The Barbados Marine Reserve and involvement of fishers in its decision-making: Outcomes, history and processes

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For my mom (who, unfortunately, always understood), my dad (who always celebrated), Kenya and Buddy (who were and are forever by my side), Adam (who tolerated some time apart) and Mike (my crutch and confidant, who has the patience of a saint). Thank you—your support has meant more than you'll ever know.

Notes, Acknowledgements and Thanks

> "When a subject is highly controversial…one cannot hope to tell the truth. One can only show how one came to hold whatever opinion one does hold. One can only give one's audience the chance of drawing their own conclusions as they observe the limitations, the prejudices, the idiosyncrasies of the speaker." (Virginia Woolf, *A Room of One's Own* 1929)

This thesis is a compilation of what I saw during a particular time frame, under certain circumstances, and with a specific worldview. As with any scientific research, it is the best approximation of the "how"s and "why"s of a situation, given a certain knowledge base, a particular period, and prevailing conditions. I hope I have done justice to those who were kind enough to give me their time and share with me their knowledge and thoughts. With this in mind, I would like to thank the fishers and "NonCons" of the west coast and Barbados in general, who let down their guard, shared their thoughts and feelings with me, and in the end, welcomed me as a friend. I would also like to thank Susan Mahon for being such a gracious host and informative and challenging mentor. Many others too went above and beyond in the time they gave to me, and I would like to thank them dearly for all their help: Angie Brathwaite, "Carol", Greg Franklin, Renata Goodridge, Everton Hinds, Clifton Ifill, Robin Mahon, Chris Parker, "Sevens", Stanton Thomas, "Thriller" and Oneta Trotman. I would also like to thank my advisor, Professor Meredith, for the insight, patience and help he gave me throughout my time at McGill. My gratitude also goes out to Professor Turner (McGill University) and Susan Mahon (Bellairs Research Institute) for their review of my thesis and to Professor McConney (University of West Indies) for his appraisal. And to Bill Wilkinson, Carol Smith and David Fortier, thanks for your help with the formatting and translation. As the funding for this research was supported in part by a Canada Graduate Scholarship Award, I would also like to thank the Social Sciences and Humanities Research Council (SSHRC)(Award No. 766-2004-0599). Finally, to Tundi Agardy, Hans Herrmann and Lance Morgan, who got me excited about the marine environment and MPAs, I am eternally grateful.

Tables and Figures

List of Abbreviations

BARNUFO……..……...Barbados National Union of Fisherfolk Organizations

BMR……..……..Barbados Marine Reserve (a.k.a. Folkestone)

BRI…….……Bellairs Research Institute, McGill University

CZMU…….……...……..Coastal Zone Management Unit

EED…….……...…..Environmental Engineering Division

FAC……..……...Fisheries Advisory Committee

FD…….……..……Fisheries Division

FMMA…….……....Folkestone Marine Management Area (proposal by Axys RTs)

FMP….....Fisheries Management Plan

HDI…….……Human Development Index (of the UNDP)

MMAA……...…Marine Management Area Authority (wrt FMMA)

MPA…….……...…Marine Protected Area

MRACC……..…….Marine Reserve Advisory and Coordinating Committee (wrt BMR)

NCC…….……..….National Conservation Commission

NGO…….……...Non-governmental Organization

PA…….……Protected Area (terrestrial or marine)

PPP…….…….……....Purchasing Power Parity

RT…….……...……...Round Table

SIDS……..……..…….Small Island Developing State

TCDPO…….……Town and Country Development Planning Office

TOR…….……Terms of Reference

UWI……...…….University of the West Indies, at Cave Hill, Barbados

Abstract

Marine protected areas (MPAs) are essential elements of marine conservation strategies, but since commercial, sport and subsistence fisheries are inevitably influenced by MPAs (and vice versa), stakeholder participation in decision-making is recognized as being critical to the success of MPAs. If the goals of protected marine resources are to be served in the long run, it is essential that participation be carefully assessed and reviewed. This thesis reviews the outcomes of fisher participation in decision-making for the Barbados Marine Reserve (BMR), and examines the history of the reserve and of the processes of participation that contributed to such outcomes. For the 108 stakeholders interviewed (55 fishers and 53 non-consumptive resource users or "NonCons" for short, e.g., government employee, diver, academic, boat operator), results were mixed.

Stakeholder involvement in BMR changed with the times. The stages of stakeholder participation in decision-making for the BMR included: a) largely neglecting and marginalizing fishers during its inception (late 1970s/early 1980s), b) later isolated attempts by a "policy entrepreneur" (Mascia 2000) at including fishers, and c) pointedly seeking out and including fishers in representative-based stakeholder round tables (RTs) during its review (late 1990s/early 2000s).

During the latest stage, the BMR review, the process of including fishers in decision-making varied in its quality. In general, both fishers and NonCons who had attended the RTs felt the facilitators' performance was acceptable. Although facilitators seemed to have made a great effort to include fishers, only a few attended, and so the impact was limited. Those who did attend the RTs felt they had had been provided discussion opportunities and had been treated equally. These positive aspects were hindered by facilitators paying insufficient attention to procedural details of stakeholders' participation as well as to details about the stakeholders' history, culture and socio-economic factors. These factors led to less than optimal outcomes.

Most stakeholders believed in the potential of an MPA and the theory behind it, and seemingly acted to take advantage of its benefits (i.e., fished on the edge of the reserve to benefit from spillover and/or leakage). Moreover, fishers who had participated in the latest participation process for the reserve (i.e., the RTs) had more positive opinions and views of the BMR than those who had not participated. On the other hand, despite their presence at the RTs, most participants (both fishers and NonCons) felt they *had not* been involved in any decision-making for the BMR. So despite their progression from the late 1970s, the BMR's poor beginnings were not forgotten and its recent improvements appeared insufficient. This analysis showed that in structuring stakeholder participation for MPA management, special attention must be paid to the *quality* and *procedural detail* of participation.

Les aires marines protégées (AMP) sont des éléments essentiels des stratégies de conservation marine, mais comme elles ont une incidence inévitable sur la pêche commerciale, sportive et de subsistence (et vice versa), la participation des intervenants dans la prise de décision est essentielle à leur réussite. À long terme, l'atteinte des objectifs de protection des ressources marines doit essentiellement passer par une évaluation et une révision rigoureuses de la participation. La présente thèse évalue les résultats de la participation des pêcheurs dans la prise de décision pour la Réserve marine de la Barbade (RMB) et se penche sur l'histoire de la réserve et sur les processus liés à la participation qui ont contribué à ces résultats. Pour les 108 intervenants qui se sont livrés à un entretien (55 pêcheurs et 53 utilisateurs rationnels (UR) des ressources, comme des employés du gouvernement, des plongeurs, des chercheurs et des conducteurs de bateaux), les résultats sont mitigés.

L'implication des intervenants à l'égard de la RMB a changé au fil des années. Les étapes d'implication des intervenants dans les prises de décisions à l'égard de la RMB comprennent : a) négliger et marginaliser en grande partie les pêcheurs pendant sa création (fin des années 1970 et début des années 1980), b) effectuer des tentatives isolées subséquentes par l'entremise d'un « entrepreneur en stratégies » (Mascia 2000) d'inclure les pêcheurs et c) s'adresser directement aux pêcheurs pour les inclure dans les tables rondes (TR) demandant la participation des intervenants au cours de l'évaluation (fin des années 1990 et début des années 2000).

Au cours de la dernière étape, le processus d'inclusion des pêcheurs dans la prise de décision a fluctué en termes de qualité. En général, les pêcheurs et les UR qui ont participé aux TR ont trouvé le rendement des facilitateurs acceptable. Même si les facilitateurs semblent avoir fait des efforts considérables pour inclure les pêcheurs, seuls quelques-uns ont participé, ce qui a diminué l'impact de leur présence. Ceux qui ont participé aux TR ont indiqué qu'ils avaient eu des occasions de discuter et qu'ils avaient été traités équitablement. Toutefois, ces aspects positifs ont été amoindris par des facilitateurs qui n'ont pas porté une attention suffisante aux éléments de procédure de la participation des intervenants, de même qu'à leurs facteurs historiques, culturels et socio-économiques, ce qui a mené à des résultats insuffisants. La plupart des intervenants croient au potentiel d'une AMP et à la théorie qui s'y rattache, et semblent avoir agi pour tirer profit de ses avantages (c.-à-d. qu'ils ont pêché aux limites de la réserve pour profiter des déversements ou des débordements). De plus, les pêcheurs qui ont participé au dernier processus d'implication pour la réserve (c.-à-d. aux TR) avaient des opinions et des avis plus favorables à propos de la RMB que ceux qui n'avaient pas participé. Par contre, malgré leur présence aux TR, la plupart des participants (les pêcheurs comme les UR) avaient l'impression qu'ils *n'avaient pas* été impliqués dans la prise de décisions relatives à la RMB. Donc, malgré le progrès effectué depuis la fin des années 1970, les débuts difficiles de la RMB n'ont pas été oubliés et les récentes améliorations semblent insuffisantes. Cette analyse a démontré que dans le cadre de la structuration de la participation des intervenants dans la gestion des AMP, une attention spéciale doit être portée à la *qualité* et aux *éléments de procédure* de la participation.

1. Introduction

> "We will not save the parks unless we save the people too, and we will not save the people unless we save the parks as well." Sir Shridath Ramphal, President of IUCN, during the Fourth World Congress on National Parks and Protected Areas "Parks for Life." (Caracas 1992)

> "The complex and dynamic nature of environmental problems requires flexible and transparent decision-making that embraces a diversity of knowledges and values. For this reason, stakeholder participation in environmental decision-making has been increasingly sought and embedded into national and international policy." (Reed 2008)

In 2008, FAO reported that 80% of the world's fish stocks[1] are considered fully exploited, overexploited, depleted, or recovering from depletion (FAO 2008); while less than a decade before this number was roughly "only" 65% (NRC 1999). In the once vital and rich—and now infamous—northern cod (*Gadus morhua*) fishery off Newfoundland, where hauls went from over 800,000 tonnes of fish in the late sixties to a mere 1,700 tonnes in the early 1990s an estimated 30,000 to 40,000 Canadians lost their jobs after the 1992 collapse and moratorium (Greenpeace N.d.). The coveted tropical queen conch (*Strombus gigas*)—harvested for its meat as well as its shell and found to have been one of the most important fisheries in the Caribbean—has seen total or temporary closures of its fishery in many countries and is on Appendix II[2] of the Convention on International Trade in Endangered Species (CITES)(CITES 2003, CITES 2010). The Nassau grouper (*Epinephelus striatus*), which was once considered "the most important grouper in the landings of Caribbean islands" is presently listed as Endangered and is found more often in the memories of older fishers than in the waters they fish (Polidor et al. 2008). Fish stocks, once abundant and a foundation for human livelihoods, have been treated as though they were inexaustible and are now vanishing. An effective conservation strategy is urgently required.

