Fisherfolk organisation in the network governance of small-scale fisheries in the CARICOM region

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# ABSTRACT

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of small-scale fisheries in the CARICOM region

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Organizing fisherfolk is a means to allow effective participation in decision-making processes and is important for good fisheries governance. The inherent scale-related issue in small-scale fisheries governance across the Caribbean relies on the development of a multi-tiered institutional arrangement that facilitates participation at the local, national and regional levels. However, organizing fisherfolk across large geographic scales presents considerable communication and networking challenges. These barriers constrain fisherfolk socio-economic development by reducing representation in management and policy development. An analytical framework is developed and used to critique fisherfolk communication and networking practices in the CARICOM region, particularly at the national level in Barbados. The framework examines the variables of (i) information management, (ii) legitimacy, (iii) social dynamics, and (iv) costs. The critique is based on the proposition that linkages across institutional scales generate capacities to improve fisherfolk livelihoods and fisheries governance. Research findings raise questions about the effectiveness of networking fisherfolk regionally without the institutional arrangements which permit participatory governance at the national level. This paper presents the network governance structures needed to support the management of dynamic and complex small-scale fishery systems. The research is based on 40 structured interviews with stakeholders from the fishing industry in countries which are members of the Caribbean Regional Fisheries Mechanism (CRFM).

Keywords: Caribbean; communication; decision-making; fisheries; fisherfolk; governance; network

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LIST OF ABBREVIATIONS

BARNUFO	Barbados National Union of Fisherfolk Organizations
BIDC	Barbados Investment and Development Corporation
CARICOM	Caribbean Community
CERMES	Centre for Resource Management and Environmental Studies
CFP&R	Common Fisheries Policy and Regime
CLME	Caribbean Large Marine Ecosystem
CRFM	Caribbean Regional Fisheries Mechanism
CU	Coordinating Unit
FAC	Fisheries Advisory Committee
FAO	Food and Agriculture Organization
FFO	Fisherfolk Organization
FMP	Fisheries Management Plan
FODP	Fisherfolk Organization Development Project
GIS	Government Information Services
NFO	National Fisherfolk Organization
NGO	Non-governmental Organization
PFO	Primary Fisherfolk Organization
SC	Steering Committee
SIDC	Seafood Industry and Development Company
SIDS	Small-Island Developing States
SSFs	Small-scale fisheries
%	Percent

1   INTRODUCTION

1.1   Research context

Since 2003, the nation-states of the Caribbean Community (CARICOM) have officially joined together to manage their marine resources at a regional level through the Caribbean Regional Fisheries Mechanism (CRFM). CARICOM comprises mainly small-island developing states (SIDS), which have a high dependence on marine resources for livelihoods from fishing and tourism (Mahon, 2005). The CRFM' s mandate is to promote and facilitate the responsible utilization of the region's fisheries and other aquatic resources for the economic and social benefits of the current and future population of the region (CRFM, 2002). Participatory governance in the Caribbean, for example through co-management efforts, is mainly consultative (Pomeroy et al., 2004). This reveals that attention is still needed on understanding institutional arrangements between the various stakeholders in the fishing industry if closer collaboration is the aim. Furthermore, the ongoing deliberation on the formulation of a common fisheries policy is gaining political attention revealing the beginning of a wave of change in the region for marine resource governance.

A growing awareness that the integration of management efforts across multiple scales requires local level participation is apparent among CRFM priority areas such as the strengthening of fishers' organizations and the promotion of community participation and public support (CRFM, 2002). The CRFM has been actively promoting the role of fisherfolk organizations (FFOs) in better fisheries governance. This is important because although the principal stakeholders of small-scale fisheries (SSFs) resources are the fisherfolk, it is paradoxical to exclude them from the policy development processes. An attempt to materialize a multiple level fisheries governance mechanism in CARICOM is visible through CRFM projects in strengthening and networking FFOs at the community (local), national and regional levels. These activities have inspired the direction of this research paper. The main research concern is to understand the complexities of network governance for SSFs in developing countries. This is also seen as valuable as part of a global quest to address the realities of regional governance for SSFs across large geographic scales.

1.2   Caribbean Regional Fisheries Mechanism Region

The issue of "institutional fit" arises when the institutions governing the conservation and management of resources mismatch with the extent of the biophysical environment (Sydnes et al., 2005). This is due to the fact that defined ecosystems do not obey the political boundaries, which today structure most national decision-making in fishery management (Sydnes et al., 2005). The identification of Caribbean Large Marine Ecosystem (CLME) encompasses the first step in starting to visualize the Wider Caribbean region under a larger cross-scale governing framework. A large marine ecosystem such as the Wider Caribbean is argued to provide the governance scale needed "to integrate and mobilize national and multi-national level efforts for ecosystem based management" (Fanning et al., 2007, 435).

Yet, there are many challenges in aligning governance efforts in the vastness of the Wider Caribbean, an area which is geo-politically complex and dominated by SSFs (Chakallal et al., 2007). The significance of an ecosystem approach is not only dependant on country cooperation but essentially it is reliant on the integration of management initiatives at local

levels. The transboundary nature of the CLME boundaries emphasizes the importance on increasing a culture of cooperation and networking in the process of strengthening a regional institutional mechanism for fisheries management in the region (CERMES, 2007a).
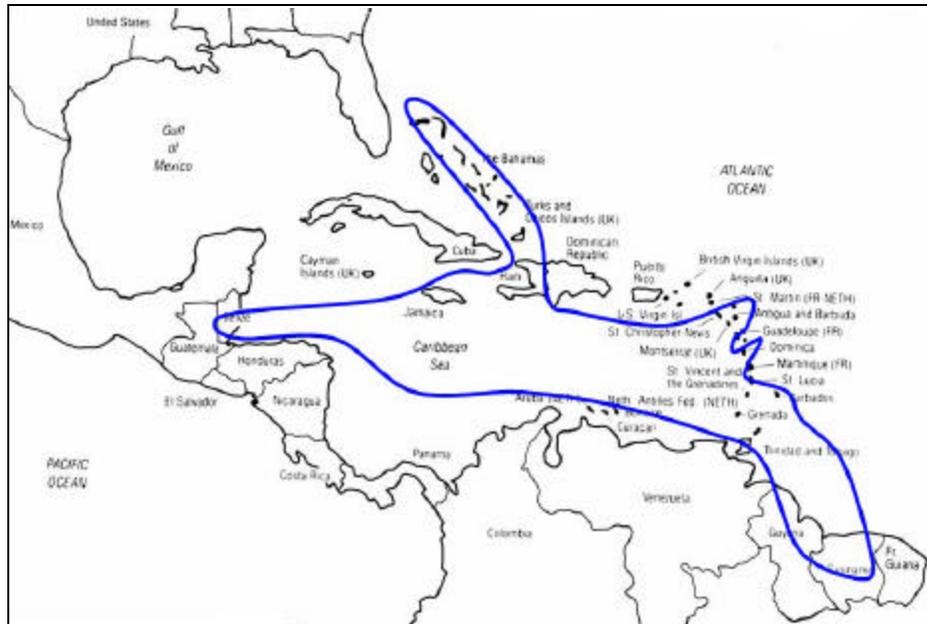
Figure 1.1 Wider Caribbean - Caricom scope highlighted (adapted from Chakalall et al., 2007)

Policy implementation across scales is challenged by their harmonization among states and the success of their local implementation (Fanning et al., 2007). The absence of policies addressing regional issues with a broader approach include but are not limited to: small states feeling powerless in making an impact on a regional scale, government capacity and lack of experience in setting up a regional fishery mechanism and vague visions put forth by technocrats with no operational guidance in how to do so (Chakalall et al., 2007). With the widespread presence regional projects increasing endogenous capacity of the Caribbean to govern marine resources, systematic capacity building is still absent (Montero, 2002). This could pose a possible threat to the regional cooperation momentum, whereby regional initiatives in increasing public awareness of coastal and marine issues have not been of national priority (Montero, 2002).

1.3   Scale considerations

Scale, diversity and complexity characterize SSFs, and the Caribbean is no exception, challenging the development of regional governance mechanism. Directly feeding into this is the need to manage shared marine resources: species populations ranging across national borders either migratory or sedentary are best managed in cooperation. Caribbean fisheries have been described as fully or overexploited, especially nearshore demersal and coral reef species (Brown and Pomeroy, 1999). Stock assessments for regionally important fisheries are few and constitute a priority for regional management. These constitute of some of the complexities of implementing fisheries management in CARICOM, especially considering an ecosystem approach to fisheries (EAF) that needs to take into consideration multi-gear multi-species SSFs. SSFs are therefore the major component of a multi-level mechanism for fisheries governance (Chakalall et al., 2007).

The design of a regional policy for SSFs is easily challenged by the diversity, complexity and dynamics which characterize them (Johnson, 2006). Yet, policies based on idealizations of governance arrangements may be ineffective without explicitly addressing the added issue of governance across-scales e.g. the complexities involved with governance across institutional scales (local, national to regional and international).

Furthermore, there are the issues of inadequate shared values, mutually agreed upon rules, local monitoring, and ways to enforce social sanctions among groups who might harvest migratory stocks (Berkes, 2006). If migratory species were to be managed at the community level, it would require multi-level co-management that is more complex than the partnership between local-level management and government-level management (Berkes, 2005). Berkes (2006) notes that even national or local level management initiatives do not match the geographical scale of migratory tuna, reflecting the need for international agreements, such as for the International Commission for the Conservation of Atlantic Tunas (ICCAT), that become necessary to solve the scale mismatch problem. Higher levels of management than the community are needed to provide monitoring, assessment, enforcement, and foster local management for highly migratory species (Berkes, 2006). In this way, ecosystem based management involves a much broader range of stakeholders that increasingly complicates management, especially in the light of policy harmonization and fisherfolk participation in CARICOM.

The Caribbean governance framework is lacking the networks at multiple levels for coordinated and aligned decision making between various actors (Fanning et al., 2007). This challenge is important to overcome in achieving national policy harmonization for regional fisheries governance in CARICOM. In addressing issues of country capacity to act on their fishery issues and high transaction costs in establishing a regional fishery mechanism, policy networks can provide a platform for initiating institutional change (Fanning et al., 2007). Linkages among states will bridge gaps of institutional incapacities impeding national level adaptations and improvements (Fanning et al., 2007). Chakalall and colleagues (2007) state that a network approach could help redress the imbalance felt by smaller island states next to the more powerful and capable countries of the Wider Caribbean. Such an example demonstrates that networks which enable enhanced information flows can redress such power imbalances felt at a regional scale. Therefore, issues associated with the geographic scope of CARICOM can be addressed in commitments to policy harmonization, information sharing and strengthening regional level partnerships.

1.4 Socio-political contexts

The Caribbean region has experienced failures and successes in participatory management of coastal resources (Geoghegan and Renard, 2002). There has been a growing trend towards more participatory processes in fisheries management over the past three decades (Geoghegan and Renard, 2002; Pugh and Potter, 2003). Fisher communities in the CARICOM region have been described as having weak levels of social cohesion, where fishers have an independent nature. It is important to consider the historical factors which affect the socio-political context of fisherfolk today. The inadequate sense of unity can be understood in retrospective back to the days of slavery as fishers increased in number after emancipation (Brown and Pomeroy, 1999). After emancipation social structures dating from the plantation systems, as well inequalities of class education and status are some factors which did not encourage the flourishing of community-based organizations (Espeut in Brown and Pomeroy, 1999).

Yet, Pugh (2005) observes that environmental planning at the governmental level is often left unprecedented due to a lack of social and environmental movements at the local levels. Environmental "movements" are mostly represented by elites, which only claim to speak on the behalf of a disengaged public (Pugh, 2005). Geoghegan and Renard argue from their experience in the Caribbean that above all "technical skills, access to financial resources and commitment are more important requirements for day-to-day management than representativeness" (2002, 24). This has contributed to the fact that public engagement has not been prioritized, and public apathy towards participation in policy is due to the fact that no alternative visions of development have been formulated (Pugh, 2005). In turn, this reinforces the states centralized powers in the Caribbean. This shows that the transformation of established processes or ways of thinking is also part of the process of articulating participatory governance systems.

Furthermore, post-colonial approaches towards management have scarred the cultural and political institutions of the region. "Expert-led", "top-down" approaches are not easily remediated by more participatory process in the face of societies comprised of "intricate power relations" (Pugh and Potter, 2003). Tending to more technical and western methodologies, people's passions are often regarded in mechanistic terms (Pugh, 2003). Pugh stresses the "impossibility of removing 'the political from participatory planning processes' as it take place *in practice* in the Caribbean" (2003, 204). He defines 'the political' as the collective identities (such as class, race, gender, expertise and so on) are always constructed around difference and, frequently, *hierarchy* (Pugh, 2003). Spheres of influence are unavoidable and the outputs of participatory processes may include those interests which are sustained by wealth or education. So "formalizing" groups may interfere with existing community institutions and "inevitably introduce new rules that can transform power relations and introduce hierarchical relationships" (Geoghegan and Renard, 2002, 23). For example, the exclusion of stakeholders less comfortable with formal processes (Geoghegan and Renard, 2002).

1.5   Institutional arrangements for fisherfolk participation

Proponents of participatory approaches have emphasized the need for strong community organizations as a prerequisite in implementing a delegation of authority to the local level. While this may seem logical, the reality is more complex. Independent attitudes, dependencies on government and inadequate collective action at the local levels challenge co-management implementation (McConney and Baldeo, 2007). Legislation promoting decentralization in some cases is absent from policy discourses, and institutional strengthening and capacity building activities are needed in fisherfolk communities (McConney and Baldeo, 2007). Even multi-stakeholder bodies such as Fisheries Advisory Committees (FACs) can be promoted through effective legislation as a means for fisherfolk participation. Yet, fishers are generally unprepared to provide inputs at the policy and decision-making levels. In general fishers have limited experience in the CARICOM region with fisherfolk organizations which facilitate partnerships with government, and many are weak and unprepared to engage in co-management arrangements (Brown and Pomeroy, 1999).

Fisheries divisions in small island developing states (SIDS) are often small with inadequate resources, but mostly importantly their institutional structures needed to be adapted to the dynamisms and needs of Caribbean SSFs (Mahon and McConney, 2004). Taking into consideration the importance of fish protein for food security, tourism as well as other marine resources in SIDS economies, it is ironic that fisheries departments remain underdeveloped.

Fisheries divisions lack visibility in national development plans, staff and resources to effectively implement co‑management (Brown and Pomeroy, 1999). There exists little guidance on planning and implementing fisheries management in line with regional and international level conventions, and considering limits of their own management structure, Mahon and McConney (2004) suggest that research on alternative structures and mechanisms which promote stable and resilient divisions is needed. For example, more focus on coordination and planning skills instead of a focus on technical issues (Mahon and McConney, 2004). Also, government is not actively networking with other groups such as NGOs to advocate co‑management, expressing a reluctance to decentralize power (Brown and Pomeroy, 1999). There seems to be preference for managers and fishers to resort to more consultative forms of co‑management as well as an absence of integrating livelihood strategies for example in SSF management strategies (McConney and Baldeo, 2007).

2 SMALL-SCALE FISHERIES AS A NETWORK GOVERNANCE SYSTEM

2.1 Concepts in network governance

Network governance relies on the understanding of self‑organizing systems (Dedeurwaerdere, 2005). Self‑organization" permits the realization of objectives otherwise unattainable by individual market forces (Dedeurwaerdere, 2005). Suarez de Vivero and colleagues state "the importance of participation (…) in voluntary action networks as one of the elements that develops the capacity of individuals to assume self‑governance" (2007, 2). "Therefore there must exist a want or desire to be engaged in management decisions. This want or desire underlies the functioning of network governance (Gibbs, 2008). Social capital represents the norms and networks that enable people to act collectively (Woolcock and Narayan, 2000). Social capital is defined as the "(…) connections among individuals- social networks, and the forms of reciprocity and trustworthiness that arise from them" (Putnam in Grafton, 2005, 754). Networks therefore portray different social capital dynamics whereby stakeholders involved in the network are able to harness information needed for good governance of marine resources (Crona and Bodin, 2006).

Bonding social capital, contrasted with bridging social capital, represents more localized networks characterized with 'strong ties' laden with trust and co-operation (Grafton, 2005, 756). At these smaller scales, social networks prove to be the underlying instruments in building trust and reciprocity, therefore increasing the likelihood of beneficial outcomes from fusing human relationships. The benefits to be sought out by a community in bridging social capital provides "a critical mechanism for the diffusion of knowledge and innovation" (Grafton, 2005, 756). Networks "enhance communication, favor collaboration and restrain opportunistic behavior" (Carlsson and Sandström, 2008, 40). The nature of the links can be revealed through a network analysis i.e. if it was spontaneous, intermittent or a relationship regulated by law (Carlsson and Berkes, 2005). This in turn captures the relationships surrounding local resource management, and can reveal how local levels activities are coordinated at higher levels.

The restructuring of social interactions mirror the ability of a community to absorb change, hence social adaptations increase a community's resilience (Mahon et al., 2007). For example, access to information at local levels requires cross‑level linkages in order to harness the knowledge necessary to manage marine resources. The nature of the ties between various societal actors is important to understand how the structure of the network influences exchanges (Jones et al., 1997). Networks can evolve differently according to context as a result of purposely

acting on an issue which in turn is embedded in the local context (Carlsson and Sandström, 2008). The likeliness of network governance to occur is strong when it increases the effectiveness of the social interactions in achieving objectives and goals. However, network governance however may assume what is set out to achieve, that is, that societal actors are interdependently linked in seeking decentralized solutions to coordination problems (Dedeurwaerdere, 2005). Triantafillou (2004) states that a major assumption in network governance is that it depends on persons with an inherent capacity "to act".

2.2 Network dynamics

2.2.1 Perceptions

How communities perceive their social reality or the ecological crisis they face, ultimately determines their "capacity to resolve it" (Chuenpagdee and Jentoft, 2007, 4). Achieving good governance is also based on an understanding of existing social networks and the institutionalization of relationships (Graham and Sol, 2004). For example, in the case of the shellfish industry off the Chilean coast, fisherfolk interaction with scientific information raised their "consciousness" about the management of their resources (Schumann, 2007, 108). This new found consciousness changed their perception about resource management responsibility as a cohesive group and encouraged stewardship among them (Schumann, 2007). Fishermen and scientists in Chile worked and communicated closely together under a government program, although no formal contract existed between them. Formal contracts between societal actors are not necessarily representative of relationships within the network (Jones et al., 1997). In other words, these contracts are socially- not legally- binding (Jones et al., 1997).

Once more, it does not depend on how much participants feel committed to the outcome of a regulatory system, but how they feel towards the "process of regulatory decision-making" (Jentoft, 2000, 146). Community members possess a degree of trust and sharing of norms, visions and values which influence local level interactions (Kilpatrick and Falk, 2003). In understanding the difficulty in sustaining institutional networks of community organizations, past failures may affect present trust levels and buy-in among community members to implement change. "The sustainability of relationships, and of the network in general, may be enhanced as partnership members recognize that fluctuations in trust levels do not predict the demise of the network, but are characteristics of the growth and maturation process" (Provan et al., 2005, 610). This point highlights the inherent dynamism in the process where issues of trust building are costly in time but also in building social morale (Provan et al., 2005). In the development of community organizations, learning from past failures may be a simple task, yet taking action where trust may have been compromised within that same community is where the challenge truly lies.

2.2.2 Collective action

Generally, human behavior can be understood as strategic and goal oriented (Crossley, 2002). Individual behavior and opinions are assumed to be rooted in the social structure in which individuals belong (Bodin, 2006). It important in understanding what practices are viewed by the societal actors in the network as legitimate. And vice-versa, what practices or groups are excluded because they contrast with prevailing standards of acting and being. To illustrate this, it is similar to thinking that a person's conduct does not occur in a vacuum but it occurs in relation to other societal practices (Foucault in Trantafillou, 2004). These practices serve to reinforce

particular conducts. Over time, these relationships are sustained and become self-constituted rules and norms (Sørensen and Torfing, 2005).

