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EXECUTIVE SUMMARY

Research questions

Most research on natural resource conflicts in general, and fisheries conflicts in particular has concentrated on site-specific violent conflicts (Shrimp wars in Kerala, for example) and has assumed that resource allocation is the primary issue. But is this always the case? Many fisheries conflicts over gear use, landing site rules or market behaviour are not primarily about resource allocation but are rooted in more complex institutional issues such as cultural differences and political power struggles. What is more, fisheries conflicts rarely result in violence, yet we know little about how such conflicts emerge nor how they are managed. Conflict is not necessarily negative: conflicting agendas and ideas can be part of an iterative process of institutional change and evolution. But when the costs of conflict begin to outweigh the benefits and the attention of policy-makers and managers is detracted from the important welfare functions of the fishery (providing a source of income and nutrition for example) conflict can become a negative force. By understanding why and how conflicts in fisheries develop and how managing them might be improved, fisheries in tropical developing countries can continue to supply a sustainable flow of benefits and support some of the world's poorest producers.

Conflicts in a developing world context

Conflicts over tropical fisheries can have a significant impact on development initiatives and poverty reduction strategies because the numbers of fishers and households that rely upon the resource is large. Millions of fishers are directly employed in fishing activities, millions more are indirectly employed in related sectors (boat building, processing, net mending etc). In many countries in Africa and Asia, fish accounts for more than 50 percent of the total animal protein intake. In almost all these countries small-scale fisheries provide over three-quarters of the domestic fish supply. In southeast Asia, possibly a billion people rely predominantly on fish for animal protein (FAO, 2001). Many artisanal fishing families continue to rank among the most disadvantaged groups of the population. They often have limited alternative livelihood options which makes them particularly vulnerable to conflict over access to or allocation of aquatic resources. Despite the intuitive need to understand the role and impact of conflict on tropical fisheries, research has often focussed on the readily observable outcomes rather than looking beyond the immediate conflict to see the 'institutions below the surface' (Farrington, 2001).

Outline of the study

To improve the level of understanding of tropical fisheries conflicts, this project carried out a study to establish the level of conflict in tropical fisheries, what institutions (formal and informal) existed to manage conflict, how well the stakeholders considered conflicts to be managed, and what improvements could be made. Fisheries in three countries were studied. At sites in Tangail, Brahmanbaria and Gopalganj in **Bangladesh** poor law enforcement is resulting in an increased use of illegal fishing gears. Constraints on social organisation outside the pervasive patronage system, coupled with poorly-funded Fisheries Officers mean that there are no institutions able to manage these conflicts successfully. Interviews in 1/3 of all the fishing villages along the **Ghanaian coast** demonstrate that localised disputes are adequately managed through the traditional Chieftain institutions. Increasing economic and environmental problems, however, are leading to new conflicts that present-day structures are ill-

equipped to manage as a result of a drastic re-organisation of Government offices under the decentralisation strategy. The third site was the Turks and Caicos Islands (a British Overseas Territory in the Caribbean); these islands are a popular tourist destination and highly dependent on fishing. In other parts of the world, fishing and tourism interactions are a source of conflicts over access to and rights over beaches, yet, in the **Turks and Caicos**, these two sectors work together well. The principle source of conflicts on the islands related to the near-monopsonistic relationship between the fishing and processing sectors. No formal institutions exist for managing conflicts, yet it appears that social capital on the islands helps prevent every-day disputes from escalating. Overall, fishers in all three countries reported that the number of conflicts appeared to be the same, but that the social and economic impact of those conflicts was becoming harder to deal with as the effects of reduced Public Sector spending take their toll on Fisheries Departments.

The research helped highlight some of the common problems experienced in fisheries management in tropical developing countries as well as some of the issues that are regional or eco-system dependent. The research also over-turned some traditional assumptions about what causes conflict: **the use of marine protected areas in the Caribbean is not a source of conflict**; evidence from Ghana demonstrated **that multiple tribal groups operating in a small area are not necessarily a cause of conflict**.

Principle Research findings

- The number of **conflicts may not be rising, but the poor are feeling their impact more keenly** as support mechanisms for dealing with conflict are eroded.
- The majority of conflicts reported were over **lack of enforcement and mis-administration** by formal fisheries institutions.
- Whilst on the surface NR conflicts may appear to be over allocation issues, the root cause of the conflict is often far more complex. **Conflict is very often a result of institutional failure** to mediate conflicting needs and perceptions.
- **Conflicts caused by external agents** (vessels from other ports and bandits for example) **are harder to resolve** and potentially more damaging than locally-based conflicts.
- The **capacity of informal fisheries management institutions** and the degree of support or recognition they receive from the state are key to understanding why fisheries conflicts emerge and how well they are managed.
- **There is an intuitive link between poverty and conflict**: the higher the levels of poverty, the greater the potential for conflict as fishers compete to capture scarce resources to meet growing financial difficulties.

Principle Policy lessons

- **Fisheries managers need to be aware of the 'layering' of conflicts** and be able to trace them back to the real rather than apparent cause, for effective conflict management; this requires training in conflict awareness and assessment.
- **Training on conflict assessment, conflict management** and resolution techniques needs to be introduced as part of basic training for Fisheries Officers working with fishing communities. Fisheries Administrators and Managers working in Government Offices also need training to raise awareness of the impact of conflict in the sector.

- Conducting a ‘**conflict audit**’ prior to undertaking project activity in fisheries would help to establish the ‘state of play’ in the fishery and prevent current problems being compounded.
- **Policy-makers and Fisheries Officers often see conflicts in a very different light to fishers.** The former will often only be aware of conflicts that are taken to court for arbitration (net entanglements, vessel collisions, violation of gear usage rules). The latter, however, often consider a much broader range of issues as conflicts (access arrangements, how the fishery is controlled and by whom). Confining management and policy initiatives to those conflicts that appear on the ‘official’ system and are recorded in court transcripts and police records will fail to deal with some of the important long-term problems at the local level.
- Good **conflict management requires the active participation of all stakeholders** – in many countries this will require institutional capacity building at all levels to ensure that all stakeholders are able to participate.
- In the long term, **tackling poverty in fishing communities and addressing entitlement issues** would address many of the fundamental problems that result in conflict.

Collaborating institutions in research were: The Bangladesh Centre for Advanced Studies (Dhaka, Bangladesh); the Marine Fisheries Research Division, a subsector of the Directorate of Fisheries (Tema, Ghana) and the Department for Environment and Coastal Resources (Grand Turk, Turks and Caicos islands).

ACRONYMS:

BCAS: Bangladesh Centre for Advanced Studies

CBFM: Community Based Fisheries Management

CEMARE: Centre for the Economics and Management of Aquatic Resources, University of Portsmouth

CRMP: Coastal Resources Management Project

DECR: Department for Environmental and Coastal Resources

FSCBP: Fisheries Sub-Sector Capacity Building Programme

MFRD: Marine Fisheries Research Division

IASCP: International Association for the Study of Common Property Resources

THES: Times Higher Educational Supplement

TCI: Turks and Caicos Islands

GCFI: Gulf and Caribbean Fisheries Institute

1. BACKGROUND TO THE PROJECT

1.1 Research problem addressed

Conflicts over the use and management of natural resources are widespread¹ yet the formation, impact and management of such conflicts are often poorly understood. In the case of fisheries, although there is much case-study information on conflicts from around the world, there have been few systematic investigations of conflict *per se*. The information deficit is particularly acute in tropical fisheries², where, because of their important socio-economic role (eg employment, income, food supply) conflict may produce hardships for some of the poorest members of society.

Fisheries conflicts arise from sources at the micro and macro level. Increased competition as a result of falling catches, an increase in the number of users or the market price for catch can lead to conflict as the *de jure* and *de facto* rules that govern access and use are ignored in the pursuit of lucrative or scarce catches. Changes in macro-level conditions can also lead to conflict as policy shifts, economic conditions worsen or political alliances give increased power to particular stakeholders.

Traditionally, fisheries conflicts have been seen in a context of resource allocation or access rights, but they are often far more complex with a large range of socio-economic issues such as institutional and market failure contributing to the cause.

Managing conflicts absorb time and money. In countries where the economy and the environment are under increasing pressure, time and effort spent in managing conflicts is time and effort distracted from the bigger goals of poverty alleviation and development. There is little doubt that from a livelihoods perspective, sound natural resource management that is able to manage conflicting demands is the key to building sustainable livelihoods in the long run.

In order that management of conflicts is improved, a number of preliminary steps need to be taken. Firstly, the nature of conflicts in tropical fisheries needs to be understood (why and how do conflicts emerge). Second, how those conflicts are currently managed needs to be documented and analysed. Third, recommendations for improved management as defined by all stakeholders need to be established.

A multi-disciplinary approach to a study of conflict is most suitable to cover the complexity of issues that contribute to and effect how conflicts emerge and develop. The project thus drew on the supply and demand dynamics familiar to economics and linked this to the study of human social behaviour found in other areas of social science. The project was particularly interested in how a change in transaction costs shifted the supply and demand for institutional change and how the failure of institutions to keep up with change lead to conflict. The project understood that demand for change can

¹ See Matose (1997), Livingstone (1993), Nickum and Easter (1990), Potkanski and Adams (1998), Hussein et al (1999), Hendrickson et al (1998), Alston et al (1998), Herring (1991) and Sithole and Bradley (1995) for case studies of forestry, water, land and farmer-herder and livestock conflicts.

² 'Tropical fisheries' refers to fisheries operating in tropical environments (between latitudes 23.5^B N and 23.5^B S) which are usually associated with non-industrialised or developing countries, and inshore and small- scale fisheries. Statements made here about tropical fisheries would therefore not necessarily apply to places such as Australia or the southern USA, or to industrial fisheries in tropical regions, such as tuna, for example.

come from a number of distinct sectors and that the process of change is often more circular than linear: that is, conflict often demands change and change often results in conflict. A more in-depth discussion of these issues is found in section 3.1.

The objective of this project was thus to gain a greater understanding of how conflict develops in tropical fisheries and how such conflicts are managed. More specifically, the project set out to a) assess the relative importance of different conflict types and how they are managed in three case-study fisheries; b) explain why conflict might occur and what its potential impacts are; c) produce a typology of conflicts in tropical fisheries to assist field managers and policy makers; d) develop and promote approaches and tools for conflict assessment and management.

The project focused on the institutional aspects of conflict, using New Institutional Economics as its research framework (see section 3.3). Data were collected from three study regions: Ghana, Bangladesh and the Turks and Caicos Islands (TCI) in the Caribbean. Each study region represented a different institutional, economic and social setting. Ghana has large, marine artisanal fisheries important for rural livelihoods; most of the artisanal catch is consumed within the country. Bangladesh is dominated by floodplain fisheries that are governed by a complex patchwork of legislation and fishing rights and make an important contribution to domestic food supplies. Finally, TCI, a British overseas territory in the Caribbean consists of sparsely populated small islands, heavily dependent upon off-shore finance, tourism and fishing³.

1.2 How the project contributes to our understanding of Sustainable Livelihoods

Conflict is multi-dimensional and has multiple impacts throughout an economy and society. Many attempts at managing or even resolving conflicts have tended to be sectoral: addressing the problems of sluice gates, catch rates or fishing grounds for example. This project found that conflicts are often layered, with perceptions (real or otherwise) that occlude the actual source of conflict. The SLA guides research outwards from the stated cause of a conflict to look at all the other factors. It is at this point that the PIPS box proves its most useful. While the interactions and failings in the capitals pentagon explain many aspects of conflict (lack of natural capital, negative social capital or rapidly declining financial capital for example), the PIPS box helps explain the process that leads to conflict. The interactions of institutions and the impact of policy on the myriad dimensions of the economy within which the fishery operates highlight issues that fishers and fisheries officers may not be aware of. Once the constituent parts of a conflict are visible they can be addressed. Conflicts and sustainable livelihoods are addressed in more detail in Analytical Appendix 1.

2. PROJECT PURPOSE

The purpose of this project was to gain a greater understanding of the process by which change can lead to conflict in tropical fisheries and the impact this has upon resource management and development objectives. The project also aimed to produce an analytical framework that would assist fisheries managers and policy makers to assess conflicts and improve conflict management mechanisms.

³ Detail country background papers setting out the political, economic and environmental context of the study countries can be found in the Background Appendices.

In order to achieve this, the project had a number of specific objectives:

a) Develop a database of literature (published and grey) on fisheries conflicts through desk-based research. This database will draw together information on the causes and consequences of fisheries conflicts; generic theories on conflict evolution and resolution; information on other common-property or open access natural resource conflicts and information related to the impact of conflicts on fisheries in developing countries.

b) Produce a comprehensive multi-disciplinary analytical review and discussion of tropical fisheries conflicts based on the literature collected. The review will explore the various definitions of conflict and set out the boundaries of the definition to be used in the project.

c) Develop a research framework leading to a greater understanding of conflict, and more specifically, the role, cause and consequence of conflict in tropical, developing country fisheries, currently an under-researched area.

d) Study fisheries conflicts in three distinct settings: complex inland-floodplain fisheries (Bangladesh), over-capitalised, predominantly artisanal marine fisheries (Ghana) and resource-dependent small-island fisheries (Turks and Caicos Islands).

e) Produce a typology of fisheries conflicts specific to tropical fisheries in the developing world. Current typologies of fisheries conflicts are specific to temperate water fisheries and fail to address some of the distinctive issues present in tropical waters.

f) Develop and promote tools for conflict assessment and management, based on the evidence that emerges from the typologies.

3. RESEARCH ACTIVITIES

The following is a synopsis of the activities undertaken in the course of the three years to achieve the above objectives. Full accounts of the activities can be found in the relevant appendices as signposted through the document.

3.1 Database of literature on conflicts

The database of literature now amounts to some 370 references that cover a wide range of issues associated with conflict in general and natural resource/fisheries conflicts in particular. The database available to users of the CEMARE Reading Room and a complete listing is in Outputs Appendix: 5.

3.2 Multi-disciplinary analytical literature review.

Based on the literature collected, an analytical review was conducted that had a number of key objectives: a) to explore the concept and definition of conflict from a theoretical point of view; b) explore the role of institutions and transaction costs in the emergence and evolution of conflicts and c) explore conflict management and resolution processes. Lastly the review helped establish the 'state of the art' of research into this area. This project shared some of the literature used in the Consensus Building Methodologies for Common Property Resources (R7562). The complete literature review can be found in

Background Appendix:4; what follows is a synthesis of some of the main points covering definitions of conflict, view on the origins of conflict and the distinctions between conflict containment, management and resolution.

3.2.1 Different views on conflict and some definitions

Literature on fisheries conflicts can be divided between those that examine site-specific conflicts and those that review the theoretical aspects of conflict. The former provide detailed information on a particular scenario, presented as a case-study (see Alexander, 1977; McGoodwin, 1980; Ruddle, 1987; Geier et al, 1992; Steiffeler, 1996; Boncoeur et al, 1998; Olomola, 1998 and Bavinck, 2000). Although these studies provide useful information on a specific location or issue, the results cannot necessarily be extrapolated with any ease or certainty to a wider context (thereby limiting the utility for policy-makers).

The theoretical approach to the study of conflict advances new frameworks that can be used to describe and analyse natural resource conflicts. Since the inception of conflict theory during the immediate post-war period, these approaches have included sociological aspects, economic and econometric aspects, technological aspects and anthropological aspects (see Boulding, 1966; Rapoport, 1970; Dnes, 1985; Hirschleifer, 1991; Skaperdas, 1992; Schlager, 1994; Jabri, 1996; Malczewski et al, 1997 and Jennings, 1998). In addition there is a large body of literature that sees the emergence of conflict in natural resources as the specific function of rising population and/or a decreasing resource base. Based on Malthus' original thesis⁴, more recent work on this theme has been conducted by Myers (1987); Homer-Dixon (1991, 1994) and Maxwell and Reuveny (2000). Econometric analysis of secondary data has attempted to show that as the resource base declines, so conflicts emerge.

Although both approaches have their merits, there have been few studies of the institutional aspects of fisheries conflicts. Given the increasing recognition of the role of institutions generally, this appears to be an important omission. For example, little attention is paid to the way communities can and do co-operate over natural resource usage, which might explain why conflicts do not emerge in some situations.

