Participatory Research and CBCRM: 
In Context

Based on discussions held at the Summer Institute on Participatory Research in Community Based Coastal Resource Management, held Aug. 29-Sept. 10, 1999 in Comwallis and Halifax, N.S.

Edited by
Veronika J. Brzeski, Jennifer Graham and Gary F. Newkirk

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Introduction

This book is an attempt at synthesizing discussions at the Summer Institute on Participatory Research in Community Based Coastal Resource Management which took place in Cornwallis and Halifax, Nova Scotia, from August 29 to September 10, 1999. The objective of the meeting was to provide a venue to exchange and synthesize information related to the application of participatory research in CBCRM. We have all learned so much from the discussions and exchanges that, in order to share this with those who could not participate, we wish to present our learnings in this book.

The title of the book comes in part from the title of the meeting “Summer Institute on Participatory Research (PR) in Community Based Coastal Resources Management (CBCRM)” and in part from the variety of people who met — thus the “in context”. Each one of us brought to the meeting a very different context which drives our PR/CBCRM efforts, each one of us came with a different experience with PR/CBCRM and each one of us approaches the issues differently. We not only came from different parts of the world (Philippines, Viet Nam, Cambodia, USA and Canada) but also held different roles in our PR/CBCRM efforts. Some participants were members of communities struggling to gain more control over the management of their resources, while others were community organizers, researchers, academics, civil servants, field workers, project managers, teachers, staff of community organizations, and many would claim to hold a combination of several roles.

Although we were talking about the same thing, we each had a different approach to tackling the issues, a different perspective on the issues and also different obstacles and experiences. But through the exchanges, we did learn a lot from each other and gained a new perspective on PR in CBCRM.

The meeting had only a preliminary schedule and no pre-arranged speakers arranged so it followed a very flexible and participatory agenda. Thus this book is a synthesis of the discussions that were held on subjects which participants felt were
essential to PR in CBCRM. The book contains the efforts of all the participants involved in the meeting since we were all active in the discussions. About half of the participants then devoted an extra week after the meeting to collate, transcribe and flesh out the discussion which resulted in the sections of each chapter. The editorial team then continued with more editing and organizing of the discussion into this final product.

The discussions have been subjectively arranged into 5 chapters. In those 5 chapters are responses to 12 questions which the participants struggle with in conducting PR, 3 discussions on case studies from the Philippines, Cambodia and Maritime Canada, and “context statements” or brief statements made by each participant on their PR experience.

The 5 Chapters divide the questions, case studies and contexts into the following themes:

Chapter 1. What is Participatory Research?
Chapter 2. Participation
Chapter 3. Context
Chapter 4. Approach & Methodology
Chapter 5. Use of PR results

However, these ‘themes’ were not identified at the start — they were only identified during the final editing of this book. The material presented is very broad, with each section touching on all themes. PR methodology can not be subdivided and boxed — it is interdisciplinary in ideology as in practice. There is no set procedure and no checklist. Since communities must lead the process, each effort with its distinct context is quite unique in its design, process, methodology and results. All we can offer is a discussion of the elements of PR in CBCRM which we have attempted here.

The appendices contain more detail on the background to the Summer Institute and its participants (The Context), an account of what transpired (The Process), a list of the main CBCRM research sites cited throughout the proceedings (The Glossary).
and a list of participants.

The meeting is referred to informally as SI2 (or the 2nd Summer Institute) as it is one of a series of meetings which the group has had and hopes to have in the future, to discuss issues of CBCRM and to learn from each other.

We welcome any comments, reviews, or questions. Please join in the discussion by writing to us!

The Editors
Coastal Resources Research Network (CoRR)
email: corr@is.dal.ca

The authors of this book are, from left to right on the back cover photograph, Back Row: Marina Conway, Pat Rhynold, Pauline MacIntosh, John Kearney, Truong Van Tuyen, Jason Mullen, Jennifer Graham, Will Hopkins, Toby Carson, Kim Nong, Gary Newkirk, Maria Recchia; Middle Row: Arthur Bull, Orlando Arciaga, Lana Langille; Front Row: Veronika Brzeski, Katherine Savard, Corinne Munroe, Khy An, Melissa Marschke, Elmer Ferrer, Francisco Aguilar, Becky Rivera-Guiel.
### List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>BFFC</td>
<td>Bay of Fundy Fisheries Council (Canada)</td>
</tr>
<tr>
<td>CBCRM</td>
<td>Community Based Coastal Resources Management</td>
</tr>
<tr>
<td>CoRR</td>
<td>Coastal Resources Research Network</td>
</tr>
<tr>
<td>DFO</td>
<td>Department of Fisheries and Oceans (Canada)</td>
</tr>
<tr>
<td>DMR</td>
<td>Department of Marine Resources (Maine, USA)</td>
</tr>
<tr>
<td>FFGC</td>
<td>Fundy Fixed Gear Council (Canada)</td>
</tr>
<tr>
<td>FRCC</td>
<td>Fisheries Resources Conservation Council (Canada)</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographic Information System</td>
</tr>
<tr>
<td>IDRC</td>
<td>International Development Research Centre (Canada)</td>
</tr>
<tr>
<td>ITQ</td>
<td>Individual Transferable Quotas</td>
</tr>
<tr>
<td>MoE</td>
<td>Ministry of the Environment (Cambodia)</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-governmental Organization</td>
</tr>
<tr>
<td>PM&amp;E</td>
<td>Participatory Monitoring and Evaluation</td>
</tr>
<tr>
<td>PMMR</td>
<td>Participatory Management of Mangrove Resources (Cambodia)</td>
</tr>
<tr>
<td>PR</td>
<td>Participatory Research</td>
</tr>
<tr>
<td>PRA</td>
<td>Participatory Rural Appraisal</td>
</tr>
<tr>
<td>SCAD</td>
<td>Sustainable Coastal Area Development (TDC's program)</td>
</tr>
<tr>
<td>SI2</td>
<td>Summer Institute on PR in CBCRM</td>
</tr>
<tr>
<td>SWNB</td>
<td>South West New Brunswick (Canada)</td>
</tr>
<tr>
<td>TAC</td>
<td>Total Allowable Catch</td>
</tr>
<tr>
<td>TDC</td>
<td>Tambuyog Development Center (Philippines)</td>
</tr>
<tr>
<td>TEK</td>
<td>Traditional Ecological Knowledge</td>
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What is Participatory Research?
What is Participatory Research?

Rationale

Although it has been practised prior to gaining it's new label, participatory research has many forms and many interpretations. The central concept in participatory research is that resource users, groups affected, or target groups participate in research. However, the interpretation of 'participation' differs among practitioners mainly in the level or degree of participation. Some researchers consider they are doing participatory research when the research subjects are involved in collecting data or information which is then used by outside researchers to produce results and apply changes (for instance to implement a change in government policy). Another alternative is the case of researchers acting as “facilitators” to assist or advise a group of affected individuals who wish to answer a research question and implement its results for themselves. In the latter case, the focus group is in control of the research process from the initial step of identifying the issue to the final step of implementing the results.

There are different interpretations of participation with regards to the process. PR has been used by some practitioners to convince resource users to implement a simple change in management practice with the idea coming from the outsiders. On the other extreme PR can be used to build confidence, strength and power in resource users. It can result in a shift in power and social changes which enable people to address their own questions and problems. Regardless of how the PR is initiated or by whom, the process will dictate the final outcome, whether it be a simple change in practice or a radical change in social and power structures which deals with a much larger agenda.

At the outset, the SI2 discussion group felt they had to define participatory research to come to a common agreement on the direction which participatory research should take. One participant questioned why we were calling it Research, when it seemed so much broader. This question is quite appropriate considering the broad ideas expressed above. The responses to this question were also very good:
What is Participatory Research?

• PR is only one element of a larger process and it is that larger process that we are discussing since they cannot be separated.

• PR is part of a cycle of action leading to research leading to action. Some practitioners refer to this as Participatory Action Research (PAR).

• In PR, research activities lead to knowledge and knowledge is the basis of all of the above.

In conventional research, the results are most often used to change management decisions or improve peoples’ lives while in PR, the transformation occurs through the research process itself as people develop the capacity and confidence to gain control of their lives and address their problems. Through the research process, and as relationships change within the community and between the community and outsiders, people become empowered and use the research results to bring about change in their livelihoods.

General statements

PR is learning with the people. An experience in community based health programme in the Philippines led a group of researchers to redefine their idea of PR. Previous programmes focused on teaching the people. Quickly they came to understand that this did not foster a partnership between the researchers and local community. They next approached the community with the idea of learning from the people in the community but this also did not foster a partnership. For a real partnership to occur, the researchers and community had to be equal in participating — thus the conclusion that PR is to learn with the people.

PR is a learning process moving from the simple to the complex, the hopeless to the hopeful, the powerless to the powerful. PR is an iterative process which may be initiated by an outsider but which eventually should be controlled by local people. The PR process should move on to result in a social change, build confidence among community groups, and train them in how to address their own questions. A group of researchers in the Philippines engaged a community in simple resource assess-
ments through mapping and transects of agroforestry systems, and then, using the maps in discussions, the community progressed to identify and address issues of concern. Thus the community moved from a simple assessment to complex issues of conflict, tenure and resource degradation. Through the PR process, the community gained confidence in dealing with complex issues and, in the process, gained power and hope.

**PR is about dialogue.** In their efforts to help coastal communities improve livelihoods, a Philippine NGO started by doing surveys and learning how coastal dwellers live. They started by interviewing fishers with a long list of guide questions. They quickly realized that this gave them 'control' over the process and questioned whether there were more appropriate ways. They abandoned the idea of asking questions and began to listen and, in the process, started discovering new questions. The dialogue resulted in an exchange of ideas, questions, fears and hopes. The focus switched from just gathering data to a concern with how the data were collected — *i.e.* a focus on the process. This required a change in attitude and appreciation of what it's like to work with people.

**PR is about transformation and change.** The experience of a Canadian group of fishermen is that non-PR research is concerned with a snapshot of a situation — a 2-dimensional picture with no time dimension. PR, on the other hand, is about transformation and change. It is not only about the present but about the future and people’s hopes for it. Non-PR research claims to be objective research, to provide a view from ‘outside’ and to seek the ‘truth’. PR research makes no such claims since there is no ‘outside’ and research can not be objective when it deals with issues of society and power. In conventional science teaching, ‘truth’ has a very limited definition: if you can’t prove it, you can’t trust it. PR is about facilitating other people’s truth and this can not be done without getting involved and losing the ‘outsider’ image. One PR facilitator was called in to help with a local issue, a conflict over aquaculture sitting. He could not facilitate the learning without getting involved himself.

**PR is a growing circle.** Most all experiences in PR have started with a small committed group which has grown to include more
community members. It may start with a very narrow definition of participants but as it develops, more stakeholders emerge and the group grows.

**PR is a developing relationship.** Who initiates the PR? This is a very static question which is not relevant. PR is a question of interaction and relationships. Just as in courtship, we can not ask who was the initiator since courtship is successful only when two people interact even if subtly.

**PR does not live in a vacuum.** PR molds into the political, legal and social system thus it is highly dependent on the context. In Viet Nam, where there is only one political party with no opposition, PR must be non-threatening to the political system otherwise it will not survive. Researchers see PR as an opportunity to reduce the gap between conventional technology development and the people’s needs. Conventional research develops technology in the hope that it will solve problems and improve livelihoods. PR is seen as a transition from the technical to the human aspect. In Cambodia, where PR has only very recently been introduced, it brings together national government officials, local government officials, people, NGOs and international organizations and staff. At first PR was used to extract information from local people but as it progressed, facilitators realized that local people needed to be more active in order to take on planning and conservation of resources. Now training is conducted for all participants (from national level officials to the local resource users).

**PR is about capacity building for people and organizations.** Managing resources requires decision making, consensus building, conflict resolution and many more skills which resource users must take on. Unlike private property, common property requires consensus on the part of all resource users for management. Organizations, whether they be formal or informal, must be in place and must have the capacity to deal with emerging issues.
Summary statement

PR is not just doing research with local people, it is part of a much broader goal which is to empower people. It is a process by which local people gain the capacity, the knowledge, the confidence and the skills to take charge of their futures. This is achieved by local people participating fully in all aspects of the research process and the accompanying movement towards social change.

PR differs from conventional research in that part of the objective is to bring about social change. It is learning from and with the people; it recognizes there is no objectivity; it uses different forms of knowledge and different methods of collecting and interpreting data; and its research questions spring from people's interests and priorities.
At some point in the mid ‘80s I found myself sitting in a small groups on bamboo mats in Northeast Thailand surrounded by rice fields so dry I thought we would dehydrate just looking at them. This was a strange place for a coastal aquaculture “expert” to be sitting and discussing RRA and how to turn one’s thinking upside down and start the research process with farmers or fishers. It was an early step in a journey which has taken me to the heart of CBCRM — people.

What have I learned?

Too much and too little.

What is my question?

Having changed my own approach to research, I am now looking for ways to promote a participatory approach and a sustainable livelihoods approach in CBCRM. The question might be: How can someone on the other side of the planet be of use to researchers in SE Asia doing PR in CBCRM?

I don’t expect the question to be answered. Perhaps one important thing I have learned is that I usually ask the wrong question and what I need to do is be quiet and listen.
What are the major factors influencing my view on participatory research?

The wisdom of community participation in research dawned on me through years of engaging in conventional research. When I started to work in 1986, I was overwhelmed with the idea that I should always try to be an "objective" researcher. In doing my research at the community, I try my best to minimize, if not altogether erase my own views so that I do not have an effect on the research process. With this thinking, the assumption is that researchers have an obligation not to taint the data with their own personal biases. I knew the impossibility of this task but I tried, anyway. Until I reached a point in my work when I could not really see the value of my non-participation in the research process. During this time, I also saw the emergence of participatory development theories and methods in the literature. People participation was being encouraged in view of the apparent failure of top-down approaches. Very slowly, the views I held changed and I saw how important it is for people to be integrated in the entire research process. Now I feel I am more relaxed when I do my research and while I have learned to listen more to people, I have also learned that I need to tell them what I feel and think. Now I know that having a dialogue between researchers and the people is an important part of research itself.
Statement

Tambuyog Development Center
Quezon City, Philippines

What have I learned?

I have learned to respect the knowledge that is overwhelmingly present in the communities I visit. I have learned that community people may not be talking to me in my language or use the terms I learned in the university, but they know. They know their problems and they have an idea on what can be done to solve them. I have learned that my role as a researcher is not just to generate knowledge for myself, the funding agency or the university. Understanding people's problems should lead to some concrete action or effort to solve community problems.

What are my questions?

In my work I continue to ask the question: who is not participating? For me, it is equally important to know who are participating and who are being left out. I think sharp contradictions in terms of distribution of access, control and benefits to resources exist in communities. In addition, communities are very diverse in terms of economic and social structures. My question is how do I lessen the inequalities I see in communities when I do research? How can I help those who cannot articulate their needs?
Participation
Who is involved in PR?
Who initiates?
What are the roles?
Who holds power?
Who is missing?

These short questions cover many of the concerns about involvement in PR. To the extent that each PR activity is special because of its context it is difficult to answer these questions in a general way. To the extent that each PR activity is part of a generic process of engaging people in research to address their own concerns, some guidelines can be suggested.

As will become evident in working through the rest of the material in this document, there are many variations and approaches such that classification of PR into a small number of categories is an unfair simplification. Perhaps the best way to proceed is to provide examples and work from them to some general statements.

**Fishery research by Fundy North**

Fundy North is an association of fishermen on the north coast of the Bay of Fundy. These fishermen have been subject to fisheries management by the Department of Fisheries and Oceans (DFO) who have worked on the assumption that the fish stocks along the north coast of the bay belong to one large stock covering a much wider area. However, the local fishermen had noticed a difference in the time of migration and spawning.

Since DFO would not listen to such stories, the fishermen decided they needed to do some research. Fundy North collaborated with a local environmental NGO to initiate a project to determine whether “their” fish were a separate stock and whether they had a separate spawning ground. They hired Lana (see Lana Langille’s context statement, p. 20) as a researcher to help them. However, the fishermen were concerned that their research will not be taken seriously if it is not “scientific” but more based on experience and observation. They decided they needed technical expertise and perhaps they needed some DFO
scientists involved in the project. This was not an easy task because there had been for a long time a level of distrust between fishermen and scientists. Nevertheless, they did manage to obtain some technical help and have proceeded with their research.

Note that we say “their research”. Although the environmental NGO was a key player at the initiation of the project, the fishermen felt in control of the research project. They asked the questions, they needed the information and they undertook the field work — with a little help from others. The idea of doing research was not really a new concept for these fishing communities. Some old fishermen referred to research as an “exchange” while others just call it “doing their homework”. Fishermen claim that “If you don’t know your fish, you won’t be able to catch them!”

Scallop culture in Maine

The scallop fishery in Eastport, Maine used to support families throughout the winter but eventually this fishery attracted boats from all over the state of Maine. With too much fishing effort, stocks started declining and the recruitment of juveniles decreased. A community development group had heard about techniques used in Canada to collect scallop juveniles and reseed local scallop beds. During the winter, the group invited local fishermen to a meeting involving a scientist from the St. Andrew’s Biological Station in Canada and an experienced scallop fisherman from Nova Scotia. A few months later, 23 scallop draggers decided to survey the potential for scallop enhancement. They held another meeting with invited guests from the Nature Conservancy (an environmental NGO), a cooperative extension agent, and state government people. Though the research needs were discussed, the fishermen didn’t say very much at the meeting — rather the extension agent did most of the talking, recalling conversations.

That summer, the fishermen decided to start spat collection. When they inquired about permit regulations from the government Department of Marine Resources (DMR), discussions and conflicts emerged within that department. Word spread of their efforts and before long students, scientists and scallop farmers
and draggers from afar offered to help. This culminated in a state-wide meeting with too many people from too many institutions. The DMR sent a researcher specializing in spat collection who brought with him data collection sheets and instructions on how they should proceed and send the completed sheets to him for analysis.

Finally, the fishermen spoke out and laid their claim — their project, their data, their analysis! They rejected all efforts at taking over their project and persevered. The Eastport scallop fishermen began experimental trials to collect seed scallops. First attempts were limited but encouraging and the group is continuing what will probably be a multi-year project of determining where and when they can best collect the seed scallops.

**PR involves people who have the knowledge.**

**Who is involved in PR?**

In the case of Fundy North, it was the fishermen who knew their fish but needed to know them better through a research project. However, they seriously underestimated their own knowledge and the power that knowledge could give them. They involved scientists but carefully selected them so as to maintain control over their project. The environmental NGO facilitated the process and a researcher was hired to coordinate.

In the case of the Maine scallop fishery, too many people wanted to be involved which confused and frustrated the fishermen for whom the research was intended. Although it is good to widen the circle and enlarge participation in PR, it must be done with care so that the resource users don’t get lost in the melee.

**Who initiates PR?**

In the United States, fishermen are independent operators and thus fishermen’s associations are rare. In Maine, the scallop project originated by a community organization but they are conscious of the fact that when they stop representing the local
Participation

fishermen, they will be asked to leave.

It is important to remember that fishermen are not 'one' group! They may not always reach consensus or have identical ideas — there are differences of opinion. A project may be initiated by only a few fishermen but, if there is accountability and transparent process, the circle of participants should grow.

\[ A \text{ project can not be judged by who initiates it but rather by how it proceeds. } \]

In both cases, the project initiators were very clear in their goals — to facilitate fishermen to do their own research. They did not have their own agenda and let the fishermen take over the process.

**What are the roles in PR?**

Fishermen don't always have time to do all the research but there are people in the community who do have time and the energy to pursue some research. Retired people, youth, and spouses who don't fish can be involved. In Digby Neck on the Fundy Bay, the school children collected stories about fishing from their parents and elders in the community and, based on those, produced a book of stories, articles and poems and a musical play. The goal of this project, sponsored by the local school and local fishermen's association, was to link up with community based fisheries in other parts of the world and learn how they got set up and to link up with schools in other fishing communities so that children can share stories. Thus children and teachers were involved in a research project supported by fishermen.

PR can also be looked at as a role reversal when considering the roles of researcher (outsider) and community. In conventional research, researchers are in the position of conducting the research and talking to fishermen. PR is a reversal of roles whereby the fishermen talk and the researcher listens. The fishermen also do their own research, either on their own or facilitated by researchers.
In the Philippines where most CBCRM research is initiated and facilitated by outsiders (NGO workers or researchers), there is an initial period where researchers do the research and fishers watch, then fishers begin to take on research responsibilities while the researchers watch. This matures into a period of levelling off where both parties become equal players.

Projects which are initiated by outsiders (environmental groups, NGO and other facilitators) must carefully scrutinize their role in the project. Are they thinking of their own agenda or that of the community? Often there are pressures from funding agencies which may push the project to stray from community needs. Who is in control of the project? The community should be.

There are both positive and negative aspects of having outsiders involved in research. They can provide excellent support in terms of research skills, funding, access to information and power holders. However, they can also easily take control of a project and stray away from the community objectives. This situation was clearly identified in the Maine scallop example.

Who holds power in PR?

Canadian fisheries research has evolved away from fishermen accountability. In earlier days the fisheries scientists worked closely with the fishermen and there was mutual understanding. As time went on the scientists became distant from the fishermen and served the regulatory mandate of DFO. Without the ongoing personal exchange and with the scientists serving those who made decisions unfavourable to the fishermen, the relationship in general broke down.

A concern raised was whether present day agents are helping fishing communities going down the same road? As fishermen's association arise are the communities developing dependencies on them? The representatives of the fishermen may become professional, establish an office, “serve” a wide range of fishing associations and eventually act independently of the fishermen! They may no longer be accountable to those who actually fish.

Organizational accountability is a precondition of PR.
One way to try to avoid the concentration of power through token representation is to have a transparent organizational structure — one that is accountable to its membership and ensures that information flows from and to members. Another way is to involve many other people in the community: youth, elders, etc. Fishing is not just the production of a commodity. It is livelihood for many communities. Many more people than those who go out in boats depend on the sea for their daily livelihood. It is essential to widen the circle and embed the PR in the larger community and thus avoid problems of dependency.

The language and methods used in PR, as well as the issues that are addressed, can also dictate who holds the power. If researchers use highly technical language and techniques of research, then local resource users become alienated from the process (see How do we demystify the highly technical and make it more understandable? p. 93). The same situation arises when researchers address issues that are not perceived as important to the community. In PR, the community must have power throughout the entire process — they must define the issues to be addressed, they must understand the research, they must be able to replicate the research without the involvement of the same researchers, and, especially, they must be able to use the research results.

Who is missing?

Throughout the process of participatory research, we need to keep asking ourselves: “who is missing?”. In most cases, this question is directed at identifying stakeholders in the community that are missing from the process. As mentioned earlier, only a few community members might initiate a research project but a small group can not sustain a project for very long — especially when dealing with management issues. Questions about what participants are missing must be addressed.

Factors that hinder people from participating are:

- Basic economic needs: NGO experiences in the Philippines have coined the phrase “People need to eat not meet”. Those that do participate are often better-off economically and, as a result, the project does not address the needs of the poor.
• Traditional roles: Social roles, for example gender roles, are often culturally defined. In many cultures, women will not attend meetings, or if they do, will not speak up. Attempts to involve women in separate groups are often regarded with suspicion.

Thus emerges apprehension that the project may be creating a new elite or supporting an established elite rather than empower those that have no voice. An examination or reflection on the project’s participants, objectives and, especially a scrutiny of ‘who is missing’ is essential in participatory research. In the case of fisheries research, some people dependent on fishery resources that may be missing are part-time or short term fishers, fishers using illegal gears, subsistence fishers (who fish for home consumption rather than market their products), and many more (see Prieto Diaz Case Study, p. 32).

Once the issue of stakeholder participation has been addressed, participation of people of influence from outside the community should also be investigated. For example, in the case of Fundy North, the fishermen were conscious of the fact that though they had a lot of information about the stocks, their information may not convince decision makers and therefore no management changes may result. In this case, those missing from the project were scientists — people who could collect data that would convince decision makers to consider the stock as discreet. Who to involve is a question that can only be answered on a project by project basis. It depends on the objectives of the research, what changes the project aims to make and who can best help realize those objectives and changes.

Although focus of participatory projects are on the poor and disadvantaged people, we should also be sensitive to the fact that, in most cases, the rich and powerful are not involved in community-based management projects. These individuals, groups or corporations often wield so much power and influence so as to negate a project’s results. These are often the source of resource depletion yet they are beyond a local community’s jurisdiction. Involving them in a CBCRM research project may be too much of a challenge for local groups, however ignoring them is not a wise step. As the communities around the Fundy
Bay have experienced, it is the rich and powerful corporations that own the resources and will not talk to the communities historically reliant on those resources. In this scenario, CBCRM does not solve the problem of population decline in coastal communities resulting in their demise.

An important step in such a venture is to involve, or at least link to, political powers (either regulators, policy makers or politicians). Without the involvement of political authority, the community may remain powerless to implement any management changes which involve outsiders — those not within the community’s jurisdiction. CBCRM efforts that do not obtain support from legislation are not sustainable even within a community.