Nevertheless, the institutional conditions which permit networks to self-organize and rearrange are at the core of the dynamics of the governance network (Dedeurwaerdere, 2005). An individual's social setting also affects participation in collective action regardless of social ties. Information alone does not guarantee its internalization; neither does it translate into behaviorial changes (Diani and McAdam, 2003). Shared norms facilitate the implementation of change and the flourishing of social capital if they allow for inclusiveness of diverse interests (Kilpatrick and Falk 2003).Therefore, the assessment of a bridging tie as a vehicle for innovation is dependent on community perceptions to external concepts. It is crucial that there is a minimal degree of identification between the innovator and the adopter i.e. "attributions of similarities" (Diani and McAdam, 2003). Hence, one must be aware of network structures surrounding an individual and not exaggerate them: the cultural content of the networks themselves are just as or more crucial in the understandings of social movements.

2.2.3   Power relations

Participatory process in the governance network remains a skeptical undertaking, and is variable depending on who is participating, under what agenda, under what power relations and the deliberation of different knowledge forms (Berghöfer et al., 2008). Adger and colleagues describe power as "the application of action, knowledge and resources to resolve problems and further interests" (2006, 13) which can determine the nature of interactions between communities, regulators and other resource users. Crona and Bodin (2006) state that a social network analysis helps identify potentially influential actors within a network to instigate collective action. When observing the ties between various actors within the network, how the structure or architecture of the network influences exchanges becomes more apparent (Jones et al., 1997). Structural distribution of power throughout the governance network affects the flow and transparency of shared information and can provide insights on the link between power and access to information (Adger et al., 2005). Existing network structures and groups can play facilitating or constraining roles in the development of collective action.

The ability of communities to manage local resources is enhanced by increasing sources of information, and other types of knowledge such as science and the provision of technology. "A basic assumption about network relations is that one party is dependent on resources controlled by another, and that there are gains to be had by pooling resources" (Carlsson and Berkes, 2005, 72). There are gains but also losses as groups can increase their legitimacy based on the source of power detained in their ability to control others. Local power structures can allow some groups to dominate decision-making processes more than others (Geoghegan and Renard, 2002). For example, tourism interests in developing coastal areas may take precedence over fish landing sites. If power distribution is uneven, it provides opportunities for the domination of those in favorable positions. Therefore, networks between various groups can result in asymmetrical relationships and, in practice, differential power relations can perpetuate inequalities (Agrawal and Gibson, 1999).

2.3 Communication flows in the governance network

2.3.1 Stakeholder diversity

Fisheries management was viewed and functioned as a centralized system from a government perspective. Governmental offices and departments of fisheries were the locus of power and fishermen and the private sector were at the periphery. Participation in fisheries management allows the incorporation of different values and viewpoints to be taken into account (Berghöfer et al., 2008). Information and influence are shared throughout the persons in the governance network (the grey components in Figure 2.1 represent sources of influence). Key knowledge and information is accessible to more stakeholders, allowing them to more actively participate in management without loosing credibility (Gibbs, 2008). For example, with the use of the internet it is possible for fisher communities to learn about management practices across the globe (Gibbs, 2008).
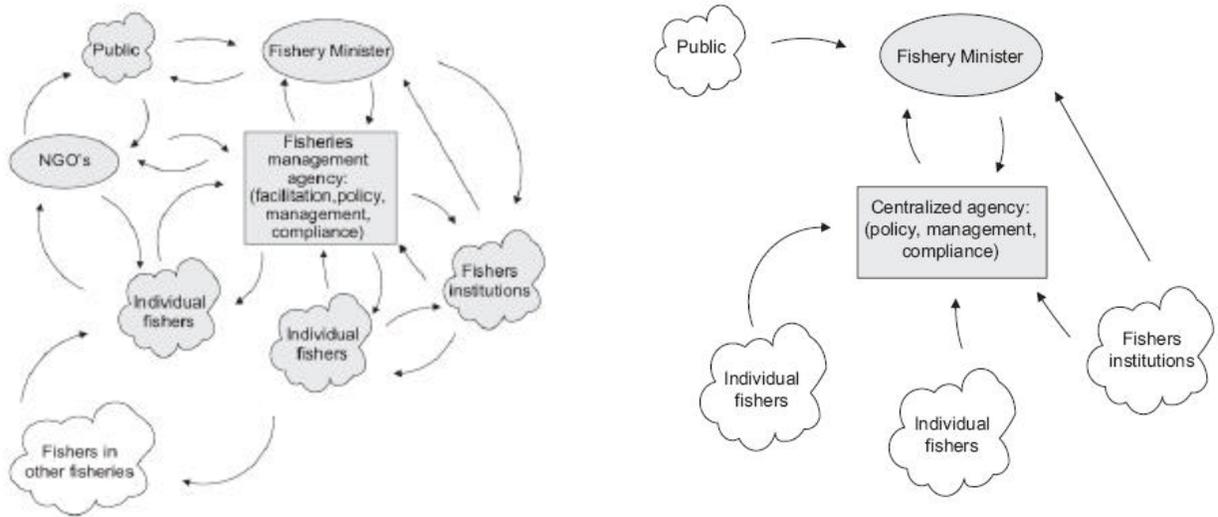
Network governance regime in fisheries   Top-down fisheries management regime

Figure 2.1 Idealized schematic diagrams of information flows (Gibbs, 2008)

Importantly, linkages in the governance network represent instruments for the gathering of information, knowledge and assessments relevant for decision-making on poli (Sørensen and Torfing, 2005). When this information is readily available to all stakeholders, this increases the likeliness of undertaking actions which will result in collectively beneficial outcomes (Bowles and Gintis, 2002). Also if the persons in the network develop a joint set of responsibilities and ownership for decision-making processes, they are unlikely to challenge the implementation of management options (Sørensen and Torfing, 2005). This feeds into fostering the articulation of group norms, and trust, essential for collective action and participatory processes. However, the growing numbers of participating stakeholders adds complexity to the management processes and potentially increases transaction costs (Gibbs, 2008).

2.3.2 Two-way communication flows

As stakeholder opinions and attitudes are becoming part of the baseline in decision-making, a greater volume of information is expected to be exchanged (Santucci, 2005). Consequently, communication and negotiation are important elements of co-management arrangements (Plummer and Fitzgibbon, 2006). This highlights the need for careful consideration of communication mechanism between different social actors, especially with multiple governance levels. Generating the appropriate information is not sufficient, but tailoring messages to target groups prove to be more effective (FAO, 2005). Technical jargon, brief policy statements, uninformative information for example leave people ignorant of what goes on in the governance network (Sørensen and Torfing, 2005). Fisherfolk may have access to a variety of information sources, but the adoption of management initiatives can be facilitated by well-packaged information. This is where the concept of strategic communication is increasingly relevant. It can be defined as:

> Strategic communication is a comprehensive and holistic concept. It includes all the activities needed for identifying and assessing critical issues, designing and implementing appropriate strategies, and monitoring and evaluating the results. It is an active and empowering solicitation of the stakeholders' perspective, ensuring that mechanisms are in place for a two way flow of information. (Santucci, 2005)

A crucial component of a strategic communication plan is the evaluation and monitoring of its impacts. It is important to know which media methods are most likely utilized, as a newsletter may be sent out but never read. For example, communications may trigger a change in attitude without necessarily affecting behavior (Santucci, 2005). Strategic communication should reduce the cost of less effective strategies and ensure that many viewpoints about the effectiveness of communication methods are taken into consideration and the project is not going down the wrong path. Although the opinion of stakeholders are the most important in the evaluation, the use of external evaluators such as specialized consultants, foreign or local experts and universities avoids monitoring biases (Santucci, 2005).

2.3.3 Improving livelihoods

Livelihoods can be understood as all the strategies and assets individuals' posses to earn a living (Graham and Sol, 2004). Social capital is a facet of an individual's livelihood and they are expressed through social networks (Graham and Sol, 2004). How the social capital gained by fisherfolk is used to create more favorable policy environment and improve their livelihoods contributes to improving governance (Graham and Sol, 2004). Enhancing communication processes and meaningfully engaging stakeholders in network governance should positively impact livelihoods. As groups organize, social capital is mobilized between individuals, increasing negotiating capacities and enhancing local representation at higher levels (Graham and Sol, 2004).

Participatory research is also a pathway towards acquiring information with the goal of livelihood improvements. It should be characterized by (1) it responds to the experiences and the needs of the community, (2) it fosters collaboration between researchers and community in research activities - data collection and presentation of research results (3) it helps promote common knowledge between community members and enhances awareness about their resources

(Chuenpagdee et al., 2004). Outcomes of participatory processes also serves dual purpose in raising community awareness of resource management, encouraging open discussions and triggering dialogue between different interest groups (Chuenpagdee et al., 2004). The combination of multiple sources of knowledge contributes to enhancing the knowledge base needed for conflict resolution and in generating policy options (Schusler et al., 2003). Yet, turning research results into activities which enhance local livelihoods requires local institutional structures to sustain action, ongoing learning and the building of collaborative initiatives (Schusler et al., 2003).

3 METHODOLOGY

3.1 Analytical framework and research goal

The analytical method is inspired by the IBEfish analytical framework and its criteria for examining participation in fisheries management. The IBEfish framework focuses on ecosystem based approaches to fisheries management but was originally developed from a process-oriented evaluation of combined participatory and analytical approaches to environmental conflicts (Varjopuro et al. 2008). The IBEfish criteria focus on: (i) information management- the way in which knowledge on natural systems enters the process (ii) institutional, legal and political legitimacy, (iii) trust building and social dynamics and (iv) costs of decision processes (Berghöfer et al. 2008; Varjopuro et al. 2008). Although all themes may arguably overlap, they provide a framework in understanding the process of decision-making and participation, particularly at the local level with fisherfolk. The original themes and subcomponents of the IBEfish framework can be seen in Table 3.1.

Table 3.1 Themes and components of the IBEfish analytical framework

Information management	Elucidating and integrating different types of information
	Anticipating outcome of management and governance structure
	Coping with uncertainty and complexity
Legitimacy	Legal compatibility
	Accountability
	Inclusion/representation
	Transparency of rules and assumptions to in- and outsiders
Social dynamics	Respect/relationship
	Agency/empowerment
	Changing behavior, changing perspectives/learning
	Facilitating convergence or illustrating diversity
	Policy uptake
Costs	Cost effectiveness
	Cost of the method
	Decision failure costs

Source: Varjopuro et al., 2008

The IBEfish framework is adapted to the context of fisherfolk organizing and networking experiences in the Caribbean. This research framework has the following understanding of the four IBEfish themes:

 (i) **Information management** is important for effective communication flows between those formulating policies and those affected by them.

The way in which knowledge is shared across scales requires repackaging information. For example, the relationship between knowledge shared and communication channels may impact how it is used and implemented by different stakeholders. If communities at the local level function informally integrating their needs and implementing management into formal governance systems requires diverse network arrangements. Furthermore, knowledge gaps may reveal that despite the availability of knowledge, lack of integration, access or awareness isolates different stakeholders in the governance network. Observing partnerships and communication flows contributes to understanding how factors permitting resilience and innovation permeate the network.

(ii) **Legitimacy** addresses higher level political commitments and local level internalization of higher level initiatives.

The dynamics of interactions across scales can play out differently in terms of accountability and transparency. Perceptions of what is legitimate may relate to past experiences and the validity of existing decision-making processes. Legitimacy can also be understood as a function of the characteristics of cross-linkages connecting fisherfolk to realms of policy development. With regard to participatory governance, it is important to understand how representation is organized in terms of interests, assumptions and values. By whom and how stakeholders are approached to participate (with the possibility of no reward) affects the legitimacy of those actions. Collective action and initiatives for self-governance can be diminished as a result.

(iii) **Social dynamics** observe more explicitly characteristics of cross-scale linkages which affect stakeholder interactions for informed decision-making.

The quality of social interactions influences the range of possible solutions for fisherfolk. The influence of interactions on policy making processes may reveal that national or local level issues may have interpersonal implications. Trust in the processes or individuals in the governance network may increase the effectiveness of participation and facilitate negotiation capacity. Degrees of independence of local level stakeholders from government may influence the ability to change and learn effectively, reflecting the need for a balance between heterogeneous networks and centrality. Collective action and the presence of social entrepreneurs may accelerate the processes of participatory governance as processes of policy development often occur in ill-defined areas.

(iv) **Costs** address the effectiveness of interactions and communication flows in relation to the outcomes of taking action or not.

The cost for fisherfolk to interact across scales is a stumbling block if not addressed strategically. Costs are not restricted to fisheries per se but in the differential financial abilities for cross-sector coordination. Accommodating different interest groups throughout the "fish chain" involves transaction costs, and may affect groups differently. Information costs such as organizing knowledge and setting up workshops may reveal that costs are also barriers to effective participation. Furthermore, costs may act positively as a driving force to participation, in improving local livelihoods through effective exchanges and communication.

In Figure 3.1, the four themes are embedded with the cross-cutting concepts of knowledge, decision-making and networking which all superimpose in creating a good governance system for SSF.

Figure 3.1 Components of the analytical framework and conceptual understanding of the research goal

In this way, this paper seeks to address the following research goal:

Research goal: Investigate how communication flows, social dynamics, legitimacy and costs affect the outcomes of SSF governance and local livelihoods.

3.2   Field entries and data collection

Information was retrieved from peer reviewed academic journals as well as reports of projects, training workshops and fisheries management in the CARICOM region. Also, data collection in the field was needed to address the specificities unavailable in the current literature. The majority of the data was collected through face-to-face interviews. Structured interviews were selected as a main method as it would allow easy comparisons between respondents (Appendix 1 and 2). Often other interviewees recommended other informants through a process of snowballing (Gilchrist and Williams, 1999). Most interviewees were selected on the basis of their status so a deliberate attempt was made to access persons on management boards or local representatives of groups or organizations.

This field study was stimulated by the need for more participation of stakeholders in the fishing industry. A shift in the paradigm of resource management towards participatory processes is challenged by formal and informal institutional arrangements. Therefore, the second aim of this study is to unpack linkages in the governance network, showing which forces are at play in cross-scale relationships. How fisherfolk perceive those forces and the types of solutions they envision is important for securing livelihoods and improving SSF governance.

A major objective of this field study is to understand what fisherfolk think about self-organization at the local level, to learn from their experiences, and understand how this may have affected their representation in decision-making. The study aims to investigate linkages between fisherfolk, government bodies and other interested parties. This study is also meant to be of a practical nature to communicate with fisherfolk about the next steps in organizing and networking across scales. By embodying the paradigm of participatory governance, this research hope that lessons acquired will contribute to generating information that could assist fisherfolk developments in CARICOM.

3.3 Case studies

Results are presented as two case studies. The case studies focus on specific instances of fisherfolk organizing and networking across scales, which has intrinsic value in itself and provides insights into wider issues surrounding network governance (Stake, 2003). The case studies were selected based on the possibility for analysis of network developments at the regional, national and local levels. The identification of cross-cutting issues is facilitated through the regional level case study, whereas the Barbados case study focuses on patterns at the national level.

Case Study	Fisherfolk Organizations	Research Expectations on network governance
1- Regional network (CARICOM wide)	In its preliminary form as a Coordinating Unit	Form, function and preparedness for a regional network of national fisherfolk organization
2- Barbados	Established national fisherfolk organization. Primary groups present.	Sustaining FFO efforts and dynamism of network structure

The analysis will be used to investigate the characteristics of cross-scale linkages in the governance network and how they affect stakeholder interactions in a way that communication flows are effective in improving SSF governance and local livelihoods.

4 REGIONAL NETWORK OF NATIONAL FISHERFOLK ORGANIZATIONS CASE STUDY

4.1 Introduction

This section focuses on the viability of a regional network of national fisherfolk organizations and discusses the outcomes of a series of workshops, national consultations and communication efforts geared towards fisherfolk development undertaken by the CRFM from 2004 to 2008 (Appendix 3). CRFM workshop outputs, and field visits to St. Kitts, Nevis and St. Vincent and the Grenadines inform the analysis.

The main data source for this section are the results from interviews conducted during the "CRFM/CTA Training Workshop on Management, Communication and Advocacy for Fisherfolk Organisations" held in September 2008. The workshop brought together 21 board members of primary and national level FFOs from 11 CARICOM countries[1]. Seventeen interviews were conducted with willing fisherfolk[2] (see Appendix 2). Through the lens of the analytical framework, the themes of information management, legitimacy, social dynamics and costs guide the case study analysis.

4.1.1 Overview

Generally, FFOs in the Caribbean suffer from a lack of participation, inadequate access to relevant information, and weak management skills, advocacy and financing strategies to mention a few (CRFM, 2007). Furthermore, organizing fisherfolk at local, national, and regional levels, presents considerable communications and networking challenges. These transcending barriers constrain fisherfolk socio-economic development through reduced self-representation in management and policy-level decision making processes. In this way, strengthening FFOs can be seen as a step towards improving the structure of fisheries governance arrangements to become more participatory.

An organizational needs assessment study was conducted in 2004 by the CRFM to identify the steps needed to address FFO institutional weaknesses. The following five recommendations were made (CRFM, 2004; CRFM, 2005):

- Form and strengthen national FFOs (NFOs) in all the CRFM Member States
- Introduce feedback mechanisms, regular consultations and responsible representation of primary level FFOs (PFOs) by their NFOs, through representatives of constituent groups on national and regional decision-making bodies. To achieve this, processes need to be transparent and accountable e.g. FFO representatives are subject to replacement for performing below expectation
- Link NFOs through an integrated electronic communication system
- NFOs should provide leadership, defend and promote the interests of PFOs and influence national policies in favor of the organizations, and similarly for the regional network regarding the development of regional policies
- Extend FFO networks to encompass other relevant national, regional and extra-regional organizations at a later stage, particularly for further capacity building and resource mobilization

These recommendations summarize the underlying objectives which have guided the CRFM in developing projects to improve fisherfolk livelihoods and achieve sustainable fisheries management (See Appendix 3).

4.1.2 Three-Tier Model for the Regional Network of National Fisherfolk Organizations

The inherent scale-related issue in fisheries governance and management across the Caribbean relies on the development of a multi-tiered institutional arrangement that facilitates participation at the local, national and regional levels (CRFM, 2004b). The three-tier model of a regional

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[1] Two invited participants were extension officers. Three staff members from the fisheries division of the host country, St. Lucia also attended the workshop.

[2] One CRFM representative was also interviewed but the data is excluded in this case study

network of NFOs reflects the vertical and horizontal networks which exist at different jurisdictional and institutional scales (CRFM, 2004b). At the primary level, FFOs are vertically linked to an umbrella NFO. Similarly, NFOs link with each other through an electronic communication system, creating a regional network. At the primary and national level, FFOs and NFOs can engage with NGOs, universities and their fisheries departments. NFOs would ensure the representation of fisherfolk interest through the Fisheries Advisory Committees (FACs) to better influence policy directives. The regional network would closely engage with the CRFM (CRFM, 2004b).
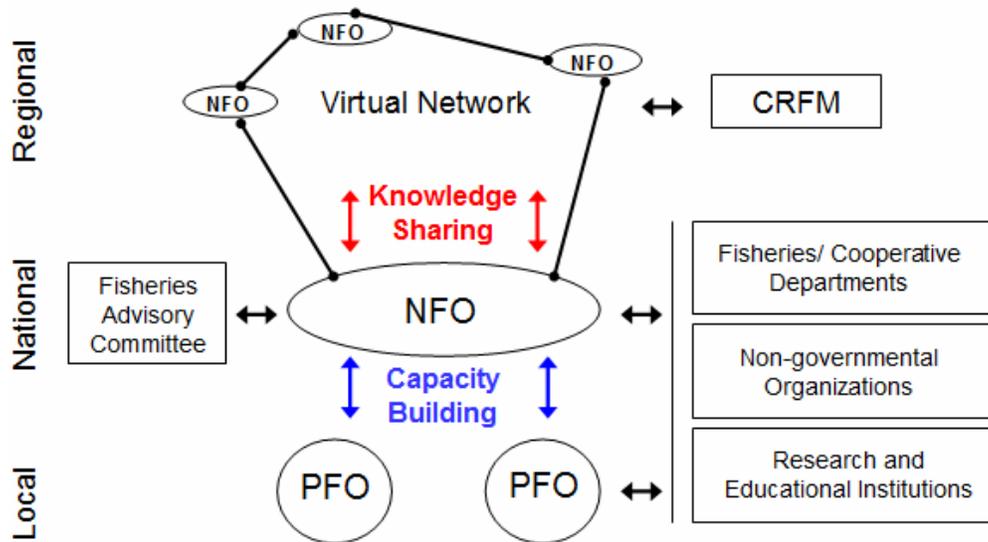
Figure 4.1 Three-tier model for the regional fisherfolk network (adapted from the CRFM, 2004)

In principle, strong PFOs ensure strong NFOs. Nevertheless, it is a two-tracked process as NFOs in turn play a role in strengthening PFOs through capacity building. The importance given to the strengthening and establishment of NFOs is not only related to its potential functions, but represents the link between the local and regional levels. In this way, the viability of a regional network is dependent on the formation and broadening of NFOs' roles and communication practices. As the regional network of NFOs is still being put in place, its structure and function have been a focal point of CRFM workshop discussions.