Conflict emerges when 'the interests of two or more parties clash and at least one of the parties seeks to assert its interests at the expense of another party's interests' (FAO, 1998:199). Conflicts of this type do not necessarily have to be violent nor highly disruptive, in fact many conflicts that arise as a result of differing interests are low-level, non-violent phenomena (Warner, 2000).

Although conflict involves one group asserting its interests at the expense of another, conflict is not always negative. Positive conflict highlights incompatible goals or objectives, thus focussing attention on something that needs to change for the benefit of all concerned. Positive conflict has also been described as the means by which communities hold themselves together through establishing consensus within groups (Powelson, 1972 and Coser, 1972) and also proof that 'society is adapting to a new political, economic or physical environment' (Warner, 2000:9). Boulding (1966) and

⁴ Malthus predicted that human populations would eventually outgrow their ability to feed themselves. As they reached the limit of existence so major conflicts or diseases would emerge to 'cull' large sections of the population until the planet was once again in equilibrium.

Buckles and Rusnak (1999) however, both note that only when political and economic elites are prepared to act with marginalised groups is change likely to occur: if the elites' priority is to maintain their position and the *status quo*, the positive role of conflict may not emerge.

3.2.2 Origins of conflict

Conflicts between groups emerge for a variety of reasons. Conflict can arise as a function of social structure (the sociological perspective), as a function of power relations (the political perspective) or as a result of rational decision-making by an individual seeking to maximise their personal utility given a pool of scarce resources (the economic perspective). The issue that often sparks off a conflict is the 'perception' that the one group is gaining (or, in economic terms, maximising their utility) at the expense of another. The underlying reason why conflict emerges, however, is often more complex. It may transpire that the conflict between two groups over access to a pond is not about access at all, but about ethnicity.

Warner (2000:11) identifies four issues that may explain the emergence of conflict over natural resources a) demographic change (a sharp influx of new-comers perhaps driven by declining economic or ecological well-being in other sectors); b) natural resources competition (increased dependence upon the natural resource can heighten competition for space and resources⁵); c) developmental pressures (as government policy switches from livelihood protection to food production) and d) structural injustices (changes in legislation that deny or severely restrict access to a resource by dependent groups in society)⁶. We would argue, however, that in addition to these four reasons, institutional failure has to be considered explicitly. Thus the role of institutional analysis in general, and institutional failure in particular are explored in the following section.

3.2.3 Institutions and conflict

Institutions can broadly be divided into two different types: informal and formal (see Feeny, 1998:172 for a comprehensive typology of institutions). Informal institutions such as markets, communities and social capital - that is, a set of rules or norms defined and policed by the users. These rules and norms are not written down, but held as a set of accepted practices, which govern behaviour and shape society. The rules and norms are constantly changing and evolving as new circumstances present themselves and different (and usually improved) means of doing things come to the fore. Formal institutions such as marriage, the State, the judiciary, the political system – these also consist of a set of rules and norms, but are defined and policed by a distinct group (not necessarily the users). They are enshrined in regulations and constitutions and are designed to govern behaviour and shape society but are not necessarily accepted by all users.

Although the terms are frequently confused and used interchangeably, there is an arguable distinction between institutions and organisations. Organisations are, according to North (1990), the groups of individuals that are bound by the institutions as described above. Thus, the government is the organisation bound by the institution of

⁵ Many of these ideas are explored in the literature mentioned before (Homer-Dixon, 1991; 1994)

⁶ Successfully identifying the 'triggers' (ex-ante) that are likely to cause the escalation of natural resource conflicts in a specific situation is an area that warrants further research.

politics, a Fisherman's Committee is the organisation bound by the institution of the local community, property rights, market etc.

How and why institutions emerge is as contested as the definition and each explanation reflects its 'home' discipline.

Neo-classical economic theory states that institutions emerge through a process of rational choice, whilst New Institutional Economics argues that institutions exist to minimise and internalise transaction costs (this concept is discussed in more detail in section 3.3). Knight (1992:10) notes how both Arrow (*Social Choice and Individual Values*, 1951) and Olson (*The Logic of Collective Action*, 1965), for example, suggest that institutions evolve to help individuals deal with issues of 'collective action'. They envisage two types of collective action institutions: those that only produce good for the community and those that produce 'bads' – in both cases they fulfil the criteria of reduced transaction costs and maximised benefits – although the bads may produce sub-optimal outcomes. The second group includes slavery, serfdom and share-cropping (see comment below).

Socio-economic disciplines allow for the interaction of non-rational actors in institutions. Here it is argued that institutions emerge as the result of a 'supply and demand' effect. A 'shock' creates an institution; demand for subsequent change to the format of that institution results when a gain cannot be captured under existing arrangements. Demand for change may be stimulated by changes in product and factor prices (wages, land etc); technology (new machines and processes) and market size (rise in population) (Feeny 1998). Demand for change can also arise from a perceived need to shift income towards the institution: that is, demand can come from a need to increase supply and alter distribution. (Thomson, Feeny and Oakerson, 1992; Feeny, 1998: 177). Feeny (1998: 164) shows that the same argument explains the institutional choice of serfdom over slavery. He argues that where markets were too limited to warrant the large-scale agricultural production associated with slavery, serfdom emerged as an institution, rather than slavery. In the case of institutions that emerge in fisheries, the community of users 'demands' rules to mediate access, use and allocation of resources. The supply of the institution to mediate access, use and allocation arises from within the community to meet the demands. The form of the institution then changes as conditions in the fishery (gear use, number of fishers, stock levels etc) change and demands change accordingly.

The above supply and demand thesis, however, fails to account for power dynamics and power asymmetries. In its broadest sense, power in its most general sense is the potential or ability to effect change, to mobilise forces in order to achieve particular results. In his rereading of power, Foucault asserts that power is not merely the power to say "No" or to prohibit illegal or legitimate actions but is also the ability to say "Yes," to promote certain forms of behaviour and activity. In this sense, power in Foucault is not about prohibition but rather about normalization. He understands power as a mobile network of relations rather than as a centralized and stable repressive force; it operates through discipline, surveillance, and regulation (and, quite significantly, self-regulation). This mobile network of relations occurs as a result of 'small happenings' which gradually form a whole and, significantly, he argued that power (and knowledge) had to be understood from the 'bottom up' rather than as a 'top down' process (Rabinow, 1984; Hoy, 1986; Davis, Leijenar and Oldersma, 1991). Acknowledging the

use of power to manipulate actions, Knight (1992: 126) observes that institutions emerge as a response to ‘strategic conflict’ over substantive social outcomes and that institutional development is the result of a process of bargaining between actors: each trying to structure outcomes that favour themselves over others. He further notes that the nature of the contest is determined by the actors’ relative power differentials and their ability to manipulate the choices of others. In other words, institutional rules do not necessarily emerge as the logical choice for the collective good, nor because they have agreed with them nor because they evolved as Pareto improvements but because the weaker contestants cannot do better than comply (Knight, 1992: 127). Thus, the supply and demand for change is rarely a collectively agreed upon action, rather it is the outward manifestation of power asymmetries within the ‘community’ of users.

The role of the State in the allocation and use of power in institutional change is important. Irrespective of the demand, the ability of institutions to change or emerge is often dependent upon the state’s willingness and ability to allow this to happen (Thomson, Feeny and Oakerson, 1992:132; Feeny, 1998:168). Strong states can control institutional change through a variety of instruments (freedom of speech and movement for example) and weak states often unwittingly control change by allowing special interest groups to dictate the conditions under which change will (or will not) happen. It is thus clear that the role of politics is also a key part of the institutional change process. Political order is able to facilitate change, including the cost of institutional design, knowledge, normative behaviour and existing arrangements (Feeny, 1998:182) and Ruttan and Hayami (1984:213) assert that without state intervention institutional change will probably not be supplied at a socially optimal level because the private return to the political entrepreneur is far greater than the social return.

3.2.4 Conflicts: containment, management or resolution?

Conflict is an essential part of how society functions, but its positive role can become destructive. A useful indication of how far conflict has become a destructive force within society is to observe to what degree, if any, it is managed⁷.

At the very basic level, conflicts are ‘contained’ where infractions are policed, rules are written, though not necessarily enforced and the existence of a problem is recognised, though no way forward may be discernible. When civil and state institutions have reached a point that they are able to step in and actively deal with conflict they will at first manage it: platforms for airing grievances will be developed and will be easily accessible for all stakeholders – particularly including the most disadvantaged. Management should ensure that the positive elements of the conflict are recognised and that the situation does not decline. Resolution takes management one step further.

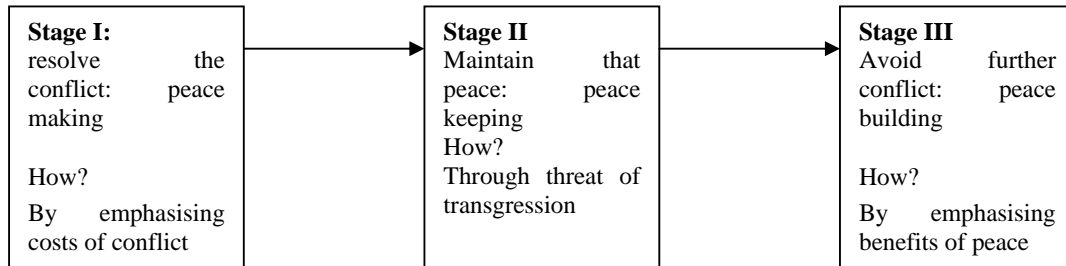
Much of the research into conflict resolution started with studies of the Arab-Israeli conflicts in the late 1960s and had a recent resurgence in the rise of European conflicts following the end of the Cold War⁸. The principles of conflict resolution have spread into a wide range of other disciplines such as personnel management (Wallace, 1993; Chen, 1991). Galtung (1971, 1976) identifies 3 key stages of conflict resolution: peace

⁷ This point raises a number of philosophical and semantic debates over the distinction between conflict and competition: is negative competition conflict and is positive conflict competition? This project decided to distinguish between the two by defining competition as an activity that takes places within a known framework and to a set of agreed rules whilst conflict lacks such a framework and rules.

⁸ For a comprehensive analysis of post-Cold War conflict resolution see Miall et al (1999)

keeping (the dissociative approach) by which the two sides to the conflict withdraw from the arena; peace building(the associative approach) where symbiosis is developed and peace-making (conflict resolution). The tools for maintaining each stage have to be economic and social incentives, and some viable threat should the agreement reached in stage I be violated (see below)

Figure 1: the three stages of conflict management, after Galtung, 1971



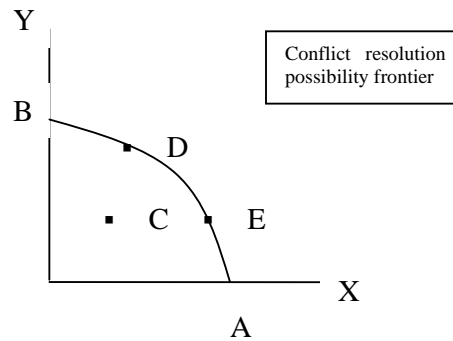
‘Tit-for-tat’ and ‘trigger punishment strategies’ also help explain why incentives might be needed to maintain Stage II peace. Under a situation of repeated games, a tit-for-tat strategy indicates that player A will chose the same option in the next game as chosen by Player B in the previous game. If player B opts to abide by the rules, so will Player A and vice versa. Assuming that one player always chooses to abide by the rules, peace will be kept by the threat of punishment should they not abide. As described by Miall, Ramsbotham and Woodhouse (1999), a tit-for-tat strategy actually involves cooperation, bears no grudges and, crucially, is predictable. They argue that in the first stages of conflict resolution, there has to be an ability to initiate cooperation.

A more dramatic form of punishment for transgressing the peace agreement is the trigger strategy. As soon as Player B opts to break the agreement, Player A plays the Nash Equilibrium⁹ strategy forever which results in the breakdown of peace. Ideally, both players should choose the co-operative equilibrium as the rational choice when faced with the possible threat of retaliation by the other side should they fail to abide by the agreements. Thus, strong institutions capable of delivering credible threats are needed to maintain peace and manage conflicts.

Nicholson (1970) and Powelson (1972) use a modified production possibility frontier model to explain conflict resolution. Taking the view that conflict is a result of unequal allocation of resources, it is argued that the optimum resolution has to be on the line BA, at points D or E, for example (see figure 2). Any moves beyond the line are not theoretically possible because this would involve allocation of resources that don’t exist, any resolution that is inside the line (point C) is an inefficient use of resources. Moves towards the line BA are thus beneficial to society, those away from it non-beneficial. Just as in economic terms perfect markets would produce production solutions on the line, so in conflict resolution terms perfect institutions would produce resolutions on the line (Powelson, 1972).

⁹ in which player A takes the best possible action given the action of player B, and player B takes the best possible action given the action of player A.

Figure 2: Conflict and the possibility frontier, after Powelson, 1972



A key issue of resolution would appear to be that it has to come from within the community but will almost certainly require an outsider to facilitate the process. Successful conflict resolution is achieved where the situation is perceived to have improved for all stakeholders. The resolution of conflicts does not necessarily change long-term issues – for this to occur more active management and resolution techniques are needed. In order to achieve this, full and effective participation of all stakeholders in the process has to be included. By definition this has to include those state structures that would assist change to take place within communities and in other sections of civil and political society.

3.3. Research Framework

No work of this nature had been conducted before, the project therefore had to devise a unique framework to research and analyse conflicts. The Research Framework drew heavily on previous work done on institutional economics, transaction costs and theories of institutional failure. The methodology was based on the precepts of PRA, although in practice it owed more to RRA methods.

3.3.1. Theoretical framework

The research for this project was interested in how institutional analysis could be used to study conflict. More specifically, how institutions respond to change and how the 'response rate' affects conflict. Using the concept of transaction costs derived from New Institutional Economics (NIE), the study aimed to examine how changing transaction costs affected conflict levels.

Whereas neo-classical economics states that market forces produce the most appropriate institutions in the long-run (because institutional changes that favour Pareto efficiency are favoured over others), this view is rejected by NIE which sees the former explanation as too prescriptive. NIE points out that basing institutional formation and change solely on rational behaviour fails to explain the existence of a number of (undesirable) institutions such as female circumcision, slavery and the untouchables. One explanation for the continued existence of such institutions is that the consequences (and cost) of subverting them would be worse than retaining the *status quo* (Toye, 1995:61). From an NIE perspective then, the cost of changing undesirable institutions (or any other institution for that matter) is a function of transaction costs. NIE argues that institutions emerge and exist to minimise transaction costs, changes to institutions are thus influenced by the inter-play of transaction costs in an endless move to minimise and internalise costs

Transaction costs are the economic equivalent of ‘friction’ in the world of physics (Hubbard, 1997). They represent the costs incurred in the organisation and co-ordination of human interaction (Challen, 2000:28). Coase, one of the first authors to write extensively on the matter, illustrates the nature of the problem as follows (1960:15):

“in order to carry out a market transaction it is necessary to discover who it is that one wishes to deal with, to inform people that one wishes to deal and on what terms, to conduct negotiations leading up to a bargain, to draw up the contract, to undertake the inspection needed to make sure that the terms of the contract are being observed and so on’

It takes but a small leap of faith to then apply Coase’s description to examples of transacting, co-ordinating and negotiating natural resource allocation decisions (Challen, 2000:29). But setting up institutions is not cost-free and different institutional arrangements emerge reflecting this. An institution is useful to society (and efficient) when the amount saved is greater than the cost of setting it up and maintaining it in the first place. Efficient institutions thus consistently reduce or maintain transaction costs (Challen, 2000:29).

Bringing together the transaction cost theory of institutional change and the supply and demand theory, the logical next step is that an increase in transaction costs is the trigger for institutional change: provided the institution is able to adjust to absorb any increase in transaction costs, it will remain viable. If the institution is no longer able to effectively minimise transaction costs, however, it is weakened and is increasingly unable to function properly¹⁰ (Klitgaard, 1998:337).

This research thus understood the following:

- Institutions exist to minimise transaction costs
- Institutions change as transaction costs rise or fall
- Demand for institutional change is mediated by power differentials and bargaining strategies amongst the community of users
- If an institution successfully changes to meet the new conditions, there may be two consequences:
 - a negative outcome as power asymmetries remain the same
 - a positive outcome as change has resulted in a more equitable distribution of power
- institutional failure results where change is unable to minimise the new transaction costs, this has two consequences:
 - conflict results because the ‘rule set’ of the institution no longer pertains
 - conflict may challenge power asymmetries with the prospect of a new institution emerging as a result.