**Summary**

Although the above discussion did not directly answer the questions, it has hopefully provided enough examples for the reader to understand the complexities involved. Each research project has a different set of initiators and different participants with different roles. There are also, in the vast majority of cases, power struggles which need to be resolved. Since PR is about empowerment, communities must assert power and take control of their resources to affect any positive change.

Key to answering the questions listed in this discussion is to ask them throughout the entire research process.
What are the major factors influencing my/our approach to PR?

One major factor influencing my approach to PR was the need of a small fishing community of Southwest New Brunswick (SWNB) to obtain information that would sustain a way of life that has existed for generations. It is said by many in this part of the world that, "our fishery is in a crisis". This prompted a local group the "Conservation Council of New Brunswick" to engage in many projects to initiate Community Based Management in this area. In this particular project, our PR assignment was timely as much of the information we needed we were able to obtain from wise and experienced fishermen.

My research involved collecting information on spawning and nursery grounds for the groundfish stocks in SWNB. Lobster information was also collected. A concern that most fishing families expressed, was the validity of the information they offered.

There is always ongoing debate on how research gets done and the validation of that research. Here in SWNB, the fisher families face great opposition, not only from government, but also from the corporate capitalists who threaten to take over the livelihood of many coastal communities. The fisher families in our area feel that exploitation by government and capitalists will eventually end a way of life they have practised for generations. The marginalisation of the independent fisherman is evident when one looks at how the government has introduced the individual transferable quota system (ITQ - see Glossary, p. 164).
Statement

Fundy North
St. Martins, New Brunswick, Canada

Communities hope that by conducting their own PR it will help pave the way for Community-Based Management, as an alternative to the present top down management system used by the government. The communities here in SWNB feel that by contributing to the PR process, it will accomplish the long-term goal of protecting spawning and nursery grounds in their crucial stages.

What I have Learned

I have learned much from my experience with participatory research. Most important perhaps is the presence of the "spirit of the community". People in the community were very receptive and stated that PR is useful. PR is regarded by most communities as a tool for solving problems. They felt that much more PR is needed if communities are to survive the current fisheries crisis. Fishermen know the current model of fisheries management is not working and they would like to devise a plan that is 1) ecological in nature 2) sustainable in practice 3) economically feasible.

With these concepts acknowledged, I learned that PR is essential to Community-based Management. At S12, I learned the importance of PR on a regional level. Wonderful people came from near and far to participate, and I left feeling inspired by their personalities and their knowledge. Continuing dialogue with people from communities around the globe is essential to the PR process. At S12, skill building and problem solving were in furious motion; my experience there will serve me well in my next PR endeavour.
How do we enhance inclusiveness and ensure that different players are involved in our PR research?

Why should PR be inclusive?

If PR as a process seeks to empower and address equity issues, then inclusion within a process can help to foster empowerment and equity. When people are participating in a process, they can work towards greater self-determination. Unfortunately, including all players within a process is not easy; moreover, mere inclusion within a PR process does not ensure equity amongst players.

An important part of any inclusive process is an ‘analysis of power’. That is, there must be an understanding of the power dynamics within a community (this can be facilitated through various tools, group and individual discussions etc.). Such an analysis determines how one can proceed and helps to gain a clearer idea of how the research process will impact upon a local ‘community’.

Who is involved and why is this important?

Using a PR approach means that one is always thinking about ways to ensure people are engaged in the PR process and that there is an understanding of the given situation.

The best way to mobilize people is to work towards reaching those that are most directly affected. This process takes time and energy. Reaching those players will take different processes depending upon the context. For example, in Cambodia one reaches the community through working with commune and village chiefs. In other places it may be possible to “go directly” to the people, however, it is usually wise to inform local officials about what is going on.

Stakeholder analysis can be helpful in sorting out who should be involved and at what level.
Participatory research can be viewed as a way of empowering people at all levels of the research process (research team, personal, village level, governmental). Given that PR is working within specific social and political structures, one must consider if this research reinforces current power structures or helps in working towards restructuring. This is always something to be concerned about.

Also, one must recognize that different players have different reasons for engaging in a PR process. Some people participate because it seems like the most viable, politically best or practical option, others are interested in empowerment and equity issues and others still are engaging PR for efficiency reasons (see How can we make PR more efficient in producing results? p.121). In working with various people, it is important to remember both the macro and micro contexts. There needs to be an understandable dialogue at different levels and between players. Not everyone sees problems in the same way. Only with dialogue will different views be made clear. This is the first step to resolving differences.

Power dynamics will become evident, and such dynamics tend to shape a research process. Often involvement does mean taking sides. One must always be asking the questions of WHO is INCLUDED and WHO is MISSING? Another important question to remember is WHO is this RESEARCH VALIDATING? (see Who is involved in PR? p. 12).

Partners and stakeholders in the PR process

There are always partners in a research process as well as stakeholders. For example, the National Round Table for the Economy and Environment (NRTEE, a Canadian NGO) suggests that stakeholders are those that have direct experience in something, and are then supported by various partners. Therefore, this suggests that one needs to begin with stakeholders and continuously expand the levels of inclusiveness.

However, after a certain amount of thinking one has to start somewhere! Some key questions to consider when thinking of who to involve are:
• Who are the local people or those most directly affected (stakeholders)?

• Who are the support people?

• Who are the other people involved?

These three “categories” will probably not be distinct. It may be difficult to decide if someone is in one or another group. Therefore, PR is a process of including people, and this does have distinct political impacts. This awareness helps to determine how you proceed. Also, inclusiveness works towards fostering participation — i.e. one can bring various stakeholders together to understand the various ‘issues’ and this is part of the community building process.

**How to measure participation**

Measuring participation is not simply about counting heads at a meeting. Attending a meeting does not mean a person is participating. In fact, it is not easy to measure how people participate in a PR process or if people have really been given a chance to voice their opinions. For example, the Fundy Model Forestry group identified all stakeholders in forestry issues and held a series of round table discussions. This meant that industry was at the table along with government and local community groups; ironically, this did not ensure an even playing field. In this example, those most powerful also held the loudest voice: there were power dynamics within the room. Therefore, simply ensuring that stakeholders meet together within a process is not enough to ensure participation or equity. Moreover, who judges this equity? This is a difficult process.

*Be careful about being “too inclusive”!* Large groups are difficult to manage at an early stage. Try to find out who is most directly involved and avoid excess baggage.
Think about the context

Consider where you are working, how this ‘system’ works and take a sensitive approach. The wonderful thing about PR is the flexible nature that this research can take.

Remember that there are complex allegiances held within communities. These are not easy to access or to necessarily understand. Therefore, one must carefully consider all the complex social, political and cultural allegiances held within a community.

There are many ways to access stakeholders. For example, if an outsider is initiating research consider these contexts: in Cambodia it is important to work within a local social and political hierarchy, hence it may take some time before reaching the village level and working with most resource users. In the Philippines one must pay a ‘courtesy visit’ to the local government official but can work directly with the peoples’ organizations, and in Canada one theoretically has access to local people.

When one cannot access stakeholders directly, one must be creative about how to reach these stakeholders. Because PR is about capacity building, one can be constantly strengthening the team and those involved in the process. This may start with developing appropriate attitudes of the team. The number of people will increase over time and building of understanding and relationships is necessary. As the process unfolds, more and more villagers will become involved. In other words, all is not lost just because one is not initially working directly at the village level!

PR is a time consuming process: It takes time to gain trust within the community and to build up healthy relationships. Different people will respond to different research tools, methods or objectives and can be engaged in different ways. For example, some people might enjoy participatory mapping exercises, others prefer group discussions and others prefer one-on-one dialogues.

If PR is to be a dynamic process, one must work on the broader values of caring and respect. There needs to be inter-generational respect and a holistic approach is important. Things are never in
isolation and they are often interconnected.

"Give a person a fish, they have to food for the day. Teach a person how to fish, they can have food for life". In other words, this process is about capacity building. It is important that people are directly involved in the research process and that this is viewed as a beneficial process. Although capacity building is difficult to measure, it is central to the PR process. While this process takes time, this is the only way to ensure local ownership and acceptance of what is being worked towards.

**Networking as a way to foster greater participation**

Networking is a way of sharing knowledge and of building upon a collective knowledge base. Perhaps it is the idea of 'collective wisdom or collective foolishness': either way this is a community struggle with people working together to find solutions.

Because globalization trends do impact local communities, knowing that other communities are facing similar struggles and understanding how they deal with the emerging issues can raise self-esteem or courage to confront the issues.

Networking can happen at various levels. For example, village networks can be very empowering. One can tap into existing networks to strengthen solidarity over issues including national and international networks

- Understanding the broader implications of an 'issue' or a process is important and networking with other groups, regions or countries can help foster this;

- Tapping into existing local, regional or global celebrations such as World Fisheries Day, or creating one's own celebrations locally or regionally can provide a source of inspiration both within communities and to others working towards similar goals;

- Using village networks of communication can help tap into information and also to dispel 'myths', for instance use 'gossip' networks to learn information or to transmit correct information (only one of many ways to transmit information);
• Being aware of local patterns of networking (and their implications) and (possibly) tapping into these!

Summary

It is critical to be constantly thinking about who is involved in a PR process and who is missing. As community power relations are better understood, there is a greater chance of ensuring that more people are included within a PR process. Inclusiveness is about giving different groups and stakeholders a voice which is not merely a question of numbers but of meaningful participation and representation. Through critical reflection and analysis the PR process can be constantly adjusted and adapted. Consider and be sensitive to the context in which PR is being undertaken and the various political, social and cultural influences within the region. It is also important to realize that different people can be engaged in different ways throughout the PR process. This helps to ensure that the PR process becomes more inclusive.
What do we mean by Participatory Research (PR)?

It is "new approach to our old problem". For application it has been simplified as an increase in level of participation of local people in research process. Low participation occurred when local people were involved into research simply by providing labour. Higher participation is characterized with local people increasingly involved in decision making through the research process from identifying problems and alternatives, selecting solutions, designing and implementing activities, and evaluating the results.

The application of PR for aquatic resources management has been driven by the following factors:

1. The status and characteristics of resource exploitation and management: The aquatic resources in Tam Giang lagoon are over-exploited because of population pressure and a weak control of production activities. One critical priority of research is conservation and protection which requires sacrifices and investments by the resource users. Such research activities do not provide incentive for local people to participate.

2. Changes in the socioeconomic and political environment: The national policy of renovation known as doi moi has as a goal "to abolish the system based on a centralised bureaucracy and state subsidies and to establish harmoniously and efficiently the state-controlled market system". Under this policy, the transfer to a market economy with a socialist orientation creates a unique socioeconomic and political environment for the application of PR. The recognition of the private sector and the autonomy of
individual households is a decentralising process, which provides local people and communities with more power in making decisions. This environment promotes local participation in research.

3. Dynamics of tenure and access to resources: The cooperative system in Viet Nam was put in place at the national level in 1958. Under this system, the state allocated agricultural land to the cooperatives and farmers worked for the cooperatives. Under the recent policy of renovation, use rights of resources (mainly agricultural land) were reallocated under three types of tenure: private, communal, and open access. Under the new doi moi policy, ownership of land is still not recognized, however long term rights to use the land were allocated to individuals (thus the term private tenure). The entitlements and exclusivity to resources resulted in changes in user groups and management practices. This form of resource tenure provides local people with different incentives and expectations for participating in research activities. In general, since farmers have more control over their land, they are more likely to want to improve the productivity and therefore increase investment and participate in research. However, land accumulation by better-off groups is occurring with poorer farmers losing land. As a result, the most disadvantaged groups in both farming and fishing communities are the people who have lost access to land resources. Thus the incentives for the most disadvantaged to participate in research have been reduced from that before doi moi while for better-off groups, the incentives have increased.

Continued on page 30
Another critical issue regarding resource tenure is the allocation and management of lagoon water area which was previously under open access. PR needs to involve different levels of management.

4. The researchers' interest and capacity: A conventional top-down management approach is still dominant among local agencies. Officials at higher management levels prescribe plans to be implemented at lower levels without consideration of their potential impacts. The challenge in PR is not only to build awareness and but also to change the attitudes of government officials towards supporting community-based resources management systems with strong local participation.

5. Management approaches by local agencies: Socioeconomic and psychological characteristics of local people and the community as a whole have a strong effect on the application of PR because of their assumed roles as the main actors. In general it is more difficult to involve or increase participation in research of the poor because their activities are entirely focused on providing food and shelter for their families. Poor awareness and perception is another constraint to local people's understanding of the problems and alternatives of management. Fishers, who are far less organized than farmers, have reduced power in securing access to resources. The previously subsidized system of production (pre-

doi moi) has resulted in a low autonomy and an inappropriate attitude towards the roles and responsibilities of local people in resource management. This trend can potentially be reversed through PR.
6. Local people’s characteristics and livelihood status: The capacity of researchers is one of the most important factors that improves the level of local participation in research. Background, experience, and commitment to the ideology of PR are very important. Research planning, monitoring and evaluation must be improved continuously, especially methodological aspects. Along with development of knowledge and methodology on PR, the researchers need to be trained and updated with improved perspectives and research methods. Hands on training in the field for researchers seem to be the most effective.

In summary, understanding the context is essential for a good start in the application of PR. In our specific socio-economic and political conditions the recognition and support of the decentralisation process by the government is an enabling factor. However, a good PR application requires not only adoption of new techniques but also a continuous adaptation of the process in parallel with ongoing research activities. A simple start, high commitment and allowing for continuous improvement in all dynamic aspects may be a good alternative for PR.
Case Study: Community conflict in resource management in Prieto Diaz, Philippines

Background information

Prieto Diaz is a coastal municipality located in the province of Sorsogon in the southern part of the Luzon peninsula. Prieto Diaz is bounded by water — the Pacific Ocean to the East and Albay Gulf to the North, and 2 municipalities — Bacon to the West and Gubat to the South.

Prieto Diaz covers a land area of 4,767 hectares which includes a total of 550 ha of mangroves, 336 ha of seagrass and 200 ha of coral reefs. The most prominent ecological feature in the area is a seagrass covered marine lagoon bounded by a fringing reef that serves as a protective barrier from the high intensity wave action of the Pacific Ocean.

Pattern of resource use

Interviews with local elders reveal that there has been significant changes in the status of resources and in the methods employed by the fishers in extracting the coastal resources. Prior to the 1970s, there was an estimated mangrove area of over 1000 hectares. Half of these, however, have been converted to aquaculture ponds for the export market of bangus (milkfish) and prawns. Today, many ponds are largely underdeveloped, or worse, abandoned. Destructive fishing practices common to the area include blast fishing (using dynamite), the use of sodium cyanide (suspected of compressor fishers), the use of fine meshed baling and sarap (modified drag seines), and unregulated harvesting of mangroves for fuel wood and charcoal.

Socioeconomics and demography

Prieto Diaz has a total of 23 baranguays (or villages — see Glossary, p. 164), 19 of which are located along the coast and consist of about 90% of the total population of Prieto Diaz. Most of the people directly depend on the coastal resources for their livelihood. Daily income of fishers employing traditional meth-
ods range from US$2–US$8 during peak season from March to August and US$1 during lean season from September to February when intensive wave action impedes fishing.

Out of the 2,821 households in Prieto Diaz, 470 are engaged in full time fishing. Ninety percent of the fishers use non-motorized bancas (boats) and the most common gear used are hook and lines, gill nets and spears. Other gears used are baling, lift nets (or bitana) and fish corrals. The major fishery produce are composed of reef fishes owing to a wide reef area fronting the municipal waters.

Shellcraft is another economic activity in 13 barangays located immediately south and north of the town centre. This activity is
mostly engaged in by women and children although men sometimes participate in the craft. Shellcraft making, however, becomes the primary source of income of some fishing households during the fishing off-season from November to February. Income from this activity amounts to $1 per shell craft.

The initial stage of the program

In early 1994, Tambuyog Development Center came to know about Prieto Diaz through the invitation of a local priest who had started organizing work in the area. The priest was set to be transferred to another town and he wanted to link the fishers' organization he helped organize with a developmental NGO. The organization is called SAMAMAMU or Samahan ng Mga Mangingisda sa Muntopar (Organization of Small Fishers of Muntopar). Tambuyog readily accepted the invitation because during this period, a community-based management program was being implemented in another part of the country and there were institutional plans to implement it elsewhere. Thus Prieto Diaz became a site for Tambuyog’s Sustainable Coastal Area Development (SCAD) program.

In July 1994, Tambuyog made an ocular survey in Prieto Diaz and talked to some members and leaders of SAMAMAMU. This was followed by a series of consultation with barangay officials and other community members. The priest helped set up all these meetings. At this point, the partnership between Tambuyog and SAMAMAMU was slowly taking form.

To prepare for the implementation of the SCAD program, Tambuyog first made courtesy calls to local government officials to introduce the program to them. Visiting local officials before starting a program is a requisite in community development work in the Philippines.

Preparing for the participatory research

Several activities were conducted to prepare for participatory research in Prieto Diaz. The first step was for Tambuyog to facilitate a summing-up activity and organizational diagnosis of SAMAMAMU. This allowed a review of SAMAMAMU’s past activities and the organization’s strengths and weaknesses. The
main weakness identified was a lack of orientation and direction. The main strength was the willingness and resilience of a small group of leaders to revive the organization. Based on this, SAMAMAMU held a series of exercises on visioning and began a process of defining its own orientation, perspectives and goals. At the same time, Tambuyog started a dialogue with the organization's members on coastal resource management. During these discussions, a video called "Yamang Dagat" (Wealth of the Seas) was shown and a discussion on environmental protection and management followed. It was a way of knowing what SAMAMAMU thought about working around issues on coastal resource management.

The results of the visioning exercises were used as a basis to draft an initial plan of action for SAMAMAMU. The objective of the plan was to undertake further activities leading to an understanding of the issues in the community and an identification of appropriate organizing strategies. The plan included the following activities: the selection of volunteer organizers from within the SAMAMAMU membership; team building activities; and the implementation of a social investigation for four barangays. The latter activity was suggested so that Tambuyog and SAMAMAMU would be guided by a similar understanding and analysis of the felt problems in the community.

Meanwhile the team building activities were oriented towards building the confidence of the volunteer organizers and SAMAMAMU leaders to take a lead role in the research. An effective tool used in team building was the "River of Life." In this activity, participants formed groups of eight persons and each has to share stories about himself or herself in the context of the community life. The stories could be described as having "strong waves" (meaning turbulence) or "calm waters" (depicting peacefulness). The tool was a good way to have a general discussion on what the community had gone through in the past.

**Doing the participatory research**

Towards the end of 1994, Tambuyog and selected members of SAMAMAMU were ready to conduct the participatory research. They jointly planned for an orientation meeting and training on PRA. Internally, Tambuyog also made institutional preparations
on logistics and team formation. Everyone thought that the plan was worked out well.

In the actual session, 30 SAMAMAMU members attended. This was unexpected because the plan intended to have a small group involved in the research. Several problems surfaced during the meeting. One was that although both men and women attended, the discussion was dominated by the men. Secondly, the fisher participants represented several gear types and the conflict between them was very evident. For example, the fishers using baling conflicted with those using the three-ply gill net. Users of both gear compete intensively in the lagoon during the lean fishing months. This conflict was made more complex by the fact that other fishers and community members oppose the use of both gear because these are perceived as destructive to the environment. Finally, there were also internal difficulties within the Tambuyog research team. Since team researchers came from several disciplines, the team members had difficulty reaching consensus on how to respond to the issues.

Before proceeding with the research, Tambuyog evaluated the initial activity and held joint assessments with SAMAMAMU. A smaller group of SAMAMAMU members then joined the Tambuyog team in undertaking follow up research activities. This time, the team worked in smaller groups of 5–8 persons. A separate study on women’s condition was also conducted. The results were validated in bigger groups through community assemblies. The analysis was then used as basis for a five-year plan for the SCAD program.

Issues in participatory research

- The presence of women in the research discussion does not always lead to their participation. In Prieto Diaz, the women were very quiet while the men dominated the discussion. Encouragement from the facilitator was not enough to make them speak because most women did not feel confident to be there in the first place, much less speak in a group meeting. In response, Tambuyog later facilitated the formation of women clusters composed of 6–8 women living close to each other. These informal groups periodically meet to
discuss family and/or community issues of concern. This approach has become an effective way of building confidence among women.

- It is important that the research team grasp the complexities of conflict among resource user groups before initiating the research. Conflict can in fact be one of the major concerns of a preliminary social investigation. In addition, it would have been easier to facilitate the research discussions if resource user groups were not mixed in the initial stages.

- Preparatory activities are necessary before doing the actual research. These can include team building activities, visioning exercises, and organizational diagnosis.

- A research team composed of people from different disciplines should primarily prepare themselves to work with each other. Activities on team building and levelling off on concepts and strategies may help facilitate this.

- There was a deliberate attempt not to target illegal fishers using dynamite (blast fishers) during the early stages of the program and the research because it was difficult to reach out to them. Subsequent attempts at dialogue and encouraging them to join the organization were not very successful. Encouraging their participation remains to be a challenge for both Tambuyog and SAMAMAMU.
Group Discussion on Prieto Diaz Case Study

Following the presentation of the Prieto Diaz case study, the group discussed the issues raised regarding participatory research in Prieto Diaz, particularly the last point raised: *The issue of broadening participation remains problematic.* The management plan adopted by SAMAMAMU has discriminated against the illegal blast fishers who are all from the same village marginalised from the rest of Prieto Diaz society. By supporting them, Tambuyog would lose credibility in Prieto Diaz, yet ignoring them is not ethically correct. These are difficult issues especially since conflict is deeply rooted within the community.

*How to broaden acceptance of resource management in the community?*

The group then broke up into 2 groups to discuss this and the more specific sub-questions that sprang from the main question.

- *How to bring in the marginalised groups, such as illegal fishers, women, migrants, mangrove cutters, etc., into the PR process?*

- *How to avoid forming an elite group of your local partners and thereby further marginalising others within the community?*

- *How to address conflict among different fishing gears, or within a fishing organization (i.e. SAMAMAU vs. baling fishers)?*
Group I Discussion Notes

The how questions?

The how questions include: How do we bring more people into a process? How do we identify potential focus groups? As one thinks about the ‘hows’ then the ‘who’ to bring into the PR process will emerge. Thinking about how to broaden the PR process and who to bring in is an initial step in thinking about how to gain further acceptance of resource management in a community.

Think informally! That is, why not ‘slip through the back door’ on an issue. Head-on confrontations are not always productive. Circle around the real issue and focus on something that brings people together (if such a topic exists!). Maybe start a project that focuses on livelihoods and targets illegal fishers in this process. This process could somehow provide an incentive for these fishers to consider other livelihood options.

Working within existing, informal networks is a powerful way to start or continue PR research and work towards great inclusiveness. In Prieto Diaz, Tambuyog tried working with a converted blast fisher who originated from the blast fishing village and had family and friends there. This process is known as ‘groundworking’ — rather than directly approaching the blast fishers, they relied on someone close to them to dialogue with them. To bring in illegal fishers, we must work in a manner that is culturally appropriate, sensitive and appropriate for the local fishers.

Peer pressure can be a powerful incentive for broadening resource management issues or addressing conflicts within a community. When respected individuals take part in the PR process, others will follow their lead. Providing training on alternative livelihood options can also provide incentives — perhaps some illegal fishers are interested in other options if given the opportunity.

Thinking about context

In some cases, kitchen meetings can be an effective way of
talking with groups of, for example, women, in a more informal setting. In other cases, a café or bar becomes more effective to discuss issues informally. In the Philippines, families are clustered in groups of 4–5 neighbours. These groups serve as an entry point into the community.

Oops! *This discussion so far is assuming that people are willing to shift livelihoods.* Not everyone is necessarily interested, or for that matter, willing to shift livelihoods or to become more interested in resource management issues. Not everyone wants to undertake legal activities!

Some families are not interested in environmental protection and, therefore, are not interested in long-term sustainable livelihoods. Some people are looking for the easiest way to make a living. Therefore, it is extremely important to conduct a PR that helps to understand the plethora of reasons that people have for engaging in various livelihood activities including both legal and illegal activities.

When working with marginalised groups, one needs to learn how migrants or illegal resource users really feel. There needs to be mechanisms to draw out the voices of the most marginalised. This mechanism has to be appropriate within the given cultural and political context.

There are many reasons why migrants would become illegal fishers. For instance, perhaps migrants don’t feel connected to the area, the community or the landscape. Or, perhaps other people fish illegally because they feel above the law.

*Questioning our assumptions of conservation ethics*

Different groups of fishers have different reasons for fishing and for resource conservation; therefore, conservation ethics also differ.

In Cambodia, charcoal kiln activities are illegal. The anti-charcoal committee is committed to destroying charcoal kilns, and thereby helping to protect the environment. Other agencies in the area argue that destroying charcoal kilns without offering alternative livelihood incentives is cruel and unfair. In fact, what is happening is that more people are cutting mangrove wood for
Participation

charcoal production deeper inside of the mangrove forests (see *PKWS Cambodia Case Study*, p. 71). Some people are interested in sustainable methods of charcoal production, but others are concerned with day to day survival. There are many reasons why people are or are not interested in resource protection. The reasons for supporting or not supporting kiln activities vary greatly within and between villages. PR tools can help to broaden understanding of these complex issues.

