

**Methods of Consensus Building for Collective Action: Community Based
Aquatic Habitat and Floodplain Fisheries Management in Bangladesh and the
Mekong Delta**

by

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Methods of Consensus Building for Collective Action: Community Based Aquatic Habitat and Floodplain Fisheries Management in Bangladesh and the Mekong Delta¹

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Abstract

Experience in community-based natural resource management in Bangladesh has shown that consensus building among all stakeholder groups in the communities that use and benefit from the resources is an essential element of collective action. A method of consensus building initially developed in Bangladesh in collaboration with partners from the UK and Bangladesh, and funded by the UK DFID, is now being applied in both Bangladesh and the Mekong delta. This paper describes the process in the context of building social capital through consensus, and compares the outcome of a consensus building workshop conducted in a Vietnamese village in the Mekong delta as part of a community-based aquatic habitat management project with the outcomes of a similar process conducted in an area of floodplain in Bangladesh.

In Vietnam the objectives were to: strengthen the capacity of the research partners from Can Tho University (CTU) in participatory natural resources management; assist the local community to gain a shared understanding and common management strategy for their own resources; and translate group discussion and learning initiatives into an action plan. The process provides a clear analysis of problems, their causes and solutions. It also identifies the collective actions that are needed to arrive at preferred solutions, and determines the potential impacts on different stakeholders and responsibilities for implementation, monitoring and evaluation. In Vietnam these outputs of village level consensus building were validated with the local, district and provincial government authorities through a subsequent workshop. The plan is currently being implemented by the community itself and the local people's organization, with research support, technical inputs and training from CTU and ICLARM funded by Oxfam America's Mekong Learning Initiative (MLI).

Introduction

The main objectives of the projects reported here were to develop and test a methodology for building consensus among stakeholders for sustainable management of common property natural resources (particularly inland fisheries and aquatic resources) that would identify win-win options, taking into account the interests of different stakeholders, that could improve the condition of the resource base for users. The methodology developed for consensus building has been named Participatory Action Plan Development (PAPD) and involves holding a series of linked local workshops where different stakeholders around a waterbody participate separately and in plenary to develop a management plan for the aquatic common resources they use. The method is inclusive and participatory and is designed to encourage participants to express their views without the process being dominated by locally powerful and vocal people, and to develop a shared framework of understand about resource management

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The problem census with the local resource users/stakeholders tried to develop with the participants a common view of the important problems the villagers face in managing the land and water resources upon which their livelihoods are largely dependent. The key features of the method are: to work with each category of stakeholders separately to identify and rank their problems, for all stakeholder groups jointly to agree on the priority problems. Then, for the stakeholder groups separately to analyse possible solutions and their impacts, before meeting in plenary to share their analysis and form a consensus on win-win solutions and actions, before lastly preparing in more detail an action plan for natural resources management.

This paper summarises some of the rationale and context for the method adopted, the method itself, and gives examples of the process and outcomes in two applications – in Bangladesh and a subsequent adaptation and extension of the method in Vietnam. The Bangladesh study involved not only method development and testing, but also a literature review and review of other related participatory planning methods, process assessment of the applications and formal before-after, with and without interview surveys to assess social capital and attitudes to the consensus building process. This is reported in detail in Barr and Dixon (2001) and associated supporting volumes.

Issues Related to Common Property, Building Consensus and Social Capital

Efforts to improve management of inland fisheries through community participation in Bangladesh have shown that some form of common property regime (whether formally recognised rights over state waterbodies devolved to user groups or informal community rights over seasonal common pool resources) and facilitated local institution building were essential (Thompson et al. 1999; 2001). But it was also found that a wider measure of consensus among the full range of local stakeholders was sometimes lacking although it is a prerequisite for success. In Bangladesh a method was developed and tested in three sites (one is reported here) for building consensus among different stakeholders covering analysis of natural resource management problems and their solutions. However, the project did not allow detailed planning and revalidation of the plans with the stakeholders whose livelihoods and assets were assumed to be directly affected by the plan. This raised questions over the extent that the process would be appropriate to achieve full consensus among different interest groups and also to find out ways to resolve conflicts, and this has been addressed in the application in Vietnam.

The original design of the PAPD (Problem Census-Village Workshop) addressed the need, emerging from systems research on the floodplain (Barr 1998), for a more holistic approach to floodplain resource management. Thus two principles of holism underpin the approach:

1. *Heterogeneity*: the belief that the floodplain population is not socially or socio-economically homogeneous, and therefore that different socio-economic groups pursue different livelihood strategies. The approach promotes recognition of the concerns of all stakeholders in floodplain resource use. The systems approach in particular recognises that primary stakeholders are not an homogenous group; they have a diversity of resource use patterns, production activities, and livelihood strategies, which for any particular group may impinge on the production activities of other groups and vice versa.
2. *Inclusivity*: the belief that representatives of the different identified floodplain user groups (stakeholders) should participate in the appraisal and planning process. Since the objective of the process is the identification of interventions to improve floodplain

resource management that are acceptable to all resource users, it is important that the perspectives of the different groups be explored and taken into account in a 'shared-learning' process.

The design also recognises that local socio-political structures may privilege the voice of some groups above others, and therefore that the process should seek to enable the voices of the disadvantaged and less powerful to be heard. Such action research is deliberative, inclusive, and participatory. It is also recognised that there are other ('secondary') stakeholders who have an interest in floodplain natural resource use and its potential impacts (for example on wildlife and the environment), and that these interests also need to be taken into account in the process.

The PAPD process leads to joint learning about social and biophysical interdependencies among users, and between the resources they manage. In the context of managing common pool resources, this is an essential basis in the search for and implementation of improved resource management solutions. Many methods aim to raise individual awareness of resource management problems; this method raises collective awareness of the problems and leads towards collective action that can tackle them most effectively.

Measurement of the outcomes of the PAPD process was also an issue, questions that arose in designing the study included: how much the participants in the PAPD process would learn about each other's livelihoods, and about each other's use of aquatic common pool resources (CPRs)?, how much their awareness of the issues in management of aquatic CPRs and the possible solutions to improve the management would be raised?, what agreements would be reached over management of CPRs?, and ultimately how many actions would be taken? Eventually, what measurable improvements have there been in biodiversity, fish populations and production?

Possible indicators and approaches to assessing the impacts of the consensus building process included:

- assessment of changes in level of cognitive social capital
- economic investment games to assess trust and reciprocity
- qualitative assessment of criteria related to process
- level of inclusivity/representation
- extent of common issues/goal
- follows principles of civil discourse (openness; all can speak)
- adapts and incorporates high quality information (aware of the science)
- encourages challenging assumptions
- maintains interest of participants
- consensus sought only after full exploration of the issues
- decline in reported conflict (e.g. steeling/poisoning fishes), but this makes the assumption that conflict is the antithesis of consensus, which is not clearly established.
- methods from Alternative Dispute Resolution (ADR) - these are more conflict focused, and more focused on outcomes.