In Figure 4.2, a multi-cluster network model is represented. In this model, stronger clusters can be formed by neighboring countries. A lead NFO represents a sub-regional hub (e.g. a fourth tier) which assists other countries in overcoming challenges through effective knowledge sharing, for example.
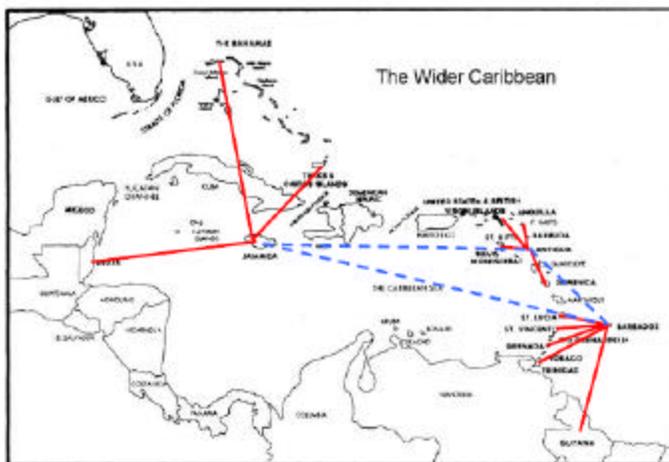
Figure 4.2 Multi-cluster network model (McConney, 2007)

The three-tier model represents 'what could be' rather than 'what is' (CRFM, 2004b). Problematically, not all CARICOM countries have NFOs, putting into question the viability of a regional network. Therefore, it was agreed that once the critical mass of 50% + 1 of CARICOM countries had established NFOs, the regional network could be launched (CRFM, 2004b). The CRFM proceeded to encourage the formation of steering committees (SCs) in countries with active PFOs to guide the process of forming a NFO (CRFM, 2007b). At the regional level, the equivalent of a steering committee (SC) for the regional network was put in place. This group represented the Coordinating Unit (CU) composed of 5 fisherfolk leaders and 2 government support officers from a fisheries department and a cooperative department different countries, was elected in 2007 to spearhead the development process of the regional network (CRFM, 2007) (see Table 4.1). The role of the CU is to promote the establishment of NFOs in countries where there were PFOs but no NFOs; develop and execute the workplan to establish the RFO and develop and promotional strategy and action plan to create awareness amongst the various stakeholders (CRFM 2007).

Table 4.1 Status of Caribbean fisherfolk organizations

Coordinating Unit Members	Fisherfolk leaders from Antigua and Barbuda, Barbados, Belize, Trinidad and Tobago; Fisheries and cooperative officers support from Dominica, St Lucia and Grenada
Officially recognized NFOs	Antigua and Barbuda, Barbados, Belize, Jamaica, Trinidad and Tobago
Active PFOs and NFO Steering Committee established	Dominica, Grenada, Guyana, St. Kitts and Nevis, St Lucia, St. Vincent and the Grenadines
Active PFOs but no officially registered NFO	The Bahamas, [3]
No active PFOs or NFOs	Haiti, Suriname, [4]

Source: adapted from McConney 2007.

The "CRFM/ CTA Training Workshop on Managment, Communication and Advocacy for Fisherfolk Organsations" brought together 6 members of the CU. So, the opportunity was taken to inform other participants of PFOs, NFOs and SCs of countries present about the CU's progress in the formation on the RFO. The CU has been taking steps to be seated as an observer at the Forum (an organ of the CRFM which is comprised of Chief Fisheries Offices of Member States and observers). This would ensure that fisherfolk are included in the CRFM decision-making process, especially in providing input at the level of the CRFM Forum (CU, 2008). A regional network of NFOs would ensure stronger and harmonized fisherfolk inputs for regional level policy development and execution

The following case study presents research results focusing on participatory processes, communication flows and networking strategies of FFOs from CRFM project outputs, field visits and interviews.

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[3] And non-ACP countries Anguilla, British Virgin Islands
[4] And non- ACP countries Montserrat, Turk and Caicos Islands

4.2 Information Management

4.2.1 Access to Knowledge

Fisherfolk depend on government bodies for information. The CRFM Needs Assessment Study revealed that almost 70% of the sources of information available to FFOs come from governmental and mass media sources, reiterating a top-down information dissemination process (CRFM, 2004a). Furthermore, poor extension services have resulted in the inadequate access to relevant information by fisherfolk. To reverse the "trickle-down" of information from government to the local level, functional FFOs are required (CRFM, 2004). All interviewees agreed that a fully functional NFO would be the best way to give and receive information amongst active PFOs. Half (50%) of the interviewees admitted to having little to no communication between PFOs, unless there was a major issue to be addressed. For example, concerns regarding the whereabouts of stolen boats are shared between different PFOs in Trinidad and Tobago. This may demonstrate that without defined communication strategies, knowledge sharing between FFOs becomes crisis oriented.
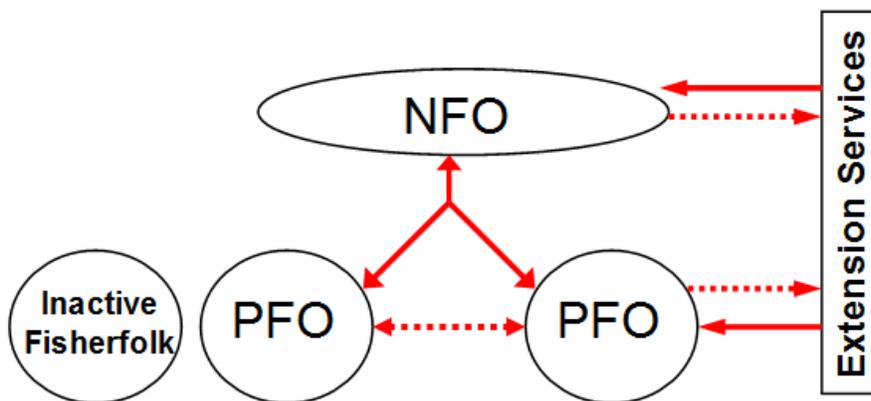
Figure 4.3 Communication flows between fisherfolk and government bodies

NFOs act as a hub for communication to occur because they facilitate the exchange of information, by interacting with different PFO board members. The NFO in Jamaica has meetings twice a month with all its committee members and once a month for its executive committee. The NFO staff often move to different landing sites to exchange ideas and acquire information from the fishers ensuring good communication flows at the local level. Knowledge is therefore not readily available for fisherfolk, unless it is actively pursued and facilitated by the NFO.

In Figure 4.3, a communication processes surrounding FFOs is represented. More formalized communication tools are used by the executive members of FFO, whereas members communicate amongst themselves more informally. The main modes of communication of FFO members demonstrate a continued reliance on more informal ways of communication i.e. face to face, verbal communication (Figure 4.4) (CRFM, 2004a). Furthermore, communication tools varied depending on what information was being disseminated. For example, printed material such as posters or letters need to be sent out by FFO executives to members to attend meetings, but following up with a phone call is necessary to ensure their presence. Electronic mail may be used in communication between FFOs but not necessarily between FFO executives and their members per se. Internet being the least utilized communication tool restricts access to a wealth

of knowledge and networking opportunities at the national, regional and international levels (CRFM, 2004a).
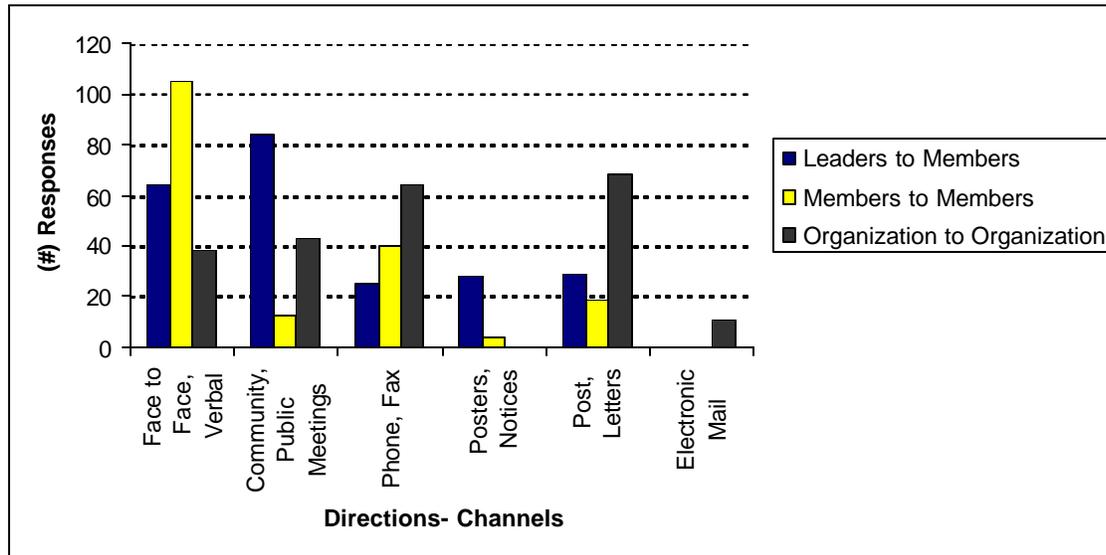
Figure 4.4 Modes of communication (Key Informants, N 194, multiple responses) (CRFM, 2004a)

In terms of the best way to receive or give information (Figure 4.5), telephones and cellular phones were the communication tools most utilized by interviewees. The use of cellular phones is widespread, especially for day fishers who do not have radios in their boats. Although the use of phones was common, interviewees (75%) felt that it is not an effective way of conveying knowledge: better decision-making could be made with round table discussions. The aspect of face to face or verbal communication stimulates in depth discussion amongst fisherfolk, therefore creating an access channel for knowledge exchange. Access to knowledge can be said to be average.
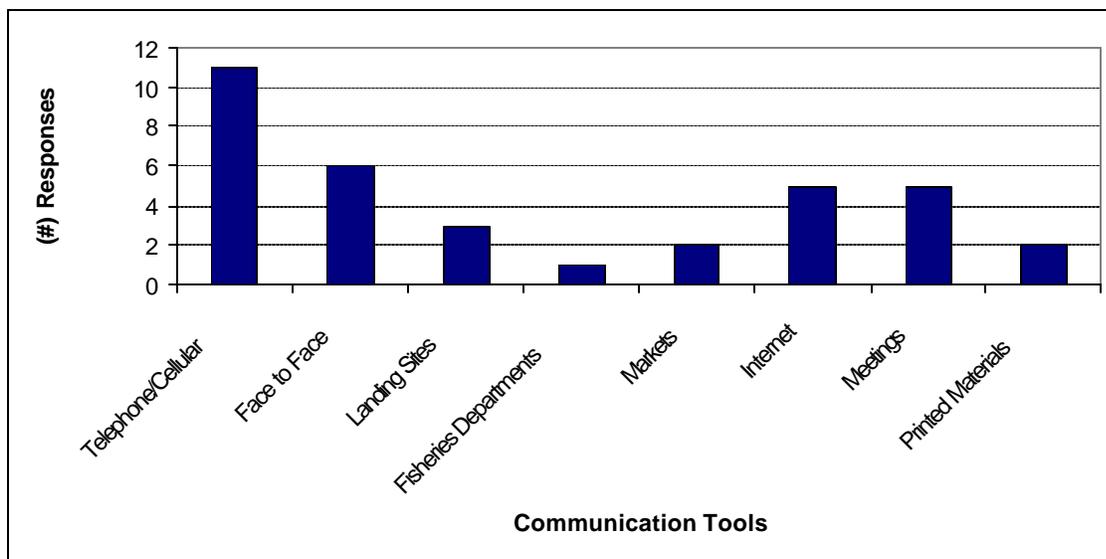
Figure 4.5 Best way to receive/give information (Workshop participants, N 17, Structured interview)

4.2.2 Presence of Partnerships

Established NFOs do not necessarily guarantee the effective distribution of information. Weak or unstable organizations cause communication flows to be disjointed. Barbados has a NFO which has been established for almost 10 years, yet it does not undertake regular visits to landing sites due to poor communication strategies and leadership. Ironically, in countries where SCs were building the foundations of their NFOs, meetings occurred often. For example, in Dominica weekly meetings were conducted as part of the NFO's establishment activities. Similarly, in St. Kitts and Nevis the objective of the NFO has triggered PFOs to meet regularly.

NFOs also expressed difficulties in effectively providing benefits and services to inactive fisherfolk. It occurs that in a given country, PFOs may be more active than others or are not properly registered. The Belizean NFO admits to engaging with their member PFOs, but their communication strategies exclude non-members and inactive fisherfolk groups. This remains a challenge in terms of successful knowledge exchange, which in such cases requires field visits and conversations with key local actors. The presence of official and active partnerships therefore acts as a vehicle for knowledge exchange.
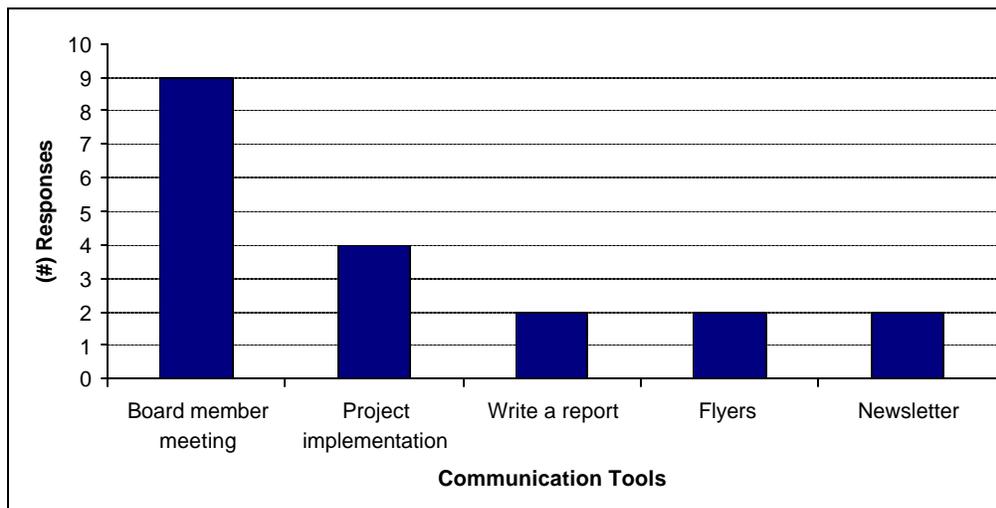
Figure 4.6 Avenues to share knowledge gained at workshops (Workshop participants, N 17, Structured interviews)

Active partnerships among FFOs encourage knowledge exchange for the benefit of the organization. From the interviews it can be said that knowledge gained after a CRFM workshop is normally shared with FFO executives and board members (Figure 4.6). Such meetings permit NFO board member meetings to discuss what aspects of the workshop are more specific to their PFO needs. Project implementation was perceived as a means to materialize the changes needed in their organizations. Due to the amount and complexity of the information that can be shared, a PFO leader from Guyana states that it would disseminate a flyer each week with a new concept learnt in the workshop. Through a regional network of NFOs, the presence of partnerships is above average, allowing for more opportunities for knowledge exchange than usually at the national level.

4.2.3 Level of Knowledge Integration

The simplicity of word of mouth for information dissemination is common among fisherfolk who will engage in conversation with each other about current issues. In St. Vincent and the

Grenadines and in Barbados, fishers land their catch at larger markets, which serve as an important places to disseminate information by "word of mouth". However, once the conversation ends, no action plan is formulated from the ideas generated. The challenge still remains in implementing a "follow-through" on issues discussed. Existing fisherfolk knowledge needs to accommodate new information inputs by fisherfolk and materialize them into action. Knowledge integration is therefore another important facet of well defined FFO communication strategies and development plans.

Transforming existing knowledge and information in a form that is useful for fisherfolk contributes to providing new learning and networking opportunities for fisherfolk. In Belize and Trinidad and Tobago, quarterly newsletters are used to get information to PFOs. Furthermore, in Trinidad and Tobago, a directory of all members of PFOs is being developed for the use of their NFO. Similarly, the CRFM has developed a regional stakeholder directory incorporating fisherfolk groups as well as other interested parties. In this way, the scope of knowledge integration extends to the regional levels. The latter examples create more independence with regard to communication and networking for fisherfolk with relevant groups within or without the fishing industry.

Nevertheless, past and current knowledge integration practices restrict the level of coordination needed to promote exchange at the national level and beyond. Consequently, the creation of common knowledge and understanding, a prerequisite to strong FFOs, is hindered. Interviewees expressed the need to change embedded communication practices and diversify to the more modern technologies which have the potential to reach wider audiences (e.g websites or visual media). The five interviewees who accessed the internet for professional use were experienced computer users in their personal lives. Only the Belizean NFO has a regularly updated website. In a general manner, the level of knowledge integration is average and needs improvement.

4.2.4   4.2.4 Awareness of Required Knowledge

All interviewees claimed that good access to fishery related information and increased awareness of current decision-making in fisheries must come from fisheries departments. Fisherfolk perceive that fisheries departments possess relevant technical and environmental information which is not effectively communicated through their extension services. Interviewees from Jamaica stated that the fisheries division mostly communicates laws and regulations aimed at better enforcement and management. On the other hand, the NFO in Belize felt that the dissemination of laws is inadequate and the library section at the fisheries division is not current and incomplete. Awareness of the required knowledge does not expand towards the information that universities, community groups or other state actors may have.

Print media have been more commonly used as a communication tool to raise fisherfolk awareness of the knowledge available and relevant to them. Print media products are sometimes distributed by government offices on selected topics, but fisherfolk expressed the view that the information is not always comprehensive. Furthermore, communication outputs are not always read, either due to a lack of literacy, or a lack of interest. In this photograph (Figure 4.7), a copy of the Fisherfolk Net newsletter can be seen posted in the PFOs' notice board in St. Vincent and the Grenadines. The newsletter distribution is reliant upon fisheries divisions and FFO leaders. It is poorly distributed in the region, and its information content is not reaching the beach level adequately.

Figure 4.7 Fisherfolk Net Newsletter

Acquiring and acting upon knowledge is therefore not simply linked to modernizing technologies. Knowledge becomes useful for fisherfolk with a certain level of understanding and awareness. There is a wealth of information available to fisherfolk on various topics. Information regarding fishing practices becomes more applicable if it is delivered in the form of a project at the local level with training components. The challenge remains in identifying the agencies responsible and capable of knowledge exchange as well as the form best suited to package it so as to engage both fisherfolk and policy makers.

Since fisheries officers are perceived to play an important role in increasing fisherfolk awareness, this requires knowledge filtering capacities to ensure that information disseminated is meaningful and relevant. In this way, there is dependence on fisheries officers to fulfill their individual roles and responsibilities. For example, fisherfolk knowledge exchange often occurs though meetings and face to face interaction. Therefore, in order for extension officers to be aware of issues at the ground level, a feedback mechanism must be in place, linking informal conversations with more official communication processes. Awareness of required knowledge is average, with much emphasis on the role of fisheries divisions.