With any activity, especially illegal activities, there are power structures within these groups. These allegiances are complex, complicated and difficult to really understand. Conflicts can be spatial and seasonal. Also, there are many macro issues and outside forces that encourage systems of illegal activities.

For instance, the Bay of Fundy group found that there were many different perceptions pertaining to illegal resource extraction activities. Therefore, there are people with whom you can and cannot dialogue with. Migrant people are often outcasts within their communities; as are illegal fishers. This brings in the importance of 'good facilitation' especially for tense topics.

**The need for good facilitation**

In times of conflict there is a need for a skilled facilitator. One must identify who would be in a position to do this. Is there someone in the community who is in a position to facilitate this process? If there is no one within the community, then it is time to look for someone outside the community. Is a community even ready to begin addressing these issues? Perhaps the facilitator should begin with a process of encouraging discussion of these sensitive issues and then the use his/her authority to steer the meeting.

Think about which issues you want to focus on. Perhaps groups can work together on a common issue and then, later on, work on more divisive issues.

Sometimes interest can differ from position on an issue. That is, while the position of a group on an issue might appear static and non-bending, the interests of a group might actually be diverse and groups might really share common or similar goals (see *How can PR processes and tools be used in conflict resolution and*
consensus building? p. 115).

And then there is the issue of timing. A skilled facilitator knows when to push and when to allow a group process to unfold. Equally importantly, a group needs to be ready to have a process ‘facilitated’. Everyone needs to see the benefits of sharing within a process.

Summary

The PR approach requires a great deal of sensitivity and patience throughout the whole process, particularly in dealing with marginalised groups. This process includes initiating contact with the marginalised group, listening to their concerns, views, interests and needs, entering into a discussion, bringing together the various groups (either by working towards a common goal or some other way), and facilitating resolution of more sensitive issues.
Group II Discussion Notes

The challenge

While our group discussion was lively and stimulating, the group had difficulty moving forward in terms of formulating a PR plan to discuss the main questions. We focused primarily on the first question, how to include marginalised illegal fishers in PR.

The format in which our conversation is presented here does not quite reflect the order of our discussion. In our last few minutes of discussion, it was mentioned that had we attempted to put our thoughts into a *Who, What, Why, How* framework, the discussion might have been more productive. These notes attempt to roughly locate the group’s discussion in such a framework.

Who

Within every organization or community, there are groups that are considered "outcasts" from the larger group. They may be marginalised because of poverty, ethnicity, the fishing methods they use, where they live, the language they speak or because they are new arrivals to the area. Mistrust and misunderstandings between different sectors of the community are universal problems. Similar tensions exist between different gear groups in the Bay of Fundy.

It is often difficult to bring marginalised groups into the CBCRM process, particularly if historically they have not had a voice in any aspect of community decision making. However, not including certain social group, such as dynamite fishers, in the management process can lead to their further marginalisation.

There is a particular urgency when the marginalised community members — blast fishers, lobster poachers, and charcoal makers — are taking part in destructive activities that critically deplete the resources on which the greater community depends. Frequently, the standard response is to try to stop the destructive activities immediately without trying to bring the affected communities into the CBCRM process.

It is very difficult to fully understand the extent of the problem
of illegal fishing activity because it is a sensitive and potentially dangerous topic to discuss. Also, the broader community’s opinion of the extent of illegal activities is often coloured by their perceptions of the groups involved. It may be the community opinion that all new migrants are blast fishers. In the Philippines, many legal fishers feel that the illegal fishers use destructive methods not because they are poor, but because they are too lazy to use other methods. In the Bay of Fundy, many non-Native fishermen perceive that First Nations illegally harvest excessive amounts of lobsters. The Bay of Fundy Fisheries Council is recognizing the importance of working with residents of the First Nations communities to address common concerns. Before these common concerns can be addressed, however, existing stereotypes and prejudices have to be acknowledged and discussed and this will not happen overnight.

**Caution:** In an urgent situation, and given the limited amount of time and resources, it may be difficult to justify devoting much energy to illegal fishers when there are many legal fishers who are not yet involved. Perhaps the real question is how to broaden participation of all groups in resource management.

*Why PR?*

The PR process can help the research team understand the situation of illegal fishers and why they engage in illegal activities. This understanding will help in devising strategies to involve them in resource management. It can also help quantify the extent of the problem — perhaps fear and mistrust have led to an overestimation of how many of the residents of Diamante actually use illegal fishing methods and the extent of damage they cause.

PR can also be used to find out about the actual processes that support illegal activities.

- Who controls the operations?
• Who is supplying the illegal equipment?
• Why do the fishermen participate in this activity?
• Who is actually benefiting from illegal activities?
• What are the processes that lead to marginalisation?
• What are the roles of different groups within the community?
• What are the conflicts?

A PR process may build rapport with the illegal fishing community. The process may also help them articulate their situation, needs and position. It can be the first step in organization building, so that these marginalised fishers have a voice in resource management decisions.

When research results are not shared, they can lead to further marginalisation. In Prieto Diaz, the initial research done on property rights arrangements provided a broad analysis of the situation and conflicts in the municipality. The findings of the initial research were not made public beyond the members of SAMAMAMU. There was not the opportunity of public analysis and acceptance of the findings.

Further research on resource management conflicts can build a new understanding and reveal who or what is missing from the initial research. Research is a continuing process, and is more relevant when the program is underway. Now that the municipal government is taking TDC’s and SAMAMAMU’s recommendations seriously, residents are more interested in various research projects and their results. They know that these projects can have an impact.

How

1) In Prieto Diaz, the illegal fishes in barangay Diamante have very little trust of Tambuyog, SAMAMAMU members and municipal authorities. It is very difficult to enter into discussions with them or to involve them in resource management activities because of this lack of trust. In a way, involving blast fishers or helping them develop alternative livelihoods might create resentment within the original SAMAMAMU members who would
resent "the illegals" being rewarded.

2) Perhaps involving other fishers in a study of blast fishers might help them learn to see the situation through the eyes of those engaged in these activities. This might also make the fishing organization more willing to work with this community. Tools such as informal interviews, PRA methods, and integration with the illegal fishing communities could help build trust and understanding. Interviewing former blast fishers also increases understanding of how the system that maintains illegal fishing operations is maintained.

3) In Bolinao, Philippines, fishers using cyanide to catch aquarium fishes were trained to use hand-held nets by an international NGO. Some fishers switched, but in rough times again used dynamite when the program support ended. The program lost credibility because the trainer was also engaged in fish trading.

4) Education might be effective at stopping blast fishing, but education alone is not sufficient. Educational campaigns do work (for instance, there has been a huge reduction in smoking population in North America) but not everyone is reached or accepts the message. Education campaigns must include adequate support and follow up with those who want to change their livelihood activities. Maybe a good starting point is a research question such as: Why do some continue to engage in illegal fishing activities when they are so obviously dangerous and destructive?

5) There are questions as to whether focusing on the illegal fishers is most effective. First of all, if the issue of resource destruction is pressing, the priority should be on stopping the activity (enforcement) to reverse the decline in the resource base.

6) It is also important to recognize that there will always be conflict within organizations and between various groups in the community. Often, the best that can be done is to manage the conflict rather than eliminate it completely.

7) It is important to stop and evaluate where effort should best be spent. For instance, in the Prieto Diaz area, how many fishers are not participating in the programme? How many of these are in
fact illegal fishers? If the number of illegal fishers is small in comparison to the number of legal fishers not involved, effort should be spent on mobilizing legal fishers to join the management planning. On the other hand, if the number of illegal fishers is indeed very large, then it is not possible to ignore them and effort should be spent on bringing them into the programme.

8) We need creative approaches to conflict resolution, look at what is being done elsewhere, try different things and document these experiences.

Another challenge

Our difficulties in framing this discussion about how to involve illegal fishers in resource management reveal that user conflicts are a difficult and emotional issue to address. There is no a quick and easy solution, but these problems can not be ignored. They must be faced and dealt with, no matter how difficult. In these situations, PR is both a tool and a process for helping opposing groups understand one another and for building the capacity of marginalised groups to participate in research and management.
Context Statement

Orlando (Orly) Arciaga
Haribon Foundation
Quezon City, Philippines

The Philippine Coastal Resources Situation

Philippine coastal resources is currently besieged by a number of problems similar to those being experienced in various countries worldwide. These problems may be classified as biophysical, socioeconomic or institutional in nature. Biophysical issues include declining fish production, sedimentation, endangered coastal habitats, degraded water quality, diminished biodiversity, and diminished natural productivity. Socioeconomic issues, on the other hand, involve poverty, lack of awareness and participation, resource use conflict, limitation of fishing effort, use of destructive fishing techniques; demographic and institutional problems. Finally, weak enforcement of the law, weak judicial support to enforcement; inconsistent laws and ordinances for management; lack of political will in implementation of integrated coastal management programs; non-integration of integrated coastal management in local and national government plans and sectoral approach to coastal management comprise the institutional issues plaguing the Philippine coastal resources.
Context
How does PR differ in different contexts?

General statement

Participatory research is never neutral: it can not be blindly replicated from project to project, from one country to another. It is important to consider the context in which PR is implemented. The PR process may in fact lead to unanticipated social changes with unfavourable results for certain groups in the community — it may cause social change and raise problems of ethics. Consequently, it is important to give attention to the macro (national, international) and micro (household, community) contexts of PR projects. Taking the time to understand context is not only appropriate when undertaking research in new areas, but also in our own communities, where familiarity may blind us to particular issues or concerns.

In order to synthesize the information, we have defined broad categories: politics, economy, environment, society and culture, and personal view; and suggest some examples of the kinds of preliminary information that should be considered prior to the research. These are not exhaustive and their respective weight varies according to the context. They can be considered at both the macro (regional, national, international) and micro (household members, between household, associations, groups in the community) levels.

A basic understanding of the context is essential before beginning PR, however, this doesn’t imply an in-depth research of all these aspects of a local community. An awareness of their influence on the community is sufficient. A deeper analysis will be done throughout the actual research with local research partners. These broad categories, separated for reasons of clarity, all influence one another. For example, there is a relationship between environmental degradation and social issues such as social equity and indigenous rights; political power can be linked up with ethnicity; perceptions of the resources can be related to religious beliefs.

In our analysis of context, we must be careful in the use and content of concepts such as decentralization, community, tradi-
tional power, etc. For example, decentralization doesn't necessarily imply good governance and democratization. Such concepts, often used casually, may not have the same meaning in different contexts.

Politics

The political context encompasses the forms and processes of governance and decision making. Forms are the structures and institutions of governance both formal and informal. Processes are the relationships among structures and actors and their respective power and weight in decision making. Different forms and processes can coexist. For example, multiple government ministries can hold authority over coastal resources management — a situation that may create an overlap of power and capacities. Competition and/or collaboration may occur among different levels of power (within the government, the municipality and the community). Furthermore, power is not necessarily formalized in institutions or organizations and we must be aware of the different mechanisms by which power is expressed.

In some contexts, the decision to engage in PR can be very political and have political implications. In Canada, the Department of Fisheries and Oceans (DFO) has traditionally made fisheries management decisions based on conventional scientific data about fish stocks. Fishermen are increasingly sceptical about the applicability of this information to their particular fishery or fishing area. In response, certain fishing organizations have started to plan and implement their own research projects in order to obtain information they can trust. In this context, a lot of participatory research in Nova Scotia and New Brunswick has taken the form of conventional scientific studies in which the research is being commissioned (and often carried out) by fishermen and in which the results are controlled and used by these organizations.

The following are examples of factors that shape the political context in which PR will take place:

- Existing management models
- Jurisdiction/governance
• Government/institutional policy
• Centralized or decentralized political decision making
• Laws (government, traditional, formal, informal)
• Level/degree of democracy/political space, and
• Economic freedom to participate and engage in decision making.

In Cambodia and Viet Nam, PR was introduced through foreign funded research projects. As national team members learned more about the approach, they began to adapt the methods to their local context. Working gradually through appropriate local channels, they have begun to work more closely with small-scale fishers to design research that meets their needs and priorities. In Quang Thai, Viet Nam, the research team supported efforts to ban electric fishing because the community identified this as a priority. It also happened to fit with national agenda of banning electric fishing and was thus well supported by local government officials.

Economy

The economic context refers to the production, exchange and distribution of economic gains. But the economy is not limited to the exchange of goods. For example, economic decisions and exchanges can be oriented towards long-term services and mutual support instead of immediate profits. In that sense, attention must be given to the relationships among people and their economic strategies. Also, we must give special attention to the non-remunerated economic activities; for example, the work of women and children. The economic context does not include only local, regional or national activities, but also the transnational context and its influence on national and local economies.

The following are examples of factors that shape the economic context in which PR will take place:

• Level of dependence on the market economy (i.e. subsist-
ence versus cash economy)

- Degree of economic centralization or decentralization

- Government economic policy orientation (e.g. liberalization versus protectionism)

- Property rights regime (i.e. distribution and access to resources, ownership of means of production, common property rights versus privatization)

- Degree of emphasis on industrial resource extraction (i.e. sustainable development versus production oriented development)

- Competing economic activities/industries

- Prevailing market situation (e.g. buyer monopolies)

Environment

There are many layers of complexity and perception in considering the environmental context in which PR will take place. First of all, there is the status and condition of the resource or ecosystem itself, which in its natural (or relatively undisturbed) state, maintains healthy ecosystem functions. The state of the environment may influence resource management decisions and activities. For example, when resources are about to be depleted, the government may take unilateral management decisions such as closing a particular fishing ground and use the condition of the environment as a justification of their management actions.

These government actions may be based on a second facet of environmental context: the level at which people and environment are interlinked or at which human activities have impacts on the resource and on broader ecosystem health. However, the decision to ban fishing in a particular place, illustrates a third dimension of environmental context: the links between environment and people’s livelihoods. Local community may not agree with government actions if they do not share a common perception on the nature of the problem and possible solutions. On the island of Palawan in the Philippines, the government is trying to establish conservation rules to protect an endangered dolphin, however, these rules are negatively impacting the small-scale
fishers in whose nets the dolphins become entangled. These fishers do not share the government’s perception that this action is fair and necessary.

The element of **people’s values and perception of the environment** is a fourth point to consider in the environmental context. Understanding how people perceive the environment can be helpful in understanding the rationale for their exploitation of resources. For example, exploitation may be oriented toward long-term benefits and maintenance of the resources or towards short-term benefits with little attention or preoccupation with environment degradation.

The following are examples of the environmental context under which PR will take place:

- **The condition of the resource** This is an important determinant of people’s willingness to accept new ideas. During our discussion, we noted that in both the Philippines and Nova Scotia, people’s frustration with government inaction (or mismanagement) in the face of increasing resource depletion has led to the growing interest in community-based management. Similarly, mistrust of government scientists and conventional scientific methods has created an interest in participatory research to validate local knowledge and perceptions. Many in our group doubted whether such a shift in attitude would have occurred without the crisis of resource scarcity.

- **The degree of dependency on resources** Communities with a high degree of dependency of coastal resources are perhaps more willing to make the effort to protect their resources than if they have other alternative activities readily available. On the other hand, when people are directly and immediately dependent on resources for daily subsistence, they may not be able to spare the time to become involved in research or management or be willing to reduce their consumption as it is necessary for survival.

- **Local ecological knowledge** PR is often used to validate and complement local ecological knowledge. Validation does not necessarily mean to “mainstream” local knowledge, but can mean validation for the community itself of their own
expertise and perceptions. For example, a newly established fishing community may have learned a lot about their fishery, but lack confidence in this knowledge since it has not yet been validated through many generations of experience. Participating in the PR process may help them gain confidence in their knowledge.

- **Availability of and access to resources** The changing availability of resources due to spatial distribution, migration, seasonality can lead to situations in which access is infrequent or seasonal, or differs greatly between communities or between various groups within the community. It is important to understand who has access to what resources and at which times of the year and how environmental changes are altering availability and access.

Other contexts which need to be considered are:

- Characteristics of the fishery (species fished; use of resource; biomass; fishing location)

- Habitat/ecosystems

- Stresses to resources (e.g. pollution)

**Society and culture**

Communities are far less homogenous than perceived by outsiders (NGOs, government institutions, researchers) and this diversity and complexity must be taken into account. There are many ways to view sociocultural systems, relationships and institutions. Attention should be drawn to the ways people define themselves, which can be embedded in historical events. An historical perspective can be useful to comprehend current context, relationships among people and groups and shared social norms and practices. In the Philippines, the PR approach seems to have smoothly complemented the community organizing and social analysis which was already an integral part of

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1 Of course, even in cases of many generations of fishers' knowledge, confidence is still very often low since it has not validated by conventional science.
many NGOs' programmes. Their exposure to PR through workshops and training materials has introduced an array of tools for gathering information about and with communities. Most of these techniques have been adapted for the particular context of NGO community work and are now inseparable from the community organizing process itself. However, in other countries, like Viet Nam, PR is not readily compatible with the hierarchical form of governance, but it can work.

The following are examples of elements which influence the social and cultural context in which PR takes place:

- Class, gender, age
- Power structures and leadership (e.g. elders, formal and informal leaders)
- Religious beliefs
- Traditional knowledge and informal rights and rules that belong to a community
- Formal and informal institutions (e.g. organizations, religious groups, education).
- Migration
- Ethnicity
- Relationships among people (e.g. production arrangements, internal conflicts)

**Personal context or point of view**

The personal perspective of those involved is a crucial element of the context in which PR takes place. Certain conventionally trained researchers or scientists may pay lip service to the idea of local knowledge and participation, but be unable to truly understand the shift in control advocated in PR. From their perspective, hiring local fishers to collect data or to run research vessels is participatory research. The Minister of Fisheries in a centralized system may not have the same vision of participation as does a fisherman in Nova Scotia or an NGO worker in the Philippines. It is important to understand how personal biases and ideology influence the nature of PR work.
An important point to consider is that, despite the best intentions of an outsider, the more distant (both spatial and social) that a researcher is from the community, the more effort is required to be sensitive to issues of social and cultural context. A researcher from a developed country working as a facilitator in a developing country should be very wary of any steps s/he makes. In the same way, urban researchers working in rural communities, or researchers working with aboriginal communities need to be aware of the differences in social contexts between their relatively close communities. The best way to deal with such social and cultural context is to let local groups take charge of the research agenda.

**Summary statement**

The areas for research presented above are guidelines only. They are not comprehensive, will change and evolve as the research proceeds, and are not nearly as distinct and distinguishable from one another as the above lists suggests.

Context is not easy to capture. In any attempt, a multitude of definitions, perceptions and interpretations can emerge. The categories presented are not exhaustive and they can be further deepened through the PR process. Furthermore, the term PR and many other concepts associated with it are frequently used casually with little attempt at understanding what these mean in a particular local or national context. A Federal agency may consider watershed level research as "micro" level, while for a fish farmer, this scale is "macro" and difficult to grasp, let alone manage.

Researchers, external to the community, can never fully grasp the realities of the community in which they are working. But, a complete understanding or answer is not the main goal of PR. PR is a process whereby a team of local people (possibly facilitated by outsiders) deepens their understanding of their local context in order to plan research to address their local issues and concerns. And, as understanding of the local context evolves, research efforts must be constant both at micro and macro levels. In fact, adapting to the context is crucial in PR projects and exerts considerable influence on their outcome.
The Philippine fishery is in perilous state. Coastal resources are fast deteriorating, production is constantly declining and there is a widespread poverty among many coastal communities. Authorities managing the fishery are having difficulties in protecting the resources and in promoting the well being of the communities dependent on it. Fishery laws are not enforced, market prices are controlled by the traders and there are limited venues for fishers to participate in the decision making processes in fishery development.

Fishery Management in the Philippines

The response made by the Philippine government was to streamline fisheries management. National agencies and special bodies were created to address the problems besetting the fishery. It turned out to be a failure not only because of the prevailing backward bureaucracy and lack of manpower but mainly due to its underestimation of the important role of the coastal communities, being the primary users of the resource, in fishery management.

The inability of the government to formulate, implement and enforce the rules for management in fishery resources have led to a weak arrangement of property rights in the Philippine fishery that is virtually unrecognized. The lack of legitimacy of the existing management authorities in fishery created a condition that can be called as de-facto open access. It is a condition whereby state management of the fishery is virtually absent and access is free and open to all. This condition has resulted in increased fishing effort and competition among resource users furthering the destruction of resources and marginalisation of small-scale fishers by those with capital and technology. Other influential people in the government
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Tambuyog Development Center
Quezon City, Philippines

also made use of this vacuum as opportunity to create more profit at the cost of destruction of the resources by reversing fishery policies to their advantage.

Changing the Trend

Many individuals and organizations working in coastal communities in the Philippines have identified that addressing the problems must work towards more relevant property arrangements in fishery resources than the prevailing de-facto open-access condition. This requires an arrangement that will clearly delineate the rules for access so trend of environmental destruction and social inequality in fishery can be reversed.

This characterizes the trend towards community based coastal resources management. The main point here is the development of coastal community institutions and processes in the management of their resources. This arrangement will give prime importance to the coastal community, being the direct users, as the best entity to bestow the right to manage and control the fishery resources.

Experiences in the Philippines have proven that allowing the community a degree of power to define and articulate the rules of access and management in fishery is more effective than the government formula of streamline management. In fact, government is slowly moving towards this direction by adopting schemes like stewardship and lease agreements of fishery resources to the community (e.g. mangrove stewardship agreement).

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If the development of a fishery will greatly depend on the coastal community, it is then very important to involve them in the whole process of resource management. This however has proven to be a difficult task to accomplish.

The failure of the past development initiatives to address the poverty in rural areas where most coastal communities can be found has created disillusionment among the people to participate in any development work. This can also partly be attributed to the culture of silence brought about by a long history of colonial domination in the Philippines.

On the other hand, communities involved in resource management are having a difficult time to sustain their initiatives. For one, in rehabilitation of resources, it takes years before people can feel the effects. Second, communities lack the financial and technical resources to pursue their activities. Third, there is still strong resistance by the local governments to support these activities due to conflict of interest as many local officials are involved in large-scale fishery production. Lastly, the macro policies and programs by the government can easily sweep away the efforts of management at the community level.
Statement
Tambuyog Development Center
Quezon City, Philippines

Challenges

Initiatives towards community resources management should not only focus on the protection and conservation of the resource, efforts should also be directed towards the development of community-based management schemes. This will ensure the long term sustainability of efforts directed towards fishery development.

Community-based models of property arrangements in resources management should be institutionalized. This form of management has proven to be more effective and efficient since it is based on the interest and capacities of the resource users.

Crucial to the development of fishery will be the active participation of the people in the whole process of management. This will ensure that resource management plans will be supported and advocated by the community.

There is a strong need to enrich the existing forms of partnership between the government and the community. The government should step further by providing enabling legislation and administrative assistance that will help pursue the efforts of community in resource management.
How is PR actually done? What are the steps and methods to follow while doing PR?

Applying PR

As has been stated elsewhere, there are no "textbook" models of how to do Participatory Research. What seems most crucial in participatory research is that it be grounded in the core principles and ideals of facilitating local capacity to bring about meaningful change (see What is Participatory Research? p. 2). Within this framework, the approach and methods vary greatly according to the particular context in which it is being carried out. However, despite the necessity of local variation and adaptation, there are certain basic procedures which seem fundamental to the PR process. These procedures are part of the participatory research cycle of some of the SI2 participants.

In this section, we discuss the procedures that have been applied in the variety of contexts represented by the assembled group. It should be cautioned, however, that these points are not a road map to PR. They are a guide which can be and should be adapted to fit local circumstances. There are many guides to PR in the literature but what is sorely lacking is documentation on how PR has been adapted to fit particular local circumstances. "Why was a particular approach selected? How were tools and methods adapted to a particular situation?" It is more important to understand and document the "why", "who" and "how" aspects of a PR process than it is to follow a particular set of guidelines or steps.

Adapt the participatory research process to the local context

The specific context will influence how the PR process is initiated and who is involved. Briefly, context refers to the conditions and circumstances that affect a particular PR process. This is discussed more fully in How does PR differ in different contexts? (p. 50). Environmental, political, economic and social conditions need to be considered at both the macro (national level politics, social context, national laws and policy) and micro (local politics, social relations, and leadership) levels. Context is
also very individual as everyone involved in PR brings their own world view, beliefs, skills and biases to the process.

The context influences those involved in the research and the relationships among them. In the case of a highly centralized government the relationship between government and local people will be very different than in a more decentralized system. It is important to be aware that in some contexts, certain aspects of participatory research may be more difficult to put into practice.

In some contexts (e.g. Philippines, Cambodia, Viet Nam) political leaders have to be informed about the research project before it can begin. In Cambodia, the research team followed a process of gaining support at the national, provincial and commune levels before they began to make meaningful contact with the villagers. This took 2 years. They were adopting the PR principles to the reality of a top-down society.

In Canada, many fishing organizations are beginning to use the local knowledge of fishermen to inform their management decisions. However, they are working in a context where the government policy makers dismiss local (or non-scientific) data as unreliable and inaccurate. As a result, many fishing groups have had to commission conventional scientists to help them design their research so that the government will respect their findings. They adapt their methodology to the overall policy context.