One approach for assessment of attitude changes of the participants utilises tools recently developed by the World Bank for measuring Social Capital as a part of the Sustainable Livelihoods (SL) framework. Krishna and Shrader (1999) use a conceptual framework that separates micro and macro levels of SC. The macro-level relates to the institutional context in which organisations operate. The micro-level is relevant to this study. Two types of micro-level SC are identified:

1. *Structural social capital*: this includes the composition and practices of formal and informal local institutions that serve as instruments of community development. “Structural SC is built through horizontal organisations and networks that have collective and transparent decision making processes, accountable leaders, and practices of collective action and mutual responsibility”. Structural social capital facilitates people or communities to take collective actions through established roles and social networks, supplemented by rules, procedures and precedents (Krishna and Uphoff 1999).
2. *Cognitive social capital*: this refers to values, beliefs, attitudes, and social norms. ‘Values’ includes co-operation and “the trust, solidarity and reciprocity that are shared amongst members of a community and that can create conditions under which communities can work together for a common good”. Cognitive social capital predisposes people and communities towards collective action on the basis of shared norms, values, attitudes and beliefs.

Krishna and Uphoff (1999) state that cognitive and structural social capital are interactive and mutually reinforcing, but they distinguish between them as follows: structural social capital is relatively objective; it includes things that are visible or tangible, and can be devised through group deliberation. It is external as it can be observed and directly modified. “Cognitive social capital is essentially subjective, being a matter of how people feel and think.” It is internal, residing within peoples’ heads, and not easily changed.

Assessing structural social capital is closer to monitoring quantitative outcomes of consensus building efforts. Therefore for assessing impacts of the PAPD process an attempt was made to assess levels of cognitive social capital, recognising that this is difficult to change.

PAPD Methodology

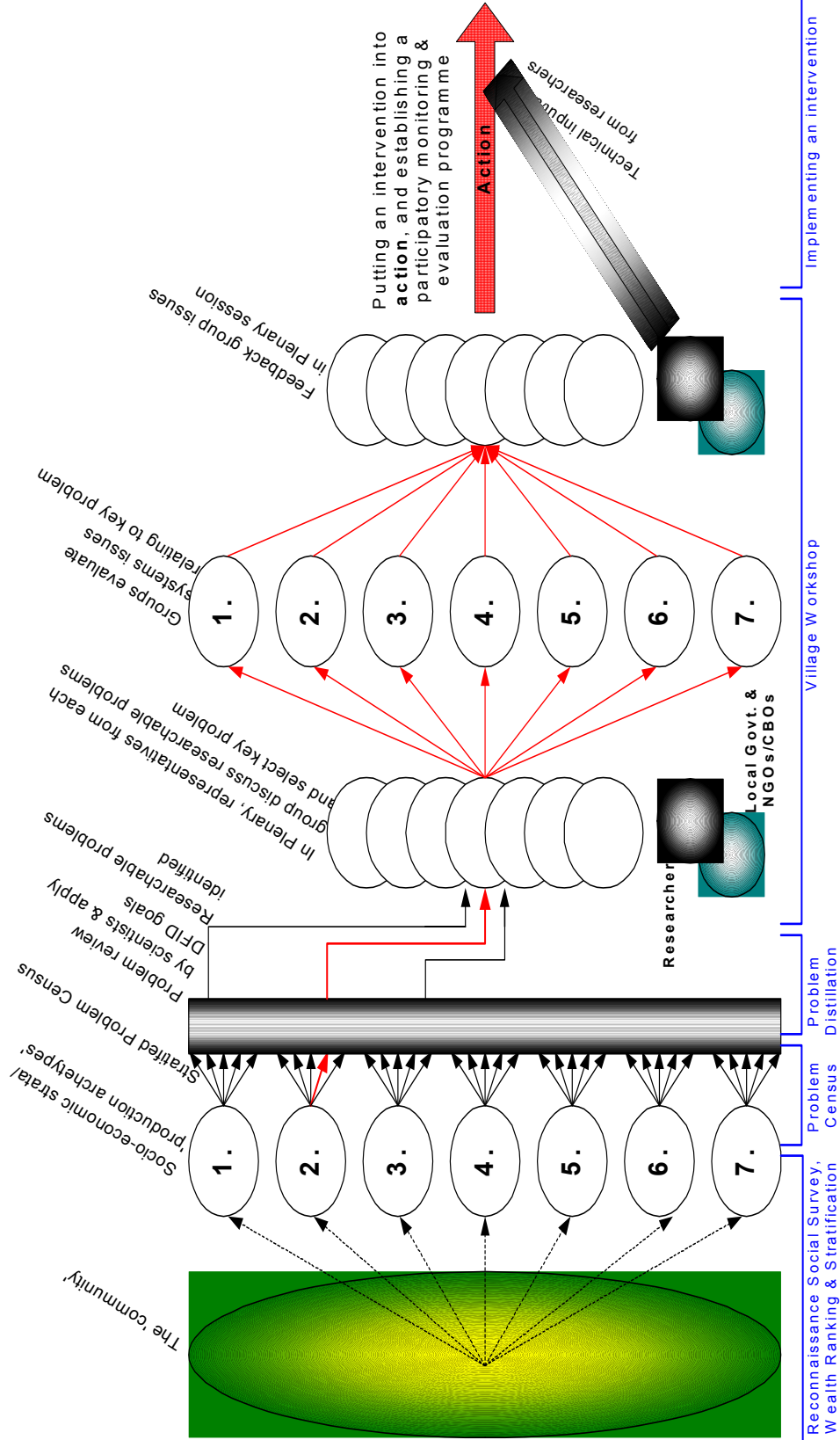
As originally conceived, the Participatory Action Plan Development (PAPD) method was seen as a two-stage process:

- problem census
- stakeholder and plenary workshops in the village (village workshop/planning workshop)

Through the process of applying and testing the PAPD process, it has evolved as reported here into a seven-stage process (Figs. 1 and 2) comprising:

1. Situation analysis (*including local knowledge on organisations and institutions*)
2. Reconnaissance social survey and stakeholder analysis
3. Problem census
4. Clustering of problems (distillation)
5. Planning workshop
6. Development of institutions to implement action plan
7. Implement action plan

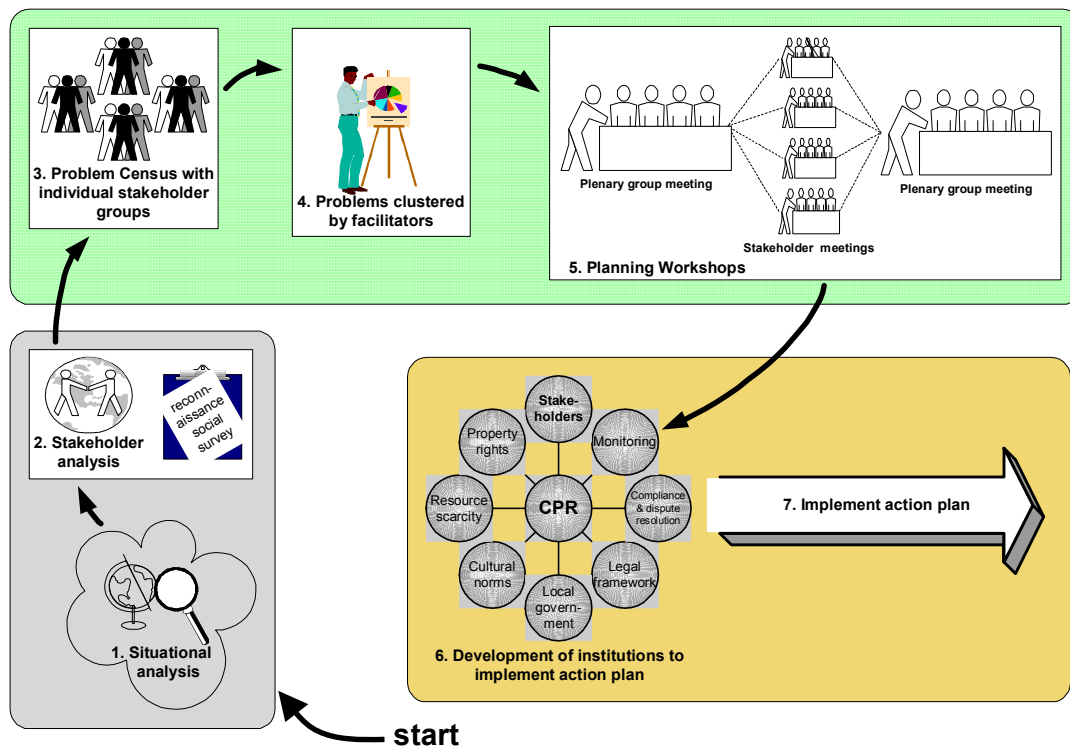
There continue to be a core of activities (Activities 3–5.) that involve participatory workshops with both stakeholder groups and plenary sessions, in which perspectives on natural resource management are expressed and shared. It has been these three stages which have been the main focus of action-research, as it is here that the substantive consensus is built.