¹⁰ A rise in transaction costs could be due to development pressures (political and economic), environmental scarcity (perceived or otherwise) and structural problems (political and economic). As a result of the rise, markets may collapse, property rights become unclear and States may be prone to civil unrest.

Institutional failure in a fisheries context may be described in the following terms:

- Capable and flexible institutions such as clear property rights, management systems rooted in community traditions, fair law enforcement and a strong State¹¹ are needed for effective fisheries management.
- The more nested the structure of formal and informal, local and state level institutions, the lower the transaction costs between the top and the bottom of the system and the more efficient the institutions in their management roles.
- In many developing countries this is not the case.
 - Communication between the different layers of fisheries management are frustrated,
 - the legitimacy of the ruling body to control or manage resources is often missing or contested
 - political factions and the action of rent-seeking elites influence the vertical relationship.
- It is in this context of imperfect or missing information that institutions often fail

3.3.2 Methodology

While there is considerable literature on **methods** for analysing and categorising conflicts (see Methodological Appendix:1), there are few obvious prescribed methodologies for collecting data. The extensive catalogue of methods housed within Participatory Rural Appraisal or Rapid Rural Appraisal, however, did appear to offer the best options. To this end, through an iterative process, a number of elements were adapted to collect data on conflicts, their management and their causes. The collection of methods chosen were grouped together under **PISCES**: Participatory Institutional Survey and Conflict Evaluation Study. PISCES was developed by Bennett and Jolley in April 2000 initially for the Ghanaian field work. It was flexible enough to be adapted to the different needs and constraints presented by each of the other countries. A full description of PISCES can be found in Methodological Appendix:2.

The objective of PISCES was to devise a simple, rapid and comprehensive tool that would enable the collection of information on conflict in fisheries. PISCES evolved out of a series of meetings with Ghanaian collaborators. A tool was needed that would enable specific information to be collected. A process of participatory exercises and semi-structured interviews with key stakeholders in artisanal fishing villages to ensure that as wide a range of views as possible were heard, and to take advantage of group dynamics.

3.3.3 Methodological issues

Establishing the veracity of the information given during interviews was problematic. Although the pilot study had demonstrated that villagers were not reluctant to talk about conflict in the village, we were aware that certain power dynamics within the group could be filtering and editing responses. In order to ‘triangulate’ the information received throughout the course of the fieldwork, the following methods were used.

¹¹ In this context, a strong state is understood as one built upon clear and open democratic foundations where the state is regarded as the legitimate authority. This is in distinction to a weak state whose legitimacy is contested by powerful elites

Etiquette in **Ghana** holds that no outsiders are allowed to ‘interfere’ in village affairs without prior consent from the Chief Fisherman. There is also a widely held belief that, as a senior member of the village, the Chief Fisherman is the holder of the ‘truth’ and the best source of information on fishing activities (the concept of participatory, stakeholder driven data collection is still considered somewhat alien). So, given the potentially sensitive nature of the research and the importance of the Chief Fisherman’s role, he (or his messenger) were always present. What is more, the Department of Fisheries (our collaborators) rely upon good relations with the Chief Fishermen along the coast for the collection of other data; this good will could not be put at risk by flouting locally held etiquette, even though interviewing a wider range of stakeholders might have produced a different set of results. To counteract the difficulties presented in data collection, Mr Robert Thompson, a senior member of MFRD staff, and himself a Chief Fisherman, conducted all the interviews. His presence ensured that interviews were possible (he was well known to a large number of fellow Chief Fishermen along the coast) and, because he is familiar with many of the villages, he was able to confirm many issues raised during the interviews. During the course of the pilot study, field work and follow-up visits, further, secondary, information was also collected from NGOs, academics and other government officers working in the area of fisheries. This information was then able to corroborate the data collected from the villages.

In **Bangladesh** the collaborators, and indeed many of the villagers, were familiar with the concept of participatory, stakeholder driven data collection techniques - so, there was no perceived need to ensure that the most senior fishermen was part of the process. The office of Chief Fisherman does not exist in Bangladesh so it was much easier to arrange interviews but the pervasive and often perverse power dynamics were certainly a factor for consideration. Due to transport difficulties, many of the interviews were conducted by local project staff with no UK project staff present, which undoubtedly changed the nature of the information given. When UK staff were present villagers appeared to be very forthcoming in their conflicts with local mastaans and bandits, but was unclear whether this information was constrained by the ever present threat of retaliation. Local project staff familiar with the area were usually able to offer advice as to the veracity of the conflicts mentioned. As with the field work in Ghana, extensive unstructured interviews with the plethora of NGOs working in the sector as well as officers in the government and donor organisations were able to provide an objective analysis of the data collected and help put it in context.

The **Turks and Caicos** islands presented a distinct advantage in that all interviews were conducted in English by the project staff, thus eliminating potential language and cultural complications. However, given the small population and the nature of the relationship between the fishermen and the processors, claims that the two parties worked in harmony with no conflicts have to be treated with caution. Local project staff were able to provide details of local difficulties, but the speed with which information is transmitted on the islands may have proven a constraint to establishing the true nature and extent of conflict. Again, interviews were conducted with “non-belongers” (expatriots) working on the islands familiar with the fisheries sector. The staff at the Field School on South Caicos were particularly useful in ‘verifying’ the data collected and providing further information.

That said, overall it is felt (and confirmed by local project staff) that the information collected is an accurate representation of the level and nature of conflict at each study site¹².

Recognising the nature of the working day in fishing communities (fishermen often rising very early, working through till lunchtime and then resting during the afternoon) each exercise needed to be no more than an hour long – most of the data collection was conducted on the spot and it was felt important that the respondents' attention and willingness to participate be maintained throughout. The shorter the intrusion into their working day, the better.

PISCES consists of a number of elements which could be used in the three different countries – either using the full complement of techniques or any combination that suited the environment. PISCES was also developed so that it could be used in large and small groups. In Ghana, data collection was conducted at village level. The Chief Fisherman, his council of elders and other fishermen, fish mammals etc would sit in a formalised arrangement. In Bangladesh it is harder to identify 'the village' (there being no equivalent of a chief) and so a number of small sessions were conducted with different groups. Usually a number of households that worked in co-operation and their extended families. These groups tended to be organised along religious lines; that is, Christian, Hindu or Muslim fishing families. In the Turks and Caicos Islands most data collection was done in even smaller groups and occasionally on a one-to-one basis. The diversity of approaches reflects the operational dynamics of fishing units and villages in the three study countries.

3.3.4. Sample number and Sampling techniques

The sampling techniques used at each of the study sites were adapted to suit the particular location, with the overall aim of maintaining a large degree of consistency of information collected. Ghana benefited from having a comparatively small fishing population that had been surveyed by the Marine Fisheries Research Division. As a result, basic information about the population was available and sufficient data allowed a representative sample to be drawn from the entire coastal fishing community.

Bangladesh has a very large heterogeneous population, making it unfeasible to replicate the sampling technique used in Ghana. Instead, three distinct water bodies were chosen and a number of villages selected at random from within each of these water bodies. Thus, the data collected from each water body could be cross-referenced across the various villages with access to the fishing grounds. The water bodies (a river, a permanent and a seasonal beel) were chosen to reflect the different access regimes evident in Bangladesh because it was felt that the legislative framework was probably a key to the emergence of conflict.

The Turks and Caicos Islands presented yet another set of issues as far as sampling was concerned. Although the population of fishermen is relatively small, and there exists data on who the fishermen are (they all have to be licensed with the Department of Environmental and Coastal Resources), constructing a sample and then contacting

¹² Due to the socio-economic nature of the study, the issue of hidden conflict was not included. The implications of hidden conflict are dealt with in subsequent sections of the report and at the end of section 3.6.

fishermen in the sample was not so easy. Few fishermen have access to telephones, the fishing community in the Turks and Caicos is very individualistic and wary of strangers and on the main fishing island the fishermen have been 'over-surveyed' and are not generally willing to participate¹³. It was thus decided to use the reputational approach and from there attempt to gather as much information as possible from those fishermen willing to participate¹⁴. The fishing industry in the Turks and Caicos is highly integrated to other activities in the coastal zone, and to this end other stakeholders were also interviewed.

The result of such a diverse means of sampling is that whereas the data collected in Ghana is *statistically* representative of the entire artisanal fishing community, no such claim can be made for either Bangladesh or the Turks and Caicos. Data collected in Bangladesh and the Turks and Caicos, however, does form extensive and informative case studies of particular villages (Bangladesh) and islands (Turks and Caicos).

Finally, transcripts from the mapping exercises and semi-structured questionnaires from each country were analysed to produce a list of reported conflicts. The conflicts were grouped by similar characteristics (perceived cause of conflict, nature of the conflict, participants to the conflict). This process was repeated until the number of 'types' satisfactorily encompassed the entire range of issues raised. This process is further outlined in Section 3.4.

3.4 Analytical framework

The development of a typology was an important starting point for studying conflict in developing country fisheries and would prove a useful analytical tool. Typologies aid in the codification of the real world. They enable the formation of hypotheses based on the unification of myriad facts under general categories. By listing the most salient features of the chosen phenomenon a typology can be built (McKinney (1966).

The development of a typology was a multi-stage process¹⁵. First a number of typologies were developed based on desk-based research regarding the causes and nature of conflict. Following the fieldwork, a definitive typology was constructed.

Charles (1992) produced a typology of fisheries conflicts that helps explain the nature of conflicts in fisheries (see Table 1).

¹³ See also *Information Systems for the Co-management of Artisanal Fisheries, Field Study 2 Turks and Caicos*, DfID funded project R7042, MRAG Ltd, June 1999

¹⁴ The reputational approach to selecting a sample consists of approaching a number of key, well-connected members of the fishing community and encouraging them to persuade others to participate in the exercise. The reputational approach helps overcome suspicions about the researchers, but obviously has its draw backs because those who are interviewed tend to be linked to the first contact: others outside this circle for what ever reason may be ignored.

¹⁵ The various stages of typology construction can be found in the Methodological Appendix: 1

Table 1: Typology of Fisheries Conflicts (Charles, 1992)

Jurisdiction	Management mechanisms	Internal allocation	External allocation
Conflicts over who owns and controls access to what; the optimal form of management and the role of government in the fishing system	Conflicts over how policy is carried out – often short-term conflicts over harvest levels, (over) enforcement and the consultative process	Conflicts resulting from how different fishery stakeholders interact	Conflicts resulting from how fishery groups and ‘outside’ activities interact

He argues that in order to understand the types of conflicts that emerge, it is important to understand the paradigms that produce the roots of the conflicts: the conservation versus rationalisation versus social/community paradigms. In other words, the conflicts that emerge will reflect the chosen path or stated objective of the fishery stakeholders and managers. If there is considerable disagreement between conserving the fishery, meeting social objectives (food and employment) and rational management (economically efficient fishery) conflict is more likely. Charles (1992:393) states that fisheries that are ‘relatively conflict free’ are those where a high degree of consensus has been reached between all stakeholders and there is little argument over the objective of the fishery (to provide food, to provide for future generations or to operate efficiently for example). Charles does note, however, that such balance is unlikely to be achieved within an authoritarian regime, a point that becomes significant in Section Five. While this typology is concise, it was never intended to deal with some of the more intangible elements observed in many tropical fisheries. For this is it useful to look at the typology developed by Warner (2000).

Warner (2000:11) proposes a typology of natural resource conflicts that encompasses many of the exogenous and intangible effects found in (tropical) fisheries. He distinguishes between a) intra micro-micro conflicts (boundary disputes, elite capture of benefits, community differences), b) inter micro-micro conflicts (lack of co-operation between communities, conflicts over wealth disparity and conflicts between long-term settlers and new arrivals) and c) micro-macro conflicts (cultural disputes, relations between project sponsors and communities, environmental problems and contradictory resource needs). Warner’s typology stretches the boundaries of conflict to include those elements that are not directly related to immediate stakeholders in the resource (such as project funders, elites) and other more intangible issues such as cultural difference and corruption.

We suggest that the following typology (see Table 2) may usefully combine elements of the Charles and Warner typologies:

Table 2: Revised typology of fisheries conflicts

Type I Who controls the fishery	Type II How the fishery is controlled	Type III Relations between fishery users	Type IV Relations between fishers and other users of the aquatic environment	Type V Relationship between fishers and non-fishery issues
Eg. Access issues	Eg. Enforcement issues, quota allocation issues, co-management issues	Eg. Issues between different groups (linguistic, religious, ethnic) Issues between different scales of users (artisanal, semi-industrial)	Eg. Issues with tourism, conservation and industrial development	Eg. Issues over the environment, politics, economic change, elites, corruption

3.5 Fisheries conflicts in Ghana

The fieldwork in Ghana was carried out between March and May 2000. The survey covered 62 artisanal¹⁶ fishing villages and focused on both the fishermen and the fish processors. Villages were chosen at random from a population stratified by Region (of which there were four). The resulting sample represents 33% of the villages listed in the latest Canoe Frame Survey (1995) conducted by the Department of Fisheries (Ghana)¹⁷.

Table 3: Sample distribution by region and village characteristics

Region	Total no. of villages (sample)	no. of villages in region ranked (sample)	no. of fishermen per village ranked (sample)	no. of canoes per village ranked (sample)
Volta	27 (9)	4 (4)	4 (4)	4 (4)
Greater Accra	48 (15)	2 (2)	2 (1)	2 (3)
Central	42 (14)	3 (3)	1 (2)	1 (1)
Western	75 (24)	1 (1)	3 (3)	3 (2)
TOTAL	189 (62)			

With no information on the variability of the population it was decided to select one third of all the villages in each region on a random basis. In order to gain a complete picture of conflicts within the coastal zone, interviews were also conducted with inshore-vessel owners and a number of industrial fleet operatives.

Local Fisheries Department staff familiar with the villages and conversant in the local languages were trained to conduct the surveys. Whilst it was at first hoped that the enumerators could be trained and then sent into the field to conduct the interviews at their leisure, it soon became clear that this was not going to be possible in all cases due to transport problems. It was thus decided that at least one member of the conflict team should be with an enumerator at all times.

¹⁶ The Ghanaian definition of 'artisanal' is any vessel that does not use an in-board motor. Artisanal vessels range from dug-out one-man canoes through to planked canoes measuring up to 90 feet in length, powered by an out-board motor and requiring a crew of around 20 men (pers.comm Mr Robert Thompson, MFRD Ghana, March 2000)

¹⁷ Information on the political and economic context of the fishing industry in Ghana can be found in Background Appendix: 1.

3.5.1 Conflicts reported

Table 4: The 6 ranked conflicts by region

Conflict	Struggle for Fish	Net Entanglement	Fish Pricing	Clashes with Semi industrial vessels	Clashes with Inshore Vessels	Theft From the Beach
Volta	6 (1)	5 (2)	4 (3)	0 (4)	0 (4)	4 (3)
Gt Accra	12 (1)	6 (4)	8 (3)	10 (2)	2 (5)	1 (6)
Central	10 (1)	8 (2)	5 (3)	2 (5)	2 (5)	4 (4)
Western	10 (3)	15 (1)	3 (6)	6 (4)	11 (2)	4 (5)
TOTAL	38 (1)	34 (2)	20 (3)	18 (4)	15 (5)	13 (6)

Note: number of villages that reported the conflict (ranked by region).

The struggle for fish and net entanglement

The two most cited examples of conflict, by the villages, were the struggle for fish and net entanglement. Though both conflicts ultimately involve the clashing of the canoes or the fishing gear at sea the difference is that the net entanglement is considered to be accidental, while the struggle between two canoes over fish is classed as deliberate.

The ‘struggle for fish’ will generally occur between two canoes using active gear, for example a purse seine. The key to this conflict is that the first canoe to sight a shoal of fish has the right to cast its net around that shoal. If that canoe decides to wait and watch the movement of that shoal before casting its net it still retains “ownership” over that shoal. Conflict arises where a second canoe casts its nets after a shoal has already been sighted. Where this conflict occurs the skipper of the first canoe will complain to the chief fishermen who will then question the fishermen from both crews to establish which canoe sighted the shoal first and therefore determine which canoe is liable to pay compensation.