When there is little space for democratic activity, it may be difficult for community members to put forth their own ideas and problems. Research teams work within specific local contexts, while still trying to facilitate social change.

**PR begins with initial exchanges/dialogue**

Community meetings, informal discussions, focus group interviews are all tools used to initiate exchanges about community issues and concerns that will lead to identification of problems and issues, partners, players and knowledge holders. It is important to take note of who is not included in these discussions and who will benefit from the research.

In the Bay of Fundy and in Guysborough County, these initial
exchanges began with community members who were already members of fishing or community organizations gathering to discuss their common concerns and plan collective action to protect their fish stocks and community enterprises. They then started to dialogue with other members of the community and with other potential allies.

In Cambodia, the PMMR project was developed by the Ministry of Environment and IDRC. A research team was formed consisting of representatives from MoE and various provincial departments. One of the objectives of the project was to improve collaboration and understanding among government agencies, NGOs and local people therefore, though the research process was initiated by government agencies, the goal of the research team was to involve local people in research. This was done through participation in PRA exercises, semi-structured interviews and workshops.

It is these dialogues and exchanges that help identify local problems and research questions that the team will try to address. Dialogue and community meetings are also starting points for relationships that lead to research partnerships or the development of a research team.

**Building a research team**

Again, there are no textbooks examples of what a PR research team “should” look like. Some would say that in an ideal PR project, the process should be initiated by a group within the local community and local people should form a research team to address their own local problems. Outsiders can be enlisted to provide support as required. However, participatory research takes place in the real world, in which there are time and other constraints to full local participation (see *How do we enhance inclusiveness and ensure that different players are involved in our PR research?* p. 22). The research process is often facilitated by a small group of people with an interest in the community. For example, in the Philippines, most of the initial momentum for participatory research comes from NGO workers who gradually build up a team of local leaders and researchers.

The research facilitators must carefully consider who will be
involved in the research team. In Cambodia, respected local leaders may recommend participants. In Canada, local fishing group may identify like-minded scientists within DFO or academia to work with them. In the Philippines, a PRA team will include NGO workers and representatives of various sectors in the community (women, youth, teachers, different gear types). Various members of the research team may have specific responsibilities, but the team as a whole is involved in shaping the direction of research, planning and designing the research, implementing the research, analysing the results and taking action following the result.

**Research partners, not research targets!**

In many cases, the research team is focused on issues or problems facing a specific group within the community (*i.e.* clam diggers, migrant youth or members of a fishing organization). The research is intended to benefit this specific group and representatives of this group are also members of the research team. At the very least, they must certainly be involved in ongoing dialogue to ensure the research continues to reflect their priorities. If those whom the research is intended to benefit are not directly involved in shaping the research, they risk becoming "research targets" rather than active participants in the process. Research targets are the objects of research and not its actors; their own knowledge and perceptions become secondary to the findings of the outside researchers. This type of denial of local reality is a common pitfall of conventional or scientific research. The participatory research process should emphasize building research partnerships, not research targets.

The research team has to be aware of the potential consequences of working with particular partners within the community. It may be of benefit to marginalised groups and help them gain power or benefits, however, working with some groups may result in disadvantaging those left out and either consolidating or creating new power holders.

There are no rules, but one should always be aware that the PR process is concerned with social change and the local dynamics will determine how that change develops.
Ongoing training

A strong research team with a shared understanding and commitment to learning about and through PR is vital to successful participatory research. Capacity must be built to plan both short and long term research projects/initiatives and should include research planning as part of PR training. The planning process must emphasize planning for action as well as planning the research. Networking and team building must be encouraged and maintained in order to build a common commitment among the participants. Training, education and capacity building are not "add ons" to the research process. Training should be integrated, ongoing and inclusive to build capacity of the research team and participants (local community members, NGO and government representatives, etc.).

Building flexibility into the research design

The research plan must have enough flexibility to allow researchers to react to local needs and priorities as they emerge. Planning for participatory research cannot take place without dialogue and exchange to develop a common understanding of research goals and objectives. The research design will depend on the type of information desired and the use for which it is intended. In PR, there is an objective of problem solving and social change. Research must lead to action on local problems.

In some cases, research problems are identified by the local people. For example, villagers in Viet Nam identified electric fishing as a threat to the productivity of the lagoon ecosystem. Consequently, some of the research in the area was adapted to study this problem and develop mechanisms to eradicate electric fishing.

In other situations, a research team comes into an area with a general idea of the issues and must then validate this perception at the community level.

Matching the research design to available resources

When designing PR research, it is crucial to consider the critical time frame of the research problem. In Guysborough County, a business consortium was planning to establish rainbow trout
aquaculture in local fishing grounds. Development of the facility was intended to begin only a few months after the initial plan was unveiled. The Guysborough County group was concerned about the impacts of trout aquaculture, therefore to convince the provincial government to order a full environmental impact assessment, they had to do a preliminary environmental assessment to point out areas of concern. In this case, speed was more important than having a complete research plan.

In contrast, documenting the shift of fishing effort in the Bay of Fundy (see Bay of Fundy Case Study, p. 136) requires a longer term study of the changes in fishing pressure.

The available resources (financial, human, material, etc.) will also influence the research design. In some cases, it may be more efficient to hire a summer student to collect data than to have fishermen take time away from fishing to gather samples.

Research tools should be selected during the planning phase. The tools selected will depend on the information required. In PR, it is important that a broad range of people be comfortable using and adapting the methods and tools and that reliable information be collected in a low cost, user friendly manner. Some tools may not be appropriate in every context and may have to be adapted to obtain the required information in a culturally sensitive manner. For example, in some countries, it may not be appropriate for researchers to interview women alone. The Cambodia team resolved this difficulty by interviewing male and female household heads together and then organizing a focus group discussion just for women.

**Field testing research design and methods**

PR results are meant to be used, therefore they must be useful and useable at the community level. It is best to pilot or field test the methods and tools to ensure the information obtained is required before beginning an expensive and time consuming study. For example, in Guysborough County early in their research, the lobster fishermen tagged and released lobsters. After completing the work they realized they still needed more information to use the results in management decisions they therefore redesigned their methodology and the fishermen collected more comprehensive information.
during the next fishing season.

**Analysing research results**

The analysis of results can take place at many levels. In certain scenarios, the research team may do most of the formal analysis, but present their findings for validation by the larger community. For example, in Cambodia, after conducting PRA in 4 communities, the findings were presented at a workshop attended by members of all four communities. The presentation allowed for further analysis as community members discussed the research process, the results and how the project team was doing its work. This analysis provided feedback and guided the research team to deal with pressing local issues and concerns.

In other contexts, local community members may be more directly involved in collating and analysing the data, and in presenting their own findings to the rest of the community or to government representatives.

In participatory research, a review of the research process and how it benefited participants is an important part of the overall analysis.

**Dissemination of research results**

The dissemination of research results, particularly within the community is also part of the validation process. The form and venue for sharing results will vary depending on the purpose of distribution. Local fishers may respond well to popular forms of documentation, while scientists or government officials may prefer a more formal style. Even if the research is conducted entirely by the community and for the community, it is important that the results are circulated for reflection and discussion. The dissemination of the research should include not only the research findings, but documentation of the research process, who and how various participants were involved, the tools and methods used and why these particular methods were selected.

**Review and reflection**

Planning, Monitoring and Evaluation (see *How do we incorpo-
rate PM&E and reflection into the planning process of PR? p. 108) are integral to the participatory research cycle. PM&E offers a mechanism for those involved with research to review and reflect on their experiences. Assessing a research process should not only be conducted as a formal or official review, but be a genuine reflex action for all researchers.

Review and reflection must take place at all levels: by the community, the research team, and individuals. It is a time to look back on the research and ask: “What was learned? What were the strengths of this process? What were its weaknesses? With the knowledge obtained, how would this research be done differently next time?”

NGOs in the Philippines have made use of community bulletin boards and colourful posters to present information about fish catch monitoring in marine reserves or for environmental education. The Guysborough County Women's Inshore Fisheries Association has used their home page on the internet to promote their lobster research and adopt-a-lobster project.

Summary statement

PR is by nature flexible. While one particular party may initiate the process, the idea is that local people eventually control the research agenda. This requires a two-way exchange of information and skills. Local people must develop the capacity to ask and answer their own research questions and outside facilitators must learn to relinquish control of research process to local people. A lot of the strength of PR comes from its actual practice in helping local people and the government understand each other's realities. The facilitator must understand the context of the local people and the policy of the government and help them better understand each other. PR is a learning process. One can never say that a model of PR has been perfected because initial research findings always indicate how to improve the research for the particular situation.
My first introduction to PR was in the classroom and, although academic work differs from fieldwork, such course work inspired me immensely. I was fortunate to be learning from an excellent facilitator who knew when to introduce different tools and how to ensure that students took ownership of their learnings. This process helped me to realize the tremendous potential offered by PR work.

However, translating PR work into different contexts can be difficult. While the flexible nature of PR enables different tools and techniques to be used, the facilitator must also be able to alter their own goals and expectations for PR work. Different communities will participate in varying degrees and in a varying manner. This does not mean that PR work is not being done. Adapting the PR work into different contexts is indeed a great skill.

Undertaking fieldwork in Cambodia emphasized to me how long it really takes to understand different tools and to facilitate a PR process. Because I am still learning, I am not always the most effective facilitator or suggesting the proper use of tools. However, as my learnings increase, I am becoming more confident in the strengths of PR work and in knowing what good PR can work towards.

Doing effective PR work requires constant reflection. While this type of learning process is important, it is difficult to know how much a process should be pushed from the facilitator and how much a process should evolve on its own accord! Thus, I face a constant internal ‘tug of war.’
Case Study: Sustainable livelihoods in Peam Krasaop Wildlife Sanctuary, Cambodia

Background information
Koh Kong, one of Cambodia's coastal Provinces, is located in southwestern Cambodia and covers an area of 11,160 Km² of which 70% are forested and mountainous lands, 10% are cultivated lands and 20% are open sea. It borders with Thailand to the west, Pusat Province to the North, Kampong Speu and Kampot Province to the East and Sihanoukville and Gulf of Thailand to the South and Southeast.

The Peam Krasaop Wildlife Sanctuary (PKWS) consisting of 23,750 ha, was designated under the Royal Decree "Creation and Designation of Protected Areas" signed by King Norodom
Sihanouk on November 1, 1993. In recent years, the natural resources especially mangrove forests have been rapidly degraded. The main reasons are:

- Population growth, migration and rising economic activities;
- Complete reliance on mangrove resources for livelihoods and lack of alternatives;
- Easy access to natural resources;
- Lack of environmental awareness;
- Lack of management plans;
- Lack of or poor law enforcement;
- Few studies on the mangrove ecosystems;
- Poverty and extensive smuggling activities; and
- No government budget to support mangrove preservation and migrant labour.

**PMMR research programme**

The Participatory Management of Mangrove Resources (PMMR) project was developed to address complex environmental and community development issues in coastal areas of Cambodia. The PMMR project is implemented by the Ministry of Environment in Cambodia and supported by the International Development Research Centre (IDRC, Canada). Project staff work closely with Koh Kong provincial authorities and local communities in PKWS.

This project aims to provide a framework of concepts (knowledge), trained human resources, and institutions for integrated community-based planning and management of the Peam Krasaop Wildlife Sanctuary. The PMMR project team collaborates closely with local communities and other stakeholders in order to strive for the following overall goals:

- To provide options for coastal communities of Koh Kong Province to participate in the planning and management of the natural resources of the mangrove forests of a protected
area currently populated by a mixture of long-term residents, internally displaced people and seasonal migrants.

- To understand the distribution among the members of a community in Koh Kong of knowledge of mangrove resources use and of their differential ability to access and use these resources which support their livelihoods.

- To initiate a process of natural resource planning and management in and around PKWS in the mangrove ecosystem of Koh Kong Province, integrating community participation with existing institutions of the national and provincial governments.

The specific objectives of the PMMR project are:

**Resource Use Patterns:** To document and assess patterns of resource use and the dependency of livelihoods on mangrove resources differentiated by social groups, within the context of developing a framework for community-based resource management.

**Institutional Analysis:** To identify and evaluate the institutional arrangements important for mangrove resource management in coastal villages and their relations with commune, provincial and national institutions, as well as to assess the feasibility of these or, as necessary, alternative institutions, for the management of the PKWS and associated multiple use zones.

**Draft Planning and Management Options:** To evaluate the role of local communities in, and support them in drafting plans for, the management of PKWS which will impact local communities.

**Resource Inventories and Analysis:** To assess the status and recent changes of the mangroves, fisheries, waterbirds, seagrass beds and coral reefs in PKWS, and document the distribution and expansion of communities in the area.

**Sustainable Livelihoods:** To assess, through participatory research, options for sustainable livelihoods in villages highly dependent on the mangrove ecosystem, and, as possi-
Participatory research in this project

When our project began two years ago, little was known about the study area. A PR approach was taken at both the micro and macro level. That is, the PMMR team received training in PR research and began using these techniques at both the national and local level.

However, there were barriers to participation which included hierarchy, gender, access/location, time, government connections and the relative novelty of the research approach.

Resource use patterns

The Peam Krasaop Wildlife Sanctuary has some of the best remaining examples of mangrove forests in the Gulf of Thailand, as many other areas have been cleared for intensive shrimp aquaculture, large-scale charcoal production, and other purposes. Local people have relied on the mangrove forest resources for food, fuel wood, building materials, medicines and other products. The mangroves are essential to the maintenance of both offshore and inshore fisheries and the integrity of the coastline.

Mangrove cutting

Widespread destruction of mangrove forests occurred over the past few decades along most of the coastlines of neighbouring countries. In Koh Kong, the degradation of mangrove habitats is mainly due to two developments since the opening of the country in the early 1990s, i.e. large scale charcoal production for illegal export to Thailand and Singapore, and the construction of intensive shrimp ponds primarily owned by Thai businessmen. There has been a dramatic increase in the rate and extent of mangrove cutting over the last few years and the present rate of cutting is unsustainable. Soon there will be few trees of reasonable size to be cut.

There have been some actions by the Government to curtail charcoal production. According to the Annual Report of the
Provincial Department of Environment, there were 475 charcoal kilns in PKWS in 1996. A mixed commission of authorities from Koh Kong Province (including the Departments of Agriculture and Environment as well as the police and military) had destroyed more than 75% of the kilns in this area but charcoal production continues almost unabated with smaller, more widely dispersed kilns deeper in the forest.

Moreover, substantial areas of mangroves have been clear-cut and bulldozed for the development of intensive shrimp culture, with obvious destruction of the environment. After a few years of operation, problems with inappropriate soils and disease in the ponds lead to the abandonment of shrimp ponds, leaving a biological desert in their wake. Efforts to rehabilitate these areas have been undertaken.

Depletion of fisheries resources

There has been a large decrease in the amount of fish that villagers are able to catch in the area due to the following reasons:

- Loss of mangrove forests;
- Sedimentation from mangrove deforestation affecting fish ecology;
- Water pollution caused by the discharge of effluents into the coastal zone, resulting in fish disease and mortality in both natural water and aquaculture;
- Lack of management, especially lack of monitoring and law enforcement;
- Lack of capacity and knowledge on coastal ecology;
- Increase in population and immigration in the coastal zone;
- Lack of market management, and improper technical system of fish processing plants resulting in loss of benefits; and
- Low scientific research due to a lack of funding and materials.

Furthermore, local people reported that the inshore fish and crab catch per unit effort has decreased. While local crab fishers reported that they could catch 20 kg of crab per day in 1995, in
1999, the average catch was between 4–7 kg per day\(^2\).

**Seasonal and permanent migration**

The Peam Krasaop Wildlife Sanctuary has only recently been designated, and the influx of people to this previously sparsely populated area continues. The local population now consists of a mixture of long time resident and immigrant populations, with varying levels of knowledge of the local resources and skills to use them sustainably.

**Institutional and stakeholder arrangements**

Another example of our PR work is undertaking an institutional and stakeholder analysis. There are many players involved in management issues of PKWS, and it is this plethora of players that we are attempting to draw into our PR process.

It is difficult to manage resources in the Wildlife Sanctuary because the technical officials do not have the real power to manage the resources. The Army is supposed to prevent illegal activity by local people but is not doing a good job. There are international and national policies relating to the environment which have been discussed; however, for the practical management in this area these policies are not followed.

There are many institutional and legal constraints to management of coastal natural resources in PKWS among which are the following factors:

- Lack of human resources in initiating community-based development planning;
- Improper management and unwise use of coastal resources;
- Inadequate knowledge, skill and experience among responsible persons, officers and staff in provincial technical institutions in the management of coastal resources and environ-

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\(^2\) The number of crab fishers is not known, so this apparent downward trend may reflect more than stock losses. In any case, there is increasing pressure on the stock.
ment;

• Lack of knowledge, experience and awareness among local people, especially fishers and farmers, of environmental issues;

• Lack of financing, equipment and means for monitoring the illegal activities particularly in fishing, mangrove cutting and hunting;

• Lack of clear explanations of most laws and sub-decrees resulting in different interpretations;

• Quick development of many laws, sub-decrees and other legal instruments without consultation with local communities resulting in difficulties in law enforcement; and

• Illiteracy and poverty among the local people.
Context
Kim Nong and Khy An

PR in Cambodia is a new concept for our research team. The idea of PR was introduced from CoRR, and most of our PR work has continued through "learning by doing". Sometimes our team has learned from reading books and sometimes we have learned by ourselves. During the fieldwork we always use PR tools but sometimes we don’t know so clearly about the expectations of these tools. We are not so clear about the different ways in which these tools can work. Therefore we need more training courses on PR work. Knowing the concept of PR is not enough, we need to learn how to actually ‘do’ good PR work. This is because we do not have the background in PR work from school.

However, PR is important for our fieldwork. We want to transfer the methodology of PR to our local team and to relevant institutions. After the participants are introduced to the idea of PR, villagers are beginning to realize that they can have questions and help to plan for the protection of PKWS. PR is a bit like medicine: it depends on how a doctor administers this medicine. If a facilitator is good than the PR process will be effective, if the facilitator is not so strong than the process will not be so useful. PR offers unlimited chances to share in knowledge and is very flexible.
Therefore, we can use different tools at different times and with different levels of people. PR is a good way to facilitate with different groups to understand their situation better and for finding common benefits in situations.

Through the questions and discussion at SI2, we learned a lot from hearing about projects in different countries that use PR. Both in Canada and in other places, local communities are using a PR process to protect themselves against the 'power men'. Sometimes it is difficult for communities to organize; however, taking a PR approach helps with community organization and environmental protection. Sometimes those with power are not interested in the PR process. Therefore, we must also get those with power interested in undertaking PR work, not only poor people.
Group Discussion on PKWS Case Study

The following are points raised by SI2 participants and clarifications provided by the Cambodian team.

The Royal Government of Cambodia has used a top-down approach in developing the protected area. People living in the mangroves, and dependent on the mangrove resources, will be affected in different ways by policies of the government and the imposition of protected area status by the government. The project has to build the capacity of the local people just to be able to work with the government.

It will be hard to get around the government’s desire to have things worked out the way the government wants it. It is assumed that the main concern of the government is to protect the environment. But it is necessary to find out the multiple and complex needs of local people and to support them to negotiate with the government.

Nong explained how the research team develops a relationship with local people and they can get along. Under the circumstances, it seems it is necessary to continue to work outside party politics as much as possible. People will need to find space to organize and build solidarity, while not being perceived as a threat to political leaders.

Working with a core group of community members does not preclude working with the local government officials. However, it may be difficult to separate people from their local leaders. After so many years of a social and political system that is based on respect for the hierarchy, it may be difficult for people to act independently. Participation and democracy should not be “shoved down” peoples’ throats any more than authoritative control should be. It takes time for people to assimilate and be comfortable with new roles. This has to be done in a way which is sensitive to cultural and social contexts.

This system of hierarchy is not necessarily a bad kind of relationship. In fact there are signs that some of the local leaders are very supportive of people working towards community manage-
ment of resources. It remains to be seen how the benefits are distributed.

There are no clear models of “community organizing” in Cambodia. There are some examples in agricultural areas but they are basically set up by local government. So, it is assumed that similar developments will take place in Koh Kong. It is necessary to develop conditions for people to form different institutional arrangements in order for them to “take control”.

Enhancing participation of community members can be “empowering” for the local officials. By this we mean that they are not just solidifying their political and social standing or power, but they are enhancing social capital by strengthening understanding and relationships which can be used for more responsive and more equitable governance. This, of course, can be corrupted and end up with depriving people of more participation in governance.

Although it sounds like an equitable thing to do, providing support for developing alternative or enhanced livelihoods can in fact be inequitable and disruptive. It is very likely that the resource destructive activities being done (overfishing or cutting mangrove trees) are based on unequal distribution of capital and access and result in uneven distribution of the benefits. Support for charcoal producers by merchants, police and the military is a clear sign of uneven distribution of capability and the benefits from illegal activities.

If the alternative income generating activities require access to land or capital or demand skills held by the educated, the ability of poor sectors to take up the new options will be less. This can end up with further enhancing the unequal distribution of wealth in a community. It was felt that programs that do follow such paths are likely to eventually fail.

The need to develop livelihood options stems from a lack government support given their limited resources. Consequently people lack technical skills and the financial resources to start new income generating options. On the other hand, there seem to be constraints with market options for some fisheries products. The approach is to look at a range of options, not all of which
are income generating, to support needs.

There was some discussion of the need to develop a framework for sustainable livelihoods which is appropriate for these communities. The challenge is to engage community members in discussions about "livelihoods" when there are no apparent quick fixes to their poverty. Long term options like fisheries resource management or mangrove rehabilitation will not feed people in the short term. It is recognized that this makes it difficult to work with PR when the time invested will not yield results for a long time.

A simple framework was suggested basically linking community characteristics, policy and market (see diagram above). The project might start with PR to define the current community characteristics. These would include:

- Existing livelihood options
- Actors involved and their roles
- The relationships among the actors
- Incentives and disincentives for various livelihood options
- Migration patterns
- Strengths and needs in the community
- Identification of class differences and gender roles in the community

With regard to policy, the project should assess what local, provincial and national government policies would be support-
ive, and which ones would be non-supportive, of identified livelihood options.

Finally, investigation of market options for various products is necessary. This is not only a question of what can be sold and for what price, but what marketing channels are possible and who controls them.

Livelihoods are more than just a way to generate income. The project should consider doing a community needs assessment in which livelihoods are viewed in a broader context. In doing this consider the following points:

- What type options can support existing livelihoods?
- What is the purpose of working towards “alternative” livelihoods?
Approach & Methodology
How do we do community assets and needs analysis?

Rationale
A participatory research process must start with “where the people are”. In other words it must be understood what the needs are within a community and what assets are available to the community. One way to do this is to structure a part of the PR to do a “community assets and needs analysis”. It is simple and vague in words but complex in practice. Let us take it word by word.

Community
Most of us have an understanding of the word “community”, but when put into practice we realize that it is in itself a difficult concept to apply as a means to group real people. For participatory research we must start with an identification of the “target” community. This community may be defined on the basis of:

- geography
- political boundaries
- resource base or ecosystem
- common values, culture, religion and ethnicity
- production sector (e.g. fisheries)

For the implementation of PR it is important to define the boundaries as a starting point. This can be done with an operational definition which defines who in the population are the starting point for the process. As we have discussed before, the PR process is one of “expanding the circle” (see What is Participatory Research, p. 2), so the group of people with which we start is only a starting point. We have discussed before how we go from this starting point to include others in the process.

The approach of PR is to use a learning process wherein the community defines itself and its resources, values, membership,
challenges and needs.

A community's understanding of itself is often overestimated. In Digby Neck, Nova Scotia people had a pretty good idea of the average income in the community. However, they were quite surprised when they examined the distribution of incomes in the community. There were more rich people and more low-income families than they had thought about before. One SI2 participant pointed out that in such cases it may be necessary for someone outside the community to stimulate such an examination.

In Quang Thai, Viet Nam, the fishing community was concerned about the number of illegal fishers who used electricity to stun fish and catch them. They were concerned about the effect this fishing practice had on their livelihood. As they began to plan a strategy for dealing with this issue and enlisted the help of some government officials, the neighbouring agricultural villages also became aware of the number of illegal fishers using similar gear in their rice fields. So the circle expanded from a problem affecting only one fishing village to a problem affecting all villages.

Assets

In the initial approach to a problem people will tend to identify their assets (strengths, abilities, resources, etc.) with respect to their vision of the solution to the stated problem. In PR we expect the "problem" to change over time as it is examined and the multiple impacts are understood. Consequently the identification of a range of assets in the community can be helpful in addressing a particular issue and in the expanded problem. An identification of assets is also important in some cases as a means to build confidence in a group of people. The process of identifying assets is itself an empowering process. We realize that we do have strengths and abilities to face seemingly insur-
mountable problems. If nothing else, this inspires hope.