4.3 Legitimacy

4.3.1 Existence of Past Failures

Top-down decision making processes only make information available to fisherfolk once a decision has been made. This decreases fisherfolk's motivation to participate in decision-making due to skepticism on governments' commitment to participatory management. The existence of past failures of participatory process has negatively impacted fisherfolk perceptions and trust relations towards government. Nevertheless, in the CRFM Needs Assessment fisherfolk recommended "a combination of collaborative and participatory management and decision making and training, particularly in leadership and management skills" (Figure 4.8) (CRFM, 2004a). Interviewees (60%) agreed that improving government-FFO relationships was important for institutional support such as assistance in developing constitutions or by-laws, and implementing sustainable fishing practices.
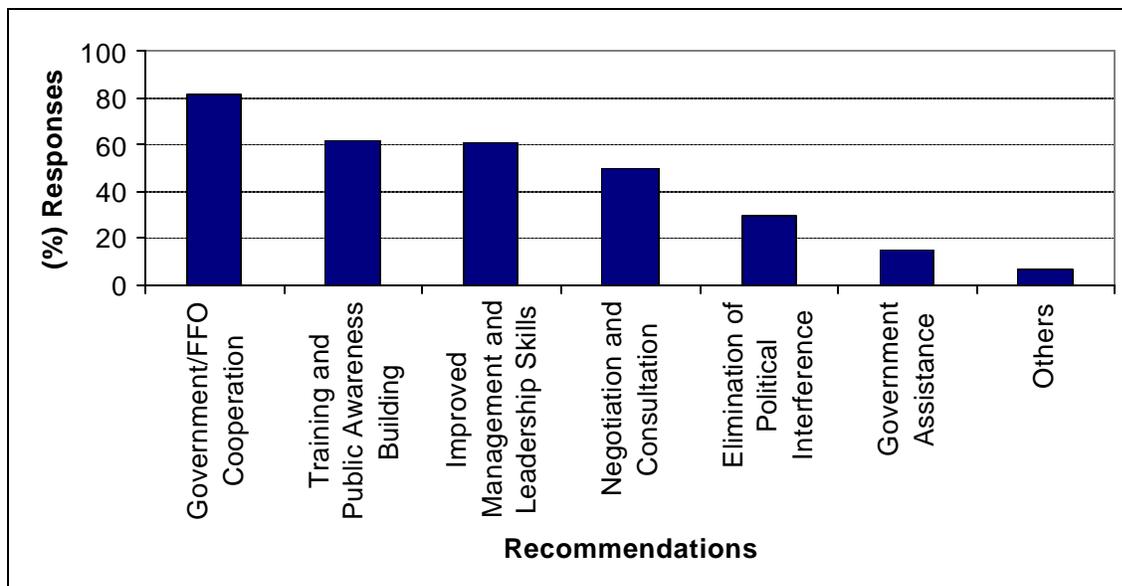
Figure 4.8 Solution to problems facing fisherfolk organizations (Key Informants, N 194, multiple responses) (CRFM, 2004a)

Past failures of government-FFO cooperation seem not to have not affected the interviewees, and can be described as below average. For example, interviewees consisted of motivated fisherfolk leaders willing to give time to attend a 10 day CRFM workshop. Nevertheless, the existence of past failures, whether in relation to government relationships or failing FFO is a major challenge for FFO leaders at the local level.

4.3.2 Level of Interest Representation

Although interview respondents felt that governments had responsibility for strengthening FFOs, it was agreed that the PFOs should drive the motivation at the ground level for increased fisher participation (Figure 4.9). In particular, the NFO executive members (i.e. PFO leaders) should play the strongest role in strengthening the organization. Increased member participation will ensure that the PFOs effectively communicate needs at the ground level to the NFO and consequently voice them to government. When fisherfolk see their interests represented and feel their livelihood can benefit from FFOs, the incentive to join will increases.
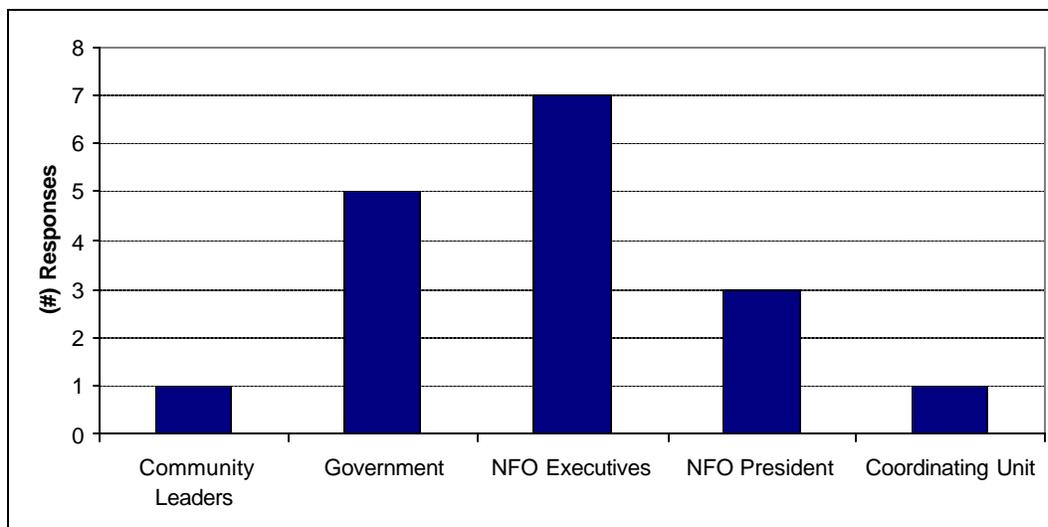
Figure 4.9 Role in strengthening fisherfolk organizations (Workshop participants, N 17, Structured Interviews)

In Antigua and Barbuda for example, there exist 3 PFOs with different interests such as sport fishing and spear fishing associations and a fisher cooperative. This situation makes it challenging for Antigua and Barbuda's NFO to easily come to consensus. The member composition of NFOs affects how PFOs will support common goals and, therefore, can influence PFO interactions. When successful, reconciling a variety of interests contributes to making the outcomes of NFO decision-making processes more representative. This contributes to increasing the external legitimacy of an NFOs communication outputs, by extending its advocacy to a variety of interest groups. Furthermore at the regional level, the CU would like to represent fisherfolk at the CRFM Forum level. It can be said that the level of interest representation is above average at the regional levels.

4.3.3   4.3.3 Process Transparency

Lack of member awareness regarding the roles and functions of FFOs threatens the efficiency of organizations. A PFO in Trinidad and Tobago places a strong emphasis on making its members aware of by-laws to ensure transparency and accountability in their decision-making processes and operations, by printing and distributing copies to the members. Furthermore, a lack of ownership and participation in the implementation of the rules and regulations which underlie the functions of a FFO is a cause of instability among primary organizations. Importantly, this can affect attracting new membership, as fisherfolk will have little or no incentives to join a FFO with no transparent and accountable management/executive boards. Mandatory meetings in cooperatives or annual general meetings in associations contribute to ensuring transparent and accountable management. In this way, the implementation of good management practices and transparent management processes is facilitated by access to information but also good leadership.

When decision-making is influenced by national politics this decreases the legitimacy of bodies meant to improve fisheries management and represent fisherfolk interests. For example, illegal harvesting arising in part from political issues occur when the government of the day may not be committed to enforcement activities. Furthermore, FACs are appointed by ministers of government, therefore introducing "political favoritism and biases into the system, and that

affects the objectivity of what goes on at FAC meetings" (CRFM, 2004, 19). CRFM workshops play important roles in information exchange and dissemination, although direct information access is limited to the number of participants. Workshop participant selection is the responsibility of the fisheries division (official recipients of workshop invitations) and internal politics can contribute to favoritism in the participant selection process. Consequently, not all fisherfolk are aware of educational opportunities and workshops occurring at the national and regional level. Process transparency is decreased when different fisherfolk groupings are not equally benefiting from available information. From the interviews it can be said that process transparency is below average in many CARICOM countries.

4.3.4   Clarity of Roles and Responsibilities

Interviewees agreed that PFOs and NFOs differ in terms of the types of benefits and incentives offered to fisherfolk at the local level. PFOs should provide the major incentives at the local level whereas NFOs play a more supportive and representative role towards government. From the interviews, it can be said that PFOs and NFOs should have the same agendas, yet their activities should not overlap. In this way, PFOs can offer services and benefits to its members, whereas the NFO might have a broader view on national fisherfolk issues and can lobby for members as well as non-members. It is important that the roles and responsibilities of FFO are related to the needs of fisherfolk as opposed to being confined to the FFO structure. For example, in Jamaica, the position of a development officer within the NFO structure had the task of developing small groups at the primary level. Clearly defined roles and responsibilities based on local level needs positively impacts the growth of FFOs.

To ensure the legitimacy of the regional network of NFOs, regular communication between the CU and NFOs is important especially during initial stages. Interviewees agreed to cooperate with the regional network, yet they requested clear cut objectives, mission, vision and strategies in order to avoid confusion at the national level. NFOs are not aware of the structure, functions and roles the network should take. For example, during the CRFM workshop (2008) fisherfolk were not up to date on what activities and strategies the regional network CU had developed. This raised other concerns regarding the level of maturity for NFOs to undertake a regional networking and communication strategy. PFO are still the main focus on any NFO activities, therefore it is important that the overall message to carry out is clear and responds to PFO needs to ensure support at the local levels. Clarity on the roles and responsibilities of a regional network of NFOs is average, as interviewees could easily conceptualize the role of the CU but were not well informed on its past activities for example.

4.4   Social Dynamics

4.4.1   Relationship between Familiarity and Trust

From the interviews, it can be said that the level of fisherfolk satisfaction with their networks is related to the willingness to invest time in engaging with other fisherfolk. In St. Vincent and the Grenadines, a longer serving fisherfolk leader takes the responsibility of communicating with PFOs as part of self-dictated duties. Another important factor such as respect at the community level was important in being able to communicate with PFOs and fishers in Grenada. Trust levels at the community level are therefore related to the level of familiarity with local leaders.

Fisherfolk find it easier to trust people who are more like themselves. Interviewees (82%) agreed that fisherfolk at the local level put more trust in the FFOs than government agencies to get

things done. Also, the establishment of a regional network of NFOs is expected to play a greater role in information dissemination and experience sharing. Many FFOs in the Caribbean face similar issues and ways to overcome them should be shared to generate ideas on how to move the fishing industry forward. Increasing access to information provided from a Caribbean perspective can give fisherfolk the opportunity to be better informed on national or regional level negotiations. In this way, the level of familiarity with regard to "Caribbean-sensitive" information is more readily accepted by fisherfolk. The relationship between familiarity and trust decreases when institutional scales increase, therefore at the regional level this relationship can be understood as low.

4.4.2   Ability to Negotiate

Stakeholders who exert more power should ideally be engaged in local level efforts to sustain the development of an NFO. In St. Kitts and Nevis, middle men (i.e. engage in trade) play an important role in moving information between landing sites and have extensive networks with the tourism industry. Middle men's informal networks are a strong asset to the development of the NFO, yet they can also hinder the development of the NFO. For example, if an NFO seeks to engage in marketing activities, this can be perceived as a threat to middle men which can negatively affect the negotiation capacity of the NFO. Hence, the role of the middle-men should be clearly assessed in the FFO development process.

Interviewees all agreed that there is inadequate access to information to actively participate in decision-making on fishery related issues. Insufficient access to information is visible in fisherfolk behavior and attitude according to the NFO in Trinidad and Tobago. Access to more information should stimulate thinking and allow fisher to be adaptive to changing times. However, interviewees (50%) felt that fishers do actively share with one another if the information may affect them negatively. Fisherfolk will put forward their interest as a group when they demand clarifications from government. In Belize, the NFO has noticed a change in fisherfolk attitudes. In expressing their livelihood concerns, they are becoming more resourceful in how they use and share information to positively affect their production.

In this way, sharing information depends on how it can be applied to improve fisherfolk livelihoods. Access to information which can affect monetary benefits will not be shared. New fishing methods or techniques, fish locations and productive grounds, even funding opportunities are other example of types of information not readily shared. Keeping knowledge from others is perceived as a means to improve status and power. Furthermore, information streams can be monopolized by the leadership of FFOs and do not always reach the general membership (CRFM, 2004a). Observing the level of participations is important, but participation alone does not ensure transparency in how the knowledge is used. Interviewees therefore felt that their ability to negotiate was below average.

4.4.3   Evidence of Cooperation with Government

Based on the particular issue, fishers will seek advice from other fishers on fishing topics. Fisheries divisions can be contacted on issues regarding fishery management and marine biology. All interviewees stated that the fisheries and cooperative departments were the most useful contacts to have in order to get changes implemented for the better functioning of their organizations (e.g. development of by-laws, business planning). Three interview respondents stated that at times fishers may put more trust in government e.g. financial audits, enforcement powers; or because depending on the government of the day, more participatory processes may

be put in place. Also, a friendly relationship between PFO leaders and fisheries division staff facilitates the feedback on certain concerns for example in Grenada.

As government bodies have more legislative and institutional power to influence policy, they should be able to best advise and guide FFOs. On the other hand, fishers can have a negative mindset towards government regulatory bodies. In Trinidad and Tobago, many fish landing sites are at risk from tourism development. A Trinidadian interviewee felt that the fisheries division, as an arm of government, cannot effectively voice concerns against tourism developments.

On the other hand, all interviewees had a common understanding that a change in attitude away from fisherfolk's uncooperative behaviour cannot be done by government agencies. Informal mobilization and motivational efforts by FFO executives and board members can have positive impacts at the ground level allowing fisherfolk with time to trust their reasoning. It is important to note that fisherfolk may trust FFO executive members more than they trust other fishers in their immediate surroundings. This is dependent on the election process: if FFO executives are elected by their members, they are expected to fulfill their functions and defend fisherfolk interests. Cooperation with government is average and mostly therefore limited to addressing certain fisheries and FFO management issues.

4.4.4   Strength of Institutional Linkages

The formation of a NFO - or its premature form as a SC -may come into existence prior to numbers of engaged fisherfolk. Therefore, NFOs can promote the development of institutional linkages. Having experienced personnel from diverse professional backgrounds on FFO boards allows for better decision-making. For example, board members may be able to source help from their own social and professional backgrounds. This contributes to strengthening the organization and facilitating the implementation of new strategies. Upon request for help from the Dominican NFO SC to the fisheries division, a Peace Corps volunteer was suggested as a consultant. The consultant meets with the SC on a weekly basis and offers a skill set that is greatly benefiting the development of the NFO.

Table 4.2 reveals the types of networking arrangements in which fisherfolk organizations may engage in. Ensuring that FFO linkages extend beyond the immediate environment, for example with local NGOs (12.3%), may forge new beneficial partnerships.. Respondents of the Needs Assessment survey explained their incentives for networking in terms of "increases in information dissemination and exchange opportunities for sourcing financial resources for collaborative project planning and implementation, and chances of accessing technical assistance in those areas" (CRFM, 2004a).

Table 4.2 Networking among organizations (Key Informants, N 194, Primary Organization, Multiple responses)

Linkages	(%) Responses
Local/National	
NFOs	31.7
PFOs	30.0
Local NGOs	12.3
Government Agencies	12.0
Regional/Extra-Regional	
Regional Organizations	7.9
International Agencies	6.1
TOTAL	**100.0**

Source: CRFM, 2004a.

A PFO from Belize felt it was not engaging meaningfully with a local NGO, which was engaged in co-management of a marine park with the government. Communication was not especially good and the weak linkages between the NGO and the PFO affected their ability to impact decisions made regarding the park.

The concept of networking was understood by one interview respondent as the capability of seeking assistance in dealing with a problem e.g. sourcing individuals with the appropriate knowledge to effective handle the issue. Most interviewees (60%) felt that their communication tools allowed them to expand their networks in the fishing industry. Interestingly, a PFO representative from Guyana stated that after being exposed to networking tools and technologies during the CRFM workshop (2008) it was clear that more networking was needed. The strength of institutional linkages was average, and interviewees felt that technologies such as the internet and telephones were crucial to expand networks at the regional level.

4.5   Costs

4.5.1   Transaction Costs

Transaction costs increase in relation to numbers of livelihood groups in the fish chain. Due to the diversity of livelihoods (e.g. vendor, fisher, boat owner), work schedules are inconsistent, making it hard for FFO to accommodate all fisherfolk at convenient times. Willingness to give time to FFO management processes is not only a responsibility for board executives, but also members and fisherfolk alike. Yet, insufficient participation leads to low attendance in meetings aimed to reach a wider audience of fisherfolk. Following this, it can be discouraging to invest time in meetings with low attendance. Interviewees noted that meetings organized by NFOs stimulate better attendance by their members. Transaction costs, especially with regard to meetings and knowledge exchange decreases through NFOs, which bring together different interest groups.

Transportation is an obvious yet defining transaction cost for NFOs, especially in traveling to different landing sites. Transport is difficult in certain countries like Dominica where road systems are bad. The cost of fuel is often borne by fisherfolk leaders who take the time and money out of their own livelihoods to fulfill their management tasks. In Jamaica, travel to-and-fro landing sites can take hours and, similarly the NFO in Trinidad expressed the difficulty in reaching all sections of the island on a regular basis. The CRFM has been bearing regional transportation costs to bring together fisherfolk from different countries across the Wider Caribbean. From a regional perspective, members of the CU are often away for days at the time, which means less time spent with families and for work. Although the benefits of such efforts are

not questioned, their sustainability in the long run is vulnerable. Transaction costs are above average for fisherfolk organizing and networking across scales.

4.5.2 Cost-efficiency

The cost-efficiency of fisherfolk development activities needs to be investigated from a holistic perspective. Certain acquisitions may not be viable for PFO: a fisher cooperative in St. Vincent and the Grenadines had a computer which was destroyed by salt spray due to its proximity to sea. The PFO has decided therefore not to acquire another computer, but to seek alternative solutions such as internet cafes. In Belize, an NGO engaged in marine park management offered scuba and tour guide training to fisherfolk to help them diversify their livelihood strategies. Fisherfolk felt that it was not a comprehensive livelihood strategy, although the help provided would have been free. The NGO offer was not well received because there was no guarantee for employment opportunities after the training and no funding was used to provide fisherfolk with their own scuba gear.

Similarly, the role of The Seafood Industry and Development Company (SIDC) can be questioned in terms of is cost-efficiency in the long term in developing FFOs. The SIDC was initiated by the Trinidad and Tobago government to develop the fishing industry and to disseminate information (SIDC Newsletter). The SIDC functions differently from the NFO as members on the board of executives are from the private sector, yet both organizations work in close relation. According to the SIDC, engaging people from the private sector is due to the fact that they avoid functioning of public servants, stunted by bureaucratic processes. The efficiency of the organization, running through government funding may exacerbate government dependence under a different form. The role of the SIDC with regard to FFO development is enhanced by its strong financial powers, yet the institutional structures it promotes can be further investigated. Furthermore, the cost of setting up such an organization is not in the capacity of all CARICOM countries.

The cost effectiveness of communication strategies needs to be assessed. With regard to newsletters, during CRFM field visits to St. Kitts and Nevis and St. Vincent and the Grenadines, the regional level Fisherfolk Net newsletter was not reaching the beach level adequately. Also, the cost of regional CRFM workshops without proper participant selection processes can decrease the cost-efficiency of these educational and networking opportunities. Cost-efficiency is below average and this can delay the development of a regional network of NFOs, especially with regard to scare financial resources of FFOs.

4.5.3 Presence of Free Riders

Trinidad and Tobago's NFO has a unique situation due to larger financial resources provided by the government. Advertising for events needs to include other incentives to make losing a day of work for training seem worthwhile. The NFO chooses its meeting venues, such as in restaurants, to increase participant attendance. The cost is greater but it is justified by higher fisherfolk attendance. This strategy can also be questioned if fisherfolk are not attending meetings or workshops because they feel the need to attend and may free-ride upon educational opportunities.

A PFO in St. Vincent and the Grenadines has inaugurated a monthly fish fry as a means to increase their revenues. Although the events have been successful, the PFO has witnessed the presence of free riders in the form of vendors who put up their stalls without formal contracts.

This has negatively affected the fish fry as the PFO has experienced difficulty in monitoring the health standards of the various vendor stalls. The fish fry has played a role in increasing the membership base, however the Vincentian PFO needs to concentrate on either attracting the vendors to join their PFO or focusing on implementing formal agreements with the vendors as a mean to benefit fully from the event implementation.