The other example of this conflict occurs when a canoe casts its nets inside nets already been cast by another canoe. This may either be another purse seine or a beach seine (incidence of this is rare) when this occurs it is again reported to the chief fisherman who will determine liability and fine the canoe as appropriate.

Net entanglement is a conflict that occurs mostly among the static gears, such as the surface set net. Before a skipper casts his nets he must take into account the direction of the prevailing wind and the sea current. By doing so he should be able to predict the direction in which the nets will drift. Quite often it will be the case that nets drift into each other, where they become entangled it may require one of the nets to be cut. Again the conflict that arises from this will be taken to the chief fishermen who along with his elders will establish liability and fine the fishermen as appropriate.

Fish Pricing

The pricing of fish is regarded as a conflict, although it could be argued that this is an essential and integral part of how markets work and is a sign of competition not conflict. The fishermen are often tied into buying agreements, though loans, with the fish processors who were always female and usually family. Fishermen reported that the women demand a lower than reasonable price for the fish, which spurs the fishermen to break their buying agreements with the fish processors which is a source of many conflicts. Fish processors interviewed also cited fish pricing as a conflict although they

maintain that the men demand an unreasonably high price for the catch and abscond from repaying credit.

Semi-Industrial Vessels

Conflict between canoe and semi industrial vessels was the fourth most cited conflict. The focus of this conflict is Greater Accra Region where more than half the villages reported conflict with semi industrial vessels.

National legislation (PNDCL 256) forbids trawlers operating in coastal waters in depths of less than 30m. Since enforcement of this law is weak, non-compliance is significant, thus bringing the semi industrial vessels into contact with the artisanal canoes. Those who operate static gear such as bottom set nets and lobster nets are far more likely to experience such conflict. The high incidence of this type of conflict in Greater Accra Region is explained by the number of villages operating static nets close to Tema (a semi-industrial vessel port) whilst the narrow continental shelf in Western Region brings the vessels within easy operational distance of the canoes.

In the majority of cases conflicts with the semi industrial vessels went unresolved because they could not be identified. Another reason was that the conflicts have to be reported to the fisheries office at Tema. For those villages in Western region who experience such conflict this means a long journey and a lot of time and effort. The fishermen are therefore reluctant to follow up such incidents.

Inshore Vessels

Just under a quarter of villages along the coast reported conflicts with inshore vessels. The incidence of this was clustered around the main inshore vessel ports of Sekondi, Elmina, Shama and Tema. Many inshore vessels are based in Western Region which would explain why this region records the highest incidents of this conflict (11 out of 24 villages).

Theft from the beach

Theft from the beach was thought to be associated with the frequently mentioned breakdown and deterioration of social order. This conflict was cited mostly by villages in Greater Accra Region who thought that the increasing intrusion of Western media, which is causing expectations of the young to rise was to blame.

Merchant vessels

This conflict was localised and reported only in the villages in the proximity of both Tema harbour and Takoradi harbour.

In the case of Tema there is an area that has been declared the anchorage for the port, which is shown on maps but not clearly marked by buoys. Tema harbour is a relatively recent construction; the anchorage area is a traditional fishing ground and thus attracts fishermen. The lights from the moored ships act as fish aggregating devices, which also attract the fishermen. Canoes operating within this area do so at their own risk and will receive no compensation if their nets get spoiled. From an interview with the fisheries director in Takoradi it became evident that no such shipping lanes are in place in Takoradi which causes confusion amongst the fishermen and the authorities particularly in the process of conflict resolution.

Land Disputes

Pressure by the tourism industry for beachfront land around Accra has started to cause disputes between the fishermen and the alleged land owners. In the village of Nungoa just outside Accra the fishermen are fighting for control over land adjacent to the beach which they claim is theirs on the basis that it forms part of the beach. A similar case was reported at Bortianor. Here fuzzy property rights and rising real estate prices are causing conflicts between two villages over rights to a piece of land. These conflicts are now being transferred out to sea where a willingness to assist neighbouring village fishermen was reported.

Price Rises

The cost of nets, fuel and canoes has risen dramatically over the last 2 years. The declining exchange rate is forcing the prices of engines and nets upwards. The rising price of oil is having obvious impacts on the cost of fuel for the canoes while the increasing scarcity of the wawa tree is resulting in a sharp rise in the cost of new canoes.

Credit

The fishermen are faced with rising prices and falling catches which is placing an increasing importance on the role of credit, without which it is becoming increasingly hard to pre-finance the inputs required for each new fishing season. In the majority of villages fishermen do not have access to formal credit facilities (only 4 sample villages had access to credit from the banks). The majority of the fishermen who do have access to credit get this from the women fish processors. This credit arrangement was reported in 35% of the sample villages, the level and organisation of the credit varied considerably with some women having access to banks and others financing the credit from the profits of their sales.

The credit system devised by the women has proved to be far more robust than that offered by the government or banks in credit schemes over the last 20 years. Fish mummies and Fisheries Officers reported that fishermen consider the government loans to be public money and often default on payments, some moving away from their villages to avoid the payments. This rarely happens when they take a loan from the women, since the women will find them and discredit them. It is not uncommon for a fish mammy to place a curse on a fisherman with whom she is having a dispute. This is taken very seriously and has indeed been addressed in local by-laws.

3.5.2 Conflict management

The level and complexity of conflict management is well established in Ghana. At the grassroots level, fisheries conflicts are either dealt with in the village by the Chief Fisherman and his council or between the Chief Fishermen of the respective villages, if more than one village is involved. As the scale of problem escalates, or the distance of the parties to the conflicts increases, so the degree of involvement changes and the management process becomes more protracted. Officials (Chief Fishermen and Fisheries Officer) deal with conflicts involving inshore or semi-industrial vessels at their respective home port – often many miles from where the problem happened. Conflicts that have become too difficult for the villages to resolve are dealt with by Fisheries Officers (where they exist) and the judicial system – though this is rare. Although there were considerable number of conflicts reported at the village level, there appeared to be little difficulty in dealing with these problems. But, the focus tends to be on day-to-day management and resolution rather than longer term measures. As the

focus for resolution moves away from the village, so the satisfaction with the process and the speed of the process slow down as the cost of the process increases.

The fisheries administration established Arbitration Committees (AC) 2000, to support and act as a mid-way measure between the formal (state) and informal (village) conflict management institutions. There is an AC in each region (4 in total) and a national AC based in Tema. The national AC is made up of the Chief Fisherman of Tema, the captain of the research vessel, a staff member from the gear technical research unit, and the Regional Development Officer for Fisheries (secretary). Representatives of the parties involved are generally the Chief Fisherman where the offence was committed and the Chief Fishermen of the defendant's village.

The AC comes into operation when a Chief Fisherman has been unable to resolve a conflict through the normal village-based channels. In this case, the Chief Fisherman contacts the DFO who either forms an *ad-hoc* committee in his District to solve the problem, or reports it to the national Arbitration Committee at Tema if it is particularly difficult. If the AC is unable to reach agreement, the case is either abandoned or referred to the formal administration settlement system at the Directorate for Fisheries or the Ministry.

Most conflicts are arbitrated by the National Arbitration Committee which reviews up to 50 cases a year, most occurring during the fishing season. Most cases concern gear damages and collisions; the AC hears cases between artisanal canoes and between artisanal canoes and other sectors of the fleet. The AC does not have the power to enforce the agreements reached, rather both parties have to agree to the settlement on a voluntary basis. Although this can be seen as a limitation of the Arbitration Committee, it is also the reason why conflicting parties agree to settle their differences via the Committee and is also the reason why it has been so successful. Conflicts between canoes and industrial vessels or merchant vessels are difficult to resolve by the AC. This is because these vessel owners have nothing to gain (or to fear) from the arbitration process. (Lenselink, 2001)

3.6. Fisheries conflicts in Bangladesh

The fieldwork in Bangladesh was undertaken between July and August 2000. In common with a number of other South Asian countries, Bangladesh's fisheries are characterised by two distinct sectors: the coastal, marine sector and the inland, floodplain sector. Given that 70% of Bangladesh is covered with floodwater during the peak of the normal monsoon period, fisheries and their interactions with other sectors on the floodplain are of critical importance to the economy of the country¹⁸.

Although the marine sector is important for exports, the floodplain fisheries are a chief contributor of protein, employment and income to a large, and growing, rural population. Conflicts in the coastal area, particularly over shrimp cultivation, are rising and becoming increasingly violent. However, it was felt that for the purposes of this study attention would be focused on the floodplain where any findings would have a far greater impact for a larger proportion of the population. Were attention to be focused

¹⁸ Information on the political and economic context of Bangladesh inland fisheries management can be found in Background Appendix 2.

on the coastal (shrimp farming) areas, the impact would more likely be felt within the export sector and its impact on the livelihoods of the rural poor would be lower.

The three study sites were chosen in collaboration with the collaborator and consisted of an open access river fishery in Brahmanbaria on the Titas river; a permanent beel (held under lease) in Tangail and Chanda Beel, a large seasonal water body (under open access/CPR regime) in Gopalganj District. Selecting sites by water body helped avoid choosing sites that had exemplary conflict resolution procedures, or excessive conflict problems.

In each area a small cluster of villages was selected to provide as broad a picture as possible of the area. In each village respondents were selected for interview on a random basis. Interviews were conducted with a wide cross-section of fishermen and other stakeholders in the fishery: poor, landless fishermen who supplement their income through waged labour and share-cropping, comparatively wealthy land-owning fishermen who also worked as fish traders during the dry season, full-time fishermen, government officials and in one case the care-taker of a large, leased water body.

Table 5: Summary descriptive of each Case Study:

Case study	Primary waterbody	Secondary waterbody
Tangail	One large permanent beel, under lease; a number of smaller beels, under a variety of access arrangements	Logala and Jumuna River, open access
Brahman Baria	River Titas, open access	A variety of beels, under different access arrangements
Chanda Beel	Seasonal water body	Madaripur Beel Route Canal

As the following table demonstrates, there is little perceptible difference between the conflicts reported at each of the three study sites. The only difference in terms of access is seen at Chanda Beel where access conflicts were not significant. As will be become evident, conflict management and resolution institutions in each of the three study sites were either non-existent, inadequate or ineffective¹⁹.

3.6.1. Conflicts Reported

Table 6: Key issues in each village

Village name	Landowners or water body owners?	Dacoity attacks	Access conflicts	Conflict resolution works?
Kathua Jugini	7	4	4	7
Krishnapur Madda	7	4	4	7
Krishnapur West	7	4	4	7
Shabazpur	7	4	4	7
Sitnagar	7	4	4	7
Kalikatcha	7	7	4	7
Sharduladi dottokhola	7	4	4	7
Bil Chanda	4	4	7	7
Kaligram	4	4	7	7
Goalgram	4	4	7	7

¹⁹ For further information on conflicts reported in other locations in the Bangladeshi media, see Background Appendix 2.

Tangail

Table 7: Number of participants in Tangail

Village	Estimated number of fishing households that participated in data collection
Kathua Jugini	30
Krishnarpur (Madda)	9
Krisnapur (West)	10
Total	49

The Sluice Gate

Under the Flood Action Plan 20 Compartmentalisation Pilot Project (CPP) in the late 1980s 13,000 hectares in the Tangail district became part of a “flood management laboratory”. The project area was divided into compartments, into which the flow of floodwater was to be regulated by sluice gates and embankments (PANOS, 1994). The main objective of the CPP was to “provide a secure environment for intensive agriculture, fisheries and integrated rural/urban development through controlled flooding and drainage” (Ali, 1997).

A number of problems were reported to have arisen due to the gates: a) the reduction of flood inundation has reduced the areas available for fishing b) the sluice gate is operated in such a way that it does not allow the fish the chance to enter the floodplain to spawn c) the river has silted up which has reduced fish numbers d) water is not allowed into the surrounding beels in adequate quantity to maintain the levels. The sluice gates are controlled by a management committee made up of representatives of all the various stakeholders. The fishermen considered themselves to be token members of the committee, and hold little power yet all reported that they had benefited from the reduced abnormal flooding levels.

The building of the sluice has, however, had a number of externalities. Because of the (reported) scarcity of fish within the locality the fishermen have been forced to move further and further afield. When fishing outside of their locality the fishermen were faced with three problems. Firstly they were often required to give 25-50% of their catch to the influentials/muscle men of that area, second they became far more likely to experience theft of their fishing gear; third the fishermen often faced opposition from the local fishermen of that area. The construction of the sluice gates has also prevented boats from moving freely along the river because the gate is not big enough to allow country boats²⁰ to pass through. Again, this has resulted in fishermen being forced to alter their fishing patterns, often pushing them further and further afield.

Decreased access to traditional fishing areas

The fishing villages of this study site are located around the permanent water body Jugini beel and alongside the River Logala. There are 7 beels within the study area, the largest being Jugini Beel. Over recent years, fishing rights in the beels has been restricted as the access system has changed. The fishing co-operative within Kathua Jugini own the lease to fish Jugini beel, but they have sub-leased it to influential men from Tangail as they were not able to afford the cost of stocking the beel. This has

²⁰ a local term for simple, open, shallow draft boats used by fishermen. They are normally powered by oars.

restricted their activities on the beel to occasional waged labour (8 or 9 fishermen a season might hope to be employed in this way).

The villagers have been given assurances that the rights to fish on the beel will be returned to them when the lease is renewed in 2001, although it remains to be seen if they will be able to afford the lease or the cost of stocking the beel. Muslim fishermen interviewed doubted that the return of the lease to the community would make any difference to them because their status means that they would be unlikely to realise the benefits. As a direct consequence of stocking, fishing in adjacent floodplain waters is also prevented to protect the brood stock. Although subsistence fishing is still allowed according to the law, there are problems over defining who is a subsistence fishermen, and convincing the beel caretakers that this is in fact the case. The same situation was reported on a number of other beels in the area. Most of them have been stocked to improve catch rates (and therefore returns to financial capital) but large tracts of the traditionally open access floodplain have been closed off as a result to protect broodstock as the waters rise. For example, it was reported that the floodplain to the south of Jugini Beel is now stocked by a local NGO²¹ who have banned all fishing in the vicinity and will not buy fry or fingerlings from the local fishermen.

Restricted access issues were also reported on the river. Although the river is open access, fishermen are prevented from fishing there by landowners whose land adjoins the river and wish to exploit the fisheries resources themselves. A number of the Fishermen who own farmland stated that they were unable to fish the flood waters above their own farm land.

Activity of *Mastans*/influentials²²

The consequence of reduced access to traditional (and local) fishing grounds means that the fishermen are travelling further away to fish and thus have to negotiate access to grounds controlled by *mastans* or influentials. Although there is no legal basis for their actions, the fishermen accept that they have to pay to fish in what is by law an open access fishery (the river). Payment is either in money or a percentage of the catch and violence is used to extract payment.

Brahmanbaria

Table 8: Number of participants in Brahmanbaria

Village name	Number of fishing households that participated in data collection
Shabazpur	14
Sitnagar	18
Kalikatcha	10
Sharduladi Dottokhola	1
TOTAL	43

²¹ The term NGO is used in Bangladesh is refer to any non-governmental organisation. These are frequently small, private enterprises set up as NGOs to qualify for aid money and do not necessarily conform to the European notion of an NGO as a not-for-profit organisation working toward altruistic goals.

²² Influentials is a loose term used to described those that use their position to manipulate the law and politics in their favour. Mastans (also known as muscle men) is a local term for the influentials henchmen.

The main focus for this case study was the Titas River, a secondary river that passes through the district and eventually links with the Meghna. A beel was also used by a number of the villagers and formed a backstop to their fishing activities on the river. The region is moderately industrialised with textile mills, some important gas fields, a large power plant and a significant fertiliser manufacturing industry. All three villages were predominantly Hindu, with the exception of the last that was a predominantly Muslim village of so-called neo-fishermen. This case study comprises 2 distinct sub-case studies. Shabazpur and Sitnagar are two villages that fish in the river and on the floodplain, Kalikatcha, is a village where the majority of the fishermen work as hired labour in the village ponds and only a small number fish in the river or floodplain.