Identification of assets was an important step in the banning of electric fishing by the community in Quang Thai, Viet Nam. Since electric fishing is an activity banned by law in Viet Nam, people expected the government to enforce the law. Upon an analysis of assets, however, they realized that they had the personnel and the equipment to enforce the law themselves. The fishers had boats and people willing to raise awareness and make electric fishers understand their affect on the lagoon. With police support, they could also apprehend electric fishers. In the farming community, regular watches patrol the rice fields every night. It was a simple matter for the guards to stop any illegal activities to which they normally would have turned a blind eye.

**Needs**

An examination of needs will help to clarify what is “the problem”. This should be a critical, exploratory process. Sometimes what we say are our needs are not really the needs, but a variation of them. Are our wishes confused with our needs? Are there more serious needs than we are willing to admit? Are the needs differentiated within the community, but not all people have expressed their needs? A dialogue and community examination can help answer such questions.

The problem is not clear: There is a very different class of people in Viet Nam which are known as Sampan people by the project. They own no land and have made their boats home for generations and, as a result, do not ‘fit into’ the conventional Vietnamese system which means they don’t have access to public services (education, health, welfare, etc.). Since several devastating storms have taken a toll on the population, the government has made many efforts to settle them on land and ‘stabilize’ their lives. As the research facilitators tried to answer the question of why many efforts have failed to settle families on land, they found the reasons to be based on very complex needs which were not satisfied by ‘settlement programmes’. A lot of problems stemmed from cultural and social differences which are not resolved by a cash or land grant. In many ways the change in lifestyle was difficult to accept along with the physical
difficulties like shortage of land.

In Koh Kong different people have different explanations for why there are so few fish today. The fishers say it is because the charcoal producers have cut so many mangrove trees; the charcoal producers say it is because of the impacts of the shrimp farms; the shrimp farmers say it is because the fishers have caught too many fish.

In Guysborough County some women came together to examine problems in the fisheries and the community. In our workshop one of these women said: we did not do a needs assessment in a formal sense. An extension worker said: “Oh yes you did!” But this is probably just a difference of opinion on what they mean by formal or informal. During the formation of the women’s group they examined the past and present role of women in the community and in the local fisheries. They looked at what were the challenges today and what they could do about them. In this process they came up with “needs”. One need was to unite with others to form a larger group, which then further refined the list of needs. So the community assets and needs analysis may be part of an organizational process in the community and not be separately identified.

How do I do this?

This section highlights a few tools, techniques and important items (such as context) to consider in carrying out a community assets and needs analysis. One set of tools which has been successful in guiding the process is PRA. There are many books on PRA tools and techniques, which explain different methods that can be adapted to local situations. They are designed to engage people in the activity and ensure as much participation as possible. A few examples of such tools are given here but for more detail on PRA tools and methods refer to IIIRR, 1998 (see References, p. 163).
Maps. Mapping techniques are helpful to identify resources and people in the community. Participatory mapping is of value in not only identifying where things "are" but it will reflect opinions, values, priorities and the different perspectives among community members. People's comfort with drawing freehand maps will vary so different approaches may be needed.

Interviews. One-on-one discussions (or semi-structured interviews) and group discussions (or focused group discussions) are different tools which are useful in PRA. As one example, the following guide questions may be used:

- Why do you live here?
- What do you want to change?
- What do you want to protect?

Pictures. One tool that can be used in the mapping is to draw different houses to represent the different sources of livelihood (where there are clear differences between households). As in all PR facilitators should be sure that the participants will be comfortable using the suggested tool. Some people will be uncomfortable drawing pictures, but in many cases they can be coaxed into doing it.

Livelihood Approach. Although the issue, which is identified initially, may be focused on one economic activity, an analysis of livelihoods may help expand the definition of the problem as well as indicate the strengths and assets of the community. It may be important to gather peoples' perspectives on livelihoods. What do they think is important? What do they "need"? How can they compensate for shortages? What is of potential for expansion? Visual presentation of these strengths and needs can be done effectively with participatory maps of the community and an analysis of the flow of resources. Although it may be strategic to start with one sector (e.g. in Whitehead, Guysborough County, they started with fisheries) eventually, as the connections within the community are discussed, the analysis should also cover the upland, farming, fisheries, forests and mangroves.

Indicators of change. Another way for a community to look at itself and critically review its assets and needs is to use an
Indicator Approach. After agreeing to one or more measurements (as an indicator) of conditions in the community, they can be traced through time. The indicator might be quantifiable, like income level or fish landings, or it might be a qualitative measure, but one which people feel comfortable assigning scores of high to low.

Then the group can examine the trends in the indicator with a trends analysis. Values for the indicator would be determined over a given period of time either by finding the relevant data or making estimates in a group brainstorming session. The group may want to determine indicators for trends themselves. What measure would indicate the nature of the trends themselves?

This analysis can be followed by sessions in which the community starts designing programs to address these challenges and trends.

Meeting locales. Where do you meet? In Guysborough County, kitchen meetings were used for informal interviews with women. The kitchens were an appropriate venue to understand the role of women in fisheries, both past and present, and how the changes have occurred. They also identified the challenges faced by women and how these might be met.

As appropriate to the situation, meetings in bars or cafés can be used although these may be more appropriate for men in some countries. In Viet Nam and Cambodia, the initial meetings were held in the village leaders' houses or offices with participants mainly selected by the leaders. Later on, larger meetings were held in local schools. One must be sensitive to local culture and practice. The social acceptance of different approaches will vary. It is also very likely that whatever the venue chosen, whether by an outside facilitator or a local leader, it will also represent only part of the community.

Participation. Always ask yourself: who is missing or whose voice is not heard?

Opportunities. In PR one must be in touch with the day-to-day activities in the community. It may be appropriate to respond to sudden events by undertaking a spontaneous analysis following the event. If there is a tragedy, there will be an outpouring of
grief reflecting feelings. If there is a joyous event, people will be filled with enthusiasm. Sensitivity is always needed and it may be that an external facilitator simply observes these events and asks the community to reflect on them at some future date.

**Validation.** Whatever the source of information and the means by which it was obtained, the results must be validated by those concerned in the community.

**Summary**

A community assets and needs analysis is an important start in the PR process. It is integral with other start-up activities and complements the organization of the research plan. The results will be used to draw up specific objectives and to determine the basis for participatory monitoring and evaluation. Although it is sometimes difficult to determine the community of individuals in a project, the assets and needs analysis can be part of the PR process of expanding the circle and set a starting point for activity. The analysis is a learning process through which the community critically examines itself. This can be an empowering process, especially when individuals realize the wealth within their own community experience. As a basis for further action, the analysis will help in clarifying the issues and set a direction for initial work. There are many publications presenting the field tools to be adapted to the local situation. A caution for the community assets and needs analysis, common to most PR activities, is to be concerned that there may be people missing from the analysis, or at least their voices are not heard well.
Context Statement

Corinne Munroe
Guysborough County Women's Fishery Enhancement Association
White Head, Nova Scotia

PR to us wasn't a term that we had ever heard about. But a problem was thrust on us that could have an impact on the local inshore fisheries, and we had no idea of how to deal with it, to come out with a solution that might satisfy all parties involved. So we contacted our nearby University, made contacts through the internet with people that had knowledge on this subject and formed a group of interested parties that had a stake in the outcome. All this led to a number of meetings.

Later on we learnt from two CoRR fieldworkers that we were using some of the tools of PR. Our biggest challenge was finding ways to use these PR tools to try to come up with a solution.

We realize now that if from the start we had known the different approaches of PR and could have used these, some of the steps to a solution or a compromise may have materialized sooner making a conclusion to the problem a much quicker one.
How do we demystify the highly technical and make it more understandable?
How do we incorporate expertise or skills in research?

Rationale

Although resource users have their own skills, language and knowledge, these can easily be depreciated or belittled when confronted with formally educated academics or government officials. The gap between the academically-trained community and resource users is exacerbated by variations in the type of education (formal, traditional, experiential), language and technical knowledge. When community groups engage in resource management, their efforts can be belittled and their confidence shaken when confronted by an opposition well versed in technical jargon.

In the majority of cases, community groups engaging in resource management must converse with government officials. They must understand the management plans designed by government, even if they don't agree with them, and have their own management plans approved by government. These groups' arguments are much more convincing (and, in most cases need to be more convincing) when expressed in the language and technical style of government officials or decision makers. Community groups can also only argue against or amend government plans when they understand the document's language or jargon and understand the data or information on which the plans were based.

Demystifying the highly technical skills and understanding the technical language is necessary for resource users to gain credibility when faced with technical opposition and, as well, to gain confidence in speaking out and addressing the opposition. However, the converse is also true and necessary. Local knowledge, skills and language of resource users needs to be demystified for the academically-educated to appreciate, understand and value management plans of local groups. Academically-trained people often underestimate the knowledge, technical skills and
information that local people have and also their capacity for learning academic skills and language. Understanding each other is vital in demystifying each other's knowledge.

Highly technical language, tools, and methods in research can lead to alienation of participants in the research process. In participatory research it is important to try to demystify the technical aspects so that all can understand and participate in the process. To demystify something is to make it easier to understand and to use. Community members need to be able to converse on technical terms with government and scientists. Technical understanding boosts confidence in community in order to better participate in and lead the research process.

**Approaches to demystifying the highly technical**

There are different approaches to demystifying the highly technical, depending upon the context. Training can be provided for local people in technical aspects of the research. Alternatively, the researchers can use popular methods that start with what local people already understand and use. Involving various members of the community in the research can help to disseminate the information to others in the community. Another approach is to try to bridge local traditional knowledge with "outside" techniques. Finally, the knowledge, technical skills and information that local people have are often underestimated. The following examples illustrate different approaches:

- One way to demystify the technical is to train a community member in the technical skill and have him/her relate it to others in the community. In Digby County, Nova Scotia, a former fisherman wishing to change occupations attended a community college where he specialized in Global Information System (GIS) technology. A requirement of the course was a practical GIS application. He chose to work on issues surrounding the clam fishery in Digby. He presented his research results to an organized group of clam diggers explaining the process involved in GIS and the potential for using GIS in the management of clam flats. Future intent of the group is to build up GIS capability in a local community centre and train the clam diggers to use the technology.
themselves. This is an example of a community member receiving training in a technical skill and relating it to others in the community.

• A second approach is to start with approaches and tools in research that are familiar to the resource users and move into more complex technologies as the need arises. For example, on the New Brunswick shore of the Bay of Fundy, fishermen questioned DFO management policy regarding cod stocks in the Bay of Fundy, believing that one of their fisheries targeted a distinct stock. In Canada, genetic tagging (a method of identifying the similarities and differences in the DNA sequences of individuals) is used by scientists to identify cod stocks and determine population dynamics. The fishermen did not trust that government scientists would use this technique to answer the questions they wanted answered regarding the stocks. They preferred to maintain control over the research by using research tools that they were familiar and comfortable with, such as interviews, group discussions, fish measurements and tagging. They also consulted maps which indicated currents, temperature and salinity gradients. Pooling their own ecological knowledge and validating the information using maps, they found enough evidence to support their argument and were able to identify seasonal patterns in fish behaviour, spawning grounds and size distribution of the distinct stock. Having gained confidence in their knowledge and techniques, they are now ready to consider genetic tagging to validate their knowledge to DFO scientists.

• In the Philippines, NGO community workers use various popular methods of communication and indigenous materials that local resource users can relate to. In the work of Haribon and other NGOs in the Philippines, they start with simple approaches and move to more complex technologies. Popular methods of communication, such as plays and songs and indigenous materials such as sticks and leaves, are used to map fishing areas, villages and resources. These are methods and materials with which local people can easily associate. Tools such as videos, cross-visits, comic books, community maps are also used for better communication between people
and organizations.

- Involving different groups in the community can also help to demystify the highly technical. In the town of Pearl Lagoon, Nicaragua, school children became involved in a project to measure environmental parameters in a creek used by a local ice-making plant. The teachers were supplied with water analysis kits which the students were taught to use. The results indicated that the water contained very high faecal coliform levels which meant that the local people were at risk of contracting cholera or other diseases. The students shared what they learned with the directors of the ice-making plant who promised to chlorinate the water in the future. The project which was built into the curriculum of the school, benefited the community as a whole and helped to demystify the technical nature of the research (Christie et al., 2000).

- In Cambodia, participatory research facilitated by the PMMR team encourages cross-sectoral methodologies. The research process allows for two-way demystifying and valuing of technical skills. For example, the technical skills of local fishers and the technical knowledge of government technical officers are combined and used in the research. The technical skills and knowledge offered by each must be explained in language that people can understand. In Viet Nam data collection sheets were designed by scientists and fishers together. This requires close communication, cooperation and flexibility. In the Philippines, a research project in the upland areas combined local with conventional directions when facilitators discovered that local inhabitants used Downstream and Upstream to indicate direction rather than the more conventional East, West, North and South.

- Academically-trained people often underestimate the knowledge, technical skills and information that local people have and their capacity for learning the academic skills and language. An internationally-funded project in Viet Nam exposed academics to rural mountainous people through a PRA exercise. When asked to facilitate a village mapping exercise, the academics were very sceptical that the local residents would be able to understand the concept, let alone
map their village. They were very surprised when the villagers took over the exercise and even adapted it to their particular situation in designing a 3-dimensional model (i.e., topography included) of their village and surrounding fields.

Summary statement

Understanding each other is vital in demystifying each other's knowledge (researchers, facilitators and local people). Understanding is not only affected by how we communicate but, especially, by our will and desire to understand and be understood.

It is also important to consider simplifying the language, training local people, using popular education techniques, encouraging cross-sectoral methodologies, and valuing various forms of knowledge in order to demystify the highly technical and make it more understandable and easier to use.
Context Statement

Maria Recchia
Centre for Community-Based Management
Mascarene, New Brunswick

I have been involved with fisheries research for the past six years, including both scientific work and traditional ecological knowledge studies (which I prefer to call local knowledge). Until recently I was not familiar with the term participatory research (PR), although some of my past work on research projects has utilized PR tools and concepts. My primary research interests involve ecological concerns and small-scale, low-technology fisheries.

My work with Bay of Fundy fishing communities centres on furthering the development of community-based management in our region. In some instances this involves conducting research to aid lobbying efforts for the institution of community-based management. In other cases research projects are centred around local biological and/or ecological questions that coastal communities need answered in order to make sound local management decisions.
How do we take an interdisciplinary approach in PR?

Rationale

*What do we mean by an interdisciplinary approach?* This is best described through the experience of the Cambodian research team. The project in Cambodia originated at the Ministry of the Environment with a focus on resource conservation and protection. When the field work began, the researchers became conscious of the fact that, to resolve resource issues, they had to deal with the local reality. The issues which affect local people are complex and include social, political, economic, gender aspects, as well as issues of resource degradation. The project began involving researchers from other disciplines and departments (fisheries, socioeconomics, rural development, etc.) to work together as one team.

*Why is an interdisciplinary approach important?* People use and, sometimes are forced to abuse, resources to feed their families. Putting in place a system of regulations, restrictions and fines will not solve the problem of food security and so, unless very stringently enforced, they will be ignored. Even

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*In Cambodia, a resource conservation and protection project based at the Ministry of the Environment, has expanded to include the Ministry of Agriculture, Forestry and Fisheries, the Ministry of Rural Development as well as officials from provincial, commune and village levels. The project is continually expanding its team and cooperates with NGOs and other interested parties. One view attributes the success working relationship of the Cambodian team to the fact that the team members are not set in their disciplines. Since all educated elite were killed during the Khmer rouge regime, the newly educated are all very young and open minded.*
when enforced, it will not solve the fundamental problem that people suffer from lack of income, food, health, and security. By working with local people to improve their livelihoods, pressure on resources can diminish and conservation can begin.

Another aspect is that community problems are always linked. Resource users each have different interests and ideas but also have an effect on each other. Interdisciplinary research can ensure that all those interests and ideas are investigated and that solutions do not create imbalances within the community.

General statements

What is an interdisciplinary team? An interdisciplinary team is a group of people, each one with a different view or approach, who come together and bring a broader perspective in dealing with issues. In the Cambodia project, the team is formed by people from various government departments; in Haribon Foundation, a Philippine NGO, the team is formed by engaging workers with different disciplinary backgrounds; in Guysborough County, they plan to bring together community residents, from different sectors of the economy, to discuss and resolve the question of whether to allow an aquaculture company to set up in the locality. Interdisciplinary can thus also mean inter-institutional and inter-sectoral.

How do we form an interdisciplinary team? The answer is not as simple as one would expect. It takes time and requires continuous team building, working and learning together and enhancing each person's capacity to achieve project or programme objectives.

In traditional academic circles, the disciplines have no opportunities to interact — each one stays well within his or her own department. Students are required to specialize early in their studies. Each discipline has formed its own set of methods to research which are sometimes difficult for others to understand and accept. As a result, mixing of disciplines can be challenging with each one using a different language or jargon. Similar problems may be experienced when different community groups come together to resolve an issue.
Essentials in team formation:

- **Levelling off:** Getting to know one another is important before starting to work together. Since an interdisciplinary team is a partnership, each member must share his or her views, ideas and experiences, and listen and appreciate those of other team members.

- **Continuous Dialogue/Communication:** Each team member must be a good listener and a good communicator so that the exchange of information can be fruitful. To work together efficiently the team members must always communicate.

- **Starting small:** Many successful teams have started with only a few members who established the team's objectives. It is easier to establish a good atmosphere and comfortable co-operative working situation with a smaller group. Then the team can gradually introduce new members who are more likely to adopt the working style.

- **Good facilitation/Neutral party:** In any team, there must be a good facilitator (or coordinator) who must be able to facilitate the dialogue between team members and who can draw on each member's strengths. Such a person must be a generalist who is willing to spend a great deal of time working with each team member, bringing together the team, and translating the various technical languages, views and ideas to make them understandable to all. This position was also referred to as a neutral party in a round table discussion of various community groups.

- **Stake in the subject:** Each member of the team must have a stake in the subject or issue otherwise there will be no incentive to cooperate and work together.

- **Regular assessment:** The team must regularly assess and review their work, progress and methodology. To deal with issues efficiently and effectively, regular assessments must be carried out for the team to revise objectives, methods or ideas as the situation changes, new issues arise, or local people's ideas change. PR must be flexible and change course as situations in the community change.
In the Philippines, most NGOs that focus on CBCRM now routinely hire staff from different disciplines. In addition, as a starting point, project staff usually undergo orientation sessions on various disciplines and issues in the coastal areas which serve to strengthen the awareness of the staff.

- **Interaction/Inclusiveness:** Related to communication, team members must interact on a regular basis through meetings, workshops, field work and, in some cultures, social events. The more interaction, the more team members learn about each other, communicate with each other, and work better together. Team members must also ensure that no one is left out — that all participate equally in all interactions. Research can not be interdisciplinary without close interaction among team members.

- **Equality/Democracy:** Each team member must feel that she or he has equal input into the project as do all other team members. Some teams have experienced great difficulties in working together and have eventually dissolved because some team members exerted more power over decision making than others. This can occur in cases where one institution, one discipline or when the team leader or coordinator assumes decision making power. Just as interactions within the research team must be democratic so should facilitators and local research partners be on equal terms.

**Documentation**

Experiences of interdisciplinary research teams have not been documented nor disseminated particularly in terms of the process of team formation and team work. The above essential points were raised by the discussion group but are generally not discussed in manuals which describe team formation simply as involving as many disciplines as possible. The experience of the group indicates that the process from team selection to conclusion of the project is difficult and requires much effort on the
part of all team members. Documentation of such processes would help other teams to improve their working relationships.

**Fear of losing control**

The experience of a community group in Canada attempting interdisciplinary research was not pleasant. As they expanded the team to involve academics, government scientists and NGO staff, the project was taken over by the more powerful institutions while the community group lost control over its project. The team obviously did not have all the essentials in team formation. Once again, documentation of poor and successful experiences might have helped the community avoid the outcome.

**Summary statements**

*Strengths of the interdisciplinary approach*

- It builds on the capacities of all team members

> In the Philippines in 1995, two academic institutions (the Marine Science Institute, MSI, and the College of Social Work and Community Development, CSWCD, both of the University of the Philippines) and one environmental NGO (Haribon Foundation) collaborated to implement an interdisciplinary approach in community-based coastal resources management in Bolinao — a coastal municipality in northern Luzon. Each institution brought to the project previously acquired skills. MSI contributed technical knowledge of resource management and aquaculture and had already conducted several resource base studies in the area; CSWCD contributed its expertise in livelihood and community enterprise development; and Haribon had long term experience in community organizing and fish sanctuary establishment.
• There is complementation of work especially in field work activities

• Factors which enhance the interdisciplinary approach are listening skills, inclusiveness of each team members, regular assessments and sharing of experiences among field workers, celebration and reflection sessions, a team leader who is generalist and can link disciplines, orientation of team members, levelling-off of expectations, and background.

Weaknesses of the interdisciplinary approach

• Differences in the strengths or power among the institutions or individuals can sometimes leads to one dominating over others.

• Factors that hinder interdisciplinary approach include the fear of losing control over agenda when the team has not dealt with power issues between academic groups, institutions, and/or community groups (e.g. community agenda can be co-opted by government or academics, etc.)

Efforts in applying an interdisciplinary approach should be documented, particularly the process of team building and team dynamics so that experiences and lessons learned can be shared and benefit everyone.
My first attempt at PR was not at all PR. Fish farmers simply cooperated in the research I was conducting but neither the results nor the research process changed their livelihoods. It was frustrating and at the same time a great learning experience. I learned how little I knew about aquaculture - about how to handle, raise and make a living from fish! And still now, I continue to learn about how inadequate my formal education was.

I have a great deal of respect and awe for people who make a living from natural resources. And I continue to be frustrated at my own efforts and disappointed in the results. Are the CBCRM efforts in which I am involved improving livelihoods? I am constantly flipping back and forth between encouragement and disappointment.

My question is "can we ever deal with the complexity of issues facing resource users?" For communities to manage their resources, they must overcome so many hurdles and I hope I see the day when we have the capacity to deal with all of them! Since my involvement in PR I have seen CBCRM develop to encompass many issues which render resource management so complex - sustainable livelihoods, institutional analysis, legal analysis, paralegal training, property rights, community organization, etc. We are developing a strong team of interdisciplinary and international researchers who are keen on networking and further strengthening CBCRM. We are heading in the right direction.
During my formation in anthropology at Laval University, I developed a strong interest for coastal communities through a field-stay in a Malagasy fishing village. In my professional experiences, I also worked on topics related to coastal area management, namely in First Nations reserves on the north shore of Quebec. However, I never had the opportunity to really conduct participatory research. My acquaintance with this approach started with my involvement in the CBCRM-IDRC Program in the Caribbean at the beginning of 1999. I then worked as consultant researcher with the coordinator of the Program, Yvan Breton, from Laval University. I first developed general guidelines for the linkages between natural and social sciences in the Program and participated to the writing of various documents. After my participation in the Summer Institute 99 in Nova Scotia, I became more aware of the usefulness of participatory approaches and became more actively involved in the follow-up of the projects and the dissemination of information among various stakeholders.

The CBCRM-IDRC Program in the Caribbean was approved in January 1999. Through support for scientific research and participatory approaches, the Program aims at contributing to the sustainable development of the coastal areas in the insular and continental Caribbean countries. Although the Program intends to generate local concrete actions, it seeks to promote collaboration, networking and information dissemination on coastal management issues between various stakeholders at a pan-Caribbean level (government agencies, research institutions, citizen committees, NGOs, national and private universities, producers and consumers organisations).
The first phase of the Program is forecast for a three-year period with three rounds of awards. One of the main outcome lies in a final collective publication, based on regional concerns and research experiences sharing. Its objective is to strengthen the links between Spanish and English speaking countries and institutions.

Given the geographical scope of the Program (Pan-Caribbean), the limited time frame and funds, and the cultural diversity between and within the countries, we need to rely on realistic objectives in terms of participatory approaches. Various stakeholders are in presence in the area and there exists a plurality of institutions concerned with coastal areas management in the Caribbean. However, they too often work on an individual basis and remain characterised by strong discrepancies, even within a single country. Consequently, they rely on limited channels for exchanging on their respective interventions. Language barriers between Spanish and English countries represent an additional constraint to a Pan-Caribbean collaboration. The sharing of common waters and of problems such as pollution and contamination renders necessary participatory research not only at the community level but also on a national and regional basis. If we add to what precedes the prevalence of mixed economies (coastal agriculture, fishing, tourism and ancillary activities such as petroleum and mining industries), the promoters of participatory approaches are faced with great challenges. We aim more for the moment at sensitising strategies at various levels, having no perfect control on the stakeholders reactions. But we hope that using a multi-level approach, we will generate some positive results that will pay in the future.
How do we incorporate participatory monitoring and evaluation (PM&E) and reflection into the planning process of PR?

General statement

Participatory monitoring and evaluation (PM&E) is integral to participatory research and can be empowering at the local level. A monitoring and evaluation system is a tool, like a compass, that helps an organization find its bearing or direction. Monitoring and evaluation systems allow groups the opportunity to pause every so often to find out whether the project is still on the right track. PM&E, through the comparison between project objectives and actual achievement, is a way of finding out how far the group has travelled, and how far it still has to go in order to reach its destination or objective.