Due to insufficient participation of fisherfolk at the local level, FFO executives and board members expressed during the CRFM Workshop (2008) that membership drives were important. Fisherfolk feel that access to educational opportunities or training should only be available to their membership. If non-members are benefiting from FFO activities they may not be inclined to join. Local level communication networks heavily rely on small numbers of motivated individuals without a necessarily engaged fisherfolk to represent. However, as individuals are less inclined to take part in voluntary work, networking with local clubs involved in community work needs to be promoted. In this way, if FFOs become more community oriented they extend local level benefit and can take advantages of community member skills sets. Free-ridership is below average and not present in terms of taking advantage of fisherfolk efforts in other CARICOM countries.

4.5.4 Efficiency of Scale

The lack of financial resources can also represent a driver for fisherfolk cooperation. FFOs play important economic and social roles by reducing access costs for fisherfolk. They can provide support and funding for fisherfolk funerals or losses due to bad weather. Also, FFOs provide an easier and cheaper access to services at local level. For example, a cooperative in St. Vincent and the Grenadines has early opening hours with snack for breakfast when fishers go out to sea. In Dominica, two PFOs are considering to merge to increase the efficiency of scale with regard to accessing to local markets. This reinforces the concept of "strength in numbers", as FFOs determine the services and benefits which serve them best.

The management boards of NFOs bring in a wider spectrum of fisherfolk and a more diverse skill set (CRFM, 2004a). In this way, they tend to be more stable than PFOs are, consequently reducing the management costs. Acquiring the skills needed to run more efficient organizations is more costly as training is needed. Interviewees shared the changes they would like to see in their organizations: more effective board members, implementing more revenue generating activities, control over landing sites, increased membership, sustainable fishing practices, communication and advocacy skills, computer and electronic management systems, marketing skills to name a few. Interviewees identified skills which require facilitators, trainers and facilities which come at a cost. With good networking, skills can be sourced, for example in Barbados CERMES will share its skill base to enhance FFO effectiveness. Therefore, there is the recognition that collaboration can improve livelihoods, and can be facilitated at higher institutional scales through NFOs.

Furthermore, FFOs have the potential to reduce fisheries management costs by facilitating data collection and coordination with government. Within the context of the CSME and the formulation of fishing agreements and a CFP&R, the regional network is perceived as vital by all fisherfolk. In order for the network to gain legitimacy all fishers agreed that representation at the Forum level will add weight to their claims to be more collaborative managers with government. Fisherfolk leaders feel that the benefits of voluntary activities taken to strengthen NFO outweigh

the cost in the long run. Fisherfolk networking becomes more meaningful, signifying that efficiency of scale is above average at the regional scale.

4.6 Conclusion

Informal networks are well established at the local and national level, yet more purposeful networking strategies with groups outside of the national fishing industry are sporadic. Fisherfolk meetings and face to face interactions are widely used as a mean to exchange information. However, they do not provide channels for individual fisherfolk to expand their networks with other organizations, especially at the regional and international level without a dependence on their executive board members. The dissemination of information and more effective communication flows has remained at the level the FFO management. Furthermore, a lot of responsibility lies in the hands of government officers, particularly in their extension activities. More systematic communication mechanisms are needed at the national level, particularly for the development of the regional network whose success relies on regular interactions with NFOs.

Challenges related to power relations, embedded in social interactions at the national level can hinder participatory processes. Insufficient participation at local levels can be increased with access to more relevant information and transparent systems for its dissemination. In this way, objective processes which are not tainted by political preference and social support systems facilitate fisherfolk participation. Conflicting interests of well established groups such as middle men or vendors can halt FFOs which seek to diminish their structural positions in the governance network. Furthermore, the development of an NFO must be inclusive of PFOs at the local level whether they are associations or cooperatives.

As the development of an FFO must be a grassroots effort to ensure its sustainability, the development of a regional network may encounter challenges in promoting the benefits of information sharing and collective mobilization. Attitudes, past failures and weak management skills plague FFO efforts at the local levels to move fishing industries forward and improve local livelihoods. In this way, a transparent decision-making process can start at the local level and innovative ways to overcome local resistance can be incorporated into the FFO structure, in the employment of full time NFO employees as development officers for example.

5   BARBADOS CASE STUDY

5.1   Introduction

In 1999, a National Fisherfolk Organization (NFO) was established in Barbados stirring up movement in the fishing community to form stronger organizations at the primary level. The benefits of self-representation are not disputed by fisherfolk, but sustaining organizational efforts has proven to be an ongoing challenge. After a decade of activities targeting the development of FFOs in the late 90s, FFO in Barbados are still weak and advocacy is limited. A brief history and discussion of fisherfolk organizations in Barbados is provided in this section.

The main data sources for this section are the results from interviews conducted between September and November 2008. Twenty-three interviews were conducted with fisherfolk across Barbados (Figure 5.1), government officials from the fisheries and cooperative division as well as one FAO staff member (see Appendix 1). Through the lens of the analytical framework, the themes of information management, legitimacy, social dynamics and costs guide the case study analysis.
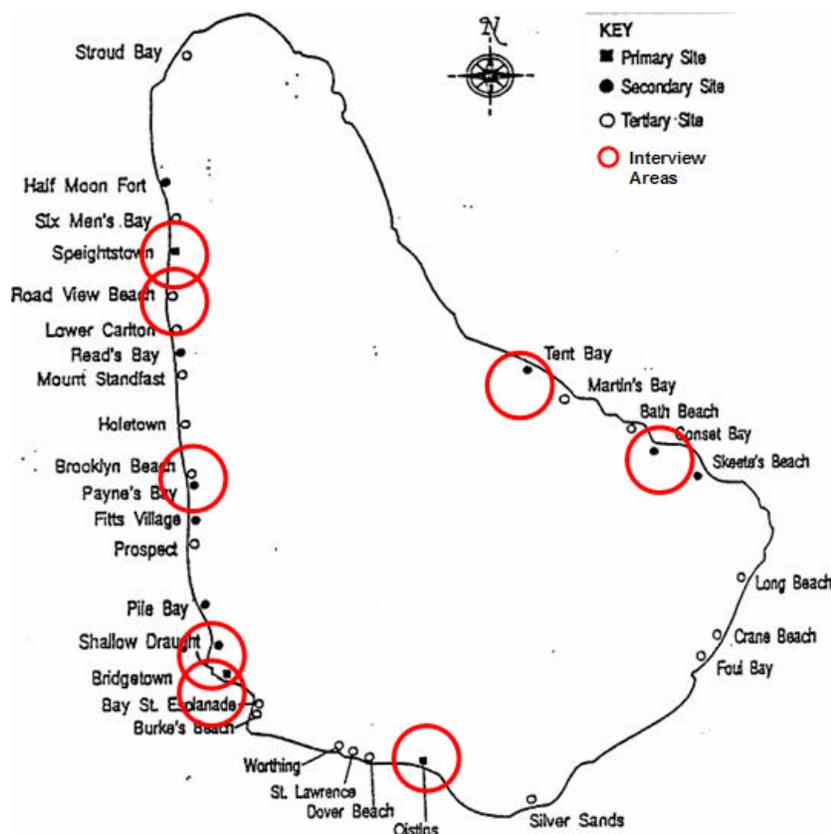
Figure 5.1 Barbados map- interview areas highlighted (adapted from Fisheries Division, 1999)

5.1.1 Overview

In the early days of organizing fisherfolk in the 1960s, the Cooperatives Division encouraged fishers to join cooperatives as a way to increase savings and provide inputs and services neglected by the Fisheries Division. Cooperatives were multipurpose and focused on fuel supply and fish marketing for example, and much less on aspects of fisheries management (McConney et al., 2000). The promotion of cooperatives in Barbados was criticized as having little integration with the fisheries authority as well as providing inadequate advisory support, making cooperative success difficult (McConney et al., 2000). By the mid-eighties, many cooperatives had failed, and fisherfolk pursued forming associations which are not entities governed by law (McConney, 2007). Associations were created as a means to improve dialogue within the fishing industry and with government. Consequently, the Fisheries Division acquired the leading role for FFO development. However, FFO activity was reactive in nature and organizations could remain dormant until they were reactivated again into pursuing debates at the government level. FFO activity was therefore sporadic and did not focus on forging links within the fishing industry (Jackman, 2001). FFOs resembled pressure groups, active in crisis. For example the arrests of Barbadian fishers in waters of Trinidad and Tobago for illegal fishing triggered the formation of the Barbados United Fisherfolk Association in 1994 (Jackman, 2001; McConney et al., 2000).

The lack of institutional credit for the fishing industry was a major constraint for FFO development. This was amplified by the ineffective and withdrawn leadership which was unable

to sustain and expand FFO membership (Jackman, 2001). What is important to note is that efforts to mobilize fisherfolk were dominated by government initiatives since the 60s. Also, since FFOs had the tendency to organize around the need for infrastructure and capital development, little attention was paid to fisheries management issues. In this way fisheries management, being promoted by the fisheries division would not be easily implemented through FFOs, especially if they remained unstable or dysfunctional. Considering that the Barbadian Fisheries Management Plan (FMP) has under its legal provisions of consultations with fisherfolk for fisheries management, it was important to encourage FFOs as potential management partners. Government was required to promote the formation of "active and vibrant fishing associations and cooperatives" needed to achieve fisheries management plan objectives (Jackman, 2001).
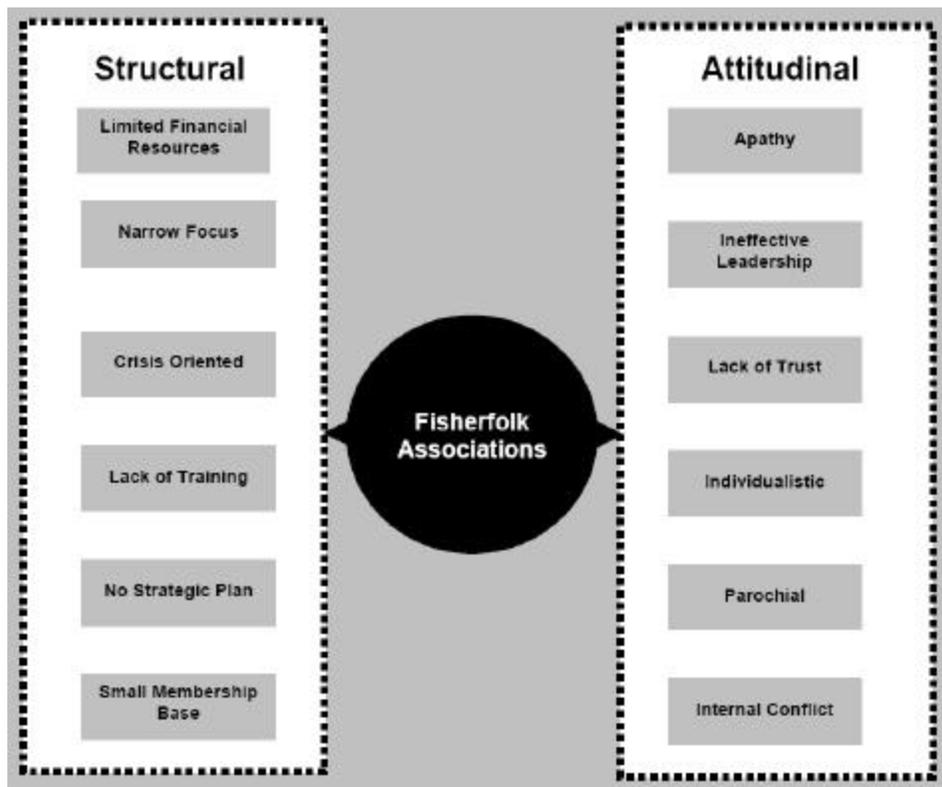
Figure 5.2 Problems confronting fisherfolk organizations (Jackman, 2001)

In Figure 5.2, some problems confronting FFOs are represented. FFO failures can be due to lack of proper leadership and guidance and the absence of conflict management and facilitation of consensus building for example (McConney, 2001). FFOs had not developed effective strategic plans, and their activities focused on addressing a single issue at a time (Jackman, 2001).

5.1.2   Fisherfolk Participation

Barbados' NFO, the National Union of Fisherfolk (BARNUFO), was the culmination of two years of work under the Fisherfolk Organization Development Project (FODP) (Atapattu, 2000). Due to the absence of fully functionally FFOs Dr. Atapattu, advisor for the FODP, undertook in collaboration with the Fisheries Division a 27 month project from May 1997 to August 1999 to

strengthen and develop FFOs (Atapattu, 2000). The FODP project was considered successful, and had 400 fisherfolk organized in 9 FFOs within 2 years.

Fisherfolk participation in management has not been fully successful in Barbados. For example, attempts to implement community-based management of the declining sea urchin fishery have shown that attitudes towards regulation access and property rights are unconforming (Parsam and McConney, 2004). Furthermore, considering the social and cultural importance of the sea urchin fishery, no FFOs have adopted the issue as a priority in their activity … questioning the institutional setups which can effectively promote community-based management (Parsam and McConney, 2004). This demonstrates the low priority of fisheries management in FFOs. It can be understood that government's approach to encouraging the development of FFOs has been one of encouraging the development of a fisherfolk dependency syndrome, whereby FFO leaderships are not taking responsibility for strengthening their organizations. This leads to the questioning of government FFO development commitments and efforts which are either unappreciated or irrelevant to fisherfolk needs.

Several recommendations were put forth by past research to improve FFOs, especially from the FODP project from 1997 to 1999.   For example, some recommendations regarding the development of FFOs (Atapattu, 2000) were:

- Fisheries Division is to provide stronger institutional support to FFOs by recruiting new staff if necessary. A full time officer to ensure fully functional FFOs as well as to investigate the development of a new position at fisheries, possibly employing someone with social science background. Legislation encouraging co-management arrangements need to be finalized and implemented. Cooperation between government agencies and FFOs is important for their good socio-economic development as well as their potential player in fisheries management.

- FFOs are to engage in money generating activities as a means to sustain the memberships as well as expend their management agendas towards socially oriented goals and sustainable fishing practices. Networking at the national and regional level with other FFOs, the private sectors and NGOs can provide benefits. Also, fisherfolk can choose to organize depending on their interests and occupations, such as vendor or processor FFOs. FFOs need to consider the employment of at least one fully time staff, as voluntary positions can not sustain FFOs.

- Training and educational opportunities should be implemented for FFOs and fisheries division staff. Training can occur from the fisheries division to ensure better transfer of skills and concepts to fisherfolk. Training of fisheries division staff on aspects of cooperation, rural livelihood approaches and microfinance for example should be considered at institutes abroad. Finally, a program needs to be developed based on the FODP project outputs to ensure project continuity and capacity building.

Recommendations have not all been implemented, and since the FODP project FFO have weakened not strengthened. In September 2008 during the annual general meeting of the NFO, BARNUFO, FFO members expressed disappointment with its leaderships stopping the election process from proceeding. BARNUFO is under review and seeking to form a completely new executive board and address its constitutions per demand of fisherfolk. In this way, BARNUFO needs to address its institutional and leadership weaknesses in order to fully support PFOs,

advocate on behalf of fisherfolk and potentially tackle issues surrounding fisheries management in Barbados.

The following section of the paper presents research results focusing on participatory processes, communication flows and networking strategies of FFOs in Barbados from field visits and interviews.

5.2 Information Management

5.2.1 Access to Knowledge

The cultural preference for face to face communication is strong amongst fisherfolk, as well as government officials (Figure 20). For example, one-on-one interactions as well as meetings facilitate discussion and knowledge exchange. For fishermen, face to face interactions are important in the market place, where boats traveling from different landing sites are also moving information. The use of radio was prevalent with interviewees who spent a lot of time out at sea. Fishermen listen to their own radio talk-shown and engage in evening discussions, where a variety of topics are debated. At the regional level, Fisheries Division officers may engage in knowledge exchange through the internet.
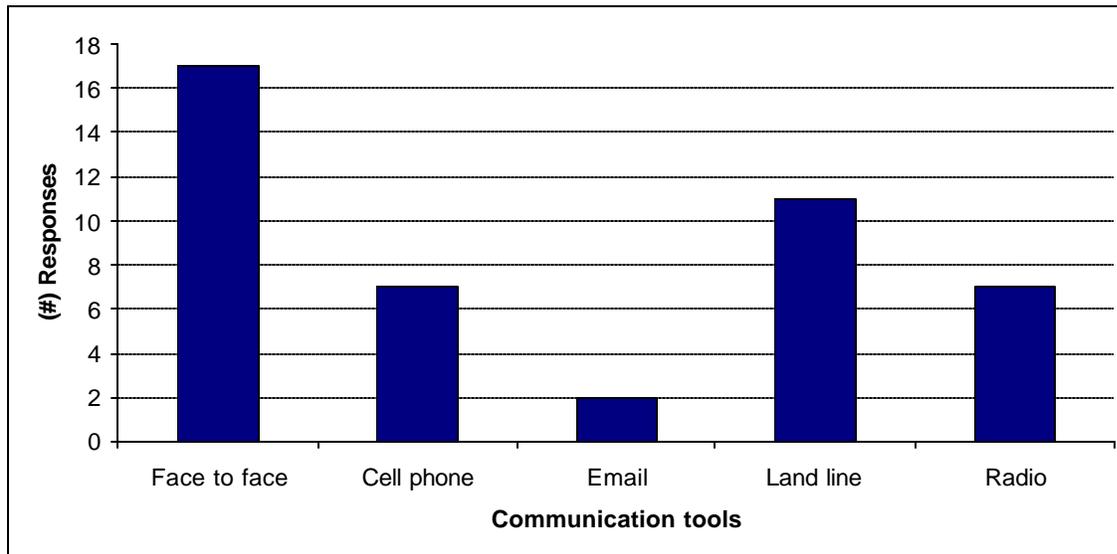
Figure 5.3 Communication on an average work day (Fisherfolk, N 23, Structured interview)

All interviewees agreed that it was necessary to adopt more formal communication methods, particularly government. Two interview respondents stated that that FFO would ideally be the best way to receive information (Figure 5.3). Another respondent expressed that in term of receiving relevant information, knowledge needs to be actively pursued. This is due to the fact that fisherfolk may rely too much on receiving information instead of determining the types and forms of knowledge they want to have access to. Reliance on more face to face interaction (Figure 5.4) to receive information can limit the quality of the knowledge exchange, depending on who is disseminating the information. For example, the use of mass media methods to receive information may be useful, yet it remains top-down. Access to knowledge for fisherfolk in Barbados seems to be below average. Therefore, it is important for fisherfolk to understand the need for institutionalized and collective communication channels.

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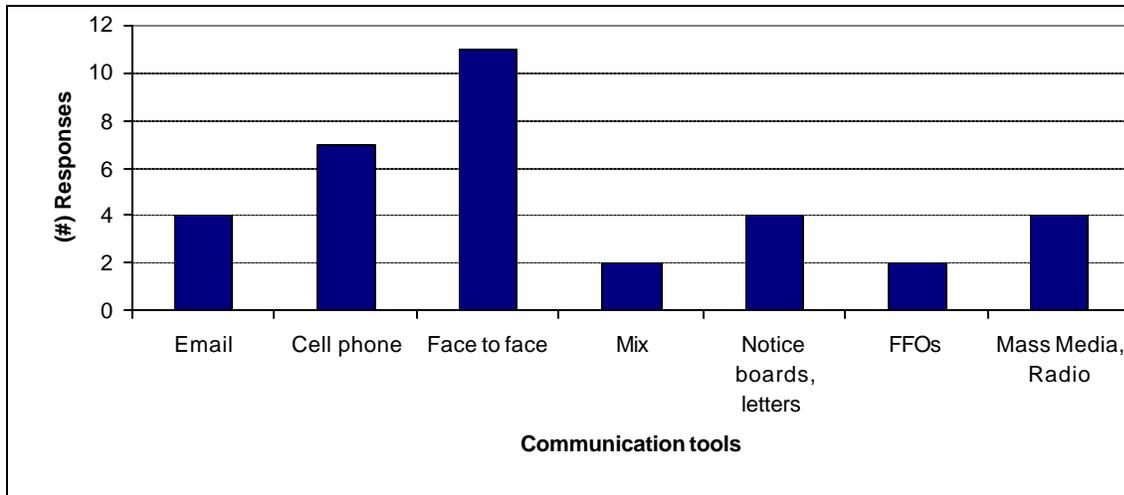
Figure 5.4 Best way to receive information (Fisherfolk, N 23, Structured interview)

5.2.2   Presence of Partnerships

Partnerships within the fishing industry can be based on occupation. A vendor PFO was formed in the Bridgetown fish market as a means to maximize their revenues focusing on ensuring a stable supply of fish to regular consumers. For example, during the slow season major restaurants sill need to be assured of a certain amount of fish. Similarly, more upscale or sushi restaurants want first bidding on fresh tuna supplies. Therefore, strong partnerships need to be developed but most importantly fisherfolk need to have the skills and experience to ensure their partnerships remain productive.