after Barr et al (2000)

Fig. 1. Schematic of the PAPD (problem census – village workshop) process.

Fig. 2. The seven stages and three phases of the PAPD process.



Stages 1-5 were followed in both examples reported here, but in the Bangladesh site the larger action research project that will help develop local institutions for making a detailed action plan and will then support its implementation only started activities at the end of 2001.

In Vietnam, the local people's organization was directly involved in the process, based on capacity building in previous years, and so the stakeholders followed through to prepare the detailed implementation design where they modified institutions to define each stakeholders' roles and responsibilities in improving resource management and participatory monitoring and research. They set rules for fish conservation and environmental management including sanctions (punishment) for violators. However, another stage in PAPD arose between or overlapping with stages 6 and 7. After detailed planning, the individual interest groups reviewed the plans and some individuals came up with different problems. These mainly related to households living next to the resources where physical interventions were planned and who anticipated negative impacts from re-excavation or specific rules. They started to disagree with the plan so in response the research team organized meetings with each individual interest group and the hamlet leaders (government and non-government). Through one-to-one problem identification and alternate solution analysis on an individual basis it was possible to allay fears in some cases and to agree alternative means of implementation to avoid conflicts or potential negative impacts. In this way the common consensus on benefits was retained and an ownership process even among people who were skeptical of the plan was built-in.

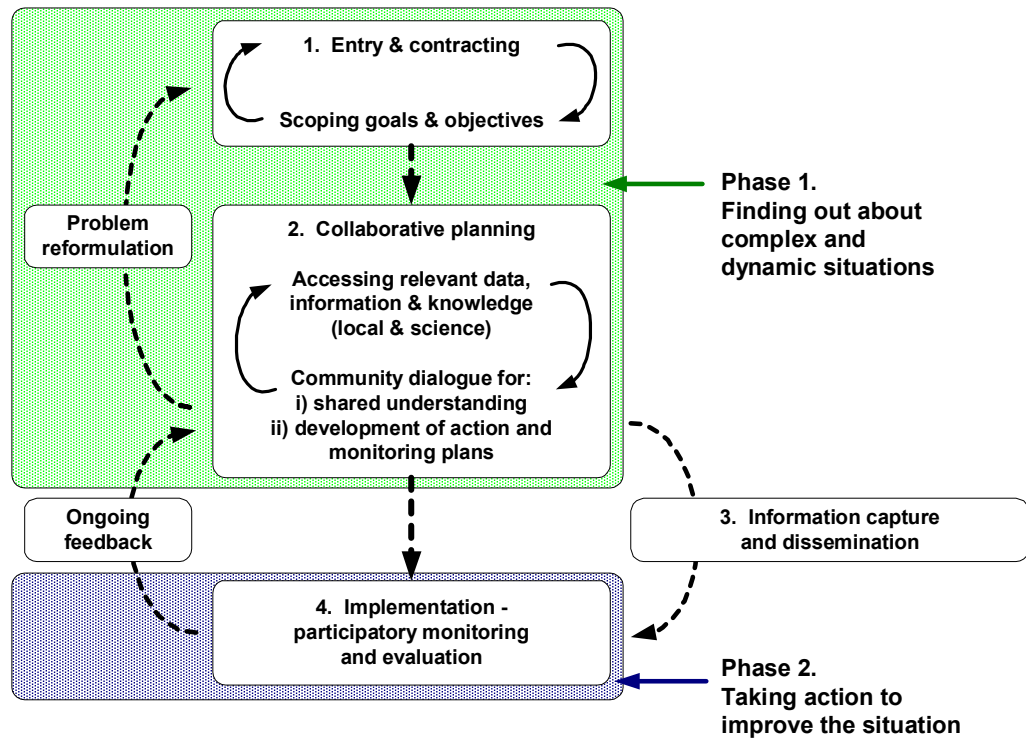
The whole PAPD process may thus be viewed as three phases:

- | | |
|--|---------------------------|
| 1. Scoping phase | <i>Activities 1 and 2</i> |
| 2. Participatory planning phase | <i>Activities 3 to 5</i> |
| 3. Implementation (institution building, problem solving for individual stakeholders and management) phase | <i>Activities 6 and 7</i> |

A similar phased approach to community-based resource management projects has been developed elsewhere, for example Pomeroy (1998) with three phases for fisheries co-management projects (Table 1) and Allen *et al* (2001) with four steps in two phases for integrated systems of knowledge management in projects for animal pest control (Fig. 3).

Table 1. The three phases of community-based resource management projects.

PAPD	Fisheries co-management (Pomeroy, 1998)
1. Scoping phase	Pre-implementation
2. Participatory planning phase	Implementation
3. Implementation / management phase	Phase-out / post-implementation



after Allen *et al* (2001)

Fig. 3 A participatory research framework to facilitate the identification and introduction of more sustainable resource management practices

These frameworks or phase models work equally well in relation to research and participatory development. They all involve a finding out phase, an information sharing and mutual learning phase, and an action phase. The steps in the Allen *et al* (2001) framework are particularly structured so as to create an effective learning environment.

Participatory processes are often mistakenly considered only in terms of their products – the resource maps, calendar charts and matrix tables that are created. These are an essential part of the process in order to know the situation better and the timing of different livelihoods activities. They also give insight into the historical background of natural resources depletion and management. The fact is that if participatory processes, such as PAPD, are to result in agreements for sustainable collective action by a range of diverse stakeholders, then the participants need to learn about each other and their different understandings of the environment. In PAPD, this mutual learning occurs in phase two.

In the following sections, the PAPD process is explained and reviewed as it evolved by illustrating the process in its three phases in a site in Bangladesh and a site in Vietnam.