Rising competition for resources on the river

Prior to 1995 the river was fished under license. Despite this, the fishermen interviewed claimed that there were at least 3 times as many fishermen fishing this stretch of the river as there were licenses issued. In an effort to resolve the conflict over licenses a local NGO, Proshika, was eventually called in to help, but before any solution could be found, the licensing system was abolished, effectively legalising those fishing there illegally. (Hindu) fishermen reported that once the river was declared Open Access the number of fishermen rose sharply which has been causing a number of problems: competition for the resource has risen and as a result enforcement is not as effective as before. The river is 'managed' by a River Management Committee (RMC), a joint initiative by Proshika and the Department of Fisheries set up in 1998. The RMC consists of all major stakeholders on the river: including katha owners, local government, DOF and Proshika. However, increasing levels of apathy and disinterest in the participating villages (which included one of the case study villages), coupled with lack of financial support has rendered the RMC largely non-functional. Fishermen who regularly fished the river reported that as resources are depleted and commons problems rise, so the use of illegal fishing gear has risen to compensate; protection of this illegal gear is also a cause of rising violence on certain fishing grounds.

Neo-fishermen

Neo-fishermen are (generally) Muslims who have been forced into fishing when their other livelihood options collapse²³. They started fishing in the river because it is Open Access and this is part and parcel of the conflict mentioned above. The Secretary of the National Fishermen's Society lives in the area and confirmed that they were lobbying at the moment to remove neo-fishermen from the Titas River, thus restoring the previous arrangement whereby only 'real' fishermen could fish there. Neo-fishermen interviewed asserted their right to fish the river and reported frequent conflicts with Hindu fishermen.

Illegal appropriation of resources

The illegal appropriation of resources in the river was reported. Firstly, the placing of bamboo fences in the river to prevent fish migrating down stream. These fences are illegal, yet frequently erected by a variety of people (influentials, muscle-men or neo-fishermen). Because they act to congregate fish, the area around them is fiercely guarded, effectively banning fishing in certain sections of the river. Secondly, the use

²³ The term used in Bangladesh is usually non-fishermen, although the more politically-correct term of neo-fishermen is used by some.

of *kathadam*, (brushpiles or fish shelters), again by influentials, muscle-men or neo-fishermen. These also act by concentrating fish, making fishing easier and are thus fiercely protected. These two devices also impact on fish reproduction because they disrupt natural migration patterns. The fish move from the river to the beel when the waters start to rise, and return to the river as the waters fall. Fishermen reported that disrupted migration patterns are impacting upon fish populations in the river and beel as breeding and reproduction is curtailed. There is no immediate remedy to either of these problems: the Thana Fisheries Officer is unable to provide support, and recourse to the police is considered futile due to the power and influence of the perpetrators.

Use of illegal fishing gear

Monofilament is banned and yet is often used by poachers on the river and the beel (and was frequently seen in fishermen's houses). It is both effective in catching fish and is also very difficult to detect in the water. The fishermen reported that it was not possible to do much about the monofilament net: the poachers that used it were very powerful, and they could not appeal to the leaseholder, as he was not powerful enough to counteract the poachers. Occasionally the police would raid the beel to confiscate illegal nets, but frequently they were bribed with large sums of money. Other fishermen reported that areas around the monofilament net are protected by *mastans*, thus constraining the villagers fishing area, and putting them in danger of a beating should they get too close.

Enforcement of illegal activity (fishing gear disputes and *mastans*)

Fishermen considered the current laws and regulations on fishing to be adequate, but were unanimous in their perception that enforcement of these regulations was not sufficient. Faults in the enforcement system were put down to power differentials between the police, government authorities and the *mastans*, but also to the frequent use of bribes. Failure to enforce regulations and the general sense of insecurity has also been enhanced by a serious rise in the level of lawlessness with *dacoit* attacks²⁴ increasing. These *dacoit* attacks are often related to any complaints lodged by the fishermen with respect to the use of illegal gear, or the illegal appropriation of resources (see below). Complaints filed are often followed by a night-time visit to the village by a band of *dacoits* who will wreck their boats and steal their gear.

Reduced access to fishing grounds

Villagers reported conflicts related to reduced access to Khajadina Beel. This was blamed on neo-fishermen that had moved into the fishery to benefit from the rising price of fish. During the monsoon vast areas of the floodplain are declared off limits by neo-fishermen that have discovered a profitable area to fish. Again, the villagers reported that they felt the laws and regulations regarding fishing to be adequate, but the enforcement mechanisms to be weak or non-existent. One of the reasons given here for the weakness of the enforcement mechanism was the sharp rise in the number of fishermen using the resource: the system was not able to cope with this. Another village that relies almost exclusively on the floodplain for fishing reported this same conflict. The fishermen in this village used to co-operate with the adjacent village (reciprocal fishing rights, mutual support etc), but, since the beel has now come under the lease system, there is no provision for them to fish there and the co-operative element has disappeared.

²⁴ A *dacoit* is a robber belonging to an armed gang (defined in law as 5 or more people).

Chanda Beel

Table 9: Number of participants in Chanda Beel

Village name	Number of fishing households that participated in data collection
Bil Chanda	19
Kaligram	21
Goalgram	10
TOTAL	50

Chanda Beel is a large seasonal water body in Gopalganj District, mid-way between the cities of Faridpur and Barisal. At full flood the beel takes in 9 unions and 45 villages.

The three villages chosen are all sited on an island in the centre of the floodplain, accessible only by country boat across the Madairpur Beel Route Canal. This part of Bangladesh has a large Christian population, and this was reflected in the villages chosen for the case study: all had a majority Christian population, generally 60% Christian and 40% Hindu, each had one Muslim family living there. Overall, 80% of the villagers are engaged in fishing activities during the wet season and 40% are professional year-round fishermen. During the dry season the land on the floodplain is used for cultivation, it was estimated that at least 75% of the villagers owned a plot of land of least 50 decimals in size. Approximately 60% of the villagers owned or leased floodplain *kuas* and ditches, for fishing during the dry season months.

As a consequence of the Christian population, there is a significant NGO presence in the area – both secular and missionary – and this appears to have had a sizeable impact on the communities there²⁵. One such NGO activity has been the promotion of IRRI cultivation²⁶ which has provided the villagers with an alternative source of income.

Between June and December fishing activities are focused on the floodplain, with the fishermen using a variety of gears to target the different floodplain species. Though predominantly open access, certain areas controlled by landowners are restricted by charges on fishing activities there. During January and February the fishers concentrate on the canal, baors and *kuas* though some fishermen will migrate to other areas to fish. March and April are the lean months and so many of the fishers seek wage labour or those that own land will concentrate upon that.

Village transacts and RRA showed that the study area was more wealthy than other sites surveyed: houses were built of tin or wood, many had electricity and televisions and a number were built on two storeys. The Third Fisheries Programme had stocked the area and many fishermen had gained financially during this time. Together with access to favourable loan rates from NGOs, the fishermen here were more likely to own land and were generally wealthier than at other study sites.

²⁵ Local staff recount that NGOs presence is much higher in Christian and Hindu villages than Muslim villages because Christians and Hindus are generally less hostile to outside influences working with the community.

²⁶ The International Rice Research Institute (IRRI) has introduced certain type of HYV rice in this area; this is often referred to as IRRI cultivation.

Despite the comparative level of prosperity, the incidence of conflict experienced by the villagers had, by common consensus, increased over the past 10 –12 years. The major reason cited for this was a depletion of the fish stock and an increasing number of fishermen.

Illegal fishing practices

De-watering in January and February when all the water (and with it all the fish) are pumped out of privately owned *kuas*²⁷ was a conflict reported by many participants. This not only kills all the fish, but all the fry and fingerlings as well. Fishermen maintain that when the floodwaters rise on the next monsoon, the number of fish entering the floodplain are much reduced. This is a very effective method of fishing and is a process that removes the brood stock from the floodplain for the next wet season. As a result the floodplain is solely reliant upon the river for the rejuvenation of its fish stock.

Access issues

Fishermen reported that the implementation of ‘property rights’ placed illegally over the floodplain by the villages adjacent to it has resulted in restricted access to fishing in the waters close to the villages. Such access restrictions were also experienced by fishermen travelling to fish in areas outside their locality (10-15 km away). Fishermen also reported being charged for access to waters on the floodplain. In certain areas the owners of the land beneath the floodwater will charge fishermen for fishing on top of that land and will enforce this with violence. This particularly impacted on those fishermen with no land on the floodplain. The same conflict arose around *kuas*. Although *kuas* are private, the owners would not allow fishermen to fish in the adjacent water and enforce this either through violence or by stealing the fishing gear and boats of the ‘intruding’ fishermen.

Dacoity attacks

Fishermen reported that attacks on villages on the outlying areas of the floodplain were on the increase with seemingly no recourse to any law enforcement to prevent them. Why such attacks were more frequent was not understood, although the culture of corruption was held to be partly to blame in so far as some Police are believed to be connected to the Dacoits and thus turn a blind eye to their activities in return for a cut of their ‘earnings’.

Enforcement issues

Current fisheries legislation was considered by the villagers to be beneficial for the fishery, yet they all felt that enforcement should be stronger. All fishermen interviewed mentioned flouted regulations regarding both fishing gear and minimum catch sizes. Since catches had been declining there has been more pressure on the fishermen to use illegal fishing gear (such as monofilament net) in order to make a living and as a result its use was considered to be widespread. The issue of weak enforcement was compounded by the fact that where police or fisheries officers had confiscated illegal gear, the gear had subsequently been sold back to the offending fishermen.

Different gear users

²⁷ A *kua* is a natural depression on the floodplain. As the flood waters recede towards the dry season, fish congregate in the *kuas* from where they are fished. As the waters rise again with the onset of the monsoon, the fish swim out of the *kuas* and into the (Open Access) floodplain.

The final source of conflict cited by the fishers was a conflict between different gear operators. Those fishermen who used gill nets objected to the use of seine nets in the same area. The outcomes of such disputes depended largely on the relative influence of the different gear operators and their ability to extract compensation from others.

3.6.2. Conflict management

All fishermen felt that the current system of conflict resolution, such as exists, could be improved. They felt that government should be stronger and take more initiatives at all costs to improve fish production and fisheries management. In particular they felt that increased stocking by the government would relieve pressure on stocks and thus help reduce competition (and conflict). They also felt that improved detection and enforcement of illegal gear use and a crack-down on bribery and corruption activities would also help reduce conflict (by providing a deterrent to such behaviour). Improving crime detection rates for dacoity attacks, would serve to improve faith in the police as a conflict resolution institution – a role they rarely fulfil at the moment. A number of fishermen reported that they use the Union Parishad Chairman as a first place to lodge a complaint. Others felt that the UP Chairman was of no use in resolving conflicts due to political pressures. Initiatives for improving conflict management at the village level were few and need external support to lend them weight.

The cause of conflicts were usually put down to production problems (not enough fish) or access problems. Whether fish catches were dropping due to increased numbers of fishermen or illegal gear use or structural problems or a combination of all these is not immediately apparent. What certainly comes over very clearly is that the ‘other’ group are frequently held to blame – in this case usually the Muslim fishermen. Although there is certainly some merit in this argument: an increase in fishers is leading to rising levels of conflict; muslim fishers, recent entrants to the fishery make up a large proportion of the rise in fishers, this is not to suggest that this group should shoulder the blame. It is inevitably the lack of access and the levels of conflict within society that are the root cause of the problems, the neo fishermen are simply a convenient scape-goat.

3.7. Fisheries conflicts in the Turks and Caicos Islands

Fieldwork was conducted during November 2000. Of the 6 inhabited islands, 3 were chosen for the study: Providenciales which is the largest, most developed and is also the centre of the off-shore finance and tourism industries; Grand Turk which is the nation’s capital where government employment is important, tourism and fishing taking lesser roles and South Caicos which is comparatively underdeveloped, has a very small tourist sector but is largely dependent upon fishing. A sample stratified by stakeholder group was constructed for each island, respondents were then chosen at random from each of the strata.

Table 10: Sample size and distribution by island and stakeholder group

ISLAND	STAKEHOLDER	TOTAL RESPONDENTS
South Caicos	Fishermen (13) Processors (1) Sport Fishermen (2) School for Field Studies (2) Government officials (1)	19
Grand Turk	Fishermen (6) Fisheries Advisory Committee (1) Diving Operations (1) Tourism (1) Government (4)	13
Provo	Fishermen (12) Processors (1) Fisheries Advisory Committee (1) Sport Fishermen (2) Conservation bodies (1) Government (2) Conch farm (1)	20

Interviews with fishermen were conducted in focus discussion groups – fishermen have an innate mistrust of questionnaires, so focussed discussion were conducted, the questionnaires being completed later. Individual interviews were conducted with government personnel. Interviews with government personnel were all pre-arranged, interviews with fishermen were generally conducted as and when the opportunity arose: many fishermen are not on the telephone, thus the easiest method of finding and approaching them is at the dock as they set out in the morning, or when they return at dusk.

Turks and Caicos islands fishermen are wary of strangers and it was found that introduction by the local fisheries officer (known and trusted by the fishermen) helped to allay suspicions. By first targeting a well-known and respected member of the fishing community, other fishermen were far more likely to come forward to have their views recorded. With the exception of Providenciales, the islands are very small and word quickly spread about the project with the result that a number of people approached the project staff keen that their views were also represented. On a number of occasions ‘interviews’ were also conducted unintentionally: chance discussions with people in the street or at local businesses for example.

The Turks and Caicos Island fishery is open access and held as state property. The number of entrants to the fishery is currently not limited (except by nationality) but all fishermen require a licence. Both major export stocks are managed. Queen conch (*strombus gigas*) is protected under CITES²⁸, and as such is managed by quota, minimum size restrictions, a closed season (July 15th-October 15th) and a Closed area (East Harbour Conch and Lobster Reserve). The quota is set at 1.6 million lbs per year (this amounts to approximately 600,000lbs of processed conch meat) and is set by the Quota Management Committee which allocates it on a quarterly basis. At the time of the study the quota was split 50:50 between South Caicos and Providenciales with the

²⁸ As a result of the low level of stocks in Florida, Queen Conch entered Appendix 2 of CITES at the 11th hour during a meeting in 1995, although there was no suggestion that stocks were threatened in other places in the Caribbean (DECR, pers.comm 2000)

plants on each island then competing for the quota. During the last season, each plant has been given its' individual share of the quota, (over 100,000 lbs). Conch is caught exclusively by free-diving (breathing apparatus is illegal). Lobster (*Panulirus Argus*) is managed by a combination of closed season (which runs from April through August), and minimum landing size. The lobster fishery opens in August with what is known as the 'Big Grab': a 1 or 2 week period when about 30% of the annual catch is taken. The lobster fishery is mainly a dive-based fishery, although there are 3 boats on South Caicos using traps.

Processing-Sector Management

As the only legal means of exporting product, the processing plants have an important role to play in the fishery. The plants are largely price-takers (from the market in the USA) although each year there are reported to be meetings and petitions initiated by the fishermen to persuade the plant operators to increase the price paid for product. By and large, processors are free to use the quota and manipulate prices as they see fit (although recent government moves now apportion the conch quota across quarters) which in some cases can lead to the hoarding of frozen product until the next season or the refusal to buy product until the price in Miami has improved.

3.7.1. Conflicts reported

Illegal fishing

Illegal fishing in various forms was reported by both fishermen and fisheries officers. Discussions on illegal fishing covered the use of bleach to catch lobster and 'illegal' entrants to the fishery. Bleaching, most common to South Caicos is used to extract lobster from their burrows. It is highly destructive to the reef and only used by a small percentage of fishermen. Detection is difficult despite widespread knowledge in the community about who is using bleach. Illegal entrants to the fishery include poaching by Dominican Republic vessels but the most frequently mentioned problem was that of 'non-belongers' in the fishery. According to the Fisheries Protection Ordinance (Chapter 104, para 6 (g (a) and i), neither a commercial fishing licence nor a commercial fishing vessel licence "may be issued to persons other than Belongers". Although the scale of the problem is not entirely clear, there are reported to be a considerable number of non-Belongers (almost exclusively Haitians and Dominicans) working in the commercial fishery. The law also states that 'the holder of a Commercial Fishing Vessel Licence [...] shall not [...] allow the particular vessel to be used for commercial fishing [...] unless there is a Belonger aboard the vessel at all times. Both fishermen and fisheries officers confirmed, however, that many vessels went to sea without the required Belonger on board. Belonger fishermen can apply to have assistance on the boat, and given the arduous nature of free-diving, it is not uncommon for relatively young belonger fishermen to find that they are physically no longer able to dive and being able to hire in other labour is therefore useful. But, fishermen and Fisheries Officers report that this situation is widely abused with belonger fishermen staying at home or working on-shore whilst non-belongers work the boat.