All interviewees agreed that different sectors in the fishing industry will use the access to information as a way to forward their own interests. Knowledge sharing from workshops, conferences or training programs related to fisherfolk's livelihoods is not effective. From the fisherfolk who were exposed to learning opportunities relating to their livelihood, only 40% made an effort to share information, and only 10% shared the information formally in a report submitted to the Fisheries Division and their executive boards. Partnerships through FFOs facilitate knowledge exchange, but it also creates a more elitist attitude where executive and board members share more between themselves than with the membership. Three respondents felt that FFO executives attending workshops would go without the good intention of the fishing industry in mind, and more for the prestige of the educational or travel opportunity. Partnerships can be complicated when issues of personality interfere with the knowledge exchange process, highlighting the need for formalized communication policies.

Face to face networking strategies were the most preferred by fisherfolk (70%). An interview respondent stated that while the communication methods were satisfactory and available, proactive networking was not in place. Creating new partnerships is a time consuming activity, especially in the initial stages. Being successful in the fishing industry was related to the amount of the networks a fisher person posses but also the level of pro-activity in seeking to forge new relationships. The presence of partnerships therefore depends on fisherfolk's networking strategies and is average for fisherfolk in Barbados.

5.2.3 Level of Knowledge Integration

Information pertaining from the fisheries division is not well integrated with the markets division, or the Ministry of Health. Four interviewees mentioned that regular cooperation and communication between the Ministries of Agriculture and Health was necessary to improve quality control in fish markets. Market management is not under the mandate of the fisheries division, yet there is no formal communication policy with the markets division. Furthermore, fisherfolk may not be able to recognize the variety of information types which are relevant to the fishing industry and their livelihoods. An interviewee from the Fisheries Division said that using new ways to package information was crucial, such as five minute time slots on national television. Knowledge integration is also dependent on presenting information in ways that will reach and stimulate fisherfolk.

The lack of knowledge integration with regard to catch data and fisheries science was reported by fishermen interviewed. The flyingfish season of 2007 was described by one fisherman as the best in years. Yet, he expressed confusion when high catch data clashes with scientific discourse regarding overfishing and the global fishery crisis. Although fishers may be aware that the state of the marine environment has changed over the years, there is inadequate understanding of stock fluctuations. It is important that scientific knowledge be integrated with fishermen's practical experience and knowledge. The Fisheries Division and CERMES undertake marine biology research engaging fishermen along the way, but the level of knowledge integration with fisheries sciences is generally below average.

5.2.4 Awareness of Required Knowledge

All interviewees- except one – felt that their communication methods allowed them to expand their networks in the fishing industry. Fisherfolk agreed that the best way to make new contacts, or meet and discuss thing relating to fishing was best done face to face. However, one interviewee stated that if awareness on happenings at the national and regional level was inadequate, this was a result of poor networking strategies. Another respondent noted that the development of policies at the regional or even international level can impact fisherfolk livelihoods. However, this does not change the fact that fisherfolk have insufficient knowledge to meaningfully provide inputs to policy makers. Awareness on process of policy level decision-making may better assist fisherfolk in formulating inputs to government. Awareness of required knowledge is below average, and this will have devastating consequences for fisherfolk in the long term.

Awareness of required knowledge is higher within the fisheries division. Fisheries Division staff interviewees all agreed that there needs to be a change in government attitude toward FFOs, for example increasing awareness and documentation of fisher knowledge, understanding on the demographics of the fishing industry etc. Understanding if the Fisheries Division institutional structure is geared towards knowledge exchange should also be investigated. The Fisheries Division needs to increase its own awareness on ways to address challenges at the national level, by incorporating more innovative communication strategies. For example, allowing more flexibility in the way extension services exchange information at the beach level develops the awareness of the Fisheries Division on local level issues. In this way, training of Fisheries Division staff to promote awareness among their own staff but also in meaningfully engaging with fisherfolk should be prioritized.

5.3 Legitimacy

5.3.1 Existence of Past Failures

The existence of past failures has impacted fisherfolk's incentives to join FFOs. This has negatively affected fisherfolk who are not FFO members to collectively mobilize, but importantly it has impacted fisherfolk leader's efforts pursued to strengthen FFOs. Two interviewees had previously been presidents of the FFOs and actively involved in national and regional level fisherfolk developments but have abandoned their cause. Consequently, their FFOs disintegrated as a result. The impact of past failures is above average for fisherfolk at the local levels.

The existence of past failures to cooperate with government is mostly related to fisherfolk's resentment of government's attitude towards them, e.g. feelings of disrespect. Interestingly, one interview respondent pointed out the fact that Barbadians may more willingly accept a foreigner's opinion over local advice. The presence of Dr. Attapadu, as a collaborator with the Fisheries Division is vivid and positively remembered in fisherfolk's memories. It is also useful to question whether the push for fisherfolk development through the government incited fisherfolk to form without a real need at the local level. Therefore, over time it would be inevitable that the groups would disintegrate of the need for collective mobilization was not recognized at the local level.

Figure 5.5 Factors which encourage /hinder collective action

In Figure 5.5, the main 5 main factors which get in the way of fisherfolk coming together are represented in purple. Crisis was named by all interviewees as being the major factor triggering fisherfolk to mobilize. Social events were also described as important in bringing fisherfolk together. Despite activities which have focused on developing FFOs, there is a lack of appreciation of how to understand the process of failure. For example, when speaking of past failure it is important that fisherfolk realize that it might be part of the processes building towards something better. The formulation of a common goal or vision can show fisherfolk that not everything is a bad failure, not worth changing, but a step to be learned from.

5.3.2 Level of Interest Representation

All interviewees agreed that personal relationships formed the basis of their critical network ties, as opposed to more formal processes. This can have negative and positive impacts on fisherfolk livelihoods. For example, in the voting process for FFO leadership fisherfolk votes may be based

on friendships. Two interview respondents spoke of how personal reputations also have a tendency to stay making it hard for fisherfolk to break the cycle of rumours and speculation. This calls into question the level of representation of FFO executive boards offer fisherfolk at the local and national level. It also demonstrates the importance of fisherfolk perceptions of joining FFOs. BARNUFO's leadership has been described as ineffective and BARNUFO members are striving to alter the constitution to ensure more democratic voting processes. This is evidence that BARNUFO needs to improve its level of FFO representation in incorporating a new constitution and rethinking its leadership.

During the interviews, the structure and function of FFOs were discussed. All interviewees agreed that there was something wrong with the way FFOs were functioning. One interviewee stated that FFOs were not accommodating all fisherfolk interests, particularly skindivers and spearfishers. The fisher cooperative for example caters to fishers but more particularly boat owners. Two interviewees suggested that maybe FFOs should not be place based, but organized in relation to fisherfolk's occupations, reducing conflicts of interest within PFOs themselves. The development of a new cooperative, engaged in more marketing activities has been a focal point of fisherfolk activities in spring and summer 2008. This demonstrates that the level of interest representation is average and that there exists a need for more effective FFOs.

Not all fisherfolk are vocal, even at the level of FFO executive boards. Key fisherfolk contacts held by the university or the Fisheries Division may be more vocal and easy to contact yet they may only be representing of the perspective of a few. Interviewees were asked to describe their ideal leader for the fishing industry (Figure 5.6). In the interviews, 44% could name their ideal leader, 35% did not know who to name and the remaining 21% stated that no one leader could be named and that leadership should be collective and not reliant on an individual. The two major characteristics of a leader were trust-worthiness and a good mediator. Mediation seems to be an important characteristic in terms of being able to filter various perspectives and navigate to the best option for fisherfolk. This would permit fisherfolk to overcome local conflicts. What is interesting to note is that the chosen leader characteristics are more important for short-term problem solving versus more long term aspects e.g. a leader with a vision.
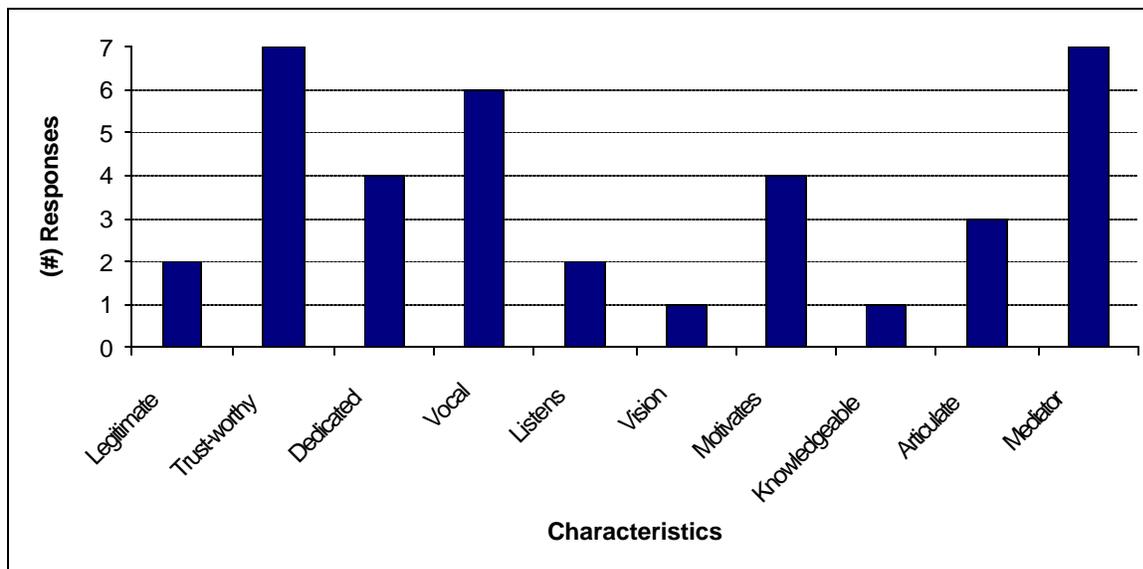

Figure 5.6 Ideal leader for the fishing industry (Fisherfolk, N 23, Structured interview)

5.3.3 Process Transparency

Most (70%) interviewees agreed that fisherfolk do not have access to enough information to actively participate in decision-making on issues relating to fisheries. Information on management and policy making is trickled down from government bodies to the local level. The remaining 30% felt that access to information was available but fisherfolk were not demanding to be part of the decision making process. Process transparency is below average: decision-making systems are negatively affected by bad feedback processes and fisherfolk are not actively engaged in requesting transparency.

All interviewees felt that even if they were more involved in decision-making, it is not enough to affect issues related to fisheries. There are two aspects to the interviews responses: the first is related to the capacity of fisherfolk themselves to participate effectively, and secondly, of government's ability to accommodate transparent and participatory processes. With regard to fisherfolk, insufficient awareness or education decreases their understanding of the scope of their potential responsibilities. On the other hand, fisherfolk expressed that inadequate government support and respect for their opinions which are rarely incorporated into decision-making processes. The intervention of politics in certain decision-making processes is beyond the reach of fisherfolk, for example one respondent felt that fishing agreement negotiations with Trinidad and Tobago were complicated by disputes over access to petroleum resources. The need for legislation and policies which encourage more consultations with fisherfolk can improve the decision-making feedback system, and consequently improve the credibility of governmental decision-making from fisherfolk perspectives.

5.3.4 Clarity on Roles and Responsibilities

Interviewees of non-FFO members (50% of interviewed fisherfolk) were unable to describe what a fully functional FFO free of government subventions would resemble. Barnufo receives government subventions to run their activities therefore to be consistent some interviewees expected that it would be fair to have a monitoring system on funding usage. Poor use of government subventions are not held accountable by fisherfolk or government. Therefore, unclear roles and responsibilities do not permit bad management to be held accountable.

Interviewees were asked to reflect on the conditions they felt were needed in their organizations to make things better, as well as to name who they thought would best to assist in getting the changes made. Although interviewees all made comments to the changes they wanted to see, only 50% of the respondents were able to suggest where assistance could be found. Figure 5.7 portrays the four main changes wanted, a mindset change (18%), stronger FFOs (35%), motivated fisherfolk at the local level (9%) and improved landing site and market facilities (9%). The red arrows indicate the directions of some fisherfolk recommendations to get assistance. Assistance to trigger a mindset change amongst fisherfolk, away from traditional or negative attitudes was unknown, yet it is considered a challenge at the local level.
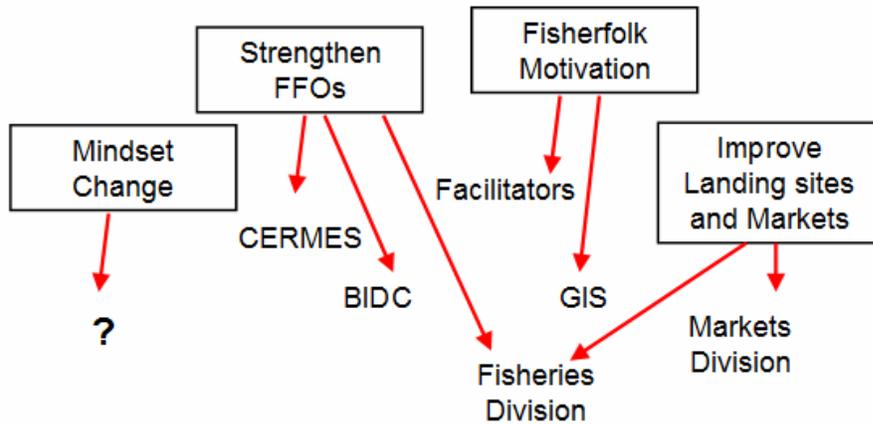
Figure 5.7 Knowledge on where to acquire help (Fisherfolk, N 23, Structured interview)

With regard to strengthening FFOs, responses mostly consisted of the need to acquire skill sets which permit effective functioning of their executive boards – record keeping, letter writing, financial management etc. Three respondents mentioned the use of the Government Information Services (GIS) to advertise and disseminate information to a larger audience on the television. Vendors said that at times the functions of the Markets and Fisheries Divisions were unclear, especially with regard to concerns about cleanliness of market spaces. In a general manner, from the interviews it can be said that clarity regarding the role and functions of different organizations in Barbados is below average. Furthermore, there may exist organizations with mandates potentially benefiting fisherfolk which they are not taking advantage of.

5.4 Social Dynamics

5.4.1 Relationship between Familiarity and Trust

The majority (60%) of interviewees named the Fisheries Division as their first contact for advice on an issue relating to their work (Figure 5.8). What is interesting to note is BARNUFO's role as an important source of support and advice in relation to the Fisheries Division is not significant. From this aspect, it would appear that the relationship between familiarity and trust is low, whereby professionalism and knowledge seem to dominate the choice of fisherfolk to contact the Fisheries Division.

Yet, social support systems are strong in Barbados, and many interview respondents felt that they did not need to ask government for advice if the issue could be addressed by fisherfolk. The level of familiarity and trust increases at the local level, whereby personal contacts and references at the community level are used by 35% of interviewees. The connection to CERMES is related to the fact that a former Chief Fisheries Officer works there and pursues research in the field of fisheries. Therefore, a more familiar network was pursued, revealing that there exist an average relationship between familiarity and trust.
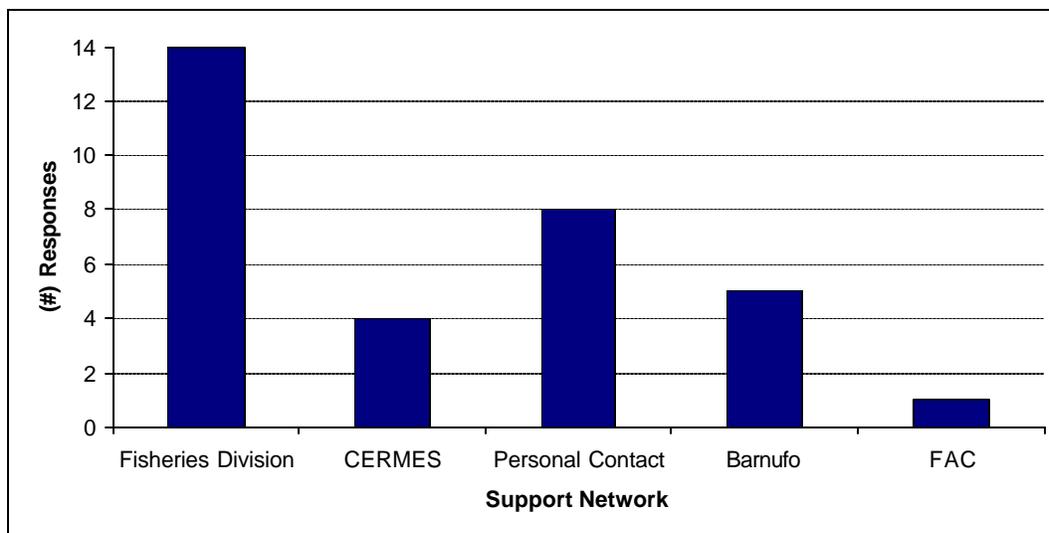
Figure 5.8 Advice on fishery related issues (Fisherfolk, N 23, Structured interview)

5.4.2 Ability to negotiate

Disagreements between vendors and fishers over fish price regulation escalated in spring 2008 when the cost of diesel doubled. Traditionally, fishers sell their catch from their boats to vendor at the market, who in turn set the price of the fish. Fishers were unable to effectively negotiate higher prices for their fish for two main reasons apparent from the interviews. The negotiation process was described as unorganized and driven by conflict. For example, one morning all fishers refused to sell their catch at the original price, however their demands were not met and eventually they need to rid their catch because they do not readily have access to fish storage, had to accept the offered rate or get rid of their catch. Secondly, many fishers do not utilize the formal banking system, and therefore often borrow money from vendors. In this way, vendors are structurally well positioned and have the power to dictate prices, decreasing fisher's negotiation ability.
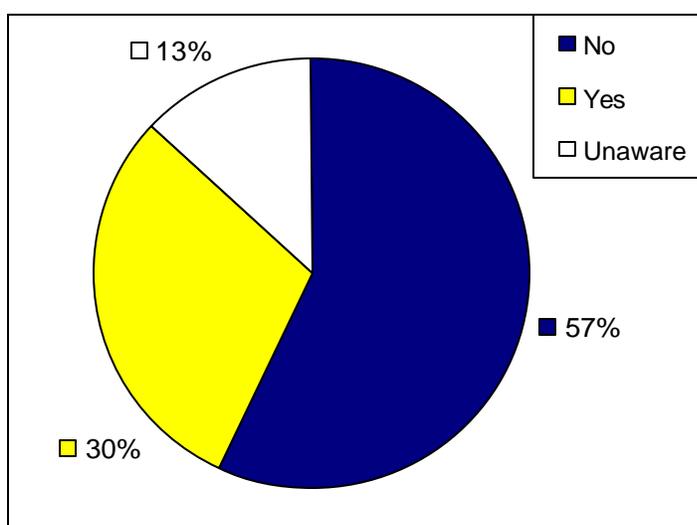
In terms of negotiation demands to government, the FAC is another channel which can be used by fisherfolk. Some interviewees (13%) knew nothing of the roles and function of the FAC (Figure 5.9), particularly in relation to BARNUFO.

Figure 5.9 FAC as effective channel for fisherfolk participation (Fisherfolk, N 23, Structured interview)

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The greater promotion of the FAC in comparison to BARNUFO could potentially harm already weakened FFOs seeking to increase their membership base. Firstly, because depending on the government of the day, the FAC is promoted or not. Secondly, as the chair and board of the FAC are appointed by the Minister, their ability to effectively voice concerns at the local level may be stunted by local politics and favoritism. A functional FFO, free of political liaisons, will help achieve better responses from the Ministry through the FAC. The ability to negotiate, especially with government is therefore exacerbated by weak fisherfolk organizations, and can be considered below average.