Scoping Phase

Stage 1. Situational Analysis

Theory, general issues

In some cases, PAPD has been, and will in the future, be carried out in locations where the facilitating organisation (commonly an NGO) has already been working. This makes the scoping phase easier as the organisation should have a good understanding of the bio-physical, socio-economic and cultural environment of the area. This was the case in this project, as ICLARM/CTU and ICLARM/Banchte Sekha had already worked in the two sites discussed in this paper during respectively the first phase of the Mekong Learning Initiative (MLI) and the first phase of the Community Based Fisheries Management (CBFM) project.

Where the facilitating organisation does not have prior experience of the area, there is a need to find out about the communities in the location, obtain an appreciation of the natural resource systems and sub-systems, and understand the level of interaction between communities and resource systems. This activity might be called “situational analysis”, but obtaining this preliminary understanding of the system does not need to be a formal



Resource mapping – Kathuria, Bangladesh

Participatory Rural Appraisal (PRA) exercise, though PRA tools such as participatory resource mapping are useful. It utilises what would be considered good practice in any scoping or rural appraisal exercise: speaking to a number of local functionaries and key informants and triangulating what they say, walking around the area and observing systems of natural resource management. This provides some insights for the facilitators, which they will call upon during the PAPD workshops, when they try to draw out constraints and possible solutions.

Application – the study sites

Kathuria Beel covers about 100 ha in southwestern Bangladesh. The beel has two parts –the beel itself and an adjacent canal (khal). The beel is in one sub-district but the attached water control structure and drainage canal lies in another subdistrict. Most of the users of Kathuria Beel live in five adjacent villages (Benahati, Hatiara, Bakri, Dogachi and Goranas). The land in the beel area is privately owned by different landowners. The canal is state property and a project of the Local Government Engineering Department is trying to establish a group to control the canal for water retention and aquaculture, but during the PAPD process it was found that most of the people living around the beel were strongly in opposition to this initiative since only a few local leaders have been involved. During the rainy season the beel and the khal boundary merge in one sheet of water and are a common fishery for all the residents of the area. After the rainy season fish become trapped in the beel as well as in the khal and are also a common fishery except that some of the water area adjacent to individual homesteads is enclosed by bamboo fences at the end of the rainy season for culture of fish and privately owned ditches in the beel are used as catch ponds for private fishing. During the dry season the entire beel dries up, with just a limited amount of water remaining in the khal. The khal was re-excavated a long time ago but now has silted up.

Although the PAPD applied to An Binh Village as a whole, it focused on Loi Du-B hamlet which is the lowest lying and most rural part of the village. This part of Can Tho Province is one of the most densely populated areas in the Mekong Delta and majority of the population rely on aquatic resources for subsistence. The hamlet has a population of 2,984 people. Between 1997 and 1998, the population growth rate was 1.3%, mainly from in-migration. There are more female residents in the hamlet (54%), but men account for 80% of the 30% of the total population that comprises the active labour force. There are 629 households of which 2% are poor and landless. This hamlet is situated along the Rau Ram Channel, which is connected to the Mekong by the Can Tho river. Because of the hamlet's proximity to the river system, its economic activities are interspersed with and highly dependent on the dynamics of the Mekong River. The river system provides access to very diverse aquatic resources that support the livelihood of the community but problems in the Mekong River also negatively impact their wellbeing.

Loi Du-B hamlet has a land area of 162 ha, 97% of which is devoted to agriculture. The main economic activity in the hamlet is farming, although households depend on fishing for daily subsistence and home consumption. The agricultural area is characterised as semi-deep water regime and 93% are predominantly planted to irrigated rice, allowing at least two rice crops a year and one cash crop such as maize. Perennial crops such as banana and citrus are found in the orchards that occupy some 64 ha.

Further situational analysis was done in the PAPD process in the workshops with each stakeholder group, for example to compile seasonal calendars (Fig. 4) as a reminder in understanding seasonality of problems and impacts of possible solutions, and to chart key events to better understand trends and changes affecting natural resources (Fig. 5).

Fig. 4. Consolidated seasonal calendar from Vietnam site.

Months	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Paddy cultivation												
Fish raising												
Small trade												
Labouring												
Fishing												
Noodle production												
Gardening												
Tailoring												

Fig 5. Key events in An Binh, Vietnam in past 25 years.

1975:	Fish catches start declining
1976:	Fish disease
1978:	Cooperative movement, start to grow 2 crops a year, Flood, HYV variety, Fish declined due to abstracting more water for irrigation
1979:	Low yield of rice due to rice disease
1979:	Deep flooding
1983-84:	Introduced 3 crops/year
1992:	First electricity in the village
1994-95:	Outbreak of brown hopper (rice pest)
1996:	First elementary school in the village
1997:	Deep flooding (1.7 m)
1998:	Re-excavation of Nga ngay canal and bridge over Ram Rau canal
	Road constructed along the Nga ngay canal
2001:	Foot and mouth disease (pig disease outbreak)

Stage 2. Stakeholder analysis

Theory

PAPD is fundamentally a stakeholder-based process. Initially, key informant discussions are used to identify the locally relevant stakeholder groups. This can occur as part of the situational analysis. Given the largely agrarian nature of the rural population and the natural resources focus of the PAPD, these stakeholder groups tend to relate to the main resource use activities. However, socio-economic status and gender are also considered in constituting these groups. Gender is particularly included to ensure coverage of the livelihood problems of some of the most disadvantaged groups on the floodplain – women from landless households.

The census is designed to incorporate locally relevant indicators of socio-economic status, such as ownership of a tube-well or type of fishing gear owned, as well as nationally relevant indicators such as land ownership. All households in the location are included, and households are classified into locally appropriate stakeholder groups, but they also have a shadow classification on national indicators, which can be used for further analyses. The scoping phase also serves to familiarise the facilitating team with the geography of the location, so that participants can easily be located and invited to the workshops. It also builds rapport with communities in the area and builds awareness of the process at an early stage.

In a heterogeneous community with a range of interest and influence groups, it is clearly important to get representation and participation from this diverse set of stakeholders. This is unlikely to occur through a passive approach, such as announcement of a village meeting or posting notices. An active, or even aggressive, approach to meeting design and recruitment of stakeholders is necessary to ensure that traditionally marginalized groups are represented (McCool and Guthrie, 2001).

Application: census and participant selection

Thus in Bangladesh, as found in previous research (Barr *et al*, 2000), a functional indicator of socio-economic status is size of land-holding. Principal occupation has been found to be a functional indicator of the major resource use activity for natural resource-dependent households. Therefore, following key informant discussions, the process used a census to characterise households. This included land ownership and principal occupation, and was used to categorise households into one of the stakeholder groups.

A census of all households in the communities using the concerned resources was made as explained above. Table 2 shows the stakeholder categories used. In Bangladesh kua (ditch) owners were identified as a special interest group since they are landowners and own ditches that they rely on as fish aggregating devices. In Vietnam landholding sizes did not vary greatly, but whether the household had fish ponds, and/or an orchard was significant in its livelihood diversification. Active recruitment to the PAPD was followed in Bangladesh by taking a random sample of about 18 households from each category and they were individually informed and invited to the PAPD process (most accepted but a few refused and alternates were invited). In Bangladesh they were also interviewed at that time using a questionnaire designed to assess various dimensions of their social capital particularly as it related to common property resources and collective action. So that these largely resource poor households were not disadvantaged since they gave up a working day for each day of the PAPD that they attended, they were paid an amount equal to the local daily labouring wage rate. In Vietnam all the households living next to the canal were included in the PAPD, and random samples proportional to population from the rest of the village.