Theft of fishing gear

Lobster-pot removal or theft was the most reported conflict between the fishing and tourist industries. Few fishermen use lobster pots yet this issue was raised on Grand Turk by fishermen and on Providenciales by Fisheries Officers. The root of this conflict is competition for space within the marine environment, which is leading recreational divers to leave the Marine Parks and search for new dive sites elsewhere – often close to

grounds traditionally used by fishermen. This has led to confrontations between fishermen and divers, each cutting or damaging the others' equipment.

Lack of enforcement

All stakeholder groups frequently reported lack of enforcement as a conflict. Firstly, there is a perceived lack of enforcement of foreign poaching vessels that fish illegally in Turks and Caicos waters and also within the Marine Park boundaries. Occasionally they are caught, the vessel impounded and the crew arrested. The DECR, however, admit that there are probably a number of vessels that escape detection due to the lack of capacity for effective enforcement. Secondly, the lack of enforcement on illegal fishing activity such as bleaching and the use of non-belongers on vessels was reported.

Quota management

The size and distribution of the conch quota was cited as a conflict on both South Caicos and Providenciales. Conch is managed by quota allocated to the processing plants, not the fishermen. Fishermen on South Caicos (where 95% of the population is dependent upon fishing) expressed an interest in quota being assigned according to number of fishermen and need – the result being that South Caicos would receive more quota as it has more fishermen and a less diversified economy than Providenciales. Not surprisingly, the fishermen all state that the quota should be larger – or abolished altogether. The processors too would like more quota (whether this means more quota from other plants or an overall increase was not clear).

There are three processing plants on South Caicos: owned by Christy Hall (ex-Acting Director of the DECR), Lewis Cox and Jimmy Baker (who is Cox's son-in-law and owns the newest plant). The fuel concession on South is owned by one of the processors and is 'loaned' to the fishermen on the basis that they will pay for the fuel out of the proceeds of that day's catch. With foreign orders to fill, the processors can largely dictate what is caught by the fishermen, and of course the processors set the price (which in itself is largely dictated by factors outside the influence of the islands). There is little doubt that the processors exercise a considerable amount of power and influence over the fishery – a view expressed by other respondents on other islands as well. However, no fishermen interviewed expressed any concern or problem with the current relationship between themselves and the processors.

Part-time fishermen

The presence of part-time fishermen in the fishery was a conflict raised by Fisheries Officers and, to a lesser extent, some full-time fishermen. There are currently no restrictions on who can apply and be issued with a commercial fishing licence (except nationality, as mentioned above). As a result, it is estimated that up to 60% of the 160 licences issued on Providenciales by late 2000 were to part-time fishermen. The large number of part-time fishermen in the fishery results in increased effort particularly during the opening of the lobster season (with the added consequence of lower earnings for full-time fishermen). Full-time fishermen also reported that part-time fishermen are generally less-skilled and thus may be causing more damage to the reefs.

Overall, conflict was not seen as a significant or insurmountable problem on the islands and conflicts reported were almost exclusively confined to the different stakeholder groups – there were few inter-sectoral conflicts (between the large fishing and tourism sectors for example).

Fishermen as environmental destructors.

A serious ideological conflict exists between the dive operators, sports fishermen and the fishermen – although this conflict was never voiced by the fishermen themselves.

There is a widespread view among dive operators in particular that fishermen are wilfully destroying the marine environment, over-fishing local stocks and paying little regard to other users of the marine zone. Dive operators interviewed cited a lack of education and thus educational awareness as prime problems in this regard. Improved education from elementary school upwards was considered to be the only way to inform fishermen of their impact upon the environment and the value of strict management of marine resources.

Boundary markings of marine parks

Interactions between fishermen and other users of the marine parks are limited and in general the issue of marine parks did not figure highly on fishermen's lists of conflict. However, one issue regarding marine parks that causes conflict is the marking of boundaries. Although few local arrests happen regarding this issue, it is a point of contention with fishermen, and indeed with other users of the marine zone.

Informed sources within the Ministry of Natural Resources commented that with a number of the parks there was little logic as to where the boundaries had been placed. Although the boundaries are marked on maps, fishermen as a rule do not take such maps to sea with them, and there are few or no markers at sea to indicate boundaries. In many circumstances this is a moot point as the fishing grounds do not coincide with the parks, it is only an issue at the margins where the spatial difference between the two is small.

As far as other users of the marine areas are concerned, the Parks in Providenciales are further demarcated to segregate snorkellers, jet-skis, para-gliders and water skiers. Understanding that remaining within boundaries is not always easy, it was reported that a certain degree of tolerance is exercised and the needs of many of the users are traded-off against each other to within certain limits.

3.7.2. Conflict management

There are no readily identifiable community-based conflict management institutions as observed in Ghana. Some conflicts (mostly one-off disputes) are resolved through the DECR and the local police force with considerable success; there is currently no official means of managing long-running conflicts with other users of the marine environment, or conflicts with the processing sector. This is not to say that there is no management. Social capital, or the networks and alliances that bind the islands together certainly act as a powerful force in mediating in disputes and controlling conflictual behaviour. Although not formalised at present, there is considerable scope for such networks to be 'institutionalised' and for conflict management processes to be improved.

4. An analysis of conflict

One objective of the project was to review the current 'state of the art' of fisheries conflict management and, as a result, develop a number of tools that would help take

this issue forward. The project has certainly been successful in this endeavour. Through PISCES (see above and Methodological Appendix: 2) there is now a tried and tested method of collecting specific information on conflict management. The typology has also moved the state of knowledge forward in it now provides a good framework within which tropical fisheries conflicts might be researched and analysed. This represents a considerable advancement. Previous typologies either dealt with non-tropical fisheries or with natural resource conflicts in general²⁹.

A typology is a means of organising data that can help in finding answers to policy problems. In the case of conflicts over fisheries resources, the following revised typology serves to highlight that **although many problems are associated with resource and access allocation issues, this is but a small part of the problem**. Policy initiatives that fail to recognise that conflicts may in fact be formed or shaped by issues outside the ‘traditional’ theoretical grounds of ‘allocation’ are unlikely to have any lasting impact on the root of the problem.

The revised typology could make an important contribution to fisheries planning because it serves as **a means of organising information collected as part of a baseline study**. Understanding what types of conflicts are reported both by resource managers and users will greatly help in ensuring that subsequent initiatives in the sector by planner and policy-makers are designed so as to mitigate the current situation and, hopefully, not contribute to more conflicts.

Table 11: A typology of tropical fisheries conflicts

	Type conflicts I	Type conflicts II	Type conflicts III	Type conflicts IV	Type conflicts V
	<i>Who controls the fishery</i>	<i>How the fishery is controlled</i>	<i>Relations between fishery users</i>	<i>Relations between fishers and other users of the aquatic environment</i>	<i>Relationship to non-fishery issues (eg: economy, environment, corruption)</i>
Ghana	None reported	Conflicts as a result of lack of enforcement	Conflicts between artisanal and other fleets; between catchers and buyers/process ors	None reported	Conflicts related to rising input prices; lack of capacity at the state level
Bangladesh	Conflicts over access to water bodies	Conflicts as a result of lack of enforcement	Conflicts between Hindu and Muslim fishermen	None reported	Conflict related to corruption in government
TCI	Conflicts over access of other groups to the fishery (non-belongers, part-timers)	Conflicts over size and allocation of conch quota	Conflicts between ‘belongers’ and ‘non-belongers’	Conflicts between fishing and tourism	None reported

²⁹ The typology is currently informing FAO work on conflict training in West Africa, see section 6.

4.1. Conflicts over ownership

Type I conflicts over who owns and regulates access to the fishery were present in Bangladesh and TCI, but not in Ghana. The strong informal institutional framework that operates at the village level in Ghana manages access to the fishery effectively – although the beaches are legally open access, custom dictates that no one may fish off a beach unless they have permission from the Chief Fishermen of that village. No such arrangement exists in either Bangladesh or TCI; most Bangladeshi villages have no real power over how access to resources is regulated and therefore many are denied access to open access water bodies by powerful political elites who have illegally ‘captured’ these benefits.

In TCI, although access to state level decision-making bodies (the Department of Environmental and Coastal Resources and the Ministry of Natural Resources) is comparatively high, fishermen did not feel that they had control over the fishery. This was reflected in their opposition to the increasing number of part-timers and ‘non-belongers’³⁰ operating in the fishery and the way the quota systems in the fishery are managed. Any asymmetrical distribution of power and the means by which power is organised may also be highlighted by Type I conflicts. Whilst power to control access in Ghana lies firmly in the hands of the Chief Fisherman from the point of view of the community of villagers, power over access lies in the hands of the state from a constitutional and legal point of view. Establishing the seat of power in Bangladesh is less clear. Power is often disguised as patronage and protection, and the organisation of power and its asymmetrical distribution are occluded.

4.2. Conflicts over control

Type II conflicts over how the fishery is managed and controlled are closely related to Type I conflicts in so far as power and influence are common denominators for both types. Reflecting the difference between fisheries management in the developed and developing world, evidence from our study shows that *lack* of enforcement was the primary conflict mentioned here whilst *over* enforcement was the issued cited by Charles under the same category (Charles, 1992:382). In Ghana, lack of enforcement in the coastal zone was frequently mentioned by fishermen and acknowledged by fisheries officers. Clashes between semi-industrial or inshore vessels³¹ and artisanal vessels were reported in many villages. State legislation bans semi-industrial and inshore vessels from fishing in waters less than 30 meters deep (reserved for the artisanal fleet), yet attempts to patrol these waters or enforce the law are infrequent – mostly due to lack of funding and capacity to carry out such duties.

By contrast, in Bangladesh lack of enforcement can largely be explained by a lack of will to interact and engage with the fishery. It was reported in our study that civil servants are reluctant to take pro-active decisions for fear of demotion within their

³⁰ Belongers are local to the islands, non-belongers is a local term referring to all others

³¹ In-shore vessels are wooden and built in Ghana, semi-industrial vessels are steel and imported. They target similar species, although inshore vessels are generally smaller, travel less distance and spend less time at sea. Semi-industrial vessels are not to be confused with larger industrial vessels that target tuna and operate off-shore. There were no reported conflicts with these vessels.

department whilst others only engage with the fishery as a means to increase their salary with bribes³².

Fishermen operating on TCI were concerned about lack of enforcement over foreign vessels. Fisheries officers, however, were concerned about the feasibility of enforcing regulations: perpetrators are often friends or family of the enforcement officers which can make cautioning or arrests difficult. Thus, the problems in enforcement, or enforcement that impinges upon family relations were both considered to be problems and sources of conflict.

Charles also lists conflicts over harvest levels in Type II Conflicts. The only country that reported such conflicts was TCI³³ and South Caicos (the least developed island economically) was the only island of the three in the study that reported conflicts related to the way the conch fishery is managed³⁴. Nearly all the catch is processed in HACCP registered plants and exported. Conch is fished under quota assigned to the plants, not the fishermen. Whilst the fishermen did not have a conflict with the size of the quota, they argue that, as the inhabitants of the island most dependent upon fishing, they should receive a proportionately larger share of the conch quota (it is currently divided equally between the 6 plants on South Caicos and Providenciales).

4.3. Conflicts between different fishery groups

Type III conflicts between different fishery groups were present in all three countries. Conflicts reported in Ghana were either between the different sectors of the fishing fleet or between different actors in the market. In Bangladesh and TCI, however, they were centred firmly on other ethnic or religious groups³⁵.

Conflicts between the artisanal fleet and the inshore and semi-industrial fleet in Ghana have been mentioned above. In addition to this conflict, Ghanaian villagers also reported clashes between fishermen of the same gear group (always from the same or close neighbouring communities) chasing the same shoal of fish. Conflicts between different actors in the fishing economy were raised frequently in Ghana: the most common being conflicts over price.

Type III conflicts reported in Bangladesh and TCI always referred to other 'groups' (ethnic or religious) gaining at the expense of the respondents. The nature of the open access rivers in Bangladesh allows new fishermen into the area, increasing competition for fish resources. The new entrants to the fishery are usually Muslims (referred to

³² It is extremely difficult to gauge the level of corruption within a system (Robbins, 2000), but anecdotal evidence (from fishermen and government employees) confirmed that the taking of bribes (in exchange for the return for confiscated illegal gear, for example) was widespread.

³³ This is because quotas are not used in either Bangladesh or Ghana. Closed seasons are used in a number of fisheries in Ghana and Bangladesh, but were never raised as conflicts.

³⁴ The islands also rely heavily on Lobster that is managed by closed season. There were no conflicts reported over the closed season.

³⁵ This is an unusual finding. Unlike Bangladesh and TCI that are relatively homogenous ethnically and linguistically, there are up to five languages spoken by five different groups along the Ghanaian coast. Intuitively one would have expected the heterogeneity of Ghana to have lead to the sorts of conflicts that in fact emerged in Bangladesh and TCI.

locally as ‘new’ fishermen³⁶) and are often blamed for the rise in conflicts and the decline in fish stocks. A similar situation exists in TCI where conflicts involving the large number of Haitian, and to a lesser extent Dominican, fishermen were also reported on all of the islands. Economic difficulties in both Haiti and the Dominican Republic have led to a large influx of immigrants (both legal and illegal); many have moved into the fishery. Some, but by no means all, the ‘belonger’ fishermen resent the presence of non-belongers in the fishery, a situation compounded by a number of complex legal loopholes that have allowed this situation to arise. Again, there is little evidence to suggest that this rapid influx of migrants has been detrimental to the fishery, but the perception that they are to blame is strong, according to our survey.

4.4. Conflicts with other users

Type IV conflicts with other users of the aquatic environment were only reported in TCI. Here, demographic pressures from a rising number of tourist arrivals is impacting upon fishing interests – although it should be noted that these conflicts were reported less frequently than other ones already mentioned. With 17,000 inhabitants, Providenciales has the largest population of all the islands. It relies heavily upon the tourist industry for employment and income, fishing being much less important. As the tourist industry expands so too does the pressure on the coastal zone as divers, swimmers, water skiers and jet skiers vie for space.

4.5. Conflicts over non-fishery issues

Type V Conflicts are perhaps the hardest to identify. The impact of economic and environmental change on a fishery has repercussions across many of the types listed above, yet in some cases conflicts are reported that merit a category of their own. Coastal erosion in eastern Ghana was cited by a third of the village as a conflict and was having a severe impact upon villages’ ability to maintain fishing activity. Natural erosion exacerbated by a number of large-scale infrastructural changes is pushing the shoreline towards villages causing a number of them to relocate in the past decade. In other places erosion has caused fishing days to be lost when the sea is rough because landing is no longer possible in anything but calm weather on the rapidly disappearing beach. Here we can conceptualise conflict between the villagers (with local objectives to continue living and fishing in certain areas) and government (whose objectives have failed to protect the coast) although this link was never made by the respondents³⁷.

Economic conditions were cited as problems that led to conflicts in Ghana. Rapidly rising input prices are putting added pressure on fishing enterprises and exacerbates conflicts between catchers and processors over the price of fish. Again, this might be seen as a conflict between fishermen and the government. Type V conflicts were not mentioned in Bangladesh which, although heavily dependent upon aid, has not experienced rapid price changes at the market level.

Constructing a typology of conflicts had support conflict management efforts in tropical fisheries because it:

³⁶ Fishing is considered a lowly occupation of the minority Hindu population. As economic conditions in other sectors have worsened, so Muslim marginal farmers have taken up fishing. they are often referred to as ‘new’ fishermen even if there is a history of many years of their family earning a living from fishing.

³⁷ This may be simply that village communities are not yet ‘politicised’ enough to establish such a link.