5.4.3 Evidence of Cooperation with Government

In small nation-states like Barbados, direct access to politicians is not impossible. It is not uncommon that fisherfolk expressed the view that they could directly contact the Ministry of Agriculture to request information or make a demand if the Fisheries Division was unresponsive. However, these types of networks and personal favors can hinder the development of FFOs. Fisherfolk may feel that they do not need FFOs to access the government in order to get things done. In this way, the quality of government fisherfolk interactions is important to investigate, especially in relation to FFO functions. Although fisherfolk attitudes in being individualistic and crisis-orientation have been blamed as a cause of FFO failures, effective institutional support can encourage collective mobilization.

There was not much agreement between the interviewees on whether taking action or communicating to the Fisheries Division or other government bodies results in any positive changes. About 60% were of the opinion that the Fisheries Division is effective at responding and those of the contrary opinion stated that the Fisheries Division rarely responds unless the need is urgent. For example, a 24 hours emergency boat hauling system is in place during the hurricane season. It was felt that concerns or demands are not dealt with systematically, reinforcing the fact that there is a bad feedback system between government and fisherfolk.

Exchange of information between fisherfolk and decision-makers is a key dimension of fisheries management. Evidence of fisherfolk cooperation with government is average yet desired by fisherfolk. Complaints that fisherfolk are not actively requesting institutional support from government should not be understood literally. A change in attitude on behalf of government was suggested, for example, in increasing their presence at the landing site level. Extension services can also be more comprehensive, in facilitating the flow of information on fishery as well as livelihood related topics. Due to the high dependence on face to face interaction as a way to network and forge new partnerships, fisheries division are not in the field enough to fulfill this criteria. It is important to ensure that the functions, which influence activities undertaken by the Fisheries Division, are relevant to fisherfolk livelihoods and development aspirations of the fishing industry.

5.4.4 Strength of Institutional Linkages

From the interviews it can be said that the Barbadian fishing industry is not as united as it could be, as seen in fisherfolk's communication practices. All interviewees stated that communication patterns were closely linked to their occupations. According to one of the respondents, a weak sense of unity amongst fisherfolk was due to a lack of communication between different types of fishermen. In this way, fishers are more in contact with fishers, and to a certain extent longliners are more in contact with other longliners than dayboat fishers etc. restricting their networking opportunities. In Figure 5.10 we see that networking strategies of PFOs are informal and

confined to immediate needs (red dots), restricting opportunities to forge new beneficial partnerships (blue dots).

Most issues that fisherfolk seek to address are technical. From the interviews it can be said that there is need to form strategic alliances and networking strategies on topics such as advocacy and education systems. For example, stronger institutional linkages between FFOs and universities could ensure that research projects are more in line with fisherfolk needs.

Figure 5.10 Fisherfolk networking strategies

Regional level institutional linkages are weak. Interview respondents revealed a "disconnect" with regard to current CRFM activities surrounding fisherfolk development projects. A total of 69% of interviews understood that an effort to form a regional network of FFOs was important, especially for knowledge exchange, better advocacy and the development of fishing agreements (e.g. between Barbados and Trinidad and Tobago) (Figure 28). However, 26% were concerned with how this would come about, in terms of communication strategies. Also, interviewees felt that the process may be too rushed as many FFOs at the national level were weak. The strength of fisherfolk's institutional linkages at the national level is below average and could therefore compromise the possibility of networking at the regional level.
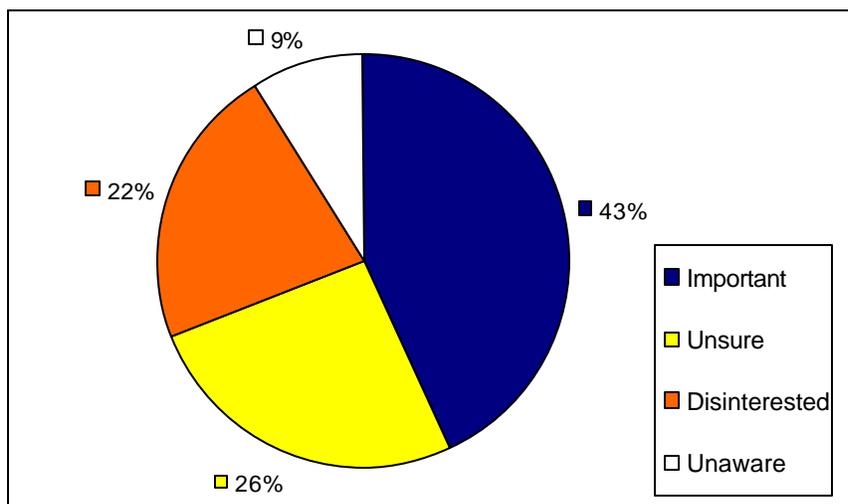

Figure 5.11 Regional level networking for fisherfolk (Fisherfolk, N 23, Structured interview)

5.5 Costs

5.5.1 Transaction Costs

Although transportation and communication costs could potentially be a negligible aspect of FFO development, they increase as more FFO leaders undertake FFO development work voluntarily. Therefore it is not simply the monetary costs, but the time and effort involved in undertaking field visits. On a more negative note, two interviewees mentioned that the benefits did not outweigh the costs of their efforts to mobilize fisherfolk. Also, due to the inadequate access by fisherfolk to information, the perception that the costs of searching for information will be high can be discouraging. As the main stakeholder groups are manageable in number (PFOs, NFOs, FAC and the Fisheries Division for example), transaction costs involved in negotiation processes should not be a barrier. It can be said from the interviews that transaction costs are average and could easily be lowered with an effective NFO.

5.5.2 Cost- efficiency

Only 40% of interviewees had previously cooperated in research projects relating to the field of fisheries. However, all interviewees agreed that better feedback between researchers and fisherfolk is needed. Interviewees (60%) felt that research could be effectively shared through project implementation. In this way, it would be made easier to share the information in practical forms. It was noted that research needs to be grounded in local needs, and this would avoid fisher's suspicions about the objectives of fisheries research data collection.

However fisherfolk stated that the ability to implement the knowledge from fishery related projects was important to consider. A local NGO involved in marine related issues had made a proposal to install reef balls near a fishing community as a means to increase fish abundance and allow fisherfolk to benefit from marine tourism. The project has not yet been implemented as fisherfolk feel that the outputs need to be more comprehensive and include for example scuba classes for fisherfolk.

With regard to governmental decision-making, two interviewees felt that bodies like the FAC engage in more discussion than action oriented activities. For example, decisions are rarely put in place due to little feedback from the Ministry of Agriculture. Furthermore, it was felt that the roles of the FAC and BARNUFO run the risk of overlapping, thus questioning the cost efficiency of their interactions. Generally, due to the challenges FFOs in Barbados have been subject to in the past decade, it can be said that cost-effectiveness of FFO development efforts and activities is below average

5.5.3 Presence of Free Riders

The presence of free riding is higher within FFOs by their membership than by non-members. Executive boards which are not fully functional often rely on the efforts of one or two dedicated people to do most of the work. In turn, uneven workloads can overburden individuals. Fisheries Division staff also reported the over reliance of fisherfolk on government and the constant expectation that government's responsibility is to resolve FFO challenges. It is therefore important that FFO executive boards are functional and that executive board members refuse to undertake tasks which are not their responsibility to decrease free-ridership. One interviewee stated that effective boards are created when personal favors are reduced and that tasks are accomplished based on responsibility and professionalism.

Nevertheless, FFO executive boards do not take advantage of all opportunities available to them. For example, CERMES has offered training to their members on FFO board effectiveness. Yet, CERMES has had difficulty implementing the course as fisherfolk are not able to ensure the commitment of a dozen fisherfolk. One interviewee stated that even educational opportunities relating to more livelihood or health aspects (e.g. HIV AIDS) are not greatly attended by fisherfolk. Non-member fisherfolk may not feel encouraged to attend FFO workshops or educational opportunities for a variety of reasons which may also be the same as those discouraging the growth of FFO. These factors may have to do with poverty, social class and the level of education. Free-ridership increases within FFO management boards, but it can be described as average in Barbados.

5.5.4 Efficiency of Scale

Barbados is a small country with a high number of landing sites (about 30) in relation to its size. Small landing sites as well as limited access to markets are inefficient. For example, in more remote areas fisherfolk prefer to land their catch near larger markets. Two interviewees suggested that small sites which are nearby should merge as to facilitate work. For example, the use of a tractor, to haul boats on the east coast of Barbados where waters are rough can not effectively be shared amongst the smaller landing sites.

BARNUFO as the umbrella body of PFOs has the potential to increase the efficiency of scale with regard to advocacy and access to funding. BARNUFO's role is important in improving government-FFO relationships, and in theory if effective can facilitate government's extension services. For example, in order to increase government-fisherfolk interactions, the Fisheries Division would need to increase its human resources to cater for increased activities. However, whether both the Fisheries Division and FFO are well structured, or have the leadership to engage in partnerships, needs to be investigated. This is where the FFOs and BARNUFO have the potential to play an important role. Efficiency of scale in Barbados is below average due to ineffective FFOs.

5.6 Conclusion

Informal networks in Barbados are stronger within fisherfolk groups of the same occupation. Traditional fish vending systems place vendor groups, in positions of power, disadvantaging fishers in terms of negotiation abilities. Networking at the local and national level is mostly reactive and based on fisherfolk's immediate needs. The Fisheries Division has an important support system for fisherfolk, yet support also seems to be restricted to more technical and crisis related needs with less regard for forging more sustainable partnerships. Networking and communication strategies remain informal, and therefore fisherfolk may not be benefiting from all the development opportunities available to them.

Information dissemination is poor amongst fisherfolk, in particular those who are not FFO members. There is a loss of institutional memory, and many fisherfolk seem to have insufficient appreciation of efforts accomplished and ongoing to assist them secure their livelihoods and develop. A wealth of information on national level development and regional level initiatives is not well communicated to fisherfolk. As many fisherfolk leaders and Fisheries Division staff feel that efforts made to communicate to fisherfolk are not cost-effective, innovative ways to increase fisherfolk interest in their activities need to be developed.

Many channels for fisherfolk participation in decision-making are present, however capacities of both fisherfolk and the Fisheries Division to engage in collaboration needs to be strengthened. Many fisherfolk are unaware of the role and functions of many government bodies and organization as well as their own FFOs. As a result, poor management is not held accountable, and a lack of communication and advocacy skills does not allow fisherfolk to clearly articulate their demands. An emphasis on strong leadership and the implementation of needed changes in ways that are accessible and practical to fisherfolk were issues of priority throughout the interviews.

6   DISCUSSION

Informed by analysis presented in sections six and seven, this discussion returns to the underlying theoretical questions posed in the methodology. This section synthesizes the case study data and addresses the research goal which is to:

Investigate how communication flows, social dynamics, legitimacy and costs affect the outcomes of SSF governance and local livelihoods.

6.1   Merging the Case Studies

Table 6.1 Comparative table of both case studies

Themes and their indicator variables	Regional Network of NFOs	Barbados
Information Management		
Access to Knowledge	2	1
Presence of Partnerships	3	2
Level of Knowledge Integration	2	1
Awareness of Required Knowledge	3	1
Legitimacy		
Existence of Past Failures	1	3
Level of Interest Representation	3	2
Process Transparency	1	1
Clarity on Roles and Responsibilities	2	1
Social Dynamics		
Relationships between Familiarity and Trust	1	2
Ability to Negotiate	1	1
Evidence of Cooperation with Government	2	2
Strength of Institutional linkages	2	1
Costs		
Transaction Costs	3	2
Cost-Efficiency	2	1
Presence of Free-Riders	1	2
Efficiency of Scale	3	1

Key: 1= below average, 2= average, 3= above average

In Table 6.1, both case studies are compared in relation to the variables of the analytical framework. It demonstrates that the level of accomplishment or assessment of the variables from the case studies analysis differs depending on scale. For example, awareness of required knowledge may be higher through regional level networking, yet it is below average at the national level due to inadequate knowledge sharing between stakeholders in the fishing industry. Also, the relationship between familiarity and trust decreases going from the local to the regional levels respectively. As demonstrated in the case studies, knowledge exchange is anticipating in the development of the regional network of NFOs irrespective of familiarity with fisherfolk across CARICOM.

From the analysis, it can be said that the analytical framework was useful in understanding fisherfolk efforts to network and organize across scales. The benefit of merging both case studies reveals that certain variables need to be addressed independent of scale, such as process transparency. The strengths of variables will differ depending on the CARICOM country chosen, and in this case Barbados provided an interesting case study of how a country with the structure in place for contributing to a three-tiered regional network of NFOs is struggling with overriding issues of power relations and inadequate communication flows.

In Figure 6.1, three additional variables are superimposed on the conceptual understanding of the research goal: sharing of knowledge and how it affects and is affected by decision-making processes and networking practices, as well as power structures and how these can affect decision-making outcomes and the way that networks form and expand. These three variables were reoccurring throughout both case studies and enhance the understanding of the research goal. This also assists in improving the analytical framework for future use in other case studies on network governance.
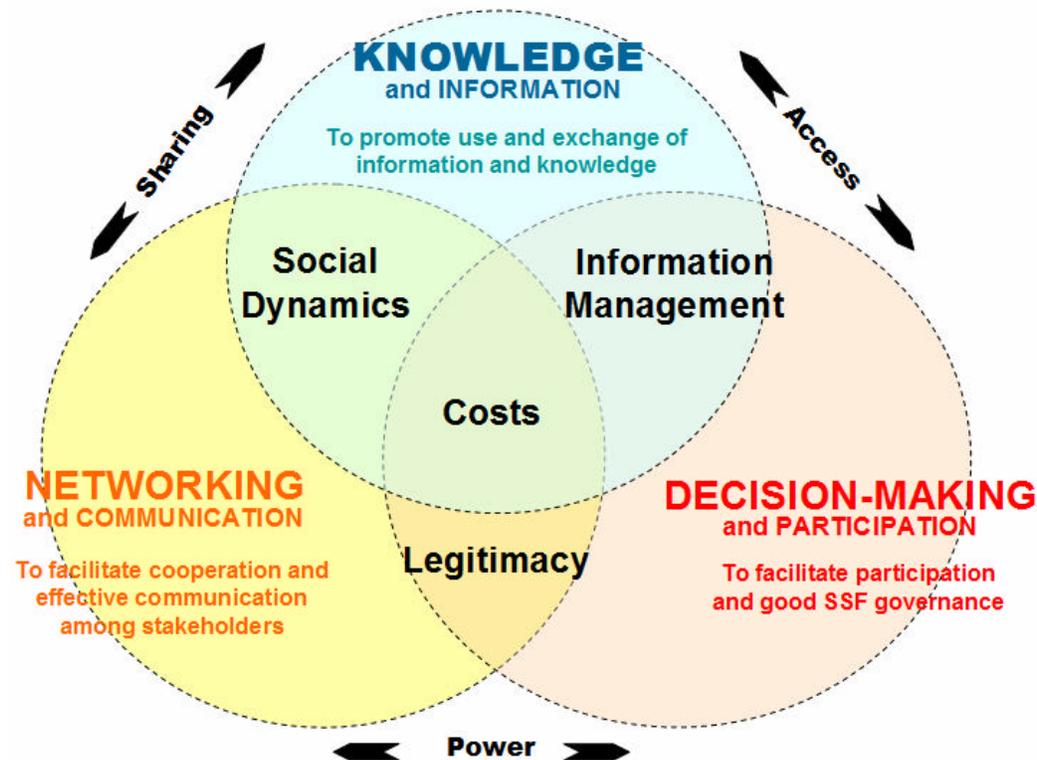

Figure 6.1 Added variables to the conceptual understanding of the research goal

6.2   Main Findings

Fisherfolk not actively part of the development of a regional network of NFOs were generally unaware of CRFM initiatives. This was related to information awareness as some fisherfolk had access to information where others did not. Differences were also noted at the national level in opinions of and beliefs about regional level networking. This led to confusion or ignorance with a disinterest in the issue. Fisherfolk differences in opinion on the potential roles and functions of FFOs are illustrations of one of the basic elements of network governance needs, especially in SSFs: diversity.

Discussion topics led by fisherfolk usually concerned their own conditions and situations, displaying poor knowledge about the wider context of their own local issues at the regional and international levels. By contrast government officers, expressed less regard for specific examples in their interviews and were concerned with strategic issues regarding fisheries management and strengthening FFOs. From the interviews it can also be said that this type of behavior could also be seen between FFO executive board members and non-member fisherfolk, the latter being less concerned with debating the role and functions of FFOs over fish locations.

On the other hand, at the national level differences in opinion were not simply due to poor knowledge exchange but also seemed to be caused by embedded differences and tensions between stakeholders in the fishing industry. For example, disagreements over more factual information, such as fisheries management, were less common than differences over the interpretation of information received. Issues became of a more personal nature, and blame games were more common and present throughout the interviews. Issues in SSF governance are not simply due to ineffective information dissemination but also are issues rooted in social dynamics.

Even where stakeholders agreed on fundamental issues needing to be addressed, differences could be found in the attribution of causes or suggested solutions. This could be seen clearly in the fisherfolk's perception of collective mobilization where the majority of respondents agreed that the fundamental obstacles were attitudes, inadequate access to information, poor leadership and sustainable financing for example. However, respondents gave different weighting to these obstacles and ascribed different causes to them. Hence, although all could agree on the basic problems, there was no agreement on their origin or what solutions were therefore available. There was even less clarity as to where assistance could be found, reflecting weak networking practices.

Governmental level decision-making and policy formulation is guided by the production of knowledge, or data collection. Yet, the lack of transparency and participation in the system only make information available to fisherfolk once decision has been made. Given the poor technical education amongst most fisherfolk, the principal alternate form of knowledge exchange and production available is from experience, handed-down traditions or knowledge and gossip. Government officials' interview responses acknowledged that often fisherfolk knowledge was discounted because of its non-technical basis, possibly due to bad attitudes or a lack of respect. This reinforces the non-participatory approach to knowledge development, restricting fisherfolk's knowledge to being incorporated in government decision-making. Hence, the need to reconsider the functions of extension work and to broaden it to more livelihood-based approaches for example as way to become more meaningful to fisherfolk's needs and interests.

The principal issue associated with legal tools and government support at the regional level was poor enforcement and ineffective legislation. Market-based tools were not uncommon from government across the region e.g. subsidies available to fisherfolk. However, subsidies were not used as a means to strengthen collective action- for example not all FFOs used this as a means to attract membership. The development of government level tools used as a means to encourage fisherfolk to join FFOs across the board could be encouraged, by providing incentives though legislation at the broader level, not simply through FFOs. Legislation directed towards strengthening collective action is crucial to encourage FFO development, as many fisherfolk seem reluctant and distrustful of government with a tendency to organize based on crisis. This comes back to the idea that granting more political powers to FFOs (e.g. for representation) could remain ineffective if they are not accustomed to exercising such powers and may not have the capacity or institutional structures to engage in government-FFO partnerships.

The development of legal tools such as FFO by-laws and constitutions are generally not focused on building consensus and developing institutional norms and rules needed for good governance. From the interviews, it can be said that the approach reflects more centralized decision-making systems, whereby delegating certain authority and action away from government and strengthening FFO for management is not commonplace. Furthermore, there has been inadequate oversight of FFO management and structure by the relevant government agencies. In the past, the instability of FFO in the Caribbean can partly be attributed to the fact that goals, structures and processes of FFOs were established by government agencies.

Meanwhile, while channels for fisherfolk to impose accountability and voice concerns to government exist, their usage seems minimal (unless used by FFOs). There seems to be fragmentation among fisherfolk, and a general a lack of social capital capable of mounting opposition or protest, even in order to effectively lobby government. Weak FFOs, as a symbol of a weak institutions capable or organizing fisherfolk at the local level in FFO or mutually beneficial projects, can be associated with inadequate access to social capital acquired through good networking strategies.

Power relations between stakeholders in the fishing industry can either constrain or enable them to meet their governance needs. Middle men, as well as vendor-fisher relations disadvantage fishers in forming groups to have more control over marketing and fisher resource distribution for example. This can be problematic in terms of the sustainability and viability of cooperatives in CARICOM. Taking into consideration the influence and role of network structure on the development of FFOs can be revealing. To some degree fisherfolk rejection of FFOs can be due to financial reasons and pressure from middlemen, but most also emphasized by a general lack of trust in one another. This appeared to be a root cause that government agencies, by dominating the triggers for collective action, have fostered dependency in fisherfolk, who then reject their own abilities and responsibilities to meet their own governance needs. Inactive fisherfolk reported that they felt disillusioned with FFOs because of limited progress in reform and poor management.