PM&E is an integral part of participatory research and starts at the very beginning of a programme, i.e., from assets and needs analyses which are the basis for formulating objectives. Since objectives are the starting point for evaluation, analyses of assets and needs are also the start of formulating an evaluation plan.

What is PM&E?

PM&E is a "feedback" mechanism. The gathering and analysis of information/data or results/effects should be the basis for modifying activities in a programme to take into consideration unanticipated or contingent factors.

PM&E is a management tool for learning from experience. It is a way of doing things or a system which enables participants in a programme to learn from both success and failure, plan better and improve upon present methods of doing things.

PM&E is a process which guides programme participants to gather and generate information to monitor and evaluate their progress. Through the process, participants can educate them-
selves and others and build their confidence to take greater control of their present and future life.

The key words, monitoring and evaluation, are distinct but related in function. **Monitoring** is a continuous feedback system, on-going throughout the life of a project and involves overseeing every level of implementation to ensure that:

- Inputs are ready on time,
- Workplans are followed as closely as possible,
- Adjustments and corrective actions can be made where needed,
- Constraints and bottlenecks can be foreseen and timely solutions found, and
- Resources are used effectively and efficiently.

**Evaluation** is the utilisation of the information generated by monitoring to assess the effects of the project, benefits in the short/medium term, as well as the overall impacts at the end of a project.

Participation is also crucial to the PM&E process. Non-participatory Monitoring and Evaluation, like non-participatory research, is controlled by outsiders to the community. In many programmes, donor agencies or controlling institutions design and implement a project without seeking to empower the community. In these cases, the outsiders identify aspects to evaluate and choose indicators which may not reflect the needs or desires of the community. For instance in evaluating the success of a marine protected area, an agency may choose the state of a coral reef as an indicator of project success rather than fishers' catch. To the institution, coral cover may be more important, but to the local community, the purpose of a marine protected area is to increase fish catches.

**Why monitor and evaluate?**

PM&E is primarily used in development work for impact assessment and project management. But it could also be used for organisational strengthening or institutional learning, under-.
standing and negotiating stakeholder perspectives and for determining public accountability.

PM&E is often used to evaluate the impact of a given programme and the changes that have occurred as a result of programme initiatives. The emphasis is on the comparison between programme objectives and actual achievement.

The other common use of PM&E is to gain in a timely and effective way information which can be used for improving project planning and implementation. As a project management tool, PM&E is used by different stakeholders to analyse and reflect systematically on their experience, and to plan for future goals and activities.

Evaluation includes elements of the following:

- Achievement
  Seeing what has been achieved or accomplished
- Measuring progress
  Based on objectives of the program
- Improving monitoring
  For better management
- Identifying strengths and weaknesses
  To strengthen the program
- Seeing if effort was effective
  What difference has the program made?
- Cost benefit
  Were the costs reasonable?
- Collecting information
  To plan and manage program activities better
- Sharing experience
  To prevent others from making similar mistakes or to encourage them to use similar methods
- Improving effectiveness
  To have more impact
Who should be involved in PM&E?

Those involved in planning the research — the research team and partners — are those that will carry out PM&E. Project participants, stakeholders and all those affected by the project, are the key players in monitoring and evaluating a project. Ideally, the process will be initiated by local community groups. However, in many situations, the initiative for monitoring and evaluation may come from external development workers who first build capacity among the stakeholders and jointly undertake PM&E. Other partners like funding agencies, local government, and other development agencies from various levels can also participate in a PM&E.

How to undertake PM&E?

1. Decision to do PM&E

The first step is taking the decision to monitor and evaluate. “Do we need an evaluation? Why?” In PM&E, it is important that the decision to monitor and evaluate, and to define the process of the PM&E, is made jointly by the various stakeholders (i.e., the programme beneficiaries/partners, programme staff/management, representatives of community members and donor agencies).

2. Defining PM&E focus

Evaluation cannot do “everything”. It is important therefore that the objectives and focus of the PM&E are clearly stated and delineated. The participants in the PM&E must come to an agreement. This step involves deciding what areas to monitor and evaluate and stating the objectives clearly.

3. Formulating indicators

An indicator is a marker. It can be compared to a road sign which shows whether you are on the right track, how far you have travelled, and how far you still have to go in order to reach your destination or objective. Indicators provide a standard against which to measure, assess or show progress (or the lack of it). It is important that the indicators chosen (i.e., fish catch versus coral cover) reflect the priorities of those participating in the evaluation.
4. Planning data collection

Identifying tools for data collection and designing the data collection system is the next step. The tools for data collection are like fishing gear — just as each fishery requires specific gear, each research question must be answered using specific research tools. Different tools can also be used to answer the same question or, used in combination, validate the data collected. For instance, to measure the effect of a new management tool on fishers' catch, you could observe or count fish supply at the local market, ask fishers to keep records of their catch, go over fish buyers' records, or ask housekeepers whether they experienced any changes in home consumption of fish. A non-participatory M&E approach would most likely be to send a research vessel to the area to assess the fish stocks.

This step also involves selecting your respondents and your source of data. If you want to find out about clam fishing you don’t interview lobster fishermen, you approach clam diggers.

5. Data analysis

When fishers bring in their catch, they first “look them over” and classify them according to species, size and quality before selling them. They certainly don’t dump them all in one container. Similarly, you collate and classify your data and “look them over”, analyse them and find out how best you could use them to explain how things are behaving or happening in your community. That is the next step — collate, classify and analyse. In PM&E, an important objective is that project participants take part not only in collecting information but also in classifying, summarizing and analysing the data collected.

6. Using the results

Finally, you must enjoy the fruits of your labour. You should utilize the results of your PM&E to improve your programme implementation and development.
Summary statement

PM&E is opportunity for local groups to produce knowledge collectively that they can identify with and own. It should also be seen as an opportunity for capacity building and empowerment, thus PM&E should take place in the local language and look at indicators that reflect participants' priorities.

Monitoring and evaluation must look at:

- What the programme has been trying to do
- What actually happened
- The gaps/differences between planned and actual results
- The differences between planned and actual results
- The reasons for these differences/gaps
- What needs to be done about them

PM&E should address the needs of the community undertaking it whether they be to measure the success of a project (e.g. counting fish) or, on a more subjective level, to assess social changes within a community as a result of a project, or on a more personal level, to assess changes in individuals' self-esteem. How PM&E is undertaken will vary depending on the desired focus of the group. Just as in all participatory approaches, there are no stringent guidelines for PM&E.
Use of Participatory Research Results
How can PR processes and tools be used in conflict resolution and consensus building?

General statement

In communities, there are many stakeholders with varied interests. Participatory research commonly uncovers areas of community tension and conflict because the process allows the various interest groups to express their concerns. For example, the interests of charcoal makers who use mangroves for their livelihood may be different from the interest of fishers who collect shells and crabs in the same areas. Conflicts may then take place if the charcoal makers continue to simply cut mangroves while the fishers want to preserve them. In this situation, the interests of the two groups may be opposing or conflicting.

Conflicts also take place in other conditions. They can occur within a group with similar interests, such as the members of a fishing organization or community group. For example, fishers using small mobile nets in the mangrove areas may pose a threat to other fishers who collect crabs and shells only with their bare hands. The former group would fish more intensively than the latter and in this situation, both groups of fishers making use of the mangrove areas may have a conflict over the use of this particular resource. Yet the two groups may be members of the same organization. Such internal conflicts are often ignored because they can be painful and controversial to address. However, learning to deal with internal conflicts can make a group stronger and more cohesive.

In other cases, conflict can occur between a community group and an external group. For example, many members of the Bay of Fundy Fisheries Council (an association of fishing groups from around the Bay) are opposed to potential oil and gas exploration in Georges Bank (a productive fishing ground). In this case, fishermen are in conflict with the oil and gas industry and its supporters.
In real situations, however, conflict cannot be described in a simple manner because it has more complex dimensions. In the earlier example on mangrove use, it is possible that the charcoal makers and the fishers have a common interest in sustaining the mangroves because both groups are dependent on this resource for their livelihood. However, they may have a conflicting position on how to sustain the mangroves (e.g. frequency and time for cutting). In thinking about conflict, therefore, it is important to consider its complex dimensions and the interplay of factors in a specific situation in which the conflict exists. It is important, for instance, to clarify and distinguish between interests and positions because often, conflicting groups may have similar interests but may not necessarily agree on what actions need to be taken to resolve an issue.

Furthermore, in conflict resolution, there is often an emphasis on reaching a consensus. Generally, consensus is achieved when everyone at the table makes concessions on their original positions until a compromise is reached. Often, this leads to an agreement which all parties find acceptable. There are situations, however, when achieving consensus is not acceptable to one of the groups. Where power relations are highly unequal, certain groups may prefer to take positions that are non-negotiable. In these cases, complete opposition may be a more realistic option than trying to reach a compromise with people with whom they have fundamental differences. For example, the Bay of Fundy Fisheries Council will remain firmly against oil and gas exploration on Georges Bank, despite industry attempts to gain support for a compromise position in which limited exploration is allowed.

In responding to situations of conflict, one should have a grasp of what is the ultimate aim to be achieved. Although it is difficult to generalize, consensus building is often desirable in resolving internal group conflicts to ensure that all members come to share a common direction and mandate. Groups may try to resolve a conflict with another group by following the principles of give and take until each party has reached gains or losses that they can live with. In still other circumstances, a group may decide that their position is final and that no compromises are acceptable. In this case, the only acceptable settlement may be to
find a mediator; this is often pursued in cases when the conflict exists between groups with distinct and opposing interests. The following are some of the relevant points to consider in conflict resolution and consensus building.

How can participatory research help in consensus building and resolving conflicts?

- The participatory research process allows the stakeholders the opportunity to identify and analyse the conflict and tension in their communities. With a better understanding of the nature of these conflicts, those involved can clarify their positions and their objectives for conflict resolution.

- Participatory research can be oriented towards generating data that can help opposing parties understand controversial issues and prepare to make a decision. For example, a documentation and analysis of how similar conflicts were resolved in the past can provide valuable insights on how to proceed with conflict resolution.

- Participatory research can clarify the positions of opposing groups and establish possible common grounds. In clarifying positions, it is important to identify what positions are non-negotiable.

- Participatory research can uncover or create mechanisms to help stabilize or minimize a conflict. For example, when brainstorming about community resources, participants may discover they all have good relationships with a particular church leader. This leader might then be asked to serve as a mediator whenever conflicts erupt within the community.

- Research should be connected with a public information campaign to raise awareness and support. In Bolinao, Philippines, for example, the community, assisted by external research groups successfully maintained an information campaign to expose the possible harmful effects of a proposed cement plant on the environment. The community’s strong opposition, supported by effective lobbying by environmental advocates, pressured the government to abandon their plan to approve the cement plant.
Cautionary notes

• Participatory research does not necessarily have to be initially about a conflict in order for conflicts to become important issues for researchers. Often, PR merely brings to light existing dynamics that people may not have openly discussed or analysed. For example, fishers who rely on mangroves may be angry and frustrated that their fishing grounds are being destroyed for shrimp ponds. However, prior to the research, there may not have existed a venue for them to discuss this issue. In this case, the PR process may rapidly become one of conflict resolution. Some within the community may even start to feel that PR brought these conflicts to their once peaceful communities.

• Participatory research should consider the influence and impact of power and the relationships between groups and/or individuals holding power in a conflict situation. For example, in meetings in Madagascar, tourism operators who wish to encourage the development of hotels and other tourist infrastructure are more vocal than local fishers. They also have the support of government planners and officials. Consequently, the fishers' concerns about losing access to landing beaches and fishing grounds are not given as much weight.

Tips

• The willingness of opposing groups to listen to each other and to negotiate will have an effect on how a conflict can be resolved. Often, the first step in resolving conflicts is to change the attitude of opposing groups so that they are more open to dialogue and discussion about a conflict.

• Effective facilitation can influence whether or not a conflict is resolved. In some cases, it may be necessary to involve someone who is perceived as “neutral” by the groups in conflict.

• Consensus building should be based on articulated principles and standards which are acceptable to all members of a specific group. It is important to take the necessary time for
participants to clarify their values and priorities and reach a common understanding before proceeding. Often, starting with a simple common issue on which everyone agrees is a good beginning.

- Partnerships in research must be grounded on principles of democratic decision making where researchers and communities play equal roles in the research process.

- Appropriate language is important in communicating information and strategies. For example, the workers of the clam industry may be better able to communicate with government officials if they are able to explain the meaning of a day’s loss in fishing in monetary terms. In this way, the government may understand how much money is lost if a clam digger’s permit is not issued immediately.

Tools and techniques

- Several team building tools are often used to build consensus and/or resolve conflicts.

> The “River of Life” exercise (see Prieto Diaz Case Study, p. 32) was useful in helping members of the fishing organization understand the organization’s history and past accomplishments. It also made the members and facilitators aware of past conflicts within the organization and the members perception of the causes of these conflicts.

- In some situations, Memorandum of Agreement (MOA) and organizational bylaws can be effective tools for preventing conflicts. By clearly stipulating the roles and responsibilities of group members, organizational bylaws concretely lay out members’ expectations of one another. The Guysborough County Fisheries Enhancement Association insists that all their research partners sign a MOA that details the roles, responsibilities and ownership of research results.
• Laying down the "rules of the game" is also important in resolving conflicts. In the Bay of Fundy a facilitator put forward only two rules in resolving a conflict situation: 1) an issue should always be discussed with a possible solution and 2) a possible solution can only be put forward if the person making the suggestion is committed to applying the solution.

• Games might also be an effective tool for developing the skills to work cooperatively. In Prieto Diaz, a game called "Chasing the Dragon" was used during team building sessions. In this game, two groups formed two lines and the person in front is the head of the dragon while the one in the back becomes its tail. The objective of the game is for the head of each group to chase the tail of the other group. The idea is for each group (or "dragon") to protect its tail by following the movement of the head and moving in a concerted manner. After playing the game, the facilitator asks the groups about their feelings and learning in playing the game. Most likely, the participants' responses will revolve around the issues on the importance of working collectively. Games like this can then be used as starting points for discussing the relevant factors in collective work.
How can we make PR more efficient in producing results?

Conducting research which involves communities and deals with livelihood issues, raises the expectations of those involved in the research. This is natural since everyone expects some return from any activity undertaken whether it be in the form of pleasure from an evening of entertainment; security in old age by raising many children; food from gardening efforts; cash as payment for odd jobs; education by attending a training course and etc. Whether we are conscious of it or not, we decide whether to partake in an activity by evaluating its return (or incentive) and each one of us has his or her own particular set of criteria for evaluation. Whatever the expectations, if they are not satisfied, disappointment, and eventually, abandonment results.

In many development research projects, material incentives are used to involve community members. This relieves pressure on the researchers to produce results and helps to improve people’s livelihoods, but incentives often affect the results. For instance, they may result in subsidizing an activity which normally would not be feasible and is unsustainable or in attracting a particular set of individuals which may not be the desired target group. This approach is quite common in conventional or non-participatory development projects and they often fail in improving people’s livelihoods.

In participatory research, the incentives should ideally be the results of the research and come from those involved in the research. Results, such as improvements in livelihood, can be slow in arriving and can also be disappointing. Without the benefits of material compensation, this can be devastating to individuals who devote much time and effort to the research. This puts more pressure on research facilitators to improve methodology so as to produce results speedily and to increase the rate of success — thus to be more efficient in research.

Livelihood is used here in the broadest sense and includes health, security (including security of resources and access to resources), welfare, education, culture, etc., as well as income and food.
Without concrete measurable success, we risk losing participation as a result of disillusionment from a very long process. In the Bolinao experience, fishers have coined the phrase “meeting without eating” to indicate that the frequent meetings they must attend are keeping them away from their regular activities which provide food and income.

In some cases, PR is used to address an issue which requires immediate action and therefore results or answers need to be produced quickly and efficiently. The Guysborough County Women's Association are opposing a mega-project to introduce finfish aquaculture to the area. They need to provide a convincing argument that will support their fear that aquaculture will negatively affect the economy of the area. If they don't quickly convince the sectors in the community that support the project, the aquaculture project will be approved and established.

However, because participatory research is an ongoing, long term process, it is essential to take the time to build a participatory process into the research cycle. Taking the time for process is needed when conducting PR since it builds a participatory movement (see How can PR be used for better planning and decision making in coastal resource management? p. 128). Thus when we speak of effectiveness in PR, we speak of:

- building a self-propelling community movement,
- widening participation,
- building consensus, and
- resolving conflict.

These are important goals of PR even though the primary goal in a project, for instance, may be to collect data and information for a management plan. The same process used in PR is also used to build a CBCRM mechanism — a mechanism by which the community is empowered and has the capacity to manage their own resources.

A balance between efficiency in producing results and effectiveness in the process is necessary.
Although producing research results (which bring benefit to the community) is important, it was also recognized that the process of building capacity within a community to take on research takes time. These 2 aspects of PR were deemed essential but a balance is difficult to reach. Producing results too quickly without taking the time to develop an effective process of community participation provides limited benefits to the community—it may solve one issue but does not empower the community to deal with others. Thus producing results in an efficient way should in no way restrain building a process whereby the community can take on other research issues. And conversely, a project should not only focus on the process but also provide results which can alleviate some of the community problems.

In balancing efficiency and effectiveness in PR, we should consider the following points:

• To effectively apply research results, we need the building blocks of a democratic organization. The Bay of Fundy Fisheries Council (BFFC) has developed a democratic system of decision making and consensus building which has proven effective in making and applying management decisions for the area in terms of quota allocations and conflict resolution. The research and advisory committee is now conducting meetings to get fishermen’s input to formulate research questions and prepare a research plan. Since the fishermen participate in the research (from formulating the research questions to analysing the results), they also participate in the management decisions.

• Although PR can be a process by which an organization is formed, it can be more efficient in achieving results if it is conducted by a pre-existing organization. In the Philippines, when NGOs first approach a community, they identify the existing organizations and try to link or partner with these organizations so that the process can be more efficient. Rather than starting with community organizing, they are then able to directly launch into research in partnership with the existing organization(s).

• When initiating PR in a community, start with community needs that can easily be addressed. This builds solidarity and
confidence within that community, develops a democratic organization, strengthens the decision making process, and prepares the community to tackle issues which are more difficult to resolve. In Cambodia, waste management and water distribution were pressing issues which did not segregate the community. As the community became organized, it moved from a passive role, of waiting for government officials to act on these issues, to an active role of coming to a consensus on how to deal with these issues and carrying out the developed plan. The community is now tackling more divisive issues in resource management more effectively.

- Participatory research should take into account the welfare and needs of the resource users, not simply the resources. In the Philippines, a NGO carrying out a cost benefit analysis on resource evaluation, focused on the perception of fishers. Rather than collecting data on the market value of resources, the study collected data on the fisher’s value of resources which inherently included the subsistence value of resources covering family nutrition and food security. The results of this research will be better understood and valued by resource users, thus making it easier to apply any management decisions that arise from the results.

- Participatory research, by its very nature, integrates research programmes into local community’s plans and needs and addresses questions that are formulated by the resource users. Since PR involves local resource users in developing the questions, research design and plan, and analysing and implementing the results, it must be integrated into community objectives to sustain participation.

- PR can be more effective and efficient if the local knowledge is used in research projects. In Canada, DFO researchers are responsible for conducting studies on all species and all stocks fished in its waters. Considering the vast diversity of species and stocks, to effectively carry out the necessary research would take tremendous human and financial resources as well as a very long time span (to allow for population changes). Given the wealth of knowledge that fishermen have from years of fishing specific species and stocks, it
would be much more efficient to start with the local knowledge base and, if needed, validate using more conventional research methods.

- Networking is a tool which can speed up information gathering, information and experience exchange, and awareness building. Examples from other communities can enrich and validate the knowledge or decision making of a community involved in PR. In their struggle with the aquaculture project, the Guysborough County Women's Association has searched the World Wide Web for similar examples and information on the effects of aquaculture on other sectors; they have consulted community groups from the Bay of Fundy who are already living with aquaculture; and they have consulted various environmental groups, academics and government scientists. This networking has enabled them to tap a much wider information source which helps them assess the situation in a much more informed way.

Summary

- Results and process in PR are important in CBCRM. Both feed into each other and complement each other.

- To apply research results, we need the building blocks of a democratic organization either in place before PR is initiated or developed as part of the PR process.

- A community or organization can be strengthened when PR starts by solving community needs that can easily be addressed.

- PR takes into account the welfare of the resource users and is integrated into local community's plans and needs.

- PR addresses questions that are formulated by resource users.

- Efficiency can be increased in PR by using local knowledge which often contains a wealth of information and data over a long period oftime.

- Networking with other groups can speed up information and data gathering and provides the community with the opportunity of learning from others' experiences.
What are the major factors influencing my approach to PR?

My appreciation for PR has been influenced by both theoretical studies and practical experience. My studies at university in the fields of International Development Studies, Resource Management, Environmental Studies and Participatory Planning, promoted PR as a tool for transformative learning and education for social change. During my experiences in Cambodia working as a Project Advisor with the Ministry of Environment and IDRC, I have witnessed both the challenges and opportunities of the PR approach. The Summer Institutes in Nova Scotia and PR Training in Koh Kong facilitated by Tambuyog have also been very helpful in influencing my approach to PR.

What have I learned?

PR is a process that combines three interrelated activities: research, education and action. I have learned that PR is not neutral. It has an ideological background. This approach has been promoted to bring about a vision of more balanced world with equitable communities and healthy ecosystems. It is meant to be biased in favour of dominated, exploited, poor or otherwise ignored women and men and groups. Thus, this social action process is concerned with issues of power, democracy and transformation.
I have also learned that there are different approaches to PR, depending upon the context. PR approaches require flexibility and openness to new ways of thinking and acting. I have seen PR at work in rural coastal fishing villages as well as in alternative classroom settings and round-table meetings in the Ministry of Environment. However, sometimes I have also seen the term is often co-opted by activities that aren't that "participatory".

What are my questions?

I understand that communities are made up of complex people with different motivations, perceptions, capabilities, feelings, and relationships, but with shared problems. In these complex settings, particularly in Cambodia where economic, political and social situations can change so quickly, how can PR methodology provide a holistic framework for understanding dynamic, lived experiences, while allowing for tensions and conflicts? I agree that the emphasis on process is crucial but an important question is how to balance this process-based approach with the need to produce "results".

PR principles can be discussed in the classroom, but I believe that the only way to really learn about PR is by doing it. I also believe that, even though PR tools and methods are important, it is the attitudes and philosophy of the PR research approach that is the most important. I hope to continue learning about PR through experience, reflection and further action.
How can PR be used for better planning and decision making in coastal resource management?

Rationale

Participatory research as an approach enriches the process of planning and decision making in coastal resources management. It democratizes the process of planning and decision making by putting primary importance on the role of the community.

The experiences of individuals and groups working in coastal community development have pointed out that the involvement of local communities in the whole process of planning and decision making is integral to facilitating a change towards sustainable resource use. This hinges on the belief that local communities are the most logical entity who can ensure the rational and sustainable development of the coastal resources because their survival hinges on the health of their resources.

If community participation is important in the whole process of planning and decision making, it is important that research activities which lead to those plans and decisions are more participatory. Participatory research provides more accurate information and identifies indicators for better planning and decision making. At the same time, participatory research ensures that the plans and decisions made for coastal resources management initiatives are appreciated and supported by the community.

The process

There are two important aspects to assess when evaluating the success of a resource management plan. One is the effect that management changes have made on the resources. The other is the effect that management changes have made on the resource users.

The latter aspect relies on the process which led to the manage-
ment plan — *i.e.*, who was involved in the research and decision making and to what extent they were involved. A process which involves all stakeholders in the decision making will be much more successful than one which involves only those interested in making changes to management.

The establishment of a marine protected area may have reached the objective of increasing fishers’ catch in the area, thus effecting a positive change on the resources. However, it may have a negative impact on a group of marginalised fishers not involved in the research process but directly affected by the plan. These fishers may resort to illegally fishing in the protected area or moving to other areas. Whatever their actions, the result will certainly be further marginalisation of those fishers, pushing them further into poverty and jeopardising their livelihood. A management plan can not be considered a success if it favours one sector of the community at the expense of another.

The process is also important as it dictates the quality of data collected and, following from that, the quality of information dictates the quality of planning and decision making. In coastal resources management, fishers must be the main actors in the process of gathering information and in processing that information. They are the best source of information and the best ones to assess the quality of information on the status of the resources since they are in direct and constant contact with those resources.

The use of participatory research is a progressive step towards ensuring better community processes in planning and decision making. Participatory research provides accurate and relevant information needed for planning and decision making. Furthermore, when communities are able to share and analyse their conditions using participatory research approaches, plans and decisions for coastal resources are made more meaningful and realistic.

In Bolinao, Philippines, a local fishers’ group opposed the entry of a multinational cement plant in their community because they feared it would pollute their fishing grounds. Before proceeding with a campaign, they decided to consult other community members to understand their views and perceptions on the issue.
In the process they learned that a substantial number of people approved of the plant because they were anticipating employment opportunities. The fishers' group thus identified the need to study the issue of employment and, upon investigation, learned that the plant would provide employment for only a few people and that there were no assurances that local people would be selected. This finding among others resulted in a consensus among the community to oppose the entry of the plant. This brief story points out how participatory research can facilitate planning and decision making: engaging the wider community strengthened the campaign of a small group of concerned fishers.