Marine Protected Areas (MPAs) and marine reserves are increasingly being proposed as essential to a solution. They are cited as tools for conserving biodiversity,

[1] For which information is available.

[2] "Appendi I, II and III of the Convention are lists of species afforded different levels or types of protection from over-exploitation. Appendix I lists species that are the most endangered…They are threatened with extinction and CITES prohibits international trade in specimens of these species except when the purpose of the import is not commercial…for instance for scientific research…Appendix II lists species that are not necessarily now threatened with extinction but that may become so unless trade is closely controlled…Appendix III is a list of species included at the request of a Party that already regulates trade in the species and that needs the cooperation of other countries to prevent unsustainable or illegal exploitation." (CITES 2011)

managing fisheries and contributing to socio-economic welfare—particularly in tropical ecosystems (UNEP 1995, Agardy 1997, Kelleher and Recchia 1998, Roberts and Hawkins 2000, [Barbados] Fisheries Division 2001, 2004, NCEAS 2001,Ward et al. 2001, Halpern 2003, Dudley et al. 2005, Chopra et al. 2005, WSSD 2005, FAO 2008, 2010, Agardy et al. 2011). For MPAs, stakeholder participation (henceforth "participation") has been viewed as the keystone for successful conservation—without participation and attention to social aspects, it is said that conservation is doomed (Pimbert and Pretty 1995, Agardy 1997, Allison et al. 1998, McConney (2001a), Bunce and Pomeroy 2003, Christie et al. 2003, Garaway and Esteban 2003, McConney et al. 2003a, Pomeroy et al. 2007). Kuperan Viswanathan and Abdullah (1994), Jentoft and McCay (1995) and Dudley and others (2005) have proposed that local stakeholders' can make or break an otherwise well planned marine reserve; if stakeholders are not on board, conservation efforts—no matter how well received by scientists and environmentalists—can be compromised. Dudley and others (2005) have said that, in addition to "find[ing] solutions to human-wildlife conflict", at their best "protected areas can be precious assets to recognize rights" and tools for local empowerment. But studies addressing participation—its process and outcomes in particular—are relatively rare (Reed 2008). If the goals of protected marine areas are to be served in the long-run, it is essential that participation be carefully assessed and reviewed.

Better understanding of the theory and practice of stakeholder participation could help advance the science of marine conservation, provide guidance for marine management practices, and improve the lives of fishers, and fishing communities, who are dependent upon these coastal ecosystems. This thesis undertakes to study public participation as it contributed to the success and failures of the Barbados Marine Reserve (BMR), in Folkestone, Barbados (figures 1 and 2). It reviews the outcomes of fisher participation in decision-making and also looks back in time at the history of the reserve and the processes of participation that contributed to such outcomes. The study examines:

1. The Outcome of Participation: Was participation, as used, successful? Was there awareness and understanding, a good opinion of the reserve, a perception of fairness and benefit to all? Was there buy-in, belief in the theory, and compliance? Did stakeholders feel empowered and involved in the decisions that affected their lives?

2. The Background and History of Participation: How was participation used throughout the BMR decision-making process? Who was involved, when and how? What other background forces were at play?

3. The Qualities and Process of Participation: How well was participation used? Was there "fairness and competence" in decision-making (sensu Renn and Webler 1995)? Was all needed information provided, made easy to understand? Were the consequences explained? Was there sufficient time? Were all topics, and all points of view including scientific and local/fisher knowledge, presented? Did all participants have the opportunity to defend their point of view, raise questions, and challenge others? Were parties stopped from dominating the conversation? Was the discussion facilitated, but not guided, by the facilitators' point of view? Were all treated equally and did all have equal influence?

The BMR, created in 1981 and reviewed in the late 1990s/early 2000, is a MPA where fishing, among other activities, has been prohibited. The reserve is located on the leeward side (and within the tourist hub) of Barbados, a tropical island of the Lesser Antilles. The thesis focuses on fishers' participation, for they are frequently the most intimately connected to marine reserves (being directly impacted by, as well as having a direct effect on marine reserves). They are also, at times, some of the most marginalized of stakeholders and appear to be so in Barbados. Here, on this small island developing state (SIDS) which is heavily dependent on tourism, coastal fishers' employment is generally not viewed as important to the economy of the country and they apparently appear to have little power in the decision-making process (McConney 1998a, pers. obs.). By looking at their involvement in the BMR decision-making process, a greater understanding is offered of how and how well marginalized members of society were or were not involved in the decision-making process, and what the effects of this participation were. As it has been said, if fishers are not "on board", no matter how good the design, marine conservation efforts can be at risk of failure.

The thesis explores public participation as an element of effective biodiversity conservation, by examining the case of the BMR in Barbados. Chapter 1 introduces the objectives and Chapter 2 reviews the literature that contextualises the issues and explains the theoretical approaches. First fisheries' impacts are described and the inadequacies of traditional fisheries management for tropical small island developing states (SIDS) are

explored. MPAs and marine reserves are introduced and proposed as alternative management actions. This is followed by an explanation of the concept of stakeholder participation in decision-making and its importance for efficient and effective MPAs and reserves, as well as how researchers are characterizing participation so as to fully understand its potential worth and flaws. Chapter 3 introduces the study area—Barbados Marine Reserve—located on the tourist-centric west coast of the SIDS of Barbados. This chapter covers the reserve as well as the human, recent historical, biological and oceanographic context within which the BMR is found—all which can have an effect on the success of the reserve. The methodology used for the study is explained in Chapter 4, and results and discussion follow in Chapter 5, which treats the outcomes of fisher participation in decision-making, as well as the history and processes of participation that contributed to such outcomes. The conclusions are presented in Chapter 6. Here the main reasonings are recapped, deductions are drawn from the record, and recommendations are made about how management of marine reserves can move forward.

2. Literature Review

> "There could be no fairer destiny for any physical theory than that it should point the way to a more comprehensive theory in which it lives on as a limiting case." (Albert Einstein)

> "He who loves practice without theory is like the sailor who boards ship without a rudder and compass and never knows where he may cast." (Leonardo da Vinci)

The following section presents the background and rationale for studying: 1) fisheries; 2) marine reserves; and 3) participation in decision-making efforts.

2.1 Fisheries impacts & the inadequacies of traditional management for Tropical SIDS

> "…a few token fisheries regulations existed, but were neither enforced nor complied with on a regular basis." (McConney 1998a)

While providing food and economic activity, fishing's many impacts (as well as the compounded impacts of other threats such as land-based activities, invasive species and climate change) have, until recently, gone largely unnoticed beneath the calm of the ocean surface. How much we have caught, what we have caught and how we have caught it have all had effects on marine systems (Agardy and Engdahl 2000). Overfishing can compromise the genetic diversity of a species, lead to serial depletion of stocks, and cause the collapse of ecosystems (Roberts 1995a, Pauly et al. 1998, Agardy and Engdahl 2000, Jackson et al. 2001). Most gear used does not focus solely on the desired species; it can entangle and entrap many untargeted species as well (Morgan and Chuenpagdee 2003). Some fishing technologies can alter and destroy habitats—some liken them to clear cutting of a forest to catch a dear (Watling and Norse 1998, Roberts and Hawkins 2000).

The data and models of conventional fisheries management have been regarded as questionable (Roberts 2000)[3]. This has been compounded in tropical systems where species richness is immense and ecological interconnections are complex—here models based on single-species fisheries (designed for temperate regions) have been thought to be thoroughly inadequate (Roberts and Polunin 1993). In addition, the data, monitoring and research resources needed to implement these "temperate" models has simply not been

[3] Fisheries regulations used in temperate waters typically rely on very large amounts of data, with much of fishers' catch possibly misreported (e.g., bycatch is not accounted for in this system, Roberts 2000). The models used are based on quite questionable assumptions, such as fish acting as isolated entities, not as part of an interconnected ecosystem (Roberts 2000).

available in many tropical and developing countries (Mahon 1997, McConney and Mahon 1998). "Approaches which rely less on large quantities of scientific information, and more on negotiated objectives derived from modest science and shared perspectives" have been seen as "better suited" to small-scale fisheries management of small island developing states (SIDS) (McConney and Mahon 1998). The final environmental decisions on catch quotas originally derived by scientists have largely not been a result of science alone, but of "incessant socio-political pressure for greater harvests" (Botsford et al. 1997, Roberts 2000). Finally, conventional fishery management tools have been regarded as complicated and expensive to enforce (Roberts and Polunin 1991), especially in SIDS where the workforce and institutional resources available to develop, oversee and enforce these regulations are scarce. It has been noted by experts in the field, that up until the late 1980s, fisheries management in the Caribbean[4] was largely absent: "a few token fisheries regulations existed, but were neither enforced nor complied with on a regular basis" (McConney 1998a).

Because of these issues, marine protected areas (MPAs) and marine reserves have become important practical alternatives to traditional fisheries management, particularly in tropical areas where systems are complex and resources are tight.

2.2 Marine Protected Areas (MPAs) & Marine Reserves as alternatives

> "Any area of intertidal or subtidal terrain, together with its overlying waters and associated flora, fauna, historical and cultural features, which has been reserved by legislation or other effective means to protect part or all of the enclosed environment." (Definition of MPA, Kelleher and Recchia 1998)

It has been proposed that by sectioning off areas of the ocean from extractive use and habitat damage, species, habitats and processes found within the reserve will be protected; predator-prey relations will be able to continue to keep species populations in check; habitats within reserves will be better able to withstand natural disturbances; and target species will be able to grow older and larger, produce more young, and ultimately replenish fished areas with larvae and adults (Plan Development Team 1990, Bohnsack

[4] "The state is not in an authoritative position in relation to the industry, particularly in terms of enforcement and the scientific resources necessary to continually research and adjust a control and command type of regulatory framework. In order for the state to engage in any type of management, the compliance and cooperation of the fishing industry will be necessary" McConney (1998a).

1990, 1992, Polunin and Roberts 1993, Man et al. 1995, Roberts 1995a,b, Halpern 2003). As Bohnsack (1990) demonstrated, fecundity of fish increases with their size—for example, the fecundity of one 12.5 kg female snapper, *Lutjanus campechanus*, was shown to be equivalent to that of 212 of 1.1 kg fishes. Protecting fish could, therefore, allow fishers to benefit from the "spillover" or "leakage" which they could catch while "fishing the line"[5] of reserves (Murawski et al. 2000, Roberts et al. 2001, Murawski et al. 2004, Murawski pers. comm. 2003).

There have also been benefits of MPAs and marine reserves related to governance. Agardy (1997), in her seminal work on MPAs, noted that rules and regulations can be simple to explain and enforce, that MPAs can serve as monitoring baselines against which other areas can be measured, that and MPAs can also serve as insurance against failures of other management techniques and tools. MPAs have been shown to offer training in more sustainable alternatives to commercial fishing, in activities such as eco-tourism, local fishing-based tourism, park management, monitoring or enforcement (Pomeroy et al. 1997, Gell and Roberts 2003). Training in alternative sustainable employment decreases the pressure on the resource by decreasing the number of fishers, thereby potentially decreasing the risk of the fishery failing (Pomeroy et al. 1997). Through this training, fishers can become less dependent on one source of income—they "diversify their portfolio"—which buffers them from the effects of an activity failing (Gell and Roberts 2003). All of these governance benefits subsequently help in increasing the likelihood that the ecological impact of marine reserves will be positive as well. Local stakeholder participation in decision-making is also said to increase the chance of efficiency and effectiveness of MPAs[6].

In the face of these benefits, however, MPAs should not be taken as a panacea for marine conservation and should be used in conjunction with other marine conservation tools (Roberts and Polunin 1991, Hawkins and Roberts 1994, Allison et al. 1998, Kramer and Chapman 1999, Agardy and Engdahl 2000, Roberts and Hawkins 2000, Heyman et

[5] "Spillover"—an increase in fish outside the marine reserve boundary due to an increase in density inside; "leakage"—movement of fish across the reserve boundary; not necessarily density dependant; "fishing the line"—fishing just outside the boundaries of a reserve to take advantage of the spillover/leakage.

[6] In terms of participation in decision-making, the more encompassing "marine protected area" is used rather than "marine reserves", a particular type of MPA. This is done for the qualities discussed in this section do not apply solely to marine reserves, but to MPAs in general.

al. 2001, Gell and Roberts 2003, Agardy and Wilkinson 2004, Wilkinson et al. 2004 Causey pers. comm. 2003). Some have offered that for MPAs to function optimally, they must be managed with effective stakeholder participation. Stakeholder or "public participation", a general term used to cover an aspect of resource management, was set in motion by conferences, initiatives and reports of the 1970s, 80s and 90s as a reaction to previous disfunctional protected area systems.

2.3 History of stakeholder participation in conservation and PAs & the enhanced outcomes it seeks to achieve

> "We woke up one day and there was a park." (local stakeholder of a Caribbean MPA)
>
> "The only kind of coercion I recommend is mutual coercion, mutually agreed upon by the majority of people affected." (Hardin 1968)

From the 1975 Resolution 12.5 of IUCN's 12th General Assembly[7], to UNESCO's (1977) *Biosphere Reserve* concept and the Brundtland Commission of 1983[8], and on to the Convention on Biological Diversity (1993); as well as the Human Development Index and Reports of UNDP[9]—the interrelationships between the environment, economic and social development came to the fore of conservation management. During this time, concepts such as sustainable development and stakeholder participation became well known. Protected area management, and subsequently MPA management, began to see and concentrate on the interconnectedness of humans and ecosystems. Conservation and protected areas management, however, had not always been this way.

Previously, PAs were created primarily for the conservation value alone and were regarded as the last safe havens of biological diversity, that should be left "untouched" by humans—despite any needs local peoples may have had for the area and its species (Pimbert and Pretty 1995). Management was based almost exclusively on expert scientific analysis, if any analysis was done at all[10], and was completely and solely under the reigns of the central government (Renn et al. 1995, Barrett et al. 2001). As Pimbert and Pretty (1995) note "all too often…outside professionals [failed] to build on

[7] Protection of Traditional Ways of Life

[8] a.k.a. the World Commission on Environment and Development

[9] Particularly that of 1993 which focused on People's Participation

[10] Mascia (1999), from his international mail survey of MPAs in the Wider Caribbean, found that "Wider Caribbean MPAs were usually established without comprehensive information regarding local biological and socio-economic conditions."

indigenous [and local] knowledge and techniques, either through ignorance or cultural myopia." Strategies and management regimes were largely "cut" from systems of the temperate industrialized north and "pasted" to the tropical "developing" south—without much consideration for differences in culture, socio-economic conditions or ecology (Pimbert and Pretty 1995). Conservationists and protected area managers were frequently criticized for focusing on nature and applying inappropriate and unilateral decision-making, to the neglect of the needs, aspirations, and knowledge of the people around them (Kamstra 1994). More often than it should have happened, locals went to bed at night well-respected, law-abiding citizens, only to wake the next morning to find their livelihood criminalized in places they frequented.

By neglecting the needs of people (particularly those most closely associated with and affected by protected areas), as well as relying on outside expert opinion and government agencies located in distant capitals, these efforts sidelined and marginalized the users—those who were the most intimately aware of the system, and could have the greatest effect on it (McNeely 1988, Bromley 1994). Without an understanding of fishers' needs, values and cultures, management efforts were often "met with serious resistance and non-compliance" (Kuperan Viswanathan and Abdullah 1994). As with any other rules, when the purposes of regulations are not understood, or are perceived as being imposed arbitrarily by outsiders, they will most likely not be regarded as legitimate, or be obeyed voluntarily (Johannes 1978). "Ownership" without control has little meaning, and when the means of enforcement are lacking, the potential for conservation and sustainable use is slim (Bromley 1994, Berkes 1996, Barrett et al. 2001). This is typically the case for government-run marine reserves, particularly in small island states of the Caribbean[11]. As Wilshusen and others (2002) note, "compliance develops over years of political interaction rather than as a result of outright acceptance of abstract management regulations", and as previously noted by Bromley (1994), "biological resources can't be managed by proclamation alone."

A centrally governed system for biodiversity conservation is also said to be quite costly to run (Hviding and Baines 1994, Graham, T. and N. Idechong 1998). Therefore,

[11] Garaway and Esteban (2003) cite a survey of 80 Caribbean MPAs, and note that "less than 50% surveyed had more than a low level of active management and 25% had none at all."

the many underfunded and understaffed resource departments in charge of protected areas—in less economically developed countries (LEDCs) and small island developing states (SIDS) in particular—were, for the most part, powerless to implement what had been declared (Barrett et al. 2001, McConney 1998c).

As a result, these parks did not always turn out to be what most people would call "successful". Management plans and park regulations not only resulted in marginalizing many of the local stakeholders, but they also ended up being generally quite costly, largely inappropriate, inefficient, misunderstood, unaccepted, and often ignored[12].

In reaction to the previous theories and unsuccessful practices of "Fences and Fines", more and more marine protected areas and conservation practitioners geared their efforts away from government run, scientifically defined, protected areas where the policy of no-take[13] ruled and local and indigenous people were often displaced from their lands and waters. During its 12th General Assembly (Kinshasa, Zaire[14] 1975) in Resolution 12.5 *Protection of Traditional Ways of Life,* IUCN "[called] on governments to recognize indigenous peoples' rights to land, particularly in the context of preventing displacement in conservation areas" (IIED 2010). Creative ideas also came about, such as the 1977 *biosphere reserve* concept of UNESCO, which was a way of marrying the commitments to conservation and sustainable use as well as education, training, and research in one PA (UNESCO 1995). Other ideas focused on the decision-making processes of PAs. At this point, management began to open up their decision-making processes. They started to include a wide range of stakeholders, including local communities, where they would have otherwise strictly relied on initiatives that were run by government and based on "expert" scientific advice largely from foreign consultants. Stakeholder participation had finally come into vogue.

The support for local community involvment in decision-making emerged as a major trend (although slightly later for MPAs than for PAs in general). For example, in 1988 McNeely asserted that local people ought be involved in all aspects of protected

[12] Hence the term "paper parks" arose and was frequently used for protected areas that were decreed in official government documents, however, non-existent in real life due to the aforementioned reasons.

[13] "No-take" areas, often called "marine reserves" in marine conservation literature, are zoned areas closed to all forms of extraction, including fishing.

[14] Presently known as the Democratic Republic of the Congo; formerly known as Zaire from 1971 to 1997.

area management. In 2000, in their guide for MPA planners and managers, Salm and others stated that "empowering communities always works better than commanding them". The Conference of the Parties' 2004 agreement stated that "the full participation of indigenous and local communities and relevant stakeholders is important…for the establishment and maintenance of individual marine and coastal protected areas and national and regional networks…" (UNEP 2001).

Reasons abound as to why stakeholder participation should be included in conservation decision-making. Some see community-based participation as a means of bringing the decision-making process back to the hands of the users—those who are the closest and most intimately aware of the system (Bromley 1994, Finnegan and Sexton 1999, Kaufman and Dayton 1997). It is seen as helping to provide local community members with the means to make and implement decisions on their own, secure their basic needs and rights, as well as control and be directly responsible for their resources (Kuperan Viswanathan and Abdullah 1994, Kamstra 1994, Pimbert and Pretty 1995, Beaumont 1997). In this way, they become actively involved in planning and management "rather than being victims of the decisions made by anonymous agencies or institutions" (Renn et al. 1995, Agardy 1997). White and others (1994) mentioned that community-based initiatives also reinforce a sense of pride and self-worth for the community.

Some feel that by involving local communities in the decision-making process (particularly in its early stages, and continuing throughout the process), management would gain from a greater and more complete understanding of the system—from all sides of the table (not simply a scientific governmental perspective) and from knowledge accumulated through daily observation and use for many years (not simply from studies that take a snapshot in time)—and subsequently the regulations may end up better suited to and appropriate for the local needs, priorities and conditions (ecologically, socio-economically and culturally), both present and anticipated (Johannes 1978, White et al. 1994, Renn et al. 1995, Pomeroy 1995, Garaway and Esteban 2003, McConney et al. 2003a, Reed 2008). They, then, would have more "buy-in" or ownership, be more accepted and the reserve would have better compliance (White et al. 1994 Agardy 1997, Parker and Pena 2006, Reed 2008). If people are involved they may be more likely to feel

like they have influenced decisions, and will most probably support and adhere to management decision. Subsequently, the MPA would become more efficient and effective in the long-run (Pimbert and Pretty 1995, White et al. 1994, Pomeroy et al. 1997, Bunce and Pomeroy 2003, Garaway and Esteban 2003). Garaway and Esteban (2003) noted that "costs of monitoring and enforcement [would be] reduced because of more appropriate regulations, voluntary compliance or self-enforcement." Moreover, White and others (1994) proposed that "responsibility [would be] delegated, local skills and tools [would be] used, and changing conditions...accommodated. The cost of community-based management is generally lower than that of more centralized and regulatory approaches." McConney similarly noted that for "Caribbean fisheries and coastal authorities…responsibility for science and management often resides in a few people who cannot provide the best information on their own. They may need to rely heavily on resource users for detailed knowledge of the resources" as well as for "data collection and interpretation, plan formulation and evaluation, implementation, enforcement and other critical functions" (McConney 1998a, McConney et al. 2003a). McConney (1998c) also writes that for fisheries co-management "institutional capacity for state management is typically inadequate, with financial, human and physical resources being scarce" and managers and scientists often ending up being the same person. "For eastern Caribbean fisheries departments, sharing power and responsibility…is a means of survival, not choice" (McConney 1998c).

By bringing the local communities alongside scientists and government, stakeholder participation may also help to create more equitable partnerships and more transparent and democratic processes (Merritt and Jones 2000, Beaumont 1997). As Reed (2008) noted, those "on the periphery" would be less likely marginalized. Garaway and Esteban (2003), however, have highlighted the specific case of the coastal poor and the need for taking special attention to them when it comes to MPA rules and regulations, and their participation in decision-making. "More than any other group, poor users dependent on the marine resource will be less likely to be able to comply with MPA measures that affect their use of the resource…[and] such people tend to be 'invisible'." The coastal poor are frequently "wrongly represented by other more influential people," and note that when poorer fishers are "represented by a richer more powerful fisher" he may have

"little understanding of [the poorer fishers'] particular constraints" (Garaway and Esteban 2003). McConney and others (2003) further wrote that "poor people need their voices to be heard in co-management arrangements or they will be unlikely to comply."

McConney (1998c) also highlighted the importance of a commonly understood language between stakeholders with widely different backgrounds and perspectives, and puts forth "common science"[15] (common sense and fisheries science) as a way of overcoming obstacles and smoothing the path for better communication (McConney 1998c).

Others have thought that by increasing the degree of meaningful, fair and competent participation, local communities would be gaining knowledge. Through participation, stakeholders could offer, learn and exchange new concepts, ideas, facts and figures with people from all backgrounds (including those with long held adversarial relationships)—a sort of mutual learning and capacity building (Reed 2008). This may lead to seeing legitimacy in others' points of view and knowledge (Stringer et al. 2006, Reed 2008). In this way, conflict amongst user groups may decrease.

Real world examples of the importance of stakeholders participation in decision-making include Nance and others' (1989) study of closure of the shrimp fishery off Texas. Of captains interviewed, 39% were against the closure, and 51% were in favor of it. When the issue was viewed again but solely amongst captains who knew the purpose of the closure, the numbers in favor increased dramatically, and the numbers against, reduced. Sadly, more than 40% of those interviewed did not know the purpose of the closure after six years after it had been instated. In Russ and Alcala's 1999 long-term case histories of two reserves in the Philippines (Apo and Sumilon), they argued that the Apo reserve, which had co-management, was effective in ecological terms due to community support for and subsequent adherence to the regulations of the reserve. The Sumilon reserve, on the other hand, did not have community support, nor sufficient enforcement. As a result, they argue, there were many violations of the park rules and biomass of fish

[15] The principles of McConney's (1998c) "common science" includes such concepts as: 1) scientific knowlede complements, not substitutes for, ordinary knowledge; 2) based on situationally appropriate fishery science, using simple methods; 3) common language rather than scientific jargon used in communication; 4) stakeholders' common interests are the basis for negotiation or consensus; 5) common or ordinary ecological and other fishery knowledge of fisherfolk is crucial; 6) benefit aimed at the common good of the public, rather than partisan interests; 7) is accessible by the common man in order to inform participation; and 8) analytical principles of science (social, natural, political etc.) are applied.

within the park decreased dramatically. Christie's (2004) review of four MPAs in the Philippines and Indonesia evaluated both their biological and social successes (but not participation and its effects in detail). In measuring biological success, Christie looked at fish abundance and diversity as well as living coral cover. In measuring social success, Christie conducted 73 in-depth semi-structured interviews with key informants across the four sites to see if there was: a) broad stakeholder participation, b) equitable sharing of economic benefits, and c) the presence of conflict-resolution mechanisms. He found that the four MPAs met standard biological critieria of success more consistently than standard criteria of social success, and that "poorly managed controversy and conflict [were] derailing these MPAs", leaving them to deteriorate over time, biologically speaking.

It seems as though the call for greater stakeholder participation in conservation decision-making is ubiquitous and universal—found within papers, initiatives, projects and proposals from the local to the international level—and that everyone is working off the same page and has learnt the same lesson. But are all forms of participation the same? Are they all equally effective? Many think not.

2.4 Qualities and processes of participation: not all forms are created equal

> "[Participation] has become so fashionable that almost everyone claims participation to be part of their work." (Pimbert and Pretty 1995)
>
> "'People and park' projects were developing in many countries, although many involved simply a repackaging of existing approaches." (Adams and Hutton 2007)
>
> "A true believer in any cause can ignore uncomfortable facts that conflict with its goals." (Nature 2005; 855)

Although the theories on participation have evolved with time, its forms have at times not kept pace, or have simply been a "re-packaging" on paper of top-down decision-making (Adams and Hutton 2007). Agardy (1997) astutely defines and differentiates different forms of participation, proposing that we should "make the planning process *truly participatory*, as opposed to allowing user groups to *comment* on a plan developed by a *single stakeholder*" (usually a government agency)(emphasis added).

With many guidelines for successful MPAs, projects, proposals and grants simply calling for or claiming "participation" without really detailing what is meant by the term, we run the risk of increased backlash to and skepticism about "participation" if it is

supposedly being used but is simply "paper participation". If, upon reviewing cases where participation was supposedly put in place, large amounts of money and time were spent and nothing changed as a result; or after being lured in by the chance of actually being involved in decisions that affect their lives, but simply being paid lipservice to, a time may come where people do not see the point of including participation of locals in decision-making…or local stakeholders may not see the point in attending. As a result, a very important aspect of resource management may be lost (e.g., via resurgence of a protectionist paradigm, or strict parks movement as described by Adams and Hutton 2007).

So, is it all really participation? Or is it simply a guise for business as usual? What are the qualities that make it effective or "true"? It seems as if the way participation is put in place and the manner in which it is used, can vary greatly. It follows that different forms and processes would have different results, and subsequently should be carefully studied and addressed if the aim of marine conservation is to be achieved.

Some categorize participation generally by the the degree of engagement or degree of power stakeholders have had in the decision-making process—their classification is a "ladder of participation" so to speak (Kamstra 1994, Jentoft and McCay 1995, Pimbert and Pretty 1995, Beaumont 1997, Lawrence 2006, Reed 2008). Although these classification schemes differ slightly, these researchers break down participation generally into seven categories, from passive participation to self-mobilization (see Table 1, below).

Table 1. "Ladder" of participation (graded by degree of power)
(Quoted and adapted from Drijver 1990, Kamstra 1994, Pimbert and Pretty 1995, Beaumont 1997)

Passive participation Communication is one way—from government to local communities. People participate by being told what is going to happen or what has already happened. Their responses are not taken into account. "Public involvement" techniques are used to change attitudes without raising public expectations of participation in the planning and decision-making process.
Participation in information giving People participate by answering questions posed by researchers and project managers. People do not have the opportunity to influence proceedings, as the findings of the research or project design are neither shared nor checked for accuracy.
Participation by consultation People participate by being consulted, and external agents listen to (but not necessarily use) views. These external agents define both problems and solutions, and may modify these in the light of people's responses.
Participation for material incentives People participate by providing resources, for example labour, in return for food, cash or other material incentives. It is very common to see this called participation, yet

people have no stake in prolonging activities when the incentives end.
Functional participation Used as a means to achieve project goals. Such involvement may be interactive and involve shared decision-making, but tends to arise only after major decisions have already been made.
Interactive participation People participate in joint analysis, development of action plans, and the formation of new local groups or the strengthening of existing ones. It tends to involve interdisciplinary methodologies that seek multiple perspectives and make use of systematic and structured learning processes. Groups take control of local decisions and determine how available resources are used. Participation is seen as a right, not merely as a means to achieve project goals.
Self-mobilization People participate by taking initiatives independently of external agencies.

Pimbert and Pretty (1995) note that in order to achieve long-term economic and environmental sustainability, people's ideas and knowledge need to be valued—hence participation should involve attributes along the lines of those included in "functional participation", "interactive participation" or "self-mobilization."

Others, such as Rowe and Frewer (2000), put the degree of engagement to the side in their categorization of participation. Instead, they look at the flow of communication: e.g., "communication" is defined as one way flow of information from facilitators to participants; "consultation" is used when there is a collection of needed information from stakeholders; and "participation" involves a two-way communication in dialogue or negotiation amongst stakeholders and facilitators, where communication flows amonst different groups (Rowe and Frewer 2000, Reed 2008).

Although these forms and processes of categorization may be appropriate for certain situations, they call up a few points for debate. In categorizing participation, they are not dealing directly with the quality of participation, nor its effectiveness. A meeting of stakeholders may have a good discussion during the participatory process, but without the background information required, the results of the meeting may be totally inappropriate. A round table may involve all the right groups, encourage people to talk and challenge other points of view, have information presented, but if it was rushed through, some may feel their points or questions were not important enough to bring up in the limited amount of time available. Moreover, these categorizations do not reflect the fact that proper resource management needs to work at various scales and thus include various players, from local to international, with different capabilities, knowledge, skills and roles. These differences may require different strategies to be genuinely effective.

Some argue that "different levels of engagement are likely to be appropriate in different contexts, depending on the objectives of the work and the capacity for stakeholders to influence outcomes" (Richards et al. 2004, Tippett et al. 2007, Reed 2008). These categorizations do not deal with the adequacy of the facilitators, nor their attempts in involving people in the process. The categorizations previously described also seem to concentrate on the degree of influence and control/power, evaluating and describing participation as a continuum of power from government- to local community-based. We are led to a type of either/or, us/them mentality—a game of winners and losers with a zero-sum outcome (Renn et al. 1995). This way of thinking can promote the view that stakeholders are on opposite sides of a fence. It may promote the idea of conflict instead of reducing it. This state of mind does not easily lend itself to the idea of working together for a common goal. It implies a wrong and a right way of involving stakeholders in decision-making, but generally only looks at the degree of control and the flow of communication. It does not mention the quality of different aspects of participation. If a fisher quietly sits at a table listening to others of various stakeholder groups animatedly and passionately dominate the debate about how the boundaries of a reserve should be defined and the fishers' name is marked on the final document, does that mean he has shared control and has influenced the decisions? If a foreign "expert" suggests certain policies without knowing the background of the area, or the capabilities of the management, does that qualify as proper participation? If a fisher is used to garner information not known to the facilitators, then not invited to decision-making meetings, will the fisher want to be "involved" again? Will he buy-in to the process? Will that participation be judged as "effective"?

In 1995, Renn and Webler proposed a method to evaluate stakeholder participation. Their "yardstick" is not geared towards the amount of power and control each sector has. It is not about evaluating who the winners and losers are per se, or evaluating public participation "as a tool that stabilizes the elite, or as a tool that topples the elite" (Renn et al. 1995). Rather it is about "what participation should accomplish and in what manner" (Renn et al. 1995). In their view, decision-making is enhanced and more effective when it is achieved through "an exchange of informed stakeholders who are regarded as equals"—in other words, where there is fairness and competence in participation. This

implies, for example, that participants have an equal opportunity to attend meetings, to speak and raise questions, to determine the agenda and the rules of the game, and also have equal access to information and knowledge (Renn et al. 1995). Their theory allows for pinpointing individual aspects of the participation process that were done well or done poorly. And if applied by groups taking part in the process, their methodology/theory can also show more detail about for whom the process was more or less suited.

Although Renn and Webler's methodology was developed in 1995, its basis still seems to hold true today. Other researchers have proposed lessons learnt and methodologies more recently that seem to confirm and validate aspects of the "fairness and competence" model. These recent methodologies are not only theorized by the researcher him or herself. Some use stakeholders' own input about proper criteria, as well as an extensive analysis of the literature. Others thoroughly review the results of case studies, determining lessons learnt and best practices.

In their analysis, Chess and Purcell (1999) looked at different forms of participation (public meetings, workshops and citizen advisory committees) and found that the success of the process was due mostly to the skills of the facilitators, not the form of participation (e.g., public meetings). Factors such as how the facilitators dealt with dominant individuals as well as how the facilitators informed or publicised events were among some of the factors that they found influenced the results.

Chase and others (2004) sought to develop criteria for participation with stakeholders themselves. Through questionnaires, stakeholders prioritised criteria that were based on theory, and came up with the following four: 1) using the best available scientific information; 2) having a genuine influence on decisions; 3) promoting communication and learning; 4) and treating citizens equally (Chase et al. 2004).

Reed (2008) found that the quality of environmental decisions may be improved by stakeholder participation, but the "quality of a decision is strongly dependant on the *quality of the process* that leads to it." So, it is not simply a matter of having participation or not, or what form it takes, but how well it was done—a tone similar to Renn and Webler (1995). From his review, Reed (2008) composed a list of "eight key features of

best practice participation" that emerged from his analysis of the literature using Grounded Theory Analysis[16] (see Table 2).

Table 2. Eight key features of best practice participation (Reed 2008)

1. Stakeholder participation needs to be underpinned by a philosophy that emphasises empowerment, equity, trust, and learning[17];
2. Where relevant, stakeholder participation should be considered as early as possible and throughout the process;
3. Relevant stakeholders need to be analysed and represented systematically;
4. Clear objectives for the participatory process need to be agreed among stakeholders at the onset;
5. Methods should be selected and tailored to the decision-making context considering the objectives, type of participants and appropriate level of engagement;
6. Highly skilled facilitation is essential;
7. Local and scientific knowledge should be integrated; and
8. Participation needs to be institutionalized.

In Garaway and Esteban's (2003) comprehensive work on how involving communities can benefit MPA effectiveness, they highlight "real world examples from the Caribbean region" and the factors and strategies that led to success. Their work is derived form a survey of 80 MPAs in the Caribbean, additional detailed case study research, as well as from direct input from individuals involved in MPA management in the region. Many of their guidelines reinforce factors from Renn and Webler (1995), Chess and Purcell (1999), Chase and others (2004), as well as Reed (2008). Some of the main factors can be found in the Table 3, below.

Table 3. Community-based factors that facilitate success for MPAs (Garaway and Esteban 2003)

1. Ensuring that local people will benefit from MPA initiatives
2. Linking to schools' education program
3. Strongly recognized local community-based organizations (CBOs) to work with; also good links to 'members' and effective community leaders
4. Prolonged and intense discussion and meaningful exchange in appropriate fora

[16] As recounted by Reed (2008): "Grounded Theory is a qualitative method used to systematically analyse large bodies of text, to construct theoretical models that are "grounded" in the text (Corbin and Strauss 1990)"

[17] Reed (2008) notes that this takes two forms: "(i) ensuring that participants have the power to really influence the decision...[and] (ii) ensuring that participants have the technical capability to engage effectively with the decisions."

5. Strong outreach skills of MPA staff
6. Trust, mutual respect established (past performance/community ties/prolonged relationship)
7. Having those affected by the rules be able to participate in developing and changing them
8. Time/financial resources available for participatory decision-making
9. Skills/tools for participatory decision-making
10. Capacity building
11. Seeing outcomes of participation having a perceptible and positive impact on the resources
12. Providing associated projects such as alternative livelihoods, community infrastructure and services

Pomeroy and others' (2004) guide, *How is your MPA doing?,* was developed to evaluate the effectiveness of MPAs. Through surveys, research, workshops with 35 experts from 17 different countries, peer review and field-testing, the authors lead a process to determine the best indicators to judge MPA effectiveness. The guide covered biophysical and socio-economic[18] as well as governance indicators, and although it does not go into detail on the specifics, the guide touches on goals, objectives and indicators that deal with stakeholder involvement in decision-making, and indicators of effectiveness of that involvement. For example, Goal 3 within their governance section deals with *effective stakeholder participation and representation ensured* and includes the following objectives: a) representativeness, equity, and efficacy of collaborative management systems ensured; b) resource user capacity effectively built to participate in co-management; and c) community organizing and participation strengthened and enhanced. The indicators the authors suggest for these objectives can be found in Table 4, below.

Table 4a. Indicators dealing with stakeholder participation and representation from How is your MPA doing? (Pomeroy et al. 2004)

1. The level of stakeholder participation and satisfaction in management process and activities. This includes whether they think their views and concerns are being heard and considered by managers.
2. The level of training provided to stakeholders in participation. This includes "the amount and

[18] It should also be noted that the guide includes biological and socio-economic indicators such as catch yields improved or sustained in fishing areas adjacent to the MPA ("via spillover of biomass from no-take zones and MPAs"); as well as focal species abundance increased or maintained (Pomeroy et al. 2004).

effectiveness of capacity-building efforts to empower stakeholders with knowledge, skills and attitudes to participate in MPA management."
3. Existence and activity level of community organization(s). This takes into consideration such things as: how many people attended the meeting; whether everyone was given a chance to talk; whether the input from the community organization represents the interests of one or two people or the whole group; whether representatives of the community organization solely attend the meeting or whether members do as well.

Other indicators, included in *How is your MPA doing?,* that relate to participation and its effectiveness are found in Table 4b, below.

Table 4b. Additional indicators dealing with stakeholder participation and representation from How is your MPA doing? (Pomeroy et al. 2004)

1. Local understanding of MPA rules and regulations;
2. The degree of interaction between managers and stakeholders; and
3. The level of stakeholder involvement in surveillance, monitoring and enforcement.

In 2003, Bunce and Pomeroy, in collaboration with the SocMon Caribbean Advisory Board, developed a guide on socio-economic monitoring for coastal managers in the Caribbean. The authors recognized that "coastal resources can no longer be managed from a biophysical focus alone," and because the community affects coastal resource systems, and management action affect socio-economic health of the community, a greater understanding of the system and connections is needed. Of the many indicators outlined in this guide, awareness of rules and regulations, compliance, enforcement were among those important for judging the quality and effectiveness of participation in marine reserve decision-making. Additional data the authors suggest to collect include stakeholders' attendance at meetings, whether they express their opinions and whether their opinions are taken into consideration.

In her Masters Thesis of 1998, Smith outlined key variables she felt impeded and enhanced community participation in coastal zone management in Barbados (Tables 4 and 5).

Table 5a. Smith's (1998) key variables that impede community participation

1. Government structure and function (short-terms vs. long-time frames needed to build trust, as well as general view of government as all powerful);

2. Some resource managers view of the public as not knowledgeable;
3. Public's lack of resources necessary to participate, and/or unawareness of the possibilities for participation;
4. Burn-out of resource managers willing to engage in participatory approaches (e.g., St. Hill);
5. Same players always involved, and hence not representative of wider community;
6. Stakeholder meetings viewed as simply "an opportunity to stir the pot" (Sealy 1997 pers. comm., Smith 1998) or being overwhelmed by emotion (Brewster 1997 pers. comm., Smith 1998);
7. Disgruntled community members who feel insufficiently involved acting as a road block for implementation;
8. Insufficiency of time for crisis situations;
9. Nature of Barbadian society (e.g., apathetic, difficult to motivate as viewed by Bajans themselves);
10. Length of time from meeting to implementation and the loss of interest of the public;
11. Inaccurate group representation of community by NGOs;
12. Past failures in public participation continually remembered, leading to skepticism of future initiatives.

Table 5b. Smith's (1998) Key variables that enhance community participation

1. Willingness for involvement;
2. Increasing knowledge of environment;
3. Local awareness of issues and 'strong oral background' in communities (Chakalall 1997 pers. comm., Smith 1998);
4. Young government employees willingness to use participatory approaches (as well as participation being specified for loan/grant eligibility); and
5. Participation as an agent that fosters greater acceptability and commitment, as well as one that builds capacity.

Cumberbatch's (2001) paper summarized the development and review of the BMR, as well as presented lessons learnt from the process. Cumberbatch's lessons learnt can be found in Table 6.

Table 6. Cumberbatch's (2001) lessons learnt from the BMR process

1. Stakeholders have justifiable concerns that must be aired and addressed even if they appear to bear little relation to the project's focus;

2. Participatory processes are very human-intensive;
3. Non-organised groups are difficult to engage in these processes;
5. Time-lags are inevitable but problematic;
6. It is not always possible or feasible to have all stakeholders represented; and
7. Access to, and perceptions of, power and influence directly affect stakeholders' interest and willingness to come to the negotiating table.

In 2003, the Caribbean Conservation Association (CCA) published a practical handbook authored by McConney, Pomeroy and Mahon, in association with the University of the West Indies, Centre for Resource Management and Environmental Studies (CERMES) and Marine Resources Assessment Group Ltd. (MRAG). This handbook is called, 'Guidelines for coastal resource co-management in the Caribbean: Communicating the concepts and conditions that favour success' (McConney et al. 2003b). Information in this handbook is complemented by a paper also published in 2003 by Mahon and Mascia on the BMR, in which they recapped the development, operation and review of the reserve and presented lessons learned. One section looked at stakeholders' capacity (to participate). They defined capacity as

> "the ability of and opportunity for stakeholders to understand the issues that affect them, and the extent of their empowerment to address them…[which include] elements of information, interpretation, representation, and collective power."

They mentioned the "global increase in awareness of the need for stakeholder participation [and a parallel] increase in environmental awareness" as factors that increased the participants' capacity, but noted that stakeholders were held back in ability to participate in the round tables (RTs) due to the "lack of technical information" provided by the facilitators (Mahon and Mascia 2003). It was felt that this was due in part to the facilitators' lack of "practical knowledge and experience in MPA development and management" (Mahon and Mascia 2003). The authors stated that "without such technical assistance, participatory process may create unrealistic expectations or lead the group to develop plans that cannot be implemented effectively" (Mahon and Mascia 2003). The authors also noted that balance in capacity of stakeholders had also been an obstacle in the BMR review process.

These extremely important papers identified criteria and lessons learnt for participation processes, as well as outlined the processes used to develop and review the BMR. What has been missing, however, is a systematic and comprehensive analysis of the participation processes and resulting outcomes from the stakeholder's perspective. The present study undertakes such an analysis for the Barbados Marine Reserve (BMR) by taking into account the experience and opinions of one of the most marginalized stakeholders in the area, coastal fishers. For reasons discussed in the present chapter, this study uses Renn and Webler's "fairness and competance" model (as well as similar indicators from other researchers' more recent work e.g., Smith 1998, Chess and Purcell 1999, Bunce and Pomeroy 2003, Garaway and Esteban 2003, Mahon and Mascia 2003, McConney et al. 2003b, Chase et al. 2004, Pomeroy et al. 2004, Reed 2008) as a basis for its analysis of the participation process and resulting outcomes, as well as for its historical review (Renn et al. 1995).

3. Background & Study Area

3.1 The reserve

> "Marine protected areas are special areas of the marine environment chosen to conserve marine resources. Folkestone Marine Reserve is a type of marine protected area that strictly prevents the removal of marine organisms except for scientific purposes." (From the National Conservation Commission's web site, *About the Folkestone Marine Reserve*)
>
> "They tell the people it's a park, but don't explain what its about." (Holetown Fisher no. 9)

The Barbados Marine Reserve, established officially in 1981 and hosting a diversity of customarily important marine ecosystems, is a small no-take MPA that is located adjacent to Holetown, and Barbados' intensely developed and tourist-centric "Platinum" west coast (figures 1 and 2). The reserve, which runs roughly 2.5 km along the coast from north to south, has an area of just over 2 km^2. The boundaries of the BMR run from the shoreline[19] of the Coral Reef Club/Colony Club to the southern side of Sandy Lane Hotel, and out to sea for approximately one kilometer. This outer/western boundary generally runs quasi parallel to the shore—650 m at its minimum and 950 m at its maximum from shore—takes a form similar to an M laying on its left side. The present reserve comprises[20] offshore bank reefs (parts of Fisherman's, Dottins, and Sandy Lane), fringing reefs (Bellairs North and South, Vauxhall or Sandy Lane North and South), patch reefs (Sandy Lane) and sandy bays (Discovery and Sandy Lane) (Cotter 1982, Blackman and Goodridge 2009). Within the reserve, there are four parallel zones. From north to the south they are: the Scientific Zone (including Bellairs Fringing Reefs, and adjacent to Bellairs Reasearch Institute); the Northern Water Sports Zone (including Discovery Bay, and adjacent to Holetown center and the police station); the Recreational Zone (including a now abandoned snorkel trail at the northern section of Vauxhall reef); and the Southern Water Sports Zone (including Sandy Lane Bay, adjacent to Sandy Lane Hotel).

The specific regulations concerning the reserve are many. First, the zones described above are to be "clearly demarcated as restricted areas by marine buoys of spherical shape

[19] With the exception of a small tract of land that holds the BMR offices, the Marine Museum, the snorkeling rental kiosk, souvenir shop, park and picnic area.

[20] The BMR also receives water from the largest watersheds on the west coast which meet the ocean at Holetown (Mahon and Mascia 2003). Also, as Mahon and Mascia (2003) note, "coastal ponds that served to store floodwaters are now largely canalized, so storm waters quickly breach the sand berm and carry sediments and garbage (which is frequently dumped in the gullies) directly into the sea."

and signs erected at points along the beach" (Government of Barbados 1981). Other regulations can be narrowed down to the following: no-taking, disturbing nor injuring any physical formation or biological entity within the whole reserve (from coral to fish to sand, for example); no creating of any structures or discharging/depositing any waste materials within the whole reserve; no carrying of weapons (fire arm to speargun, to fishing hook or line etc.); and no wake (other than in Water Sports Zones), no fishing boats, and registration of all other boats with the NCC. Researchers must seek approval of the NCC for any research within the reserve, as well as a special permit for access to the beach or a mooring. Any person who breaks or fails to comply with these rules would be subject to a fine of $1000, imprisonment for 6 months or both (Government of

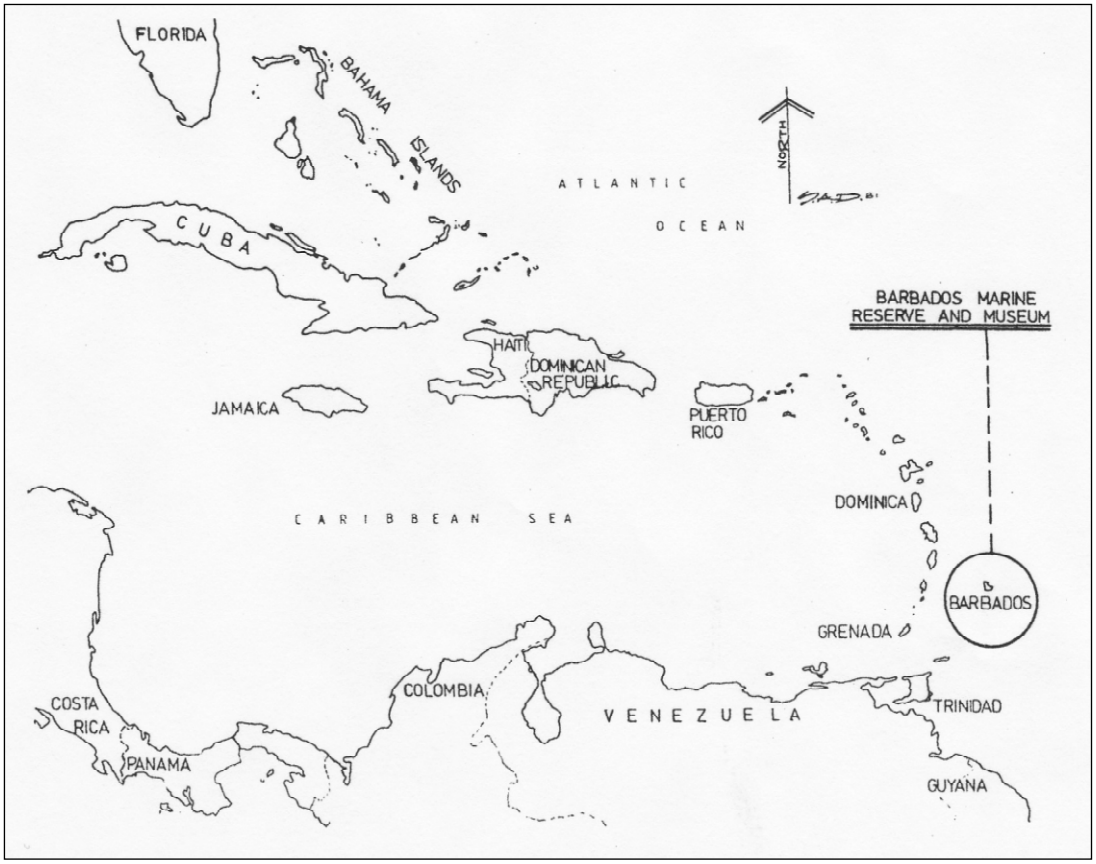

Figure 1. Barbados within the Caribbean (adapted from Cotter 1982, p. 8)

Barbados 1981); this was later increased to $5000 and/or 2 years by an amendment in 1998 (Government of Barbados 1998a).

As for the visible markings of rules, regulations and boundaries, they have been scant to nonexistent throughout the reserve's lifetime. There are no signs on land that

outline the rules of the reserve, nor are there any boundary markings on land. Buoys marking the boundaries on the water, as well as the zoning are frequently damaged and destroyed, expensive to maintain and thus have been largely absent on the water. Unfortunately, buoys are commonly seen on land behind the reserve's offices, awaiting repair or replacement. The few boundary markings which were seen in 2006, did not extend to the most seaward boundary of the reserve. They were found only part way out. This has apparently been the case throughout much of the reserve's history (Mahon and Mascia 2003).

For most of the lifetime of the BMR, the necessary resources (financial and human) have been lacking such that management, protection and enforcement of the BMR has not been able to perform at its best. For much of its life, the BMR has been basically described as a "paper park". Its management (officially part of NCC) is largely made up of a Manager, Park Naturalists, Boat Operators, a Clerical Officer, and staff for the souvenir and snorkel shops. Protection of the reserve is officially carried out through Barbados Coast Guard, NCC Park Naturalists and the Royal Barbados Police Force in various different ways based upon their capabilities and manpower as well as their knowledge.

The Park Naturalists and Boat Operators are the most directly connected with the reserve, its protection and enforcement. Through much of the lifespan of the reserve, enforcement effort was mainly done from shore; the BMR staff did not have the equipment for marine surveillance (Axys 2000). In 1994, the NCC provided the reserve with a small 13 ft vessel. At this point in time, however, staff was dedicated to enforcement efforts and the boat was used largely for collecting specimens for the museum acquarium. That changed in 1999, when staff and a larger vessel were officially dedicated (Nicholls pers. comm. 2004). Daily patrols—from Monday to Friday—are currently made along the entire length of the marine reserve by the NCC vessel (Mahon, S. pers. comm. 2011).

The "Boat Operators" or "Enforcement Officers", however, are said to lack a clear mandate, be short in authority, and have no powers of arrest. Their job is to "make the public aware of the rules of the park, to get the guys to understand the significance of no fishing and no anchoring" (Gilkes pers. comm. 2006, Nicholls pers. comm. 2006).

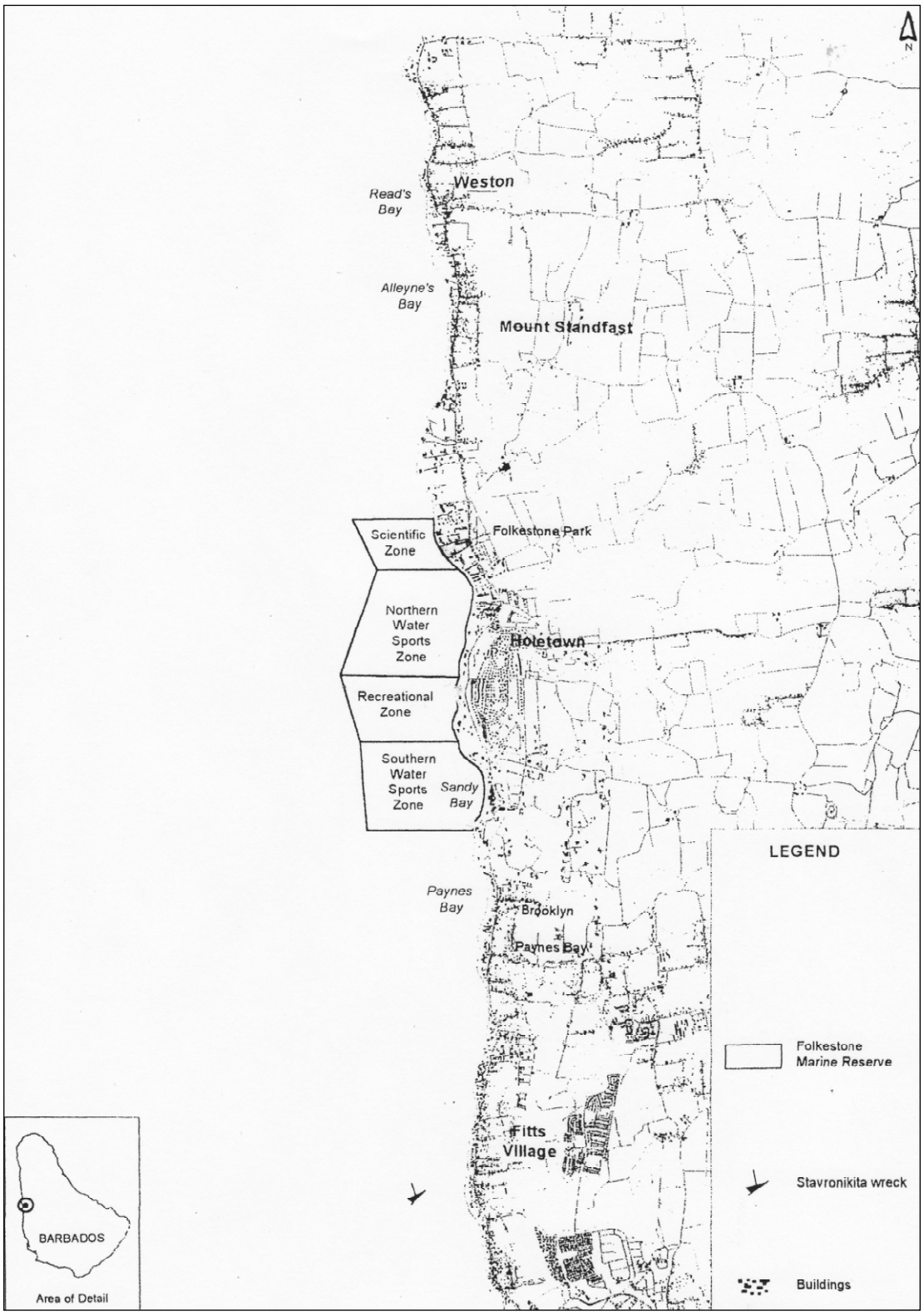

Figure 2. Barbados Marine Reserve and fishing villages (adapted from Axys 2000, p.9)

As of the fall of 2006, hours of the reserve were generally business hours Monday to Friday, with the NCC staff, including boat operators/enforcement officers held to these

hours as well. Subsequently, early mornings, evenings and week-ends were generally free of any BMR management and enforcement presence.

The Coast Guard is the main agency responsible for law enforcement of the BMR's rules and regulations. They are the sole power allowed to fine or arrest. The Coast Guard is also the main agency responsible for all territorial waters of Barbados, up to the EEZ, and so it is likely that they may have their attention occupied with other activities. General marine law enforcement, port security, safety at sea, search and rescue, drug smuggling or any other activity which may fall under the 17 pieces of legislation the Coast Guard is responsible for, may take precedence over enforcement of the marine reserve (Commander Shurland pers. comm. 2006, Axys 2000). Being located outside the general line of the Lesser Antilles islands, Barbados has a rather large EEZ in comparison to other islands' in the area. For these reasons and more, there is a scarcity of manpower (Commander Shurland pers. comm. 2006) which results in the Coast Guard *passing by* the BMR infrequently (two or three times a day). The Police, another party that can enforce the BMR rules and regulations, are limited to the terrestrial component of the reserve, and have the rest of the island to tend to as well. Due to inadequacy of management and enforcement capability and resources, buy-in and ownership of the reserve is even more important for compliance with the reserve's rules, regulations and boundaries.

3.2 The system within which the BMR is found

> "When I was growing up, there were swamps with mangroves all along the coast—they were a breeding ground for fish. Then they dredged them and put in hotels. That had a major effect on the west coast." (Dennis Roach, CEO of Tall Ships Cruises)

Barbados, a tropical small island developing state (SIDS) of the Caribbean, with one of the highest HDI rankings of the region[21], has intricately intertwined socio-cultural, economic, historical, climatic and bio-physical attributes.

Of the estimated 285,653 Barbadians (2010), the great majority of the population is of African descent (90%), with the remaining 10% being of European (4%), Asian and mixed origin (6%) (CIA 2010, Government of Barbados 2002). Some say that the

[21] Barbados is ranked as one of the highest in human development of all the islands found in the Americas and of the countries found in Latin America and the Caribbean via the UNDP's Human Development Index (UNDP 2006).

composition of the populations is a vestige of the "major periods in the island's history", i.e., colonization by Britain, as well as slavery and post slavery periods where forced African migrants and indentured servants mainly brought from Asia (but also northern England, Ireland and Scotland) were driven to work on sugar plantations (Government of Barbados 2002). Some note that although the historical concentration of wealth and power in the hands of a small white Bajan minority no longer exists, the gap between the "elites (black and white) and most of society" is "tremendous" (Mascia 2000, pers. obs. 2006).

This most easterly Caribbean island of the Lesser Antilles has a land area of roughly 432 km^2 (34 km long by 23 km wide, a little over ¾ the size of Montreal) and a marine Exclusive Economic Zone of 167,000 km^2, or almost 400 times the size of its terrestrial environment (Government of Barbados 2002). The mild subtropical climate as well as the turquoise waters and white sandy beaches of the ancient reef's long coast line (92 km) contribute to the island having one of the best economies of the region[22] through its major driving force of economic development—coastal tourism (Fisheries Division 2001, Government of Barbados 2002, CIA 2010). During the 1990s, tourism and manufacturing surpassed sugar—the traditional economic staple of Barbados' economy—with tourism becoming the primary engine of economic growth (CIA 2010, Government of Barbados 2002). In 2005, tourism accounted for close to 15% of the GDP (Central Bank of Barbados 2007). In 2009, there were 1,154,310 visitors to Barbados, including 518,564 tourist arrivals and 635,746 cruise ship passengers—or over 4 times the entire 2010 population of the island (One Caribbean 2010, CIA 2010).

Although the interior of the island is still largely covered in cane crops, the new tourist "commodity" has taken over Barbados' coasts. The most populated area of Barbados is the coastal strip on the west and south coasts that runs from roughly Speightstown to Oistins. The calm leeward mid west coast, or 'Platinum coast' as it is nicknamed, with its coral reefs and narrow, white, sandy beaches, deemed "a prime area for tourism", was and is still recognized as an exalted retreat for elite European and North American visitors (Government of Barbados 2002). It is also known to be "one of the most intensely used and impacted sections of the coast" as well as host to "the most

[22] Highest GDP per capita in the region at $US 18,500 ppp in 2009 (CIA 2010)

tourism development of the entire island" (Mahon and Mascia 2003, Brewster 1990). The area around the Barbados Marine Reserve—which is centered on Holetown—is a developed mixed-use area that consists of residential, commercial and tourist sectors, with the latter predominating. In 2003, Mahon and Mascia estimated that the area between Bridgetown and Six Men's Bay included some "30 hotels, numerous apartments and villas, and supporting services", including major golf courses (e.g., Royal Westmoreland and Sandy Lane), with "local residential developments, and associated public and private services…*interspersed* among these tourism-based land uses" (emphasis added) (Mahon and Mascia 2003). Holetown is also "home" to large surges of tourists from cruise ships whose length of stay on and knowledge of the island is minimal (pers. obs. 2006, Mascia 2000).

In the early 1960s, before tourism swept in, the central west coast around Holetown was covered with coastal forests and housing for Barbadians of more meager means (Mascia 2000, Roach, Carol and Hinds pers. comm. 2006,). Tourism officially (or "symbolically") came to town "when the Holetown fish market—the social and economic center of the local community—was razed in order to make room for the development of a luxury hotel" (Mascia 2000). Once the tourists came in, many locals felt they were not welcome on the beaches and coastal waters. Fishers, who used to frequently go out at night to fish, were "hassled" by police thinking they were "thieving". Presently night fishing is still largely not done. These days, however, the danger of becoming entangled with drug smuggling boats and the Coast Guard is what scares most fishers away.

Although the area around the BMR still is home to a few chattel houses owned by locals on the oceanside of Highway 1, particularly around First and Second Avenue[23], much of the west coast is socio-economically divided by this road. Lavish hotels and villas for tourists are found on its oceanside, while modest chattel houses of locals are found on the landward side. With this division, there has been an ever increasing concern about maintaining local water and beach access to this highly private property-oriented, tourism-based area. Although there are a number access points on the coast, many consist solely of narrow paths between buildings (most frequently between hotels). These lead to narrow beaches that front hotels—many of which deter black Barbadians from

[23] People living in this area have said the area is known for its flooding.

frequenting the area, even within the shore areas adjacent to the BMR (except, however, the Folkestone Park area of the reserve; and, at the Holetown Centre and Police Station). On the other hand, it seems that fish landing sites serve as a proxy for open and public access areas, vital gathering sites for the local community. Young and old are found at these sites throughout the day, there to chat about local politics, slam dominos, play chess or checkers, or take their daily "sea bath". They seem to be some of the main areas where locals seem at ease "hanging out" on the coast.

The rough, windward north eastern part of the island—known as the Scotland District and which makes up 14% of the island—has steeper rocky and eroded shores, that are pounded by waves (Government of Barbados 2002). The remaining 85% of the island is made up of step-like terraced coral limestone and gouged by deep gullies that carry a great amount of water during heavy rains (Government of Barbados 2002, Brewster 1990). These watercourses have been canalized in some instances, e.g., at Fitts Village and Paynes Bay. Many have sand bars that hinder the release of water, thus forming "small lagoons", until they are breached during heavy rains e.g., at Holetown a.k.a 'the Hole' (Brewster 1990).

Pollution of coastal waters, waste disposal by ships, soil erosion, and illegal solid waste disposal from monoculture agriculture, ad hoc residential and tourism related development (hotels and golf courses, for example) and resource extraction that jeopardizes the country's aquifers, all contribute to the pollution that plagues Barbados (Government of Barbados 2002, CIA 2010). In the country's *National Biodiversity Strategy and Action Plan*, coastal and marine habitats are said to be shouldering the burden of the side effects of a combination of economic development, such as "careless diving", "disposal of solid waste", "indiscriminate alteration of coastal topography mainly for tourism development", "destructive fishing practices", as well as "anchoring boats over reefs" (Government of Barbados 2002). Subsequently, Barbados' finfish, shellfish and other species, which rely on these habitats for breeding, feeding and nursery grounds, are experiencing a reduction in their populations—"the once diverse and abundant populations of fish and other marine species have become impoverished" (Government of Barbados 2002). Barbados' Fisheries Division considers the south and west coast shallow-shelf reef fish overfished, although some note that the term "overfished" is

relative, dependent upon the system's capacity to support fishing (Fisheries Division 2001, Parker pers. comm. 2006). In other words, if the system is heavily impacted by pollution and other land-based activities, its capacity to support fishing will be low, and hence a small amount of fishing, or even the most benign fishing may bring it to its tipping point of "overfished" (Parker pers. comm. 2006).

It should be noted that although fishing can be very detrimental, much of Barbados' present fisheries are considered comparatively benign, especially coastal fisheries of the study area. The boats are not large nor very numerous and their common fishing methods—pots and hand lines—are of little detriment to the surrounding habitat, comparatively speaking. With storm swells and great waves, however, pots can bump, damage and break coral. And when lost, abandoned or not emptied quickly enough, they can ghost fish not only reef fish, but turtles and other non-targeted species as well. Seine nets and cast nets can be detrimental when used over reefs, however in these labour intensive fisheries, fishers claim they fish over sandy patches to avoid untangling or pulling snagged nets from reefs (and thus damaging reef and nets alike). Dynamiting, which was common in the past, is no longer used. Most of the west coast coastal fishers' *modus operandi* are very labour intensive and hands on, contributing to catches that are not extremely large. Aside from ghost fishing mentioned above, they generally do not have bycatch—everything is used (eaten, used as bait, or even fed to their dogs). What they catch or have caught in the past, however, may have caused considerable harm to the fishery. For example, the once important and relatively common "ning ning" or grasby *Cephalopholis cruentata,* a long-lived (max. age of 15 years), coral reef predator fish which changes sex around age 4 or 5, is now rarely found in catches and individuals are relatively small/young (fishers pers. comm.).

The Fisheries Sector in Barbados is a minor force in the economy. It accounts for less than half a percent of Barbados GDP[24] (FAO 2004-2010). Although fisheries are described as a "vibrant small business sector" in governmental documents, others astutely note that "[fishers'] contribution to the Gross Domestic Product…makes them low

[24] The amount accounted for within the GDP is only the ex-vessel value (the value the fisher receives for his catch as it passes to the first buyer), and does not include the added value as the fish passes from hand to hand along various pathways to the consumer (see Mahon et al. 2007 for a more thorough recount of this topic).

priority as engines of economic development", "squeezed out" both economically and physically by tourism (Research and Planning Unit 2009, McConney 1998a, Ifill et al. 2003). Coastal fisheries, (such as snappers (Lutjanidae) and a variety of shallow shelf reef species) which take place during the "off season" (i.e., hurricane season from June to October), are the minor players within the already low economic importance fisheries sector (Government of Barbados 2002). Because of its small shelf (320 km^2), coastal fishing cannot support a large industry, and hence is of lesser importance, economically speaking (less than 5% of total annual landings), than the island's seasonal offshore pelagic fishery (McConney N.d.). By and large, flying fish (*Hirundichthys affinis*, 55% of total annual landings), dolphin (*Coryphaena hippurus*, 30% of total annual landings) and other large pelagics (kingfish, mainly wahoo, *Acanthocybium solanderi*; tunas, mainly yellowfin, *Thunnus albacares*; and swordfish, *Xiphias gladius*) are the most important fisheries, accounting for the largest percentage of Barbados' total catch (Ifill et al. 2003, Fisheries Division 2004, McConney 2001a). During their main season, from November to July, roughly 90% of their catch is landed (McConney N.d.). In terms of landing sites, Bridgetown and Oistins are busiest (Ifill et al. 2003) and are the sites where the largest catches and largest fish are landed; smaller local sites are used more often for off-season coastal fisheries (pers. obs. 2006, Ifill et al. 2003). Moses, the most modest of fishing boats and the one that involves the least economic capital, is also the most popular boat on the island (Ifill et al. 2003). It is primarily used for the less lucrative coastal fisheries, such as the shallow-shelf reef fish, coastal pelagics and deep slope and bank reef fisheries (Ifill et al. 2003). Coastal fisheries are said to "experience the most varied interaction with other coastal uses and impacts such as tourism and agriculture" and "represent the most complicated case due to the numerous and various uses of their habitat" (McConney 2001a, McConney N.d.).

Although not an important player in terms of its contribution to GDP, fishing is an important source and assurance of income and sustenance for the island's most marginal people, the coastal poor as well as a "valued part of the island's heritage" (McConney 1998a, Mascia 2000, Ifill et al. 2003). It is deemed a "social and economic safety net, and contributor to food security, [rather] than as an engine of economic growth" (McConney

1998a). Fishing provides an alternative employment to tourism, but also builds on the popularity of tourism as well in ways[25] (Ifill et al. 2003).

Some find that there is a sense of community associated with fishing, but note that there is a general group organizational dysfunctionality, a lack of "pulling together" spirit or "sense of togetherness", as well as the lack of will amongst fishers to take the lead due to apathy or the feeling that things will not change (Ifill et al. 2003, Parker and Pena 2006, Fishers from Fitts Village, Paynes Bay, Brooklyn, Holetown and Weston's pers. comm.). Although fisher organizations have been formed (many in the late 1990s), many are not tremendously functional (Fisheries Division 2004)[26].

In terms of the greater marine ecosystems in and around the BMR, bank and fringing reefs, gully outlets, tidal pools/ponds, and sandy habitat predominate and a very small zone of mangroves also exist. In addition to the important ecological roles these systems play for the areas species, they also have important economic, "engineering" and socio-cultural functions as well, such as proving feeding and nursery areas for the islands commercial and subsistence fishery or tempering the destructive capacity of rough weather's beach eroding waves, or simply attracting many snorkelers and divers for a relaxing day of marine 'sight seeing'.

Coral reefs, which cover one-sixth of the world's coastlines and act as support system for hundreds of thousands of species, are some of the most complex systems worldwide (Roberts et al. 2002). As Johannes (1978) notes, "no other fishery involves so many species, nor such complex and diverse habitats." In addition, coral reefs have been estimated to provide the world with USD$375 billion in goods and services (Johannes 1978, Costanza et al. 1997). Per unit area, they have been considered to be one of our most valuable ecosystems (Wilkinson 2002).

[25] Fish Frys, at Oistins in particular, are a major cultural attraction drawing large numbers of Bajans and visitors alike (Mahon et al. 2007). A few fishers also capitalize on the tourism by offering "traditional fishing" excursions followed by a beach picnic.

[26] Some allege that the fishers of Barbados do not belong to tightly knit fishing communities due to: 1) many fishers using multiple landings based on the type and size of the catch or simply because they know people in the area, or know of good fishing nearby (Ifill et al. 2003); and 2) the low topography and less defined bays of Barbados which does not seem conducive to isolating individual communities (compared to mountainous terrain and bays of other Lesser Antilles islands which support tightly knit fishing communities) (McConney 1998b).

The reefs of Barbados are no exception; the narrow shelf of Barbados hosts more than 