Table 2 Communities and samples involved in consensus building by stakeholder category.

a) Kathuria Beel, Bangladesh			b) An Binh village, Vietnam		
Groups	Total HH	No participated	Groups	Total HH	No participated
Fisher	114	17	Landless	512	17
Landless women	151	16	Rice + Orchard+ Fish	632	21
Large Farmer	171	16	Rice + Orchard	934	31
Kua owner	48	17	Women dominated	904	30
Small Farmer	403	17	Total	2471	99
Landless men	151	17			
Total	887	100			

In Bangladesh two samples were drawn from the landless households (one of men and one of women). "Landless" was defined as up to 0.2 ha (0.5 acres), margina-small farmer as 0.2-0.6 ha (0.5-1.5 acres), and medium-large farmer as over 0.6 ha (1.5 acres).

In Vietnam landless was defined as only owning homestead land, women dominated households were those where women provide the main sources of household income.

Participatory Planning Phase

Theory and design

The participatory planning phase involves six separate activities in three stages (Table 3). These are the spaces in which stakeholders formulate and develop a common understanding of the perceived issue (Allen et al, 2000).

Table 3. The six activities in the participatory planning phase.

Stage	Purpose	Format
3.	Problem census	Individual groups
4.	Cluster and review group findings	Facilitators only
5.1	Group introduction and Problem census synthesis	Plenary
5.2	System appraisal & feasibility analysis	Individual groups
5.3	Compile group findings into summary charts	Facilitators only
5.4	Developing a shared framework of understanding and taking steps to an action plan	Plenary

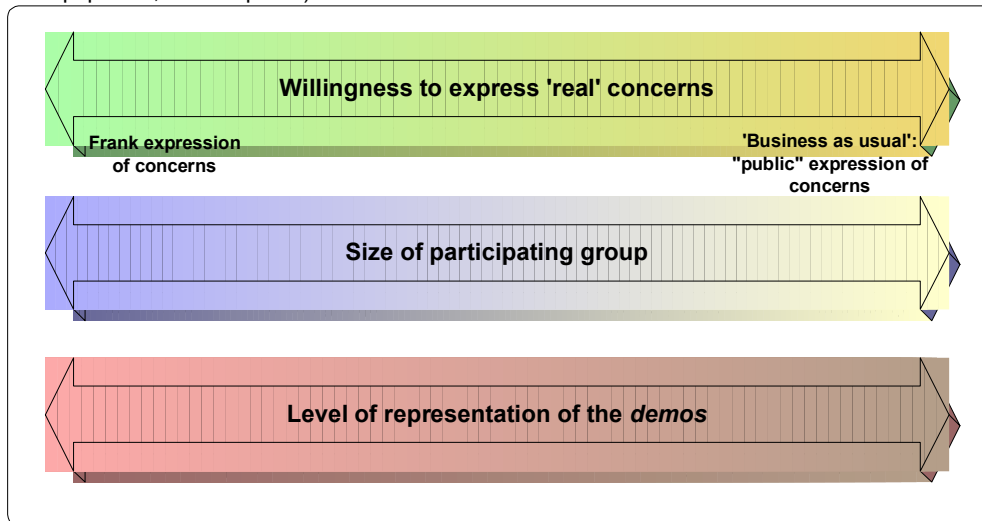
It is in these stages where participants are meant to express the constraints they experience in their (natural resources-dependent) livelihoods and share their views on how they may be overcome, especially through better resource management. However there is a paradox in participation due to the inverse relationship between people's willingness to express their views frankly and the number and diversity of people participating (Fig. 6).

This is a paradox, between the frank exchange that occurs between individuals and what people are willing to express in public, which is found in many participatory activities. It is compounded by the fact that participatory planning, though it tends to occur in public fora, is meant to be democratic since it is put forward as yielding a true representation of people's views. Mosse (1994) observes that "public and collective events...tend to emphasise the general over the particular (individual, event, situation), tend towards the normative ('what ought to be' rather than 'what is'), and towards a unitary view of interests which underplays difference...These 'rhetorical expressions of integrity of the community' are not to be mistaken for the absence of distinct and perhaps conflicting interests".

People may not contribute ideas to a public discussion for several reasons. These include:

- because they do not consider their ideas valuable
- because they do not want to upset the status quo
- because they are worried about the consequences of what they say (i.e. that it might offend someone at the meeting)
- because in many cultures certain types of person traditionally do not speak at public meetings (e.g. women and young people), while others do (e.g. male elders).

Fig. 6. The relationship between exchange of views and level of representation in public meetings. (demos = the populace, i.e. 'the public').



Anthropologists have long known that to go deeper than the superficial and to obtain information of the real workings of society requires a prolonged exchange with a few key individuals, usually alone, when they will divulge what they might not say in public. These 'truths' can over time be validated by triangulation with what other individuals say, but it is a slow process, with no explicit public consultation. In participatory planning and thence consensus building, there thus remains the paradox of 'democratic' outcomes that can be founded not on private truths, but rather on public generalities which are within the public comfort zone.

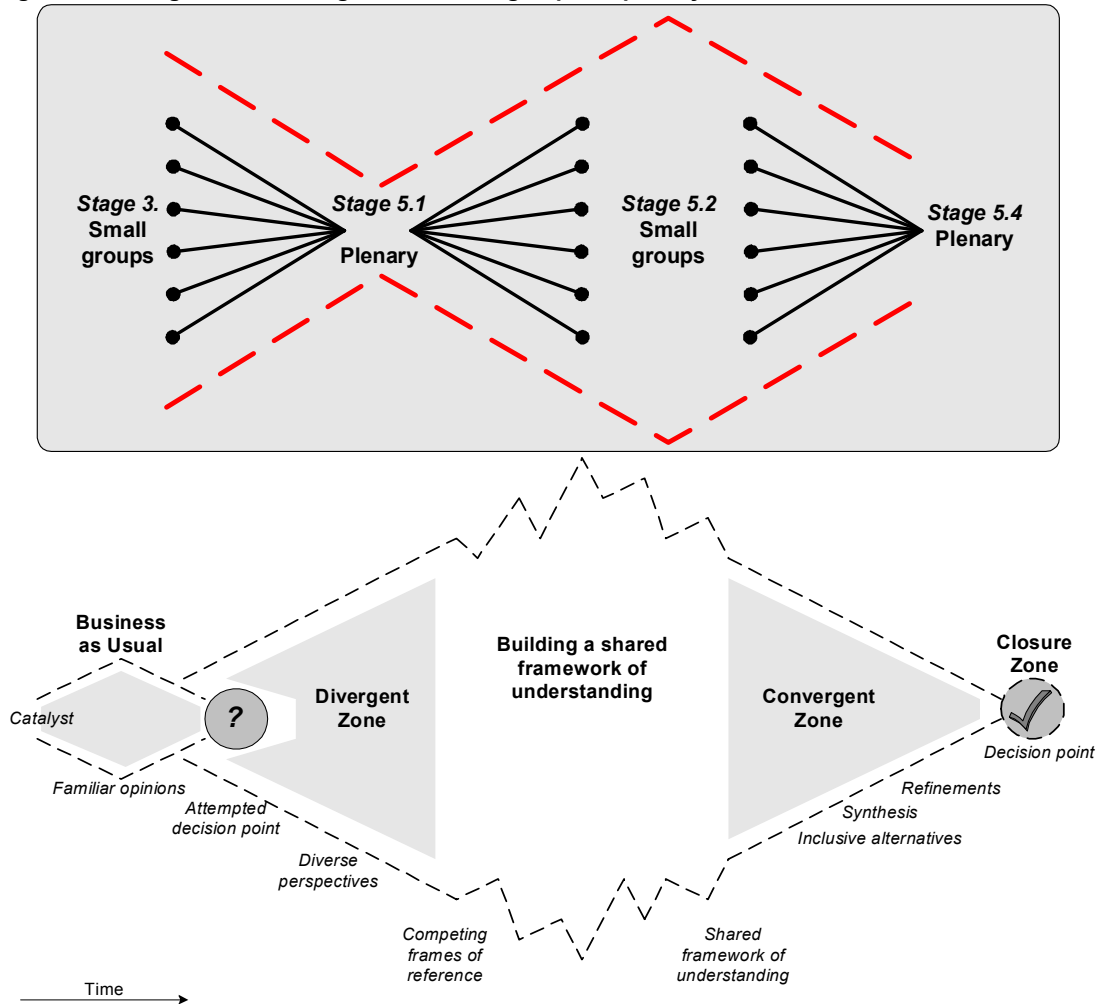
People can be encouraged to express their ideas in a less judgemental forum in which they feel comfortable. This is often a closed group of friends and/or peers, wherein they can express their real concerns rather than the perceived interests that these marginalized groups are usually accorded. The drawback is that in a closed forum the diversity of views is not aired in public and does not contribute to a shared framework of understanding and mutual learning, and there is no change in the status quo. Thus the problem is to balance the comfort of a closed forum where the real problems and issues are discussed and everyone contributes, with an open forum that may be dominated by a few vocal people and may only provide a platform for airing the same old issues.