- Enables fisheries managers to distinguish the different types of conflict present at many levels of the economy
- can help establish the level and frequency of conflict in a particular area, when used in conjunction with PISCES,
- enables fisheries managers to distinguish the subtle root causes of the conflict rather than just the visible symptoms, thus enabling better planning and policy decisions to be made.
- can serve as a useful tool in broadening the debate over conflict (from the specifics out to the more generic issues at stake) and encourage more participation in seeking solutions when constructed in collaboration with stakeholders

However, conflict management and assessment is only part of the picture. Understanding how institutional failure contributes to conflicts is also vital. **The failure of informal institutions will rarely show up in a typology** – rather it becomes apparent when one attempts to address the possible reasons why a particular type of conflict has emerged in a community.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Institutional failure and conflicts

In so far as institutions regulate behaviour, institutional failure and a subsequent breakdown in restraints on behavioural norms and rules can result in conflict. Institutional failure often arises as conditions external to the institution change too rapidly for the institutions to adapt to them. In other words, rising transaction costs outstrip the institutions ability to internalise those costs and the institution fails. The field work in the Bangladesh, Ghana and the Turks and Caicos Islands amply demonstrated this ‘cause and effect’ sequence.

Rising transaction costs in Bangladesh are evident in:

- The pervasive and perverse patronage system which, whilst originally a mutually beneficial safety-net, has evolved into a **corrupt rent-seeking** system (see Maloney, 1988)
- **Rising cost of leases.** Although leases are awarded through sealed auction, there is a minimum price set, which at the time of the field work, rose by 10% every year³⁸ thus ensuring that the most fisher collectives were unable to afford a lease
- **Political instability** and violence associated with local political party activities lead to a climate of uncertainty and unpredictability which increases transaction costs across the board as individuals hedge their bets against future problems.
- Forced change in **economic activity** (inability to fish in the usual place due to intimidation, lack of access or physical barriers) has increased transaction costs as new markets, routes and contracts have had to be negotiated.
- **Environmental degradation** (increased siltation, falling stocks, threatened biodiversity) have a long-run impact on transaction costs
- **Increased violence** and intimidation have led to rising monitoring or information costs for the fishermen

³⁸ In 2002 the National Committee on Fish and Shrimp decided to abolish the practice of increasing the cost of a Jalmohal lease by 10% each year (Liaquat Ali, pers. comm, 2002)

Institutional failure in Bangladesh can be viewed at a number of levels.

- At the **village level**, although the community is comparatively robust, the institutions that shape the community have been failed by the support network around them (eg the Department of Fisheries, the police and the courts).
- **Nationally**, a lack of will to actively promote fisheries management for sustainable livelihoods³⁹ and reported corruption have hampered the State's ability to enforce even the most basic of fishery regulations.
- Institutional failure is evidence in the **policy making** process; lack of cross departmental and ministerial cooperation has led to contradictory objectives between the competing agriculture, water and fisheries sectors. Without a strong, coherent and applicable policy for the fisheries sector, institutional support for fishers will continue to fail.
- From a **legislative point of view**, although nearly all fishers interview remarked that the laws at present are adequate, the means of enforcing the laws are weak and there are considerable gaps in the legislative framework to protect the most vulnerable.

Changes in transaction costs in Ghana can be attributed to:

- Economic reforms which have had a dual effect on transaction costs.
 - They have **fallen** as the institutional capacity at the state level (eg open political processes and market structures) has been promoted.
 - Theoretically, the process of decentralisation should have seen them fall as the communication links between different sectors and levels of the economy were shortened.
 - Conversely, though, there is evidence that the required 'slimming-down' of the state and decentralisation which has **increased** transaction costs at the regional and local level
 - Activity in the economy has also seen transaction costs rise as the performance of the national currency against convertible currencies worsened, with knock-on effects throughout the system.
- staff reductions in regional and district offices have weakened enforcement regimes
- the cost of settling conflicts has risen as the parties to the conflict are more likely to be from geographically distinct areas of the coast
- The survey highlighted a tangible result of changing transaction costs on institutions: whilst many villages reported that the post of Chief Fishermen had existed for several hundred years, other posts are comparatively recent (some formed as late as 1987). This suggests that the post was formed to meet changing needs within the industry with the institution of Chief Fisherman emerging to meet a growing need for a 'spokesman' to negotiate on behalf of the village in fishing matters

Institutional failure, similarly, takes on a dual aspect in Ghana

- **informal institutions** at the community level (such as the role of the Chief Fisherman and property rights) **remain robust**, however

³⁹ Current official policy as stated in the Government's Fifth Five Year Plan is the raising of production levels (to increase food source). On closer inspection, however, the current plan has no explicit linkage between production, income distribution and livelihood promotion.

- worsening economic conditions and the reported rise in conflicts with inshore and semi-industrial vessels is threatening their stability.
- Local **formal institutions** for managing fisheries have failed as a consequence of a process of decentralisation; Fisheries Department staff at the regional level should be able to support village-level initiatives to manage conflicts and control the activities of rival fleets.
- **institutional capacity strengthening** measures are in place that are helping minimise transaction costs at the national level but these are a long-term initiative and it could be some time before positive effects filter down through the system.

Identifying significant changes in transaction costs in the TCI is more complex:

- the **costs of negotiating, establishing and maintaining rules** is low and compliance with the system is improved by social conformity (possibly a function of high social capital, see below).
- however, the **small population may also be the cause of rising costs** of enforcing rules and management: government ministers and state employees reported that close family connections often impose restrictions on effective policy making and law enforcement.
- **private interests and political expedience** are more immediate and have a bigger influence than would occur in nations with larger populations, which may also be impacting on transaction costs

Likewise, identifying institutional failure in TCI is problematic.

- The **informal institutions** that form the framework for local communities appear to function well as a result of the small population.
- Whilst the precise nature and level of social capital⁴⁰ on the islands is contested (Murray Rudd, pers. comm, 2001), there is some evidence that social capital has an overall **positive institutional effect**
- The nature of the power relationship between the fishermen and the processors may indicate institutional failure, although this concept is contested by respondents in the field work⁴¹.

Overall, the following conclusions made be drawn:

- Transaction costs in tropical fisheries are not necessarily rising: despite dire global predications on stocks and economic conditions, many fisheries are stable (if not sustainable in the long run)
- Traditional and informal institutions are capable of transforming and evolving to meet new demands – provided they have sufficient support from the formal framework that they operate in.

⁴⁰ Social capital is the amount of loyalty or the extent of networks accrued by an individual. High levels of social capital thus imply an improved ability to reduce personal transaction costs and exercise a degree of control over one's livelihood. See Putnam for more information (Putnam, 1993).

⁴¹ As noted earlier, this observation has to be treated with caution because the fishermen may have felt unable to reveal the true extent of conflict in their relationship with the processors due to power asymmetries.

- Institutional failure is analogous with conflict in a fishery and the ability for that conflict to be resolved and managed to benefit of the majority.
- Institutional failure may come from a variety of different sectors and may be divorced from direct fisheries interests: it is critical that fisheries managers and policy makers can correctly identify and successfully rectify institutional failure for optimum conflict management.

Whilst conflicts in the fisheries sector are certainly common place, they rarely result in violence, rather they contribute to a slow but decisive erosion of institutional capability and the ability to manage resources in a sustainable manner. However, conflict management institutions do exist, and, in a number of circumstances work very well, albeit under considerable pressure. The three study countries demonstrate how management systems can work but also how they might be completely absent.

5.2. Conflict management in Bangladesh, Ghana and the Turks and Caicos

Of the three fisheries studied, Ghana is the only one with a recognisable set of institutions for dealing with conflict.

- At the village level there is a Chief and a **Chief Fisherman** who, together with their representative Council of Elders police the community and settle most disputes. Inter-village disputes are settled through negotiation with the respective Chiefs.
- Conflicts involving death or serious injury are dealt with through the **formal system** (involving the police, the Director of Fisheries and for very serious cases, the courts and the Ministry of Food and Agriculture)
- Each Region has an Arbitration Committee, with a **National Arbitration Committee** based in Tema, they were established in 1990/2000. The Arbitration Committees (ACs) aim to step in where Chief Fishermen have been unable to resolve a conflict. Because the ACs work along the same lines as the traditional informal system (each side has to voluntarily come to agreement on how to resolve the conflict) they are successful in dealing with conflicts between canoes from the same of neighbouring villages, but not so in conflicts involving other sections of the fleet, who have nothing to fear from the ACs which outside the traditional system, carry little weight.
- The **Community Based Fisheries Management Programme (CBFM)**⁴² which for the past 6 years has been operating in parallel with this traditional institution also has a role to play in conflict management:
 - **Monitoring, Control and Surveillance** Unit created under the Sub-Sector Capacity Building Programme does not have conflict management in its remit, but is seen as critical in the process by artisanal fishermen.
 - Villages in Central Region (where CBFM has been most fully implemented) reported a greater decrease in conflicts than any other region.

⁴² The Community Based Fisheries Management Programme (CBFM) is part of the Fisheries Sub-sector Capacity Building Project (FSCBP), a World Bank/IDA funded project run by the Government through the Fisheries Department. The FSCBP was started in October 1995 with a loan from the World Bank and formed part of wider 'structural adjustment' lending to Ghana. The key objective was to improve the long-term sustainability of Ghanaian fisheries through structural changes in management at Ministerial, Directorate and the local level. The issue of capacity building at both a local and national level was central to the programme and had in fact be a basic tenet of the Country Assistance Strategy (the document upon which all World Bank lending is now based) formulated in 1990 (World Bank, 1995:12).

Bangladesh has no such recognisable means of conflict management or resolution.

- Traditional '**salish**' courts are in operation in the rural areas, but were not cited as a means for resolving conflicts by the respondents
- Small conflicts among villagers may be **settled amicably** at meetings, but these are few compared to the much bigger issues of dealing with persistent bandit raids, access issues, corruption in the police force and lack of action by the fisheries officers
- All fishermen have recourse to the TFO or the **police** when conflicts occur, but many respondents remarked on the 'cost' of taking such action (in terms of bribes and retaliation)⁴³
- The **TFO** has the remit to ensure that fisheries legislation is upheld (which should help prevent conflicts emerging) and the powers to help resolve conflict, but many TFO are over-burdened with work and unable to dedicate time and resources to such tasks. Although government departments are reportedly over-staffed, there are not enough trained fisheries officers with adequate equipment to patrol the fishery and maintain a level of law and order and departmental capacity is constrained by institutional problems at the State level.
- **Community Based Fisheries Management** programmes operate in certain parts of the country and do appear to have empowered the fishermen and had a positive impact on levels of conflict and how they are managed. Unfortunately, the programme is not sufficiently widespread to have a major impact on conflict nationally.
- A number of '**official**' organisations exist to represent the needs and interests of fishermen, but they were not mentioned during field work in connection with conflict management mechanisms.

TCI, likewise, has no official or established system for managing or resolving fisheries conflicts. But the following play a role in the process:

- The **Fisheries Advisory Committee** (FAC) has a member from each of the main islands representing the processing industry and other people in society interested in fishing (there are currently no full-time fishermen on the FAC). The FAC acts as an advisory body to the government, and has been able to monitor and manage conflict in the past, although many fishermen reported that they did not find the process completely satisfactory.
- DECR staff are charged with policing and monitoring waters around the island and as such are able to resolve one off conflicts. However, they are not able to have much impact on long-run conflicts with multiple stakeholders because the framework for changing the context that might affect the conflict is often out of their hands.
- **Social capital** also promotes conflict management. As a consequence of the islands' small population (around 24,000 in total) it is not unusual for fishermen to be able to approach staff from the Department of Environmental and Coastal Resources or even the Ministry of Natural Resources socially. While this does not necessarily serve as the best way to manage conflicts, it appears to help in taking the immediate 'heat' out of situations before they get out of hand. (See Outputs Appendix: 5)

⁴³ For a detailed discussion on corruption in natural resource management see Robbins (2000).

Overall, then, it is possible to identify the following generic conclusions about fisheries conflicts and their management:

- Official and formal conflict management institutions and arrangements are comparatively unusual in tropical fisheries in less developed countries
- Informal and traditional means of managing conflict are prevalent, although not necessarily readily visible to outsiders
- Intra-groups conflicts and those between and close neighbours are much easier to resolve and manage than between distinct groups and geographically distant stakeholders
- State support (be it implicit or explicit) is vital for the success of conflict management mechanisms
- Fisheries policy frameworks and legal and regulatory frameworks have to be able to work alongside and in cooperation with conflict management institutions. This rarely happens at present with either benign neglect occurring or contradictory aims and objectives obscuring potential benefits.
- Fishers and Fisheries Officers often view conflicts differently. Whilst Fisheries Officers only tend to regard conflicts as those incidents that are reported via the official/formal system, fishers take a much more holistic view of the issue considering anything that impinges upon their livelihoods as a conflict.
- a key factor which determines whether conflict emerges (or not) is the ability of the formal and informal institutions to withstand and adapt to change and the emergence and severity of conflict is linked to the institution's ability to deal with rising transaction costs.
- Conflict is not a linear, step-wise process but often a circular one: management issues can lead to conflicts and conflict in turn can create management issues. It is the circularity of the dilemma that often complicates attempts to identify the source of conflict.
- Successful management of conflicts will depend upon managers being able to
 - distinguish between positive or negative conflict
 - determine the root cause of the conflict and tackle that issue first and
 - strengthen the capacity of local institutions to manage conflict, preferably in cooperation with government.

5.3. Policy and management recommendations

For the study of conflict to have any lasting impact on natural resource management and improve the sustainability of rural livelihoods, the results have to feed into the wider management plans. The following policy recommendations can thus be made:

1. **The impact that policy has** on the wider context for fisheries management, and thus on the potential for conflict emergence and **management needs to be better understood**. Tyler (1999:264-8) suggests that a step in this direction requires public policy makers to recognise the impact that they have on the emergence of conflict (for example by weakening institutions, setting one group of users against another or setting up market-based management systems that run counter to traditional use patterns).

2. **Improved information flows** (an essential element for understanding transaction costs) are often a root cause of many conflicts⁴⁴. By reviewing how information is fed down and back up the system – both within the state institutions and between state and village institutions, potential information costs can be identified and removed. This issue is of particular importance where decentralisation is concerned because usual channels of communication and influence are disrupted in the short-to-medium term.
3. **Promoting the role of communities** (however they might be defined) in the management of natural resources would have a beneficial knock-on effect in conflict management. Evidence from Ghana shows that when government and communities work in partnership, advances can be made in securing the livelihoods of artisanal fishermen by enabling conflicts to be managed more effectively.
4. Both Ghana and Bangladesh have the provision for a **detailed fisheries plan** to guide the implementation of Fisheries Policy, but no plan has been operationalised as yet. The continued failure to implement policy will undermine efforts at managing the fisheries which has a knock-on effect on the ability to contain and manage conflicts.
5. **Political interests and power asymmetries** in fisheries departments need to be addressed to ensure that fisheries management plans are fully implemented. For example, whilst the role of the Chief Fisherman in Ghana is critical to conflict management also he can decide whether or not to support fisheries management measures depending on whether he sees them as a threat to his own power-base and influence. The Chief Fisherman is often a member of the District Assembly which brings his political, personal financial and community interests into conflict. A revision of responsibilities and duties of key stakeholders in the conflict management process would ensure that power asymmetries can be addressed, although they are unlikely to be completely eliminated.
6. **The division of responsibility** between formal and informal fisheries management institutions is a cause of conflict. Clear boundaries need to be established to ensure that both ‘sides’ of the system are working in cooperation. This is observed in Ghana where conflict management duties of the MSC, Arbitration Committees, the Fisheries Commission and Chief Fishermen are often overlapping. In Bangladesh, the plethora of agencies and departments that manage fisheries causes similar confusion.
7. **The legal and regulatory framework** governing fisheries is often weak or contradictory which can cause conflicts. Because the lack of enforcement is such an important issue in conflict management, clear and applicable laws which govern fishing activity have to be established to reduce the potential for conflict. In Ghana the status of by-laws written under the CBFM is doubtful – the extent of their jurisdiction and the right of the community to enforce the laws have been called into question on a number of occasions. In Bangladesh, there are considerable gaps in the legislative framework that leave vulnerable groups exposed when attempting to defend their rights (even if they could ‘use’ the legal system).
8. Policy makers (and those charged with implementing it) must recognise that conflicts are multi-layered: by conducting a ‘conflict audit’ or ‘conflict impact assessment’ exercise prior to the formulation of fisheries policy or plans conflicts could be mapped and categorised so as to avoid compounding problems in the future. This should be done on a national, regional and local level.