In Canada, PR is a grassroots movement, embraced by local community groups to entice the government to work with them. As they see their resources dwindling and government decision makers favouring corporate interests, these groups see PR as way to make the government understand their needs. By favouring corporate interests who have no long term stake in the resources, the government management system has resulted in the collapse of cod stocks along the Atlantic coast of Canada, jeopardizing the livelihood of inshore fishermen.

In Asia, PR is used to build confidence and entice participation of coastal communities. Long standing colonialism has introduced apathy among community groups and a dependence on government action. Facilitators (NGOs, development workers, researchers, etc.) see PR as a way to get local people involved in management and, ultimately, empower them to take over management decisions. Since government management is mostly ineffective and its rules not enforced, making resource users responsible for management can ensure effective enforcement of management rules and thus, sustainability of the resource.

**Improving planning and decision making**

There are various ways to improve planning and decision making in coastal resources management using participatory research.

1. Participatory research must raise the awareness and confidence of local resource users with the ultimate goal of enabling the community to engage in resource management: in proposing management plans, in collaborating with other
Use of PR Results

institutions and in amending existing management plans. Participatory research methods should not be used by outsiders to simply extract information from the community without engaging them in the analysis and decision making stages.

2. Establishing a mechanism where all community members can participate in the planning and decision making is very important. This provides the community with a formal venue where various opinions are shared and discussed. It ensures that broad representation of ideas are considered and accounted for, encourages critical analysis of different points of view and prevents the dominance by one individual, group or idea. There are many ways to ensure democratic representation such as community meetings, consultations, focus group discussions, etc. One need only to identify the proper mechanism based on the specific context of the community.

The Fundy Fixed Gear Council (FFGC) has a democratic structure which has provided a basis for participation in doing research. Representatives from different ports ensure that they echo the concerns of their members or local people to the decision making body of the FFGC.

3. Local knowledge of the resources must feed into the management plan and decisions. Local knowledge (also referred to as Traditional Ecological Knowledge or TEK) is based on a long history of the community’s and individuals’ experiences with their environment and their struggle for survival. Although often discounted by formally trained scientists, particularly in the past, this knowledge is quickly gaining value as alternatives to unsuccessful government management plans are sought.
For the past 10 years in Bolinao, fishery assessments were conducted with little or no participation from fishers. This distance between fishers and fishery researchers not only affected the quality of information gathered but it also led to weaker compliance of management regulations since the fishers did not agree with the decisions made. Recently, the process has begun to change and local people are now encouraged to participate from the very start of the research. Fishers’ knowledge contributed immensely to the data. The result was improved quality of information leading to better management decisions and increased compliance of rules which were now made by fishers and scientists together.

Summary

Participatory research empowers local organizations to make their own management plans, agree to existing plans or those designed by government institutions, and/or amend plans designed by others. The key results are that community members have input into management decisions, they understand how the decisions were made, and they agree to those decisions. It ensures that not only are local resources sustainable but that the local economy is also sustainable. An added bonus is increased compliance of management regulations.

Process is key to the success of PR and its resulting management changes. The process must ensure participation by all stakeholders — not only the ones encouraging management changes — and a transparent democratic system in decision making.
I learned about PR at school where it was often described in relation to what it is not. It is not like conventional research, it is not exclusive, it is not to take knowledge out of the community. It took me a long time to realize that all the descriptive words about PR often obscure a research process that still leads to community members being marginalised and excluded.

It took me even longer to realize that while I am often frustrated at the lack of results or improvements from PR, there are often changes and gains from the PR process that are and will always be intangible to me as a researcher. Hearing stories of gains in local competence and skills, ability to articulate local concerns, new visions and hope for the future... of empowerment. All this has made me question and re-evaluate my own definition of change.

Lately, I am interested in the spread and scaling up of community organizing. Is PR the entry point for community-driven research and action? What will the next generation of CBCRM research look like? Not the projects that we as practitioner will facilitate, but the ideas and projects spearheaded by local people after we are no longer working in their communities.
The Centre for Community-Based Management is a joint project of the university's Coady International Institute and Extension Department. In the view of the Centre for Community-Based Management participatory research fulfills a number of functions and is in part characterized by the following. Participatory research:

- Defines problems and collects data.
- Forms the basis of community-based education.
- Relies solely on citizen (knowledge holder) participation.
- Implies an equal and reciprocal relationship between the professional researcher and the people.
- Must result in action.
- Creates new knowledge by building upon existing knowledge which effectively builds capacity, enabling action to follow.
- Focuses on practical application.
- Educates all participants.

The mission of the Centre for Community-Based Management is to promote the dignity and social development of people by supporting their participation in community-based organizations seeking control over their natural and social resources and by linking these communities, regionally, nationally, and internationally in a global programme of cooperation and action. Fostering the continued development of participatory research practices is indeed imperative to the mission of the Centre for Community-Based Management.
The implementation of participatory research faces many challenges. A great deal of concern must be dedicated to protecting the integrity of any research project. Specific to participatory research, challenges often exist to:

- Involve an adequate number of people and methodologies to ensure the validity of the research findings.
- Educate people who are unfamiliar with participatory research who may not understand and therefore may not value or may question the credibility of participatory research findings.
- Engage research participants in taking ownership of the research design as opposed to participating only in the implementation of the design.
- Become knowledgeable, as researchers, of the subject matter and the context in which the research will be carried out, rather than relying solely on process expertise.
- Consider questions around who initiates the research — the researcher, the community or a combination of both. Is one approach better than the others?

As participatory research continues to evolve as a process, practitioners will continue to be challenged. We must revisit our personal philosophies as educators and researchers. We must engage in self-education and, perhaps most importantly, we must reflect on our experiences and accept the teaching offered within.
Case Study: Fighting the concentration of fishing effort in the Canadian Bay of Fundy groundfishery

This is a story of inshore fishermen who are struggling for the future of their communities. It is the story of how Bay of Fundy inshore fishermen have tried to address a threat to the viability of their fisheries. The threat is a massive shift of fishing effort by groundfishing fleets into the Bay. Ultimately it is a discussion of how fishermen might use the tools of participatory research to overcome political struggles.

The Bay of Fundy and its fisheries

The Bay of Fundy is a long, narrow body of water bounded by three political jurisdictions: Nova Scotia, Canada to the southeast; and New Brunswick, Canada and Maine, USA to the northwest. Two hundred and fifty kilometres long and forty kilometres across at its widest point, the Bay is the northern most portion of the Gulf of Maine. The area boasts a population of about 50,000 spread over roughly 75 fishing communities, in addition to a large industrial city in New Brunswick and a large developed area in Nova Scotia.

The Bay of Fundy is characterized by an extremely complex geography including islands, peninsulas, convoluted bays and inlets, and its extreme tides, known to be the highest in the world (nearly 50 feet/16.5 m at the head of the Bay). This complex geography, extreme tides, and cold water temperatures attribute to an extremely varied ecosystem.

The high degree of biodiversity in the bay lends itself to several commercial fisheries. The most important of these are the lobster fishery, scallop fishery, herring fishery, a number of intertidal fisheries, and the groundfishery, which is at the centre of this case study. Lobsters, harvested only by independent boats, makes up the most successful fishery in the region and is presently the backbone of local community economies. Scallops are pursued by a fleet of inshore independent boats on the New Brunswick side and a fleet of mostly company-owned boats.
based in Nova Scotia. The herring fishery is almost entirely fished by one company's seiners with the exception of a small number of weirs (fixed herring traps made of wooden poles and netting along the shore) operating primarily on the New Brunswick side. There are also a number of intertidal fisheries, notably for clams, that are especially important in the US portion of the bay.

It is the Bay of Fundy groundfishery that forms the context for this case study. This fishery targets cod, haddock, pollock, and hake, also known as "groundfish," meaning those fish that feed on or near the sea floor. The groundfishery is pursued by two separate fleets. The first is a fleet of inshore boats using hook and line and gillnets during the spring and summer fishing seasons. Both these passive gear are anchored to the sea floor and require the fish to swim to them, and thus they are referred to as fixed gear. This fixed gear fleet fishes under local community-based management boards that manage and allocate quota in
the communities. The other groundfish fleet is composed of significantly larger vessels using mobile gear (otter trawls or, more commonly referred to as, draggers) that are primarily company-owned. This corporate fleet fishes year round under a privatized quota regime — individual transferable quota or ITQ (see Glossary, p. 164).

It is important to note that there is a dichotomy in the Bay of Fundy's commercial fishing industry. Each commercial fishery in the bay (except the lobster and intertidal fisheries) is pursued by two types of fishermen: independent fishermen, and fishermen hired by companies. Independent boats are generally smaller and utilize less efficient capture technologies than company boats. Independent and corporate fleets constantly compete for access to resources, generally resulting in conflict.

The Bay of Fundy Fisheries Council

Something unique and important has occurred in the Bay of Fundy over the past few years. Fishermen from around the bay have come together to form an umbrella group of fishermen's associations. The formation of the Bay of Fundy Fisheries Council (BFFC) was the direct result of community-based management boards that were established in 1996 for the fixed gear groundfishery. The BFFC was officially formed in 1997 and is made up of 14 fishermen's associations from around the bay, and includes weir, intertidal, lobster, and other fishermen's associations. These 14 local associations all represent independent fishermen in the Canadian Bay of Fundy. There are no corporate fleets represented on the BFFC. They have all been invited to join but so far have declined.

The mission of the BFFC is to support fisheries management in the Bay of Fundy according to the principles of ecosystem- and community-based management and democracy.

The shift-of-effort problem

Although the BFFC has addressed several issues since its inception, one issue in particular has consumed a considerable amount of the council's energy and is the topic of this case study. The so-called "shift-of-effort" refers to a recent concentration of
groundfishing effort at the mouth of the Bay of Fundy. Much of the new fishing effort is by vessels and fleets originating from outside the bay who have abandoned their usual fishing grounds due to serious declines in groundfish stocks in those areas. At the onset of this migration of fishing vessels, the groundfish stocks in the Bay of Fundy were the only healthy stocks in all of Atlantic Canada. As the shift-of-effort problem intensified, the Bay’s groundfish stocks began to decline rapidly.

The issue of concentrated fishing effort has been raised by the Bay’s fishermen’s associations for the past five years or more. The issue went unrecognized until 1997 when the Canadian Fisheries Resource Conservation Council (FRCC), a government appointed body that advises the federal government on groundfish management, included a description of the shift-of-effort in its annual report. They recommended that the issue be examined by the government’s fisheries scientists. The scientists confirmed that the shift was occurring, but could not prove what, if any, effect this would have on fish stocks. The issue was tossed back and forth a few times between the FRCC and the scientists without suggesting any concrete solutions.

Reaching consensus

It was at this point that the BFFC picked up the issue. At first BFFC members worked to put the issue on the agendas of local and regional meetings. Then the BFFC held a workshop that initiated a 6-month internal process of devising concrete solutions to the problem and reaching consensus among the 14 Fishermen’s Associations around the Bay.

Advocacy

Once completed, the BFFC wrote a letter to the Federal Minister of Fisheries and Oceans outlining the main concern of the BFFC — that the current quota system is not serving the conservation needs of the region and that the solution to this crisis lies not simply with the Federal Government, but rather with a partnership in which fishermen’s organizations play the lead role in the stewardship of the resources. The letter to the minister also included four proposed management measures to curtail the shift-of-effort and protect Bay of Fundy fish stocks:
• To prohibit offshore companies from hiring mid-sized otter trawlers to fish their quota meant for more offshore areas in the Bay. The policy which allows this (Temporary Vessel Replacement Policy or TVRP) benefits the offshore companies since their huge factory trawlers cannot fit into the Bay of Fundy and the groundfish have nearly disappeared in the offshore fishing grounds.

• To limit fishing during the winter spawning season in the Bay of Fundy.

• To freeze the transfer of individual quotas (ITQs) since this practice results in the concentration of quota in the hands of players with a lot of fishing power. The problem occurs when a fishing enterprise cannot catch its quota and the unused quota is transferred to another fisherman or fishing company with a better opportunity or capability to catch fish. If fish are scarce in one region, the quota is transferred to someone who can fish where populations are abundant.

• To restrict effort originating from east of the Bay of Fundy from fishing in the bay.

**Public relations campaign**

The work of the BFFC on this issue did not go unnoticed. Local, regional, and national media picked up the story in newspapers, radio broadcasts, and television news. The coverage was extensive, although the story appeared sporadically with a few media floods but no long-term commitment to the issue. Nonetheless, high ranking government officials took notice and sent their subordinates on fact-finding missions.

**Research on dumping**

BFFC also worked with a local environmental NGO, the Ecology Action Centre, to gather data on dumping by mobile gear fishing vessels. Many of these vessels, once they have reached their quota, will start dumping the smaller fish into the ocean and continue catching, thus bringing in a catch of higher quality fish. This research was aimed at exposing the lack of conservation ethic within the fishing companies.

The hard work and media attention led BFFC members to feel
hopeful that their warnings would be heeded and solutions implemented. Unfortunately, this did not occur. Instead the fishermen's concerns were dismissed at every turn. The Federal Minister of Fisheries responded to their letter by dismissing all four proposed measures, saying there was not enough data available to predict the effect such measures would have on the fishery. Therefore he could not act on the issue. He did, however, offer to pass the issue on to the regional industry advisory committee. This committee includes representatives of both the independent and corporate fleets based in the Bay of Fundy and those based further east. Basically it encompassed those contributing to the shift-of-effort problem and those fighting against the shift-of-effort. The meeting of this advisory committee was chaired by a high ranking government official who himself was a strong supporter of the status quo. As may be expected, nothing was accomplished at this meeting except to have the issue thrown out due to a lack of consensus, and a token promise to increase research efforts in the field of local stocks and migration patterns.

The BFFC, for all its effort, has run full circle on this issue without many concrete gains. There is a need to analyse the events of the last two years and regroup. The recent decline in groundfish stocks, however, has turned inshore fishermen's attention to the pursuit of other species, leaving the shift-of-effort unsolved but not forgotten. The fishing fleet was reduced to 165 fishing vessels when BFFC was first established to less than 40 boats in 1999.
Group Discussion on the Bay of Fundy Case Study

The discussion of the participants began around the issue of strategy planning to bring about a change in the situation. The following questions helped focus the discussion:

- *Who are you trying to convince? What language are they using?*

- *Who participated in the effort so far? Who should participate? Who is missing?*

- *What kind of results would change things?*

The following suggestions were made to increase political pressure:

- Identify the locus of power

- Widen issues and participation: So far the issue has been one of conservation—saving the fish stocks. Broadening the issue to include other impacts, such as the social impact of unemployment and people abandoning the area, may involve others not directly impacted such as business owners dependent on local business.

- The DFO now has a new orientation—MPA establishment. The group could also use this new orientation to force the DFO to change its policy.

The steps involved are summarized as follows:

- Building a movement

- Focusing on social consequences

- Following the overall trend and policy in government

- Identifying the key decision makers

The participants then separated into 2 groups to plan a strategy for bringing about a change in the shift-of-effort problem.
Group I Discussion Notes

The group decided to outline a PR process of building consensus among stakeholders to address the issue of shift-of-effort in the Bay of Fundy. The group did not have much specific knowledge of the relevant institutions and groups around the area, so we outlined a plan which would be exploratory while trying to bring together the relevant stakeholders.

PROPOSED PARTICIPATORY RESEARCH PLAN FOR BAY OF FUNDY

A. Assumptions:

There is a recognition from the Marine Resource Centre or a core group of committed individuals that there is a need to incorporate participatory research in enhancing the participation of various stakeholders in the Bay of Fundy area.

B. Overall Goal:

To establish a mechanism of continuous coordination and participation of various players of the Bay of Fundy who would be able to provide the relevant socioeconomic, biophysical and legal-institutional background and participate in efforts to sustain the various ecological systems of Bay of Fundy and the livelihoods they support.

1. Start-up Phase:

The participatory research phase as being outlined here must be phased into whatever development plans are already existing. Development plans shall mean those plans being undertaken by the national, regional and local government institutions; and those plans being implemented by different agencies (academic, private voluntary organizations, and civic-minded individuals) along the coast of Bay of Fundy.

2. Specific Goals:

2.1 To conduct a program review and planning workshop by a lead organization. This lead organization could be the Bay of Fundy Fisheries Council, Marine Resource Centre, or St.
Francis Xavier University or a committee of representative of these or other institution. The main output of the program review and planning workshop shall be a research plan that highlights the involvement and participation by the stakeholders.

2.2 To catalogue and review existing national and state laws and local ordinances related to fisheries resource management and recommend and/or advocate appropriate policy on marine affairs.

2.3 To compile and review existing researches on the biophysical and socioeconomic aspects of the Bay of Fundy area.

3. Activities and Responsible Persons:

3.1 Initial consultation through kitchen meetings will provide a venue for brainstorming of ideas among the lead or core group on the rationale of conducting the participatory research. A levelling-off of various research objectives should be established after 2–3 series of informal and small group meetings.

3.2 Assignment of individual tasks shall be agreed upon by the core group members. These tasks shall include but not limited to the following: profiling of institutions and agencies with concerns and initiatives along the Bay of Fundy area; list of various existing national and state laws; local ordinances related to marine affairs; list of socioeconomic and biophysical research conducted in the area; the logistic and financial sources and uses; and monitoring and evaluation of the participatory research plans.

4. Monitoring of Activities

4.1 A regular meeting among the core group members or institutional representatives shall be held at least twice a month to look into the progress of the agreed plan of activities.

4.2 In due time, the core group membership should be expanded to include other representatives from various interests or stakeholders of the area.
4.3 It would be good to have a physical centre or a secretariat area for participatory research activities. The secretariat shall coordinate all on-going activities as the PR proceeds and it would be better if the location of the secretariat is accessible to identified stakeholders.

5. Logistic Support

The core group or the institutional representatives shall include in their plan the estimated budget for the whole PR process.

The intent of the discussion group was to initiate discussion of ways of forming a multi-stakeholder process. Without the specifics of a situation the outline is only a generalization intended as a guide.

Group II Discussion Notes

Focus of discussion: How to develop a strategy to persuade government to take action in securing more allowable catch for the local fishing community.

The following notes are not steps to be realised on a sequential basis but simply a guideline of points to consider which are connected and interrelated, and which can not be dealt with separately. This is an iterative process with the people affected — those who should be engaged in the process of analysing their situation, their goals, strategies, etc.

Clarifying the issues

The focus of the Fundy Group's research has been very much around conservation issues (e.g., when approached by the media, they spoke of stock collapse). The Fundy group originally wanted to address the issue of the shift-of-effort by looking at its effect on livelihoods but DFO scientists minimized the importance of socioeconomic aspects and were only interested in conservation issues. Therefore socioeconomic and livelihood issues were left aside and not researched. However, environment
and society are clearly interlinked and both should be considered.

The discussion group came up with some possible general issues which seemed to be prevalent in the presentation and which should be clarified by the fishermen:

- Conservation issues — Overfishing
- Tenure issues — Temporary Vessel Replacement Policy (TVRP)
- Socioeconomic issues — Livelihoods

Livelihood issues could be documented by collecting data on decrease of incomes, the number of families leaving the area, the decreasing number of licensed fishermen, etc. This can also be presented as a cross-sectoral issue within the community by looking into how much local businesses will lose as a result of a decrease in population and less demand from the fishing industry. This issue could attract other sectors, such as forestry, because although they may not be affected by this particular issue, they may be confronted with similar issues in the future.

The discussion group felt that though convincing DFO may require a focus on conservation issues, engaging the participation of the wider community and, perhaps other government departments which could put pressure on the DFO, could best be done by addressing livelihood issues. For instance the number of houses for sale in the area could be the subject of a media item as a way of increasing awareness of the general public in Canada.

It should be noted that these are only suggestions made by the discussion group. In doing PR, the Fundy group must get the fishermen to clarify the issues they feel need addressing.

- Clarifying the issues is a validation of the issues by those affected to ensure that the action is on the right track or as directed by the larger membership. PR research can help clarify issues by and for local people.

- Clarify the issues results in the dissemination of information to all members, between members and also to other groups which may be sympathetic to the issues.

- Clarifying the time frame for action will ensure that the
issues are resolved on time. The group may identify issues that need addressing in the short term, middle term and the long term.

**Objectives and the research required to reach those objectives**

As the issues are clarified, the general and specific objectives of PR must be defined to begin designing a workplan for future action. In the Bay of Fundy case, the general objective (which should be validated) could be to bring about change in government policy. To reach the target or general objective, specific objectives need to be define. The following are examples of possible sub-objectives which could be considered strategies used to reach the goal:

- *Create a movement or organize a force to bear pressure on government:* Creating a movement could be an objective in itself in the sense that this movement or force can deal with other current or potential issues. Mobilizing a force should start with those directly involved — in this case the fishing community. However, power also comes in numbers and by involving other groups, even though not directly affected, the group can gain force. There are 2 possible ways of involving or engaging others: 1. Generalizing the issue to engage more groups or to broaden the participation. For instance, by defining the issue in terms of property rights may engage other local groups under threat of resource over-harvesting by non-local people in forestry, farming, clam harvesting, etc. 2. Breakdown the issues and see how each affects certain community groups and then consolidate. For instance, environmental issues are of interest to environmental groups while the decrease in population concern local businesses.

- *Document convincing facts to support the arguments:* Identify who could be convinced by what information or data. This may need the participation of other institutions, researchers, without losing control of the research.

- *Involve multiple levels of decision makers in the process:* To convince government, a good strategy would involve govern-
ment agencies as participants in PR. However, as with the previous point, there is a risk of the research being co-opted by somebody else (see How do we take an interdisciplinary approach in PR? p. 99).

- **Document other similar cases**: The strategy can be improved by studying other similar cases and how they tackled the situation. Lessons can be learned from others' efforts whether they were successful or not.

- **Disseminate information at multiple levels**: Has the group been looking too much to government to solve the issue? Different levels of action may be required. It can be part of the PR process to reach these levels and build connections. By the same token, who the group will convince may not the same as who it needs to convince. Can the group use PR skills to reach these other levels? Multiple levels may be reached by the 14 fishermen’s associations. However, it is often very difficult to broaden participation when such an issue has the potential to pit people against each other. The discussion focused on one of the levels—mass media. How to disseminate the information to the media in order to gain popular support for their case? How to sensitize Canadians living far from the coast and naive about the issues of coastal communities? Any media item presented is very brief providing limited time to express all the issues, all the angles and all the problems experienced in the community. It is important to find media items that catch the interest of media producers and that would touch or affect the maximum number of people.

**Who**

Who is involved in the PR process? (see Who is involved in PR? p. 12) For whom is the research? Who will benefit from the research? Who do you want to convince? There is a need to identify the targets groups or, for a more in depth analysis, a stakeholders analysis should be conducted to identify the following groups:

- **Main forces** — those directly affected
Allies — potential friends

Opposition — those in opposition of the main force

Ultimate target group — those with the power to change the situation

Identifying allies can help to broaden the participation. Allies can be church groups, educators, environmental groups and international agencies. Allies may not be permanent but can help in the course of the struggle. International support or pressure (either through support letters or public show of interest) may or may not produce results, but it will empower and give confidence to the main forces.

Involving external participants or allies entails some risk. The main forces may lose control over the research process and their strategies (see How do we take an interdisciplinary approach in PR? p. 99). Fishermen of the Fundy group were opposed to the involvement of an environmental NGO in their campaign because of past experiences with such organizations. One way to minimize the risk of losing control is to require all allies to sign a memorandum of understanding (MOU) which defines the roles and responsibilities of each group, the ownership of information and restrictions of actions. This could alleviate fears of partnering with external groups. A MOU can also be applied to a government scientist, other institutions and groups involved in participatory research.

For each objective there is need to identify the partners, strategies, allies and the information needed. Those may differ according to the objectives.

Summary statement

As in all particular research with a particular time frame, there is always a need to balance time and participation. To ensure that all those affected participate in the research takes time, which in this case is not available. The shift-of-effort problem needs to be resolved as soon as possible before the groundfish stocks in the Bay of Fundy are depleted. Investing some time in building participation will pay off with faster and better results in the end.
Context
Patricia Rhynold

Research Protocol

The Guysborough County Inshore Fishermen's Association position on research is that research projects (supported by the association) have to have a purpose that is relevant to the Association's members. All past research projects have been directed by the association, and facilitated by other institutions until this year. In 1999 the members decided to do research on an issue that was a priority to their group. The GCIFA developed the research question, worked out the methodology necessary to gather the data, analysed the results with the help of a researcher they had chosen, and compiled a report.

All research information and data collected in the past has been shared with other stakeholders. This is the approved practice for all GCIFA research. It is clearly stated in the bylaws of the Association that the object of the society is to share information on programs and projects and this includes research projects.
Statement

Guysborough County Inshore Fishermen's Association
Guysborough County, Nova Scotia

At a recent meeting of the Association it was agreed to and approved formally to continue with the research plans approved at the annual meeting. The Guysborough County Inshore Fishermen's Association and its staff are free to become involved in any such research project and agree to provide access to the results of any such project with any interested party as has been its past practice.