Kaner (1996) calls this latter situation "Business as Usual", but recognises that this approach can work much of the time. It is with difficult and more complex problems - such as stakeholder options in floodplain management - where it does not. Kaner recognises that to reach new and collectively agreed solutions, participants must pass through three stages (Fig. 7). Firstly divergent ideas must be expressed, secondly stakeholders must participate in the process of trying to appreciate one another's perspectives - achieving a shared framework of understanding, and finally converging towards a closure zone or decision point. Using Kaner's framework, the Problem Census (PAPD Activity 3) is 'business as usual' since each of the stakeholder groups work in a closed forum.

The objective of PAPD is to encourage the frank expression of a full diversity of views on natural resource management, whilst achieving a high level of representation of *demos* ('the public' voice) in the target communities. As Fig. 4 indicates, no single activity will be able to achieve this. Thus PAPD has approached this paradox of public and private voices through a series of separation and aggregation steps. The separation steps are exercises undertaken by stakeholder groups separately. The aggregation steps are facilitated plenary

sessions where all groups are represented. Thus the participatory planning phase uses a series of linked individual and plenary activities to achieve a balance of frank exchange and representation (Fig. 5). Similarly Ravnborg and Westermann (2000), working in the Andean foothills of Colombia, approached this paradox of receiving only a polished version of reality in public meetings yet needing to be 'participatory' by combining public meetings with individual interviews that revealed the breadth of divergent perceptions for inclusion in public negotiation.

Fig. 7. Achieving balance through linked small group and plenary sessions.



after Kaner (1996)

Application

In this approach each stakeholder group spent a one day workshop (in Kathuria running two groups in parallel) listing all problems, making some consolidation by the group members, then voting (each participant had five stickers to vote against cards and illustrations of the problem). However, there is normally something of an art and outside intervention in their consolidation across groups. The method developed in the field tried to minimise this by scoring the rankings of each group and then summing scores across all groups and across poorer stakeholders, by doing this overall priorities for natural resources issues/problems and other problems were ranked, and there was a check that the priorities of poorer people were not left out. Table 4 compares the problem rankings from both case studies and shows considerable similarities, although there was more direct concern for agricultural productivity in the Vietnam site.

Table 4 Comparison of ranking of priority natural resource related problems and other developmental problems in sites in Bangladesh and Vietnam.

Rank	Natural resources related problems		Other development related problems	
	Bangladesh	Vietnam	Bangladesh	Vietnam
1	Sluice gate does not operate properly	Fish declining	Poor road communication	Lack of capital
2	Canal connecting Kathuria Beel has silted up	Siltation of canal	Scarcity of safe drinking water	Bad road communication
3	Production of natural fish has been decreasing	Water pollution / drinking water	Lack of capital	Electricity
4	Lack of unity	Rice production declining	No electricity	Low price of agricultural product
5	Low lying land is single cropped	Flood	Poor education	Local security
6	Scarcity of fishing gear (boats and nets)	Lack of modern (HYV) rice variety	Poor nutrition	Irrigation/drainage
7	Poaching by force by outsiders	River bank erosion	Poor hygiene	Unemployment
8	Ditches in the beel have silted up	Use of harmful gear	Poor health facility	Unstable rice price
9	Fish diseases		Scarcity of agricultural inputs	
10	Scarcity of fish seed/fry		Unemployment	
11	Scarcity of cattle			
12	Use of current net (harmful gear)			

The top 5-6 problems were reviewed and validated in the first plenary workshop by representatives of each stakeholder group plus local leaders, and the natural resources problems were further prioritized so that three could be taken further for solution analysis and action planning. In addition each stakeholder group after the problem census made an analysis for the top ten problems it identified, and these were consolidated by the research team so that no points were lost, Table 5 shows the outcome for the top three problems in the Vietnam site, and illustrates how problems related to canal siltation are linked.

Table 5 Example of consolidated problem analysis from Vietnam site.

Problem	Causes	Effects	Solution	Affected
Fish declining	<ul style="list-style-type: none"> • Low water level, shallow canal • High amount of pesticide use • Rice production throughout the year changed fish habitat • Electric fishing • Use of duck to catch fish • Overfishing • Catching undersized fish 	<ul style="list-style-type: none"> • Less fish for consumption and sale 	<ul style="list-style-type: none"> • Fish conservation in the sanctuary • Fish culture • Strict regulation in using harmful gear and net size 	Community
Siltation of canal	<ul style="list-style-type: none"> • Daily wave activity • Canal was excavated in 1998 • Bank erosion due to many engine boat • Wave action brings more silt 	<ul style="list-style-type: none"> • Reduced fish • Water transport become difficult during dry season 	<ul style="list-style-type: none"> • Canal re-excavation 	Community
Water pollution	<ul style="list-style-type: none"> • Low water flow in the canal • Pig and poultry raising • Waste from noodle industry • Limited awareness about environment • Use of pesticide • Dam on the canal 	<ul style="list-style-type: none"> • Less fish • Health problem • Lack of safe drinking water 	<ul style="list-style-type: none"> • Sink tubewell • Excavation of canal • Strict rule for waste water management/disposal • Use of filter • Bigger diameter pipe for drainage • Limit use of pesticide 	Community

For the plenary sessions the participants in each stakeholder group nominated in private the five other participants they would prefer as representatives from their group, and “votes” were summed to finalise the representatives. Following agreement on the priority problems in the first plenary, the separate stakeholder groups again meet to each spend a whole day on solution analysis. The activities involved are a stakeholder analysis including a force-field analysis of all other stakeholders affecting the interest group’s livelihoods (Fig. 8), a detailed analysis of the actions required for possible solutions including their political, environmental, social and technical feasibility (Table 6), and an assessment of the potential impacts of the solutions on all of the stakeholders identified (Tables 7 and 8).