⁴⁴ This point is also emphasised by Degen et al (2000)

5.4. Directions for future research

The Management of Conflict in Tropical Fisheries project was able to establish the extent and nature of conflict and its management in the fisheries of three countries, but, during the process of research, highlighted a number of issues that merit further research. These can be sub-divided into a number of categories as follows:

1. Recognising/characterising conflict
 - a) **How extensive are hidden conflicts?** Research so far has been concerned with reported conflicts, yet a study of hidden conflicts (whilst methodologically more difficult) would certainly address an important aspect of this issue. It is likely that many conflicts are unreported and unseen even by those in the community of users, yet may be impacting on the lives of the vulnerable. Hidden conflicts related to gender, ethnicity and status may, for example, be prevalent at some sites. Again, it is important that these conflicts are brought to the attention of those working with fishers to either a) help them be better managed or b) prevent them escalating.
2. Understanding conflict: key institutional and political factors
 - a) **What is the relationship between power and conflict?** How power is distributed and used is clearly part of the conflict process, yet poorly understood. How elite groups use power to manipulate conflicts to their own ends is important in understanding why some conflicts are easier to resolve or manage than others.
 - b) **How can a rights-based approach to development help us understanding conflict?** Allied to the role of power is the role of the rights-based approach to development in understanding conflicts.
3. Predicting conflict
 - a) **Is it possible to predict where and when conflict might emerge?** A key part of managing conflicts is being able to predict them: whilst conflict is often very site specific, this research has demonstrated that there are a number of key factors (economic situation, political stability, nature of enforcement regime, status of fishing as an occupation) that possibly influence the scale and extent of conflict. Further work needs to be done to establish if there are, indeed, real cause and effect mechanisms at work.
 - b) **Can the SLA help us understand the emergence of conflict?** Research into the function of conflict in the sustainable livelihoods framework would help establish the interplay between the assets pentagon and conflicts and additionally how conflict impacts upon the PIPs box and the entitlement to capital.
4. Conflict Management – improving policy making and institutional strengthening

- a) **What role does social capital have in NRM?** Results from TCI demonstrate that Social capital is a key part of the institutional framework. However, the role of social capital in securing compliance with rules and regulations (formal and informal) and engendering greater social cohesion is not clear. Considerable research has shown that social capital levels can influence environmental awareness and uptake of extension services, but little work has been done on the link between social capital and incentives for collective action over common property resources in particular.
- b) **Is there a link between community participation in NRM and social capital?** In order that initiatives to promote community participation in natural resource management can succeed, they have to be able to establish, and build upon, the link between social capital, community based management and conflict management. The potential of social capital, particularly on small islands, as part of natural resource management should be further investigated.
- c) **How does policy impact upon conflict?** From a state-level perspective, how policy is formed, executed and evaluated is important for the management of conflict. Current research on the policy making process (see Keeley and Scones, 1999 for example) has demonstrated that this issue needs to be revisited; likewise, how the overall framework set by fisheries, agricultural, social and economic policy affects fisheries communities and the ability to manage conflicts needs to be reconsidered. As this research has shown, local level efforts at conflict management are short-lived if the over-all context cannot be changed.

6. OUTPUTS

The immediate target institutions for the outputs were those in a position to influence how conflicts are managed and with the necessary power to change management. In Bangladesh this meant the target institutions were mostly NGOs working in the fisheries field and a number of 'enlightened' Fisheries Officers. The Department of Fisheries tends to work along traditional 'increased output' lines and has not fully grasped the role of society, community and behaviour in fisheries management (although there are moves in this direction from some quarters). It is therefore not anticipated that any great changes will be promoted by the Department of Fisheries in the short term. As a result of the World Bank funded Fisheries Sub-sector Capacity Building Programme considerable progress has been made by the Directorate of Fisheries in Ghana to take fisheries management beyond the 'catch and effort' stage. Government Fisheries Officers were therefore the target institution for the project outputs. The target institution in the Turks and Caicos was a much broader mix due to the size of the country and the potential reach of institutions. The Department for Environment and Coastal Resources (DECR) was the primary target institution with local leaders being secondary targets.

In addition to the outputs reported in section 3 of this document, the following outputs were also produced:

6.1. Research reports

- *The Management of Conflict in Tropical Fisheries: Year 1 Report January 2000*, A Neiland and E Bennett, CEMARE Report 52, (Portsmouth: University of Portsmouth)
- *Institutions, economics and conflicts: fisheries management under pressure*, E Bennett, 2001, CEMARE Research Paper 148 (Portsmouth: University of Portsmouth)

6.2. Conference papers

- E Bennett and W Clerveaux: *Size Matters: Fisheries Management and Social Capital on the Turks and Caicos Islands*
Presented at the 54th Gulf and Caribbean Fisheries Institute (GCFI), 12-17 November 2001, Turks and Caicos Islands, BWI
- Christophe Béné, Elizabeth Bennett and Arthur Neiland: *The Challenge of managing small-scale fisheries with reference to poverty alleviation*
Presented at Small-Scale Fisheries, Poverty and the Code of Conduct for Responsible Fisheries Workshop organised by CEMARE as part of the DFID/FAO Sustainable Fisheries Livelihoods Programme (SFLP), November 2001, Cotonou, Benin.
- E Bennett: *Institutions, Economics and Conflicts: Fisheries Management under Pressure* presented at the 8th conference of the International Association for the Study of Common Property (IASCP), 31 May- 4 June 2000, Bloomington, USA.

6.3. Academic papers

- Elizabeth Bennett, Arthur Neiland, Emilia Anang, Paul Bannerman (MFRD, Tema), A. Atiq Rahman, Saleemul Huq, Shajahan Bhuiya (BCAS, Dhaka), Mark Day, Michelle Fulford-Gardiner and Wesley Clerveaux (DECR, TCI)
Towards a better understanding of conflict management in tropical fisheries: evidence from Ghana, Bangladesh and the Caribbean, *Marine Policy* 25:5, pp 365-376

6.4. Other publications

- Natural Resource conflicts literature database of 370 articles
- “Eyewitness”, THES, January 19, 2001
- A brief synopsis of the project appeared in the *New Agriculturalist On-Line*, issue 3, 2000 (<http://www.new-agri.co.uk/00.3/newsbr.html#nb12>)

6.5. Dissemination tools

- Project web-page (<http://www.pbs.port.ac.uk/econ/cemare/conflict.htm>).

7. HOW THE OUTPUTS CONTRIBUTE TO DFID’S GOALS

The outputs produced over the course of this project contribute to the DFID and RNRRS goal of “enhanc[ing] the productivity and productive potential of the land water interface through improved management of aquatic resources” as defined in the FMSP logframe as Purpose 1: “optimum sustainable yield from capture fisheries achieved by improved resource management”. More specifically, the project addressed the indicative FMSP output by contributing to “mechanisms generating conflict between fisher groups and stakeholders understood and management tools for mitigation developed and promoted”. Outcomes of the project are also related to the

RNRKS goals of poverty elimination through sustainable development and on a more global level, any potential decrease in conflict is also likely to lead to a decrease in poverty levels, thus contributing to the DFID goal of “working with developing countries to ensure that their poverty reduction strategies reflect the need to manage environmental resources sustainably” as defined in the White Papers of 1997 and 2000.

By improving understanding of current conflict management methods, the project has succeeded in contributing to DFID and FMSP goals and purposes. A greater understanding of what types of conflicts exist and how they are currently managed has served to establish the ‘state of the art’ in any discussion over how natural resources are managed and what problems exist therein. The project, however, took the debate several stages on from there by establishing how communities perceive conflicts and how these perceptions differ from policy makers: the difference in such perceptions is often responsible for failed attempts by government to improve upon natural resource management strategies. Research conducted by this project has established that conflicts over natural resources are complex and dynamic and need to be treated as such by policy makers. Policy makers (both international donors and local governments) need to tackle the longer-term, underlying issues surrounding conflicts if they are to make any headway in the battle for poverty reduction and the support of sustainable livelihoods. Whilst not providing any tangible management methods as such, the project has certainly contributed to the level of knowledge concerning what management methods currently work, how such methods might be improved and how conflict management fits into a wider fisheries management scenario. Finally, improving knowledge of how conflicts are managed and how this process might be improved empowers poor resource users to take charge of their own livelihoods – increasing their human capital in the process.

The contribution of the project outputs towards DFID’s development goals can also be considered in terms of the A-H pathway.

- A formal agreement with target institutions
- B Generation of relevant research results
- C Development of appropriate research-based products through adaptation/packaging
- D Promotion of products to TIs
- E Adoption of products by TIs
- F Application and replication of results in TIs
- G Promotion of technology or behavioural change among end-users by TIs
- H Adoption of technology by end-users and generation of economic benefits – developmental impact

Step A was achieved during the project memorandum process; Step B was achieved by the end of Year 2 of the project when data had been collected from the field and had been analysed. Step C was achieved by Year 3 when the revised typology had been developed and published in the public domain, Step D was achieved towards the end of the final year of the project when the concept of the typology, how it could be used and how it might shape future policy work on conflict was promoted to the target institutions. Awareness building and consciousness raising on the issue of conflicts and conflict management is also a ‘product’ of the research, and this also contributed to achieving Step D. It is not possible to state whether Step E has been achieved, but

there is some evidence that Step F has been achieved. The target institution in the Turks and Caicos Islands (the DECR) has taken on board the research results from the project and now plans to use those results to feed into and support future work with fishermen on the islands. In Ghana, the results from the project have helped the Directorate of Fisheries drive home the message that control and monitoring of the different fleet sectors within the narrow continental shelf are key to conflict management – this will also help secure future funds to supply equipment which is vital to control and monitoring activities.

In both the Turks and Caicos and Ghana the project has had a number of ‘champions’. In TCI the DECR has taken the issue of conflict management on board and is moving forward with ideas of how to better incorporate ‘community’ into fisheries management mechanisms. In Ghana, the FSCBP has also championed the project’s results, which have vindicated the work done on building community-based fisheries management units which have had a positive impact on conflict management.

8. PROMOTION OF OUTPUTS

A variety of avenues were used to promote the outputs of the project: conferences with large, varied and international audiences helped put the project findings into the wider academic and NGO community and provided the space for discussion and comment. Workshops and seminars with invited audiences were used to target the outputs to policy makers and fisheries workers in the field. Publications in academic journals also served to ensure that knowledge of the project and its findings were disseminated to as wide an audience as possible.

8.1. Conferences

- A paper entitled: *Institutions, Economics and Conflicts: Fisheries Management under Pressure* was presented by Elizabeth Bennett at the 8th conference of the International Association for the Study of Common Property (IASCP) held in Bloomington, Indiana in May 2000
- A paper on the role of social capital in fisheries conflict management was given at the 54th Gulf and Caribbean Fisheries Institute (GCFI) held in TCI (12-17 November). The GCFI was attended by some 140 participants who included *inter alia* senior representatives from the Organisation of Eastern Caribbean States, The Nature Conservancy, the NOAA, CARICOM and a number of island governments in the region.

8.2. Workshops

- The findings from the project were presented to an invited group on 25 February 2002. The meeting took place at the Directorate of Extension (Dept. of Fisheries) in Accra Ghana, some 33 people participated in the meeting including Senior Staff from the Directorate of Fisheries, the Fisheries Commission and the Ministry of Food and Agriculture; Senior Technical Officers from Regional Fisheries Offices, Chief Fishermen from the Greater Accra Region, representatives from the FAO, National Fishermen’s Association of Ghana and the Ghana National Canoe Fishermen’s Council. Presentations were made by Mr Robert Thompson and Mr Paul Bannerman (MFRD); Mr George Hutchful (FSCBP, MOFA); E Bennett and R Lewins (CEMARE). The meeting generated lively debate about the successes

achieved so far in Ghana with respect to conflict management and where efforts need to be made in the future.

- A similar exercise was conducted in Dhaka on 20 March and 21 March. On 20 March approximately 25 people from the Department of Fisheries, local Independent Research Organisations, Bangladeshi and foreign NGOs and visiting staff from Leeds University attended a workshop held in the Sonargoan Hotel. After presentation of the results, those present were split into working groups to discuss how they believed the results might be practically applied in Bangladesh. On 21 March, the project team were invited to present their findings to the Local Consultative Group which consists of the major donors active in the fisheries sector (FAO, DFID and Danida) and representatives from the DoF. The findings were welcomed by the meeting. The representative from the DoF has asked for further information on the project and the representative from FAO is actively seeking funding to incorporate a Consensus and Conflict Management module (based on the project's research) into their Programme.
- Results from the Ghana fieldwork and the role of fisheries in the alleviation of poverty in Ghana was discussed in a joint paper presented at the Small-Scale Fisheries, Poverty and the Code of Conduct for Responsible Fisheries Workshop organised by CEMARE as part of the DFID/FAO Sustainable Fisheries Livelihoods Programme (SFLP) and held in Cotonou, Benin in November 2001. at a workshop held in Benin.. Government officials and NGO workers from West and East Africa attended the conference.
- A series of participatory workshops on the project were held in Ghana during 1999 and 2000. These were attended by Department of Fisheries personnel and disseminated information on the aims and objectives of the project and gave training in PRA survey techniques to be used with the project.
- A series of workshops and meetings on the project were held in Bangladesh during 1999 and 2000. These were attended by NGO staff working on natural resource related projects in Bangladesh, DfID staff in Dhaka and District level government staff.

8.3. Seminars

- Together with Roger Lewins (reporting on the findings of R7572), the findings of the project were presented to MRAG in London on 3 July 2001.
- A guest lecture was given at the School for Field Studies on South Caicos (Turks and Caicos Islands) in November 2001 on the role of social capital in conflict management in the Turks and Caicos islands. Fisheries officers attended the meeting.
- A seminar was held in CEMARE on 26 April 1999. Three speakers were invited: Dr David Lewis from LSE gave a paper on Bangladesh; Dr Giles Mohan from University of Portsmouth gave a paper on Ghana and Mr Bill Samuels gave a paper on the Turks and Caicos Islands. 18 people attended the seminar that was held over the course of the day. The aim of the seminar was to set the context for the conflict project by bringing together a number of speakers on the political economy of Bangladesh, Ghana and the Turks and Caicos Islands. The objective was to contribute to the wider debate on the linkages between natural resource management and the political economy of developing countries.

8.4. The internet

- The Project Officer (Elizabeth Bennett) is 'topic editor' for Fisheries Conflicts on the FAO OneFish information service (<http://www.onefish.org>). This involves editing information (projects, papers, databases, discussion forums) submitted from around the world related to the issue of fisheries conflict resolution. This resource is helping disseminate information on the conflict project as well as related information to a wider audience.

8.5. Publications

- A brief synopsis of the project appeared in the *New Agriculturalist On-Line*, issue 3, 2000 (<http://www.new-agri.co.uk/00.3/newsbr.html#nb12>)
- The Times Higher Educational Supplement asked the project team to provide expert input to an article on the conflict currently waging in the Galapagos Islands between fishermen and conservationists. This article was published on Friday 19 January 2001.
- Copies of the Fieldwork report from Ghana have been sent to the World Bank and DFID in Ghana and to the Sustainable Livelihoods Fisheries Programme (SLFP) in Cotonou in Benin. Favourable feedback has been received from the SLFP in Benin regarding the project's work and findings.
- Publication of research results and the typologies in Marine Policy will ensure that policy makers at many levels will have access to immediate results from the project.

8.6. Dissemination engines

- A web-page for the project has been set up under the CEMARE web-site (<http://www.pbs.port.ac.uk/econ/cemare/conflict.htm>). The project web-page has been registered with a number of search engines (for example Yahoo and Altavista). A number of teething problems need sorting out but it is hoped that it will make the results of the project more accessible to a greater number of people. The internet is proving to be a powerful dissemination tool (albeit limited to those with access to the technology). Information presented on the project web-page and published on-line in the NR Newsletter has generated enquiries from researchers in Mozambique, Indonesia, India, Namibia, the UK and the United States.
- Details of the Research Project have been submitted to the MCB University Press Research Index for publication on the WWW.
- Details of the research have been published by ID21 at the Institute of Development Studies (www.id21.org) in the Society and Economy (Natural Resources) Section.

8.7. Information sharing with other programmes and projects

- The FAO are at the beginning of a major programme of work looking at improving training in conflict management, using Ghana as a pilot study. Because the FAO work is beginning where the Conflict project has ended, a number of meetings have been held between CEMARE staff and FAO staff in Accra to ensure optimum synergy between the two projects.
- Throughout the life of this project, information has been shared with the Consensus Building Project (R7562) which was looking at related issues, although the project were organised along very different lines.

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