Five year plans and blueprint approaches can restrict the ability of the Fisheries Division to respond to the dynamics of the fishing industry or emergence of new problems. Although approaches in place were generally successful in cases of infrastructure development and other problems that responded well to planned change, those problems not amenable to technical or engineering solutions such as inadequate participation in fisheries management were not being actively addressed. At the national level FFO leaders mostly addressed the issues of institutional

support with regard to administrative management, not fisheries management. With regard to fisheries management, FFOs having the potential to play a role in the size and age of fish caught can push fishers to deal with vendors with little regard for management issues by accepting juvenile fish for example. Furthermore, not many fisherfolk activities or community level institutions for marine resource management were identified during the research.

FFOs appear to have limited roles in policy development, and in response to this there is a clear attempt to strengthening interactions with state organizations, and regionally in the development of the CU/RFO. In Barbados, government had attempted to generate some limited form of social capacity through the creation of FFOs, but fisherfolk instead expected government to engage in fisheries management through instrumental action. While FFOs were weak and struggling in Barbados, fisheries officials were interested in proposals to develop social capacity in the fishing community and assist them to develop. In terms of access to information, in several cases fisherfolk appeared to believe that fisheries officials were responsible for everything, but achieving nothing. One hypothesis for this misconception is the fact that fisheries officers, not wanting to undermine their local prestige, did not transparently disclose their limited capacities in FFO institutional support, fisheries management and integrated policy formulation.

Opportunities for developing social capital and civil society, principally FFOs such as cooperatives and associations, were not always fully representative of fisherfolk at the local level. In theory, fisherfolk have the potential to self-represent their interests with FFOs as a form of self-mobilization and community action, although in practice this was under-used because of a lack of social capital. Indeed, apart from instances of stronger ties at work amongst occupational and friendship groups in Barbados, little capacity appeared to exist outside such social networks. Some interviewees suggested the role of some personal relationships and local leaders in conflict resolution but otherwise no community-level institutions were strongly identified. Community groups and FFO leaders were at times mentioned, but in Barbados poor trust relations and past failures had damaged attempts to develop new cooperatives or strengthen FFOs. It is possible that the inadequate flow of information, education and trust at the local level make fisherfolk groups vulnerable to disintegration.

At a local level, due to past failures of participatory processes Fisheries Divisions appeared to have lost considerable legitimacy in the eyes of fisherfolk as a result of their inability to solve problems. Many fisherfolk expressed frustration with governmental bureaucratic processes, whilst in turn government officials acknowledged that government can be disinclined to acknowledge the legitimacy of fisherfolk as a source of governance capacity. It was clear from both case studies, that government experienced difficulties in communicating effectively with fisherfolk. This could be due to a lack of resources (an aspect unexplored in this project), or in that the state appeared insular, discounting the importance of effectively informing fisherfolk on management issues (e.g. the sea urchin fishery in Barbados). Even government officials emphasized the importance of face-to-face communication, possibly a reflection of the importance attached to personal contact in Caribbean culture. However, fisherfolk and managers do not always share the same cognitive tools or horizons of meaning when engaging in verbal communication. From the interviews, fisheries officials seem to recognize the need for strong FFOs and collective mobilization increasing capabilities of addressing governance needs but they also recognized that such processes did not yet effectively exist.

A major weakness was the absence of intentional interactions with organizations which could result in mutually beneficial partnerships. There are academics at CERMES Barbados producing

independent research critical of state interventions, such as purposeful networking and good governance practices. Ineffective incentives for innovation appeared to have generated a risk-averse bureaucratic culture. FFOs have suffered as a result of the lengthy decision-making dynamics. The fact that networking is not actively pursued and developed to reach out to new groups (e.g. academic) could be a reflection of the social values of interactions with external groups, especially assumptions about the value of knowledge exchange, or in the case of government agencies, the superiority of their agencies and undervaluation of sociological studies.

It is therefore questionable whether regional level networking, especially among fisherfolk groups, can be constructive at such early stages. Regional level networking should focus foremost on knowledge exchange as a means to assist struggling FFOs. Challenges need to be addressed at the national level before they can effectively be addressed regionally. Yet, political commitments and effective knowledge exchange are crucial to achieving participatory management arrangements. Until CRFM activities actively promoted the formation of NFOs, government efforts focused on FFO institutional support were not occurring even though the need was present. This will require a lot of ground work at the landing site level as well and the continued availability of training opportunities for fisherfolk.

A crucial point to be made from the two case studies is that challenges at the national level are not isolated from regional level issues! Almost all countries face similar issues in terms of organizing fisherfolk and implementing good fisheries governance. Across the region, many countries have set out to incorporate effective participatory management, but it has not been systematically strived for as seen in fisherfolk's sense of non-commitment of policy-makers. Fisherfolk need to recognize that government bodies have a role in helping them secure and improve their livelihoods. The development of FFOs can be seen as an ongoing dialogue between fisherfolk and government, yet it is one that would be better served with good information. Such dialogue needs to be two-way and geared towards the improvements of fisherfolk quality of life and managing the fisheries.

7   RECOMMENDATIONS

7.1   Significant Issues

Improving fisheries governance can be achieved through many different pathways specific to a nation-state's economic and socio-political context, due to the complexities of cross-sale governance in the Caribbean region. The existing opportunities lie in harnessing national initiatives and assessing them against regional level aspiration. In this way, it is not sufficient to develop networks across scale, it is also necessary to ensure that national level governance processes allow networks to develop irrespective of externally implemented FFO projects, such as those originating from the CRFM since 2004.

Networking FFOs has many challenges, at various levels depicting relationships amongst stakeholders which can hinder or facilitate successful management outcomes. It is crucial that efforts to strengthening NFOs succeed as a means to improve the network governance structures across the CARICOM region. This is the foremost recommendation these case studies have demonstrated and reiterated. This section builds on past recommendation put forth at the CRFM level, and well as in Barbados from the FODP. Key emergent themes can be generated in order to improve current FFO development initiatives at the national and regional levels:

- **Building awareness on regional and national FFO development initiatives:**

The development of common goals and understanding of the challenges needed to move the fishing industry forward need to be effectively articulated and shared. Inactive fisherfolk need to be appreciative of the root causes of past FFO failures, as well as the need for good accountable management. There is a need to develop effective communication strategies and information products that reflect fisherfolk aspirations. Most importantly, they must contribute in the creation of grounds for dialogue as opposed to a channel for complaints. Structures to encourage sharing and effective feedback mechanisms need to be implemented in FFOs, the fisheries division as well as between FFOs and the fisheries division. Effective communication decrease the fragmentations found within the fishing industry. This will assist FFO development to contextualize their efforts in past successes and failures as a means to encourage continuity and avoid repetition.

- **Achieving FFO self-representation autonomy through training, legislation and secured funding:**

Legislative frameworks and clear institutional mandates are issues of priority for FFO at the national and regional level. Yet, FFOs must be granted the political resources in order to affect them. Fisheries division needs to consider the development of group incentives as a means to provide the enabling legislation to promote FFOs. Also, proper management skills, succession planning and secured funding are ingredients which positively affect FFO development. Institutional support and access to training opportunities can assist fisherfolk in implementing changes. In return, stronger FFOs will be more able to advocate and play a role in decision-making. By ensuring that NFOs remain functional, the viability of a regional network is achievable.

- **Aligning and strengthening partnerships between government agencies, FFO, NGOs and other interested parties:**

There appears to be a need to improve knowledge exchange and strategic networking practices. The functions of FFOs need to include active communication and networking. From a network governance perspective, innovative way to convey the meaning of purposeful networking is important, especially with research partnerships. Aspects which hinder network development should not affect access to information as to where FFO can seek assistance. Strengthening partnerships within the fishing industry as well as with outside players can be more effective though FFOs. This highlights the role NFOs play in terms of leaderships towards PFOs.

- **Improving the functions of fisheries management bodies in the reexamination of management priorities, structure and legislation:**

Firstly, Fisheries Divisions need to address themselves and take on the lead role as the change agent by executing their potential role in national development policies, not simply fisheries management. Extension officer's mandates need to be flexible, include the discussion of wider problems and engage in capacity building relating to improved livelihoods and fisheries governance. Part of government's own training requirements need to look at the institutional arrangements which gear them towards promoting participatory management. Their roles and functions should be reflective of their management priorities, such as effective fisheries management with increased local participation. Legislation and institutional support to FFOs as government partners is needed for better fisheries management and as a means to encourage

investment and development of the fishing industry. Furthermore, with regard to the extent of CARICOM scope, SSFs network governance and the diversity of interests of its stakeholder, emphasis must be placed on developing Caribbean specific solutions which are adaptable and based on effective consultations with fisherfolk.

7.2 Future Research

Decision-making process in the SSFs will be more effective with policy-relevant information with substantial socio-cultural or non-technical information. The formal knowledge creation process in government bodies need to be cross-sectoral in nature, therefore research at the Fisheries Division should also be investigating the social aspects of the fishing industry. SSFs are too dynamic and complex to differentiate socio-economic aspects, technology, infrastructure and fisheries management for example. This leads to problems where such complex situations and interactions are not well understood, theory is undeveloped or knowledge is missing, all such aspects associated with uncertainty which paralyze future actions to be taken. The cumulative impact of disregarding the importance of social science in SSF will not allow managers to recognize the steps needed to unite and improve fisherfolk livelihoods. Reductionist perspectives on issues facing fisherfolk can be improved by increasing research on networking governance, therefore partnerships with research intuitions engaged in objectively addressing challenges such as NGOs and academic institutions should be prioritized.

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9   APPENDICES

Appendix 1- Interview Questions for the Barbados Case Study

Interview questions guiding the national level case study in Barbados with their related themes and variables.

Question	Theme	Variable
(a) In the past, what events have drawn fisherfolk together?	Legitimacy	Existence of past failures
(b) What are the things that got in the way of the coming together of fisherfolk?	Costs	Transaction costs
(a) In an average work day, how do you communicate with other people in the fishing industry? **(b)** And who would you normally communicate with? **(c)** Who do you not communicate with? **(d)** Do you use different means of communication for different people in the fishing industry? **(e)** What about the reverse, i.e. what is the best way for you to receive information?	Information management Social dynamics	Presence of partnerships Access to knowledge Evidence of cooperation with government
(a) Do you feel that your communication methods have allowed you to expand your networks in the fishing industry? **(b)** How do you network within the fishing industry?	Information management Social dynamics	Awareness of required knowledge Strength of institutional linkages
In your work, if you were seeking advice on any issue: who would you contact first?	Legitimacy	Clarity on roles and responsibilities
(a) What have been the benefits of cooperation on projects that are fishery related? **(b)** Were there any drawbacks in participating in these projects? **(c)** How can benefits be enhanced and drawbacks minimized?	Costs	Cost-efficiency
(a) Have you been exposed to learning opportunities relating to your livelihood? (i.e. workshops, exchanges, conferences etc) **(b)** How have you shared the knowledge you gained?	Information management	Presence of partnerships
(a) In your opinion, do different sectors in the fishing industry have access to enough information to actively participate in decision-making? **(b)** Why do you feel that way?	Information management	Access to knowledge

Question	Theme	Variable
In your opinion, do you think that different sectors in the fishing industry will use the access to information as a way to forward their own interests?	Information management	Presence of partnerships
(a) Do social network ties have clout in the working arena? **(b)** Are critical network ties based solely on personal relationships?	Legitimacy Social dynamics	Level of interest representation Strength of instituional linkages
If you felt more involved in decision-making, do you think it would be enough to affect issues related to fisheries?	Legitimacy	Process transparency
(a) Has taking action or communicating to other sectors in fisheries resulted in any positive changes? **(b)** To what extent have concerns received by the Ministry responsible for fisheries been officially acknowledged?	Legitimacy Social dynamics	Process transparency Evidence of cooperation with government
(a) To have the changes you want, what conditions will you need to create in your organization so that you can? **(b)** Who is most helpful in getting changes made?	Social dynamics Legitimacy	Relationships between familiarity and trust Clarity on roles and responsibilities
(a) What characteristics would you expect from a person in a leadership role? **(b)** Can you think of anyone who has these qualities now?	Legitimacy Costs	Level of interest representation Presence of free-riders
(a) Do you think that a body like the Fishery Advisory Committee is a good way for fisherfolk to voice their opinions in decision-making? **(b)** What do you feel needs to be done to make decision-making processes more accessible to fisherfolk?	Legitimacy Social dynamics	Process transparency Ability to negotiate
(**a**) Now that an initiative has been made to form a regional fisherfolk network, what does this mean for your organization in the near future? **(b)** What are the consequences of doing nothing?	Costs	Efficiency of scale
To improve coordination and information sharing what changes you would like to see in fisherfolk organizations? (e.g. at national, regional, international levels)	Legitimacy	Existence of past failures

Appendix 2 - Interview Questions for the Regional Network of National Fisherfolk Organizations

Interview questions guiding the regional level case study across Caricom with their related themes and variables.

Question	Theme	Variable
Do you communicate regularly with other PFOs or your NFO?	Information management Costs	Presence of Partnerships Transaction costs
What is the best way for you to receive/give information?	Information management	Level of Knowledge Integration
When you are back home, do you feel that the way you communicate allows you to expand your network in the fishing industry?	Information management Social dynamics	Access to Knowledge Strength of Institutional Linkages
(a) In your opinion, do different sectors in the fishing industry have access to enough information to actively participate in decision-making relating to fisheries? **(b)** Why do you feel that way?	Information management Legitimacy	Awareness of Required Knowledge Level of Interest Representation
Do you think that different sectors in the fishing industry will use the access to information as a way to forward their own interests?	Legitimacy Social dynamics	Process Transparency Ability to Negotiate
How do you share the knowledge you gain at workshops?	Information management	Presence of Partnerships
When it comes to power to change things, who do fishers put more trust in: their organizations or government agencies?	Legitimacy Social dynamics	Existence of Past Failures Relationship between Familiarity and Trust
Who should play a strong role in forming/ strengthening	Social dynamics	Evidence of Cooperation with Government

Question	Theme	Variable
your NFO?		
In your opinion, what is the main difference between PFOs and NFOs in terms of the incentives they provide to the fishers?	Legitimacy	Clarity on Roles and Responsibilities
(a) To have the changes you want, what conditions will you need to create in your organization so that you can? **(b)** Who is most helpful in getting changes made?	Costs Social Dynamics	Efficiency of Scale Cost Efficiency Strength of Institutional Linkages
(a) How will the RFO gain recognition/credibility among NFOs and PFOs? **(b)** Will being represented at the forum level add weight to that claim?	Legitimacy Costs	Clarity on Roles and Responsibilities Presence of Free Riders

Appendix 3 - Timeline of Fisherfolk Activities of the Caribbean Regional Fisheries Mechanism (2004-2008)

This table summarizes the major activities pertaining to strengthening FFOs and promoting the development of a regional network of NFOs. The activities and outputs described were undertaken by the CRFM, as well as other partner organizations.

Activity	Date	Description
Organizational Needs Assessment of Caribbean FFOs (CRFM, 2004a)	October 2004	194 surveys were carried out to examine the organizational needs and operational strengths and weaknesses of existing national and primary or community-based Caribbean FFOs and make recommendations to address them.
CTA / CRFM / CARDI Regional Workshop Report on Findings of Organizational Needs Assessment of Caribbean FFO (CRFM, 2004b)	November 2004	Workshop implemented to review results and confirm next steps for action from the Needs Assessment. A working group of fisherfolk leaders was elected to develop a strategy and medium term action plan for the launching of the Regional Network of NFOs
First Meeting of the Pro-Tem Working Group on Institutional Strengthening of Caribbean FFOs (CRFM, 2005)	June 2005	Meeting of fisherfolk Working Group to transform Needs Assessment recommendations into a strategy and medium term action plan covering the period of 2006-2010.
CTA/CRFM Training of the Trainers Workshop for Fisheries Extension Officers to Enhance their Skills to Provide Better Information Advisory and Training Services to PFOs and NFOs (CRFM, 2007a)	December 2006	The workshop was established to ensure that fisheries and cooperative officers are involved from the inception of the project for the institutional strengthening of FFOs and supporting the launch a regional network. This was important to generate government support and "buy-in" of these processes at the national level. The workshop was to provide training to fisheries extension officers to enhance their skills in order to provide better information, advisory and training services to PFOs and NFOs. Officers shared the issues they face with regard to fisher attitudes, concerns on the viabilities of FFOs, lack of institutional capacity at the governmental level, and the need for greater cooperation between cooperative and fisheries divisions. Supporting the development of alternative economic opportunities, facilitating mechanisms for co-management and promoting alternative livelihoods for fishers were recommended steps.
FFOs in the Caribbean: Briefing Note on Networking for Success (McConney, 2007)	2007	Prepared by Dr. McConney at the CERMES-UWI, Barbados introducing the concepts of networking strategies at national and regional level to improve livelihoods and source opportunities. The document focuses on FFO, their challenges and successes in sustaining FFOs.
Launch of the Fisherfolk Net Newsletter (CRFM, 2007c)	July 2007	The concept of the newsletter is to share fishery related information among FFOs and people in fisheries. It disseminates information regarding past workshops and on the activities undertaken under CRFM joint project with the ACP-EU

Activity	Date	Description
		Technical Centre for Agricultural and Rural Co-operation (CTA) with the overall objective "to contribute to improved income earnings higher standards of living of fisher folk and sustainable use of fishery resources in the Caribbean". Input is generated at the ground level and facilitated through national fisheries divisions and CERMES-UWI, Barbados.
National Consultations to Launch a NFOs in Dominica, Grenada, Guyana, St. Kitts and Nevis, St. Lucia, St. Vincent Field Visits (CRFM, 2007b)	2007	A series of field visits and meetings with PFOs and government officers to develop NFOs. SCs were appointed and deadlines were set for the establishment of NFOs. SC tasks involved determining type of NFO, motivating PFOs and legally establishing the NFO.
CTA/CRFM Regional Fisheries Stakeholders Workshop to Promote the Launching of a Caribbean Network of National FFOs (CRFM, 2007d)	September 2007	The CU was elected and its Terms of Reference and the development an action plan achieved. The workshop focused on communication challenges at the regional level, the structure of the regional network, and CU goals, objective and activities. Website and email groups were tools recommended for regional communication.
Fishers Forum: "Fisherfolk and fisheries scientists linking and learning together" at the 60th Gulf and Caribbean Fisheries Institute (GCFI) (CERMES and CRFM, 2007b)	November 2007	Side event at the GCFI annual conferment organized in collaboration with UWI and the CRFM. The forum fishers, scientists, managers, students, persons from NGOs and other interested parties shared information on environmental education, SSF experience in the region with regard to management and FF participation. The session contributed to giving fishers an opportunity to express their challenges, contribute to the development of research agendas of scientists and managers as well as discuss options for alternative livelihoods.
Advocacy and Communication Workshops	2008	CERMES UWI training to enhance fisherfolk skills in communication and advocacy to reach a wider audience and better voice their concerns.
Launch of Regional Stakeholder Directory (Parsam and McConney, 2008)	December 2007	Developed to provide names and contact information for all fisheries and fisheries related business and personnel in the region.
GCFI/CRFM Small Grant Fund for Sustainable Fisheries and Alternative Livelihoods for Fishers. Field visits to St. Kitts and Nevis, St. Vincent, Guyana and Belize Field Visits	May 2008	The CRFM executed field trips to countries without established NFO on a project focusing on strengthening and networking of FFOs at the community, national and regional levels The field visits focused on communicating CRFM activities at the beach level. Two members of the CU traveled and engaged with fisherfolk to promote the strengthening, establishment and development of NFOs and the formation of the regional network of NFOs.
Workshop on Management, Communication and Advocacy for FFOs in CARICOM	September 2008	Hands on workshop to strengthen participants' abilities in areas of leadership, management, communication and advocacy to improve the day-to-day running of their organizations. Skills such as financial management, communication, networking, conflict resolution etc were introduced. Fisherfolk shared common issues and developed projects to take back to their FFOs.