Table 6. Example of solution analysis for key natural resources problems identified in Vietnam site.

a) Problem: natural fish declining

Solutions/ Actions	Purpose	Alternative	Political/ social impact	Technical/ economic aspects	Environmental Impacts	Sustainability
Conservation of fish (fish sanctuary)	<ul style="list-style-type: none"> -To increase the number of fish -For ecological balance -To increase fish diversity 	None	Community benefit, some households will be affected	-Need technical support from the experts	Positive impact	Long term
Canal re-excavation	(see below)					
Decreasing use of pesticide	-To reduce water pollution (which affects fish) and health hazard	Integrated Pest Management (IPM)	None	-IPM training arranged by CanTho University and government extension agencies	Positive impact	Depend on awareness building and farmers’ reception

Changing agricultural practices (from 3 paddy crops a year to 2 paddy crop and a vegetable)	-To increase income -To improve soil fertility - To reduce pesticide use and water pollution	None	-More labour use will employment more local people	-Need demonstration	Positive impact due to less use of pesticide	-Depend on market demand
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b) Problem: Canal silted up

Solutions/ Actions	Purpose	Alternative	Political/ social impact	Technical/ economic aspects	Environmental Impacts	Sustainability
Canal re-excavation	-To improve water flow -To increase water availability for community use - To ensure more fish for food and for sale	None	-Some households will be disturbed by excavation	-Need technical support / advice	Positive impact	No idea

c) Problem : Water pollution

Solutions/ Actions *	Purpose	Alternative	Political/ social impact	Technical/ economic aspects	Environmental Impacts	Sustainability
Sink tubewells	To get safe water for domestic purposes and irrigation	Rainwater harvest Storing water in reservoir	None	-Support from technical experts	Better quality water, less pollution	No idea
Using biogas	To use household waste for biogas production	- Use waste for composting	None	-Support from technical experts	No idea	No idea

* IPM covered in b)

Fig 8. Force Field Analysis – Bangladesh site.

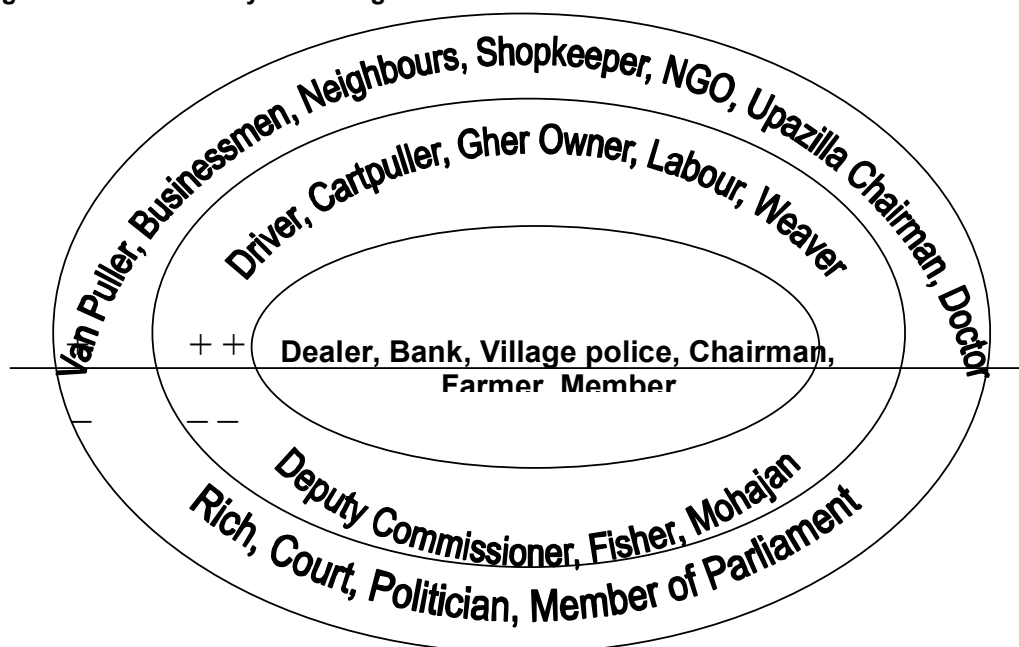


Table 7. Summary of social impact analyses of solutions and activities in Bangladesh site

Stakeholders	Natural Fish declining												
	To stop fishing in breeding period				To preserve brood fish by establishing sanctuary				To reduce agro-chemical use				
	Landless (female)	Landless (male)	Landless (male)	Fisherme	Kua farmer	Small farmer	Large farmer	Landless (female)	Landless (male)	Fisherme	Kua owner	Small farmer	Large farmer
Landless-male		+							+				
Fisher		-+		+		+		+		+	+	+	
Kua owner		+						+					
Small Farmer				+	+					+	+		
Large Farmer				+				+		+			+
Fertilizer Dealer			—										
Fish trader	+	-+	+	+			+	+	+	+			
Money lender	—		—	+			—			+			
Local elite			—	+		+		+		+	+	+	
Chairman/Member			+		+	+			+		+	+	
Sluice gate people	—			+			+	—					
Gher owner	—						—						
Power tiller owner													
Cart puller													
Share cropper													+
Agriculture Dept			+		+								+
Fisheries Dept			+		+	+			+			+	+
NGO		+	+		+	+	—	+			+	+	+
Labour			+		+		—		+		+	+	
Land office													
Engineer													
Outsider		—					—						

Table 8. Summary of social impact analysis of solutions and activities in Vietnam site

Stakeholders	Problem 1: Fish declining				Problem 3: Water Pollution	
	Conserve fish	Re-excavate canal	Applying IPM	Change agricultural practices	Sink tubewell	Use household waste as biogas
Traditional doctor	0	0	0	0	+	0
Fish trader	+	+	+	+	0	0
Vegetable trader	+	+	+	+	0	0
Mushroom trader	0	+	+	-	+	0
Police	+	+	+	+	+	+
Meat trader	-	+	0	0	+	+
Customer	0	+	+	+	0	0
Coffee shop owner	+	+	+	+	+	+
Grocery store owner	+	+	+	+	+	+
Fertilizer/pesticide dealer	+	+	+	+	+	+
Gasoline vender	-	+	0	+	0	0
Drugstore owner	0	0	0	0	0	0
Wine seller	+	+	+	+	+	+
Noodle trader	0	+	+	0	+	0
Motorcycle driver	+	+	0	0	+	+
Hairdresser	+	+	0	+	+	+
Motorcycle passenger	+	+	+	0	+	+
Fruit buyer	+	+	-	+	+	+
Fish sauce buyer	+	+	+	+	+	+
Local government	+	+	+	+	+	+

Implementation Phase

Detailed planning and institution building

In Vietnam because of the advanced stage of the earlier stages (problem census) and because of the active involvement of local government (People's Organisation) in the process, in the second round of stakeholder workshops and the final plenary the participants discussed implementation issues in much greater detail than in Bangladesh, they also voted for a stakeholder representative in the implementation committee. This was followed up by problem solving negotiations (December 2001) immediately before implementation (January 2002), these formed additional steps making a link between the PAPD process in as developed in Bangladesh and achievement of a feasible implementation plan. The issues discussed and agreed on covered details of implementation and institutional arrangements and the outcomes were disseminated locally through participant-neighbour contact and upwards through a plenary involving higher levels of government:

- actions needed to achieve the priority solutions,
- possible conflicts and their mitigation,
- composition of the management committee,
- rules to be followed and punishments,
- monitoring to assess impacts, and
- timetable for implementation.