The Guysborough County Inshore Fishermen's Association are committed to doing participatory research as it has been their experience that the questions they want answered and the interpretation of the findings are not always shared by academics and/or government agencies. Perhaps it could better be explained in terms of priorities. The organization has members with skills and experience that with proper direction can be targeted toward research projects. The topics they would like studied and the relevance of the results may be different for our members than academics or government officials it is for this reason that they prefer the type of research where they can have a more "hands-on" approach.
Appendices
Appendix A. The Context

As mentioned throughout the discussions, the context in which Participatory Research is conducted is highly important to the introduction of PR, the approach, the process, the design of the project, the tools used, the results and the use of results. PR can not be replicated it can only be adapted! Just as context is important to PR, the context was very important in SI2.

CoRR and the Summer Institute Series

The Coastal Resources Research Network (CoRR) works with IDRC-supported projects to provide research advice, assistance in training, information exchange, publications, progress review and evaluation. CoRR has evolved from the earlier technical and enterprise-development oriented Mollusc Culture Network and has shifted to a focus on participatory and interdisciplinary approaches to research in support of CBCRM projects. To this end, CoRR assists researchers in developing skills for interdisciplinary and participatory research to work with coastal communities for the sustainable management and utilization of living coastal aquatic resources as a means to improve quality of life for resource users and attain sustainable livelihoods.

The Summer Institute series is one of many efforts of CoRR towards fulfilling its objectives. In June 1997, CoRR organized and hosted the first Summer Institute (SI) on Sustainable Livelihoods for Coastal Communities at Dalhousie University. The participants, from Cuba, Nicaragua, Cambodia, Indonesia, Philippines, Viet Nam, South Africa, Canada and the United States, came from a wide diversity of professional and disciplinary backgrounds (community organizing, fisheries, marine biology, physics, social work, sociology, law, etc.). It was a gathering of academics, government representatives, NGO workers, international development workers and researchers. Fishers and other coastal residents were not present although a weekend visit to Digby County on the Bay of Fundy, hosted and facilitated by the Fundy Fixed Gear Council, enabled exchanges between SI participants and members of a coastal community.

The goal of SI was to begin the development of curricula for
training programmes in Sustainable Livelihoods for Coastal Communities. And, as an output, CoRR put out a report which included process and outputs, country reports and the following very brief training modules:

- Coastal Resources Management,
- Research,
- Training on Culture for CBCRM,
- Environmental Education and Training,
- Community Organizing, and
- Training on Gender and CBCRM.

Although the meeting was very fruitful and enlightening for the participants, the report was not widely circulated. In part, it was because it was felt that the training modules were only a start and needed much more development.

The second of the Summer Institutes series, the Summer Institute on Participatory Research in Community Based Coastal Resources Management (SI2) was held in August and September 1999. For this meeting, CoRR developed the concept in conjunction with its old partners in the Philippines, Viet Nam and Cambodia as well as its new local partners, the Fundy Fixed Gear Council, the Marine Resources Centre in Cornwallis and the Centre for Community-based Management of St. Francis Xavier University. Discussions suggested that there was a need for a critical evaluation of experiences with PR to improve research effectiveness, and develop training materials for those working directly with coastal communities. CoRR hoped SI2 would provide a venue to begin this kind of discussion.

At the first Summer Institute in 1997, CoRR had invited participants who were involved in facilitating CBCRM programmes in developing countries. At SI2, the participant list was expanded not only to include those involved in facilitating CBCRM programmes in Atlantic Canada and US, but also members of those communities — thus widening the scope of experience and approach. This of course led to some trepidation as to whether the participants would find common interests and would all feel
comfortable sharing each other's experiences. Fortunately, our initial concerns proved unfounded; participants willingly shared their stories and the lessons they learned. We were all inspired and moved by tales of hope and struggle. Many commonalities were uncovered and discussed; commonalities not only in the issues and approaches used, but also in a shared philosophy and commitment as CBCRM practitioners.

Throughout all this, explicitly or implicitly, participatory research was recognized as a necessary prerequisite and complement to community-based management.

Why Participatory Research?

"Control by participants over the participatory research process is one important step toward empowerment at a global level. Participatory research is a tool which oppressed people can use to begin to take control of the economic and political forces which effect their lives." (Selener, 1997: 29)

Participatory research is an essential component of CBCRM. If a community is to manage its own resources, then community members must participate in the research which will lead to management decisions.

Participatory research involves the full and active participation of the community in the entire research process: definition of problem, choice of methods, analysis of data and use of findings. This level of engagement and critical participation in all stages of the research builds capacity within the community and generates knowledge required for CBCRM. The process of participatory research can create a greater awareness in people of their own situation and mobilize them for self-reliant development. Community participation in the research process facilitates a more accurate and authentic analysis of local conditions which allows for better information to be included in the management
plans required for CBCRM.

Thus, participatory research is an important strand in the CBCRM web. It is something we CBCRM practitioners do daily in the course of our work and yet it remains, more often than not, an ideal that always seems just a few steps away. We know it is important to our work, and in principle many different people are committed to “doing PR”.

Why a Summer Institute?

A belief in the importance of a particular task does not ensure a follow up commitment to actually doing this work, or in doing it well. In our work in and discussions about CBCRM, we realize that despite our belief that participatory research is essential to CBCRM, we are all often struggling with its actual practice. Sometimes we are not sure if what we are doing is really participatory (or empowering); and sometimes we wonder if we have allowed for enough time for local people to meaningfully participate in the research process. Most of all, we all feel frustrated at having much good research seldom used in the management of coastal resources.

At the same time, our work brings us into contact with some very exciting examples of empowering participatory research. There are many CBCRM practitioners who use participatory research in their work and they have evolved practices that should be getting wider attention: Participatory Rural Appraisal (PRA), commonly used in South East Asia, has been a very successful entry point for organizing communities and for advocacy campaigns; and in Atlantic Canada, work with fishermen is carried out to record their local knowledge of fish stocks and spawning areas. This type of information is the essential foundation for developing management plans at a scale that reflects ecological and social realities.

The rationale behind the 1999 Summer Institute on Participatory Research for CBCRM was to bring together a group of international participants with experience in participatory research in CBCRM to share their experiences, both positive and negative, in this work. We invited participants with whom we had prior links and who had expressed a willingness to reflect on and...
critically analyse their experiences in order to increase their knowledge and build their capacity for participatory research.

In some ways, the common link we have as a group is our interest in the theory and practice of CBCRM, and a desire to learn for our own and others experiences with various aspects of CBCRM to improve our work, share our successes and questions and find inspiration and support from like-minded individuals.

Where are the participants coming from?

While the group of SI2 participants have a common interest in participatory research for CBCRM, there are many differences in our backgrounds and contexts of which we have to be aware. Scattered throughout the chapters of this book, are “context statements” which offer an insight into the participants’ thoughts about participatory research. The context statements indicate a wide range of knowledge and comfort level with participatory research terminology and approaches.

Also scattered throughout this book are references to specific CBCRM research sites from which participants drew examples to illustrate their ideas or comments. These sites are described very briefly in the Glossary (p. 164).

In the Philippines context, participatory research is nearly always used interchangeably with PRA where information collection and analysis are conducted in a participatory manner with NGOs acting as catalysts for community organizing and social change. Tambuyog Development Center and Haribon Foundation are such NGOs. The College of Social Work and Community Development (CSWCD), at the University of the Philippines in Diliman, is also using and developing PRA tools.

There are few equivalents to NGOs in Viet Nam and Cambodia. Our participants first learned about participatory research through their involvement with IDRC funded coastal resources management programs. In Cambodia, the project involves staff from government offices and was represented at SI2 by staff from the Ministry of the Environment and from the Koh Kong Provincial Department of Fisheries. From Viet Nam, the project sent a lecturer from Hue University of Agriculture and Forestry,
one of 3 leading institutions in the project. In both countries, the research teams are in the process of learning how to most effectively promote more participatory approaches in very hierarchical societies. The flexibility of participatory research allows for its application in those very different contexts.

The Canadian participants offered yet another context from which to explore participatory research. A few of the participants came directly from groups working for CBCRM in their own communities (Guysborough County Women’s Fisheries Enhancement Association, Guysborough County Inshore Fishermen’s Association, the Fundy Fixed Gear Council and Fundy North), and while actively involved in the process of analysing their own reality as the first step to effective action, had never really had a name for the process they followed. They were delighted to be able to call their approach participatory research and realize that others were doing very similar work.

The participants from Canadian and American based institutions, on the other hand, are perhaps the equivalent to Filipino NGOs in the sense that they act as catalysts and resource people in the struggle to organize communities for CBCRM; they help community groups better articulate their own situation and plan for action. The Centre for Community-based Management at St. Francis Xavier University, has been active in promoting PR with fishermen’s groups in Nova Scotia and New Brunswick so for these practitioners, PR is not new. However, so far, participatory research for Canadian CBCRM has relied mainly on the tools that researchers have conventionally used to collect and analyse information, such as fish tagging and surveys. These scientific methods are used to answer the questions posed by fishermen’s associations about their fish stocks or to press for changes in government management. Many researchers in Canada and the US are unfamiliar with the range of PRA tools used to gather background information and to stimulate community discussions in the Philippines and elsewhere in South East Asia.

In short, history, politics and culture define the unique local and national context in which we work, and determine how we define and do participatory research in various parts of the world. Furthermore, on a personal level, participants had a wide
range of different levels of exposure and awareness of PR. Some of us first learned about participatory research from classes or other formal university settings; others later adopted a PR perspective into our formal training in community development, fisheries research, management, etc. Still others, discovered the term and theory of participatory research after years of experience with community-based research.

With our diverse nationalities, experiences, personal backgrounds and skills, our PR results in very different kinds of relationships with local communities, research projects and approaches to community organizing and fisheries management. It is no wonder we sometimes wondered if we were even talking about the same thing at all!

We have found, however, that this diversity provided us with an opportunity to learn much more. CBCRM takes place in a local context. We have found that by examining our own work, across diverse contexts, we are forced to ask some fundamental questions about participatory research for CBCRM. Therefore, despite a shared commitment to promote CBCRM, it cannot be said that everyone arrived (or left) SI2 with a universal definition or recipe for PR in CBCRM. Rather, participants brought a wealth of experiences with various aspects and approaches to PR and generously shared their hard-won lessons with each other. Everyone's understanding of PR was expanded through these interactions.
Appendix B. The Process

The process followed in any participatory research is important to note. In conventional research, the results are meaningless without a detailed account of the research procedure or methodology, whereas in PR, the process is essential in understanding of the results. From the presentation of the “results” of SI2, it is impossible to guess at the process by which we arrived to the publication of this book. Thus the following description of our process is important to readers involved in PR.

What did we do at SI2?

The First Week

We followed a similar style to that of the first Summer Institute in 1997. At both workshops, the cases and materials discussed sprang from the research projects and experience of the participants. Therefore, we started the meeting by sharing our stories — introducing ourselves and our work and projects. These introductions opened the lines of communication and exchange. They also highlighted the importance of the context in which participatory research takes place — a theme that appeared throughout the week’s discussions.

We then followed up the introductions by writing down key questions and issues each of us felt needed discussing. From a wall filled with cards, themes emerged and then 15 questions which we all agreed should be discussed. We spent the next 2 days as a whole group and in smaller groups sharing experiences and stories. We never fully answered the questions we raised but the in-depth discussions provided more insight and a broader view of the complexities and realities of doing PR. This process brought out many powerful statements, and underscored links and commonalities, not only in experiences, but also in the philosophy and vision shared by the participants. As well, sharing our difficulties strengthened our commitment to the struggle of establishing CBCRM.

After tackling our questions, we decided to use the ideas developed so far to brainstorm and suggest potential approaches for
real situations and questions facing some of the participants. We selected two case studies: 1) Fighting the Concentration of Fishing Effort in Canada’s Bay of Fundy Groundfishery; and 2) Community conflict in resource management in Prieto Diaz, Philippines.

After the presentation of each case study, we divided into 2 subgroups and discussed how PR could be implemented to solve the difficulties. These working groups yielded intense and stimulating discussions which the presenters agreed would be useful for their work. We put forth many questions and observations about using PR to build broader social movements; involving local fishers/fishermen in shaping the PR agenda; conflict resolution; inclusiveness in community-based management and the difficulties of addressing non-cooperative behaviour within a community or within a management association. No one had the definitive answers, but many creative ideas were put forward and discussed. We felt that asking these questions together is an important step in analysing our experiences.

As many of the Canadian participants could not commit to a second week of meetings, we parted ways but before doing so, discussed how the remaining CoRR participants should proceed in the synthesis of the discussions. Everyone also agreed that the results should include a 'context statement' from each participant — a statement roughly describing: What are the major factors influencing my approach to PR? What have I learned? What are my questions?

Community visits

We spent one day along a short portion of the Nova Scotia shore of the Fundy Bay to see first hand some of the issues facing these communities. Terry Wilkins, a local clam digger, brought us out on the clam flats and shared some of the difficulties and research needs facing local clam diggers. We also visited a stream restoration project and saw the fleet in Digby Town and the wharf in the community of Centreville. In the evening we participated in a community supper at the Sandy Cove Elementary School. Throughout the day, the people we met were eager to talk. These local interactions were a powerful reminder that as PR practitioners, we have only to look at the questions and
concerns of local people to find a wealth of potential research projects.

The Second Week

We were a much smaller working group during the second week as CoRR members reconvened in Halifax to synthesize the first week’s discussion with the intent of developing training materials for CBCRM-oriented participatory research. In the end, the type and content of material produced was based on the priorities identified by the participants during the first week. In order to make the lessons and experience of SI2 available to others, participants wished to produce a document that would reflect the richness and complexity of the first week’s discussion.

To this end, we worked primarily in small groups in which we were while discussing the questions and case studies. We concentrated on fleshing out rough notes and developing a common framework for presenting the material. At least one draft of each document was reviewed by the working groups and the other participants. This was a very intense process and we completed as much as possible of the write up before everyone dispersed.

A welcome change of pace occurred in the middle of the 2nd week when the Cambodia team presented their case study about the challenges faced in identifying sustainable livelihoods in and around the mangrove reserve. Subsequent discussions centred on how PR could be used in the process of livelihood development in Cambodia.

At the end of the second week, we had pared down our original notes into a manageable group of papers. The chapters of this book include the questions as they were worded originally. A few questions were grouped and answered together (thus resulting in a reduction from 15 questions to 12). They also include the 3 case studies (Philippines, Cambodia and Canada) and all the original context statements submitted by most of the participants.
Post SI2 Editing

The questions and case studies were further edited by the CoRR editorial team and then sorted and organized to form the chapters of this book. Thus the book does not follow the sequence of discussions but rather tries to arrange the questions, case studies and context statements in 5 chapters titled “What is PR”, “Participation”, “Context”, “Approach & Methodology” and “Use of PR Results”.

Appendix C. References


Appendix D. Glossary of Terms and Places

ITQ — Individual Transferable Quotas. The prevalent Canadian fisheries management system involves the establishment of a Total Allowable Catch (TAC) for each species. Its overall purpose is to allow for a sustainable level of catch by limiting the amount harvested. The TAC is determined by the DFO based on scientific modelling of stock health. Fisheries managers then divide this overall TAC between the various gear types and regions generally based on past catch histories. Individual quotas, however, are a relatively new management tool for the inshore fisheries. Under ITQs, each fisherman is granted an individual quota which s/he is allowed to sell or transfer to another vessel. Many independent fishermen are strongly opposed to ITQs because they favour fishermen and gear types that have harvested excessively and unsustainably in the past; leads to the concentration of quota in the hands of larger vessels; represents the privatization of a public good; and creates a hierarchy within communities of those who own quota and those who do not.

Fisher vs. Fisherman — In the international and political world, the word ‘fisher’ is used to denote men and women who harvest fish and other aquatic species. As the word is gender neutral, as are the equivalent words in many Southeast Asian languages, we have used the word fisher when speaking of the SE Asian contexts and case studies. However, in Canada, though DFO uses the word ‘fisher’, fishermen and women refer to themselves as fisher men and consider the word ‘fisher’ a derogatory name assigned by bureaucrats. Therefore, out of respect, when referring to Canadian fishermen we have used the word ‘fisherman’.

Barangay — a filipino village which is divided into sitios or hamlets.
Peam Krasaop, Koh Kong, Cambodia is the location of an IDRC-funded project — the Participatory Management of Mangrove Resources (PMMR) project which is conducted by the Ministry of the Environment (MoE) in Cambodia and began in 1997. More about the area and the project is described in the case study “Sustainable Livelihoods in Peam Krasaop Wildlife Sanctuary, Cambodia” on page 71.

Tam Giang Lagoon, Hue, Vietnam is the location of an IDRC-funded project “Management of Biological Resources in Tam Giang Lagoon” which was started in 1995. The research is conducted by 3 institutions - the Hue University of Agriculture and Forestry, Hue University of Science and the Provincial Department of Fisheries. The main research sites are 2 communes, Quang Thai and Phu Tan, located on the coast of the lagoon.

Prieto Diaz, Sorsogon, Philippines is the location of a project by the Tambuyog Development Center. A description of the area and concerns of fishers is described in the case study “Community conflict in resource management in Prieto Diaz, Philippines” on page 32.

Bolinao, Philippines, is the location of an IDRC-funded project carried out by Haribon Foundation focussed on research about community organizing and livelihoods. There has been an IDRC project in Bolinao since 1995 with various institutions involved.

Anda, Philippines is the neighbouring province to Bolinao where the College of Social Work and Community Development (CSWCD, University of the Philippines, Diliman) has been working on community organizing and ecosystem based management.

Guysborough County, Nova Scotia, has a strong group of women who began the Guysborough County Women’s Fishery Enhancement Association (GCWFEA). In 1998, the St. Francis Xavier Extension Department organized kitchen meetings for women to discuss fisheries issues. From there, this association was born. In addition to a scallop enhancement project, they have been struggling with the proposed establishment of a rainbow trout aquaculture facility in Whitehead.
Fundy Bay, Nova Scotia and New Brunswick, is the site of a cooperative effort by fishermen to manage the area for sustainable use. More about the area is described in the case study “Fighting the concentration of fishing effort in the Canadian Bay of Fundy groundfishery” on page 136. The Bay of Fundy Marine Resource Centre (MRC), where the first week of SI2 was held, is located in Cornwallis Park in Nova Scotia. It is a community based institution with offers services, facilities and technical support to all sectors of the marine economy and ecosystem. It was established by the Western Valley Development Authority (WVDA) and the Fundy Fixed Gear Council (FFGC) in 1997.

Cobscook Bay, Maine, USA, is the site of a community development project which began in 1993 and is housed at the Cobscook Bay Resource Center in Eastport, Maine. The Cobscook Bay Clam Restoration Project aims at restoring the clam industry which has supported Maine fishermen for generations.

In the Caribbean, IDRC has funded a new project coordinated by the University of Laval in Quebec on Community Based Management. At the time of SI2, the project was in the initial stages of planning. The aim of the project is to assist local groups and institutions to do participatory research in management of resources.
Appendix 1. List of Participants

Francisco Aguilar
Tambuyog Development Center
Rm. 108-A, Philippine Social Science Center Building
Diliman, Quezon City, Philippines 1101
Fax: 63-2-926-441563-2-922-9621
Tel: 63-2-922-9621
Email: tdcaod@skyinet.net, freejet@usa.net

Khy An
Participatory Management of Mangrove Resources (PMMR)
Ministry of the Environment
48 Samdech Preah Sihanouk Blvd.
Tonle Bassac, Chamkarmon, Phnom Penh, Cambodia
Fax: 855-23-427-844
Email: moecoast@forum.org.kh

Orlando Arciaga
Haribon Foundation
#9 Malingap corner, Malumanay St. Teachers’ Village
Diliman, Quezon City, Philippines
Fax: 63-2-925-3331
Tel: 63-2-925-3332
Email: science@haribon.org.ph, marine@l-manila.com

Veronika Brzeski
Coastal Resources Research Network (CoRR)
RR #4 Baddeck
Nova Scotia, Canada B0E 1B0
Fax: 902-929-2299
Tel: 902-929-2757
Email: veronika@ns.sympatico.ca

Arthur Bull
Bay of Fundy Fisheries Council
RR #4 Digby
Nova Scotia, Canada B0V 1A0
Fax: 902-834-2958
Tel: 902-834-2958
Email: arthbull@clan.tartannet.ns.ca
Toby Carson
Community Based Natural Resource Management
World Wide Fund for Nature (WWF)
#28 Street 9 Tonle Bassac
Phnom Penh, Kingdom of Cambodia
Tel: 855-23-218034, 855-16-828528
Fax: 855-23-211909
Email: tobyc@bigpond.com.kh

Marina Conway
R.R. #1 Canso
Nova Scotia, Canada BOH 1H0
Tel: 902-366-2460
Email: marina.conway@ns.sympatico.ca

Elmer Ferrer
College of Social Work and Community Development
University of the Philippines, Diliman Campus
Quezon City, Philippines, 1101
Fax: 63-2-929-8438
Tel: 63-2-922-4567
Email: emferrer@pacific.net.ph

Jennifer Graham
Coastal Resources Research Network (CoRR)
1321 Edward Street
Halifax, Nova Scotia, Canada B3H 3H5
Fax: 902-494-1216
Tel: 902-494-1656
Email: grahamja@nb.sympatico.ca, grahamja@is.dal.ca

Will Hopkins
Eastport Maine Clam Diggers Association
Eastport, Maine, U.S.A.
Tel: 207-833-6607
Email: wilhopkins@nemaine.com

John Kearney
Extension Department
Saint Francis Xavier University, PO Box 5000
Antigonish, Canada B2K 2W5
Fax: 902-867-5154
Tel: 902-867-2317
Email: jkearney@juliet.stfx.ca
Appendices

Lana Langille
33 Vaughn Creek Rd
St. Martins, New Brunswick, Canada E0G 2Z0
Tel: 506-833-4889

Pauline MacIntosh
Extension Department
Saint Francis Xavier University, PO Box 5000
Antigonish, Canada B2K 2W5
Fax: 902-867-5154
Tel: 902-867-5130
Email: pmacinto@juliet.stfx.ca

Melissa Marschke
358 Dickens Drive
Oshawa, Ontario, Canada L1K 1N5
Tel: 905-723-6567
Email: dfmmi@idirect.com, marschke@hotmail.com

Jason Mullen
Department of Biology
Dalhousie University
Halifax, Nova Scotia, Canada B3H 4J1

Corinne Munroe
Guysborough County Women’s Fisheries Enhancement Association
Box 17, RR #2, Larry’s River
Guysborough County, Canada BOH 1TO
Fax: 902-358-2180
Tel: 902-358-2180

Gary Newkirk
Coastal Resources Research Network (CoRR)
1321 Edward Street
Halifax, Nova Scotia, Canada B3H 3H5
Fax: 902-494-1216
Tel: 902-494-2284
Email: gary.newkirk@dal.ca
Kim Nong
Participatory Management of Mangrove Resources (PMMR)
Ministry of the Environment
48 Samdech Preah Sihanouk Blvd.
Tonle Bassac, Chamkarmon, Phnom Penh, Cambodia
Fax: 855-23-427-844
Email: moecoast@forum.org.kh

Maria Recchia
Centre for Community-Based Management
352 Mascarene Rd.
Mascarene, New Brunswick, Canada E5C 2R9
Fax: 506-755-7837
Tel: 506-755-2893
mariar@nb.sympatico.ca

Pat Rhynold
Guysborough County Inshore Fishermen’s Association
R.R #1, Canso
Nova Scotia, Canada BOH 1H0
Fax: 902-366-2460
Tel: 902-366-3411
Email: patrhynold@ns.sympatico.ca

Becky Rivera-Guieb
Community-based Coastal Resource Management Resource Center (CBCRM RC)
107-A PSSC Building, Commonwealth Avenue
Diliman, Quezon City, 1101 Philippines
Fax: 63-2-9203368
Tel: 63-2-9203368, 4538974
Email: becky@netgazer.com.ph

Katherine Savard
Community-Based Coastal Resource Management program in the Caribbean
Département d’anthropologie
Université Laval
Sainte-Foy
Québec, Canada G1K 7P4
Email: katherinesavard@hotmail.com
Truong Van Tuyen  
Tam Giang Lagoon Project  
Hue University of Agriculture and Forestry  
24 Phung Hung Street  
Hue City, Viet Nam  
Fax: 84-54-824923  
Tel: 84-54-823540  
Email: tvtuyen@dng.vnn.vn, tvtuyen@yahoo.com
The group assembled in the photograph are the authors of this book. Their stories, experiences and writings were shared during the Summer Institute on Participatory Research in Community Based Coastal Resources Management, 1999. From South East Asia and North America, these community members, CBCRM facilitators and practitioners, academics and NGO workers have special stories to tell about their communities’ attempts at gaining control over the management of resources. CBCRM is still a struggle with many obstacles, some similar and some different depending on the context. This context has an enormous influence on how PR and CBCRM are carried out and applied. Let us share our learnings with you!