li>• Analysis with local participants using visual representations of data</li> <li>• Analysis by team</li> <li>• Validation at State of the System workshops</li> <li>• Local reporting</li> </ul>
<b>CAGES- BANGLADESH</b>	<ul style="list-style-type: none"> <li>• Analysis by researchers</li> <li>• Validation with local NGOs</li> </ul>
<b>QUIRINO- PHILIPPINES</b>	<ul style="list-style-type: none"> <li>• Analysis by researchers</li> <li>• Validation workshops involving local participants</li> </ul>
<b>ICLARM- BANGLADESH</b>	<ul style="list-style-type: none"> <li>• Analysis by researchers</li> <li>• Validation by local participants</li> </ul>
<b>ICLARM - MALAWI</b>	<ul style="list-style-type: none"> <li>• Analysis by researchers</li> <li>• Validation by local participants</li> </ul>
<b>DFID – LAOS</b>	<ul style="list-style-type: none"> <li>• Multiple levels of analysis – community, local, and researchers</li> <li>• Reporting also by different levels of stakeholder</li> <li>• Multiple media – written, video, photographs</li> </ul>
<b>EPIDEMIOLOGY OF WSD - ASIA</b>	<ul style="list-style-type: none"> <li>• Researchers from various levels involved</li> <li>• Validation and discussion with local participants</li> </ul>
<b>ICLARM – CAVITE, PHILIPPINES</b>	<ul style="list-style-type: none"> <li>• Data processing by researchers</li> <li>• Validation by local participants</li> </ul>

<b>CASE STUDY</b>	<b>OUTPUTS AND OUTCOMES</b>
<b>ALCOM - ZAMBIA</b>	<ul style="list-style-type: none"> <li>• Written report (for fisheries department, extension staff, project)</li> <li>• Set up on-farm trials</li> <li>• Highlighted differences between priorities of extension staff &amp; local participant</li> </ul>
<b>ARP FISH SEED QUALITY - ASIA</b>	<ul style="list-style-type: none"> <li>• State of the System reports (for local &amp; central planners, researchers, administrators &amp; decision-makers)</li> <li>• Better understanding of complex issues</li> <li>• Appreciation of participatory approaches among participating institutions</li> </ul>
<b>CAGES – BANGLADESH</b>	<ul style="list-style-type: none"> <li>• Written report (for project)</li> <li>• Potentially helpful for targeting of cage-culture development</li> <li>• Understanding of farmer priorities</li> </ul>
<b>QUIRINO- PHILIPPINES</b>	<ul style="list-style-type: none"> <li>• Written reports for researchers and project</li> <li>• Visualisations of resource flows &amp; possible on-farm trials for local participants</li> <li>• Better understanding of farm systems by researchers</li> <li>• Better understanding &amp; production by local participants</li> <li>• On-farm research activities to incorporate aquaculture into farming systems</li> </ul>
<b>ICLARM– BANGLADESH</b>	<ul style="list-style-type: none"> <li>• Data on fish consumption for project</li> <li>• Understanding of impacts of aquaculture on fish consumption patterns</li> </ul>
<b>ICLARM - MALAWI</b>	<ul style="list-style-type: none"> <li>• Diagrams and data for researchers and farmers</li> <li>• Better understanding for researchers of constraints in aquaculture development</li> <li>• More participation in integrated aquaculture by farmers</li> </ul>
<b>DFID – LAOS</b>	<ul style="list-style-type: none"> <li>• Design &amp; implementation of system to encourage rice-fish culture</li> <li>• Creation of adaptive and interactive planning, implementation &amp; monitoring system</li> <li>• Skills in participatory approaches</li> </ul>
<b>EPIDEMIOLOGY OF WSD - ASIA</b>	<ul style="list-style-type: none"> <li>• Better understanding of dynamics of WPD</li> <li>• Advice to farmers on WSD and its prevention</li> <li>• Experience and skills in use of epidemiological approach</li> </ul>
<b>ICLARM – CAVITE, PHILIPPINES</b>	<ul style="list-style-type: none"> <li>• Better understanding of farming systems</li> <li>• Tools developed for interaction &amp; analysis</li> <li>• Indicators for monitoring of changes</li> </ul>

<b>CASE STUDY</b>	<b>PROBLEMS AND INADEQUACIES</b>
<b>ALCOM - ZAMBIA</b>	<ul style="list-style-type: none"> <li>• No major problems identified</li> <li>• Regarded as better output than preceding formal surveys</li> </ul>
<b>ARP FISH SEED QUALITY - ASIA</b>	<ul style="list-style-type: none"> <li>• Difficult to establish an adequate sampling procedure</li> <li>• Timeframe/budget insufficient to allow adjustment of approach</li> </ul>
<b>CAGES – BANGLADESH</b>	<ul style="list-style-type: none"> <li>• Size of teams involved</li> <li>• Difficult to control the numbers of people involved in interviews</li> <li>• Not enough time available for participants to take part</li> </ul>
<b>QUIRINO – PHILIPPINES</b>	<ul style="list-style-type: none"> <li>• Identifying appropriate media for visualisations like maps &amp; diagrams difficult</li> <li>• Reluctance to carry out monitoring</li> <li>• Reluctance to give data on incomes</li> <li>• Limited time for initial immersion of team</li> </ul>
<b>ICLARM– BANGLADESH</b>	<ul style="list-style-type: none"> <li>• Time required by participants</li> </ul>
<b>ICLARM - MALAWI</b>	<ul style="list-style-type: none"> <li>• Disputes among respondents</li> <li>• Considerable expense and time required for process</li> <li>• Limited learning about sustainability</li> </ul>
<b>DFID – LAOS</b>	<ul style="list-style-type: none"> <li>• Poor reporting skills among collaborators</li> <li>• Lack of experience &amp; familiarity with participatory approaches &amp; principles</li> <li>• Data collected from men taken more seriously than data from women during field data collection phase (resolved by Participatory Monitoring &amp; Evaluation)</li> </ul>
<b>EPIDEMIOLOGY OF WSD - ASIA</b>	<ul style="list-style-type: none"> <li>• Technical problems</li> <li>• Need for confidentiality had to be established and recognised</li> <li>• Time required for processing of samples</li> </ul>
<b>ICLARM – CAVITE, PHILIPPINES</b>	<ul style="list-style-type: none"> <li>• Identifying appropriate media for visualisations like maps &amp; diagrams</li> <li>• Reluctance among participating local people to carry out monitoring</li> <li>• Reluctance among participating local people to give data on incomes</li> <li>• Limited time for initial immersion of team</li> </ul>

**APPENDIX 2****LIST OF PARTICIPANTS****Manuel Martinez-Espinosa**

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