In summary the rules agreed upon by the participants were:

- one canal would be designated as a fish sanctuary with signboards and red flags posted to mark the sanctuary,
- there would be no fishing at any time in the sanctuary,
- no boats of any kind in the sanctuary canal,
- after 3 years half of the sanctuary will be fished with income distributed equally among all people living along the sanctuary and Nga Ngay canal.

Additional rules agreed in the Nga Ngay canal comprised:

- no fishing using battery/electricity or dynamite
- no use of chemicals to attract fish
- net mesh size to be 2.5-3 cm
- no fishing using ducks
- fish under 3 cm in length not to be caught
- no big boats or tourist or engine boats
- ducks should not be raised in either sanctuary or Nga Ngay canals

The various stakeholder groups also cumulatively (by each successive group seeing the proposed rules from the preceding group sessions, modifying them, and then discussing further in the plenary) set sanctions for rule violators as follows:

- 1st time: hamlet head will arrange for the violator to explain to the community and arrange awareness training,
- 2nd time: payment of 10 times more price of the caught fish (but 20 times more if members of the people's organization/administration break the rules),
- 3rd time: handing the violator to law enforcing authority.

It was also agreed to form a Project Management Committee to implement the plan comprising 9 members: five members from the local People's Organisation, and one member from each of four stakeholder categories.

Furthermore the stakeholder groups also reviewed the expected outputs from their action plan, and identified indicators for these impacts and how they could be assessed through participatory monitoring (five persons agreed to participate in observational fish catch monitoring, 30 households agreed to monitor their own fish catch and consumption):

<i>Indicator/output</i>	<i>Monitoring</i>
Fish catch increase	catch
Fish diversity increase	catch
Fish consumption increase	consumption
Increase in fish marketed	market
Increased income from VAC	demonstration plots/uptake
Reduced use of pesticide	IPM training & adoption
More safe domestic water	water quality
Better habitat for fish	water quality
More sustainable agriculture	demonstration plots/uptake

Conflict Resolution

Seventeen households raised specific concerns after the PAPD process, and with hindsight should have been identified by the community as distinct stakeholders with respect to the proposed solutions. These were 8 duck raisers, 2 canal side tree owners, and 7 landowners having land on the side of the sanctuary canal. The process adopted was based on facilitated negotiations and understanding of their concerns and possible ways of mitigating the problems through one-to-one interaction with solutions coming from the community and from the People's Committee. It was possible through this to reach a consensus on what were really problems with the planned solutions and to reach agreement on the mitigation measures or modification to the solution. This highlights the need for action-researchers not to leave once a participatory action plan has been developed but also to be on hand to help the combination of old and new institutions find workable solutions.

Process Assessment and Conclusions

In Vietnam baseline surveys of households were conducted, but we intend to assess changes in social capital after implementation of the action plan in parallel with monitoring and impact assessment of the actions undertaken. In Bangladesh institutional and impact monitoring will be undertaken under a new project that will also support plan implementation, but built into the testing of the PAPD approach was a matched random sample survey of PAPD participants and non-participants from four stakeholder groups (landless men and women, fishers, and large farmers) undertaken about 3 weeks before the PAPD and repeated 3 weeks after it. The survey used statements and scales to assess cognitive social capital (including any changes), assess that the dimensions investigated were relevant to consensus in the participants' own views, and to get their views on the PAPD process. Here we summarise some of the results from the analysis.

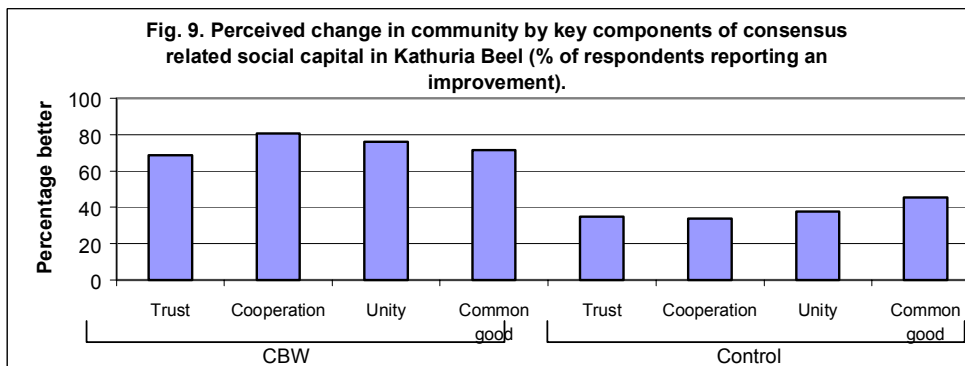
Levels of trust were generally high in the rather homogenous community of Kathuria Beel, but willingness to cooperate (fish) together increased after the PAPD for fishers. In general few statistically significant changes in the social capital indicators were reported from the before-after comparison, although "improvements" on average were more common among participants than the control sample, but this is not surprising given that any such changes

are expected to take time. The participants agreed with the concepts related to consensus used in the survey being important, notably almost all four stakeholder groups in both samples thought that trust, cooperation, unity and working for the common good were the main characteristics of their understanding of “consensus” (Table 9).

Table 9. Respondent’s modal assessments of the importance of concepts to their understanding of “consensus”, Kathuria Beel.

Concept	All – pre PAPD		All – f
	CBW	Ctrl	CBW
Trust	++	++	++/++
Harmony	++	+	+
Empowerment	+	+	+
Cooperation	++	+	++
Empathy	+	+	+
Unity	++	++	++
Negotiation	=	+	=

About 60% of non-PAPD participants had heard about the process and workshops, virtually 100% of participants thought it had been useful and rated it highly and most non-participants who had heard about it also rated it highly but with a wider spread of scores. They mainly reported benefits from the PAPD in terms of understanding of issues and knowledge, but also claimed that there were changes in the community in terms of indicators of social capital (Fig. 9).



Hence we believe that the PAPD approach is an effective way of achieving participatory planning and developing collective action for natural resource management at the local level. The structure of the process ensures that all stakeholder groups are involved and their voices are heard and does not rely on self-selected spokespersons, it also enables people from each stakeholder group to understand each other’s problems and aspirations and to find common interests and to identify win-win solutions. This appears to be a good starting point for community-led resource management interventions and for developing local institutions.

This approach does appear to be transferable from Bangladesh to other social settings, based on experience in Vietnam, but it is not a means of resolving conflicts. Application in Vietnam showed the need to add to the process a stage where individual stakeholders (including those who were not directly involved in the PAPD) could reflect on the outcomes and proposed action plan and where they could investigate with the local community leaders ways of adjusting implementation plans to minimize any short term adverse individual impacts. That this was feasible confirms that ultimately all concerned recognized that there were wider benefits that they and the community would gain from working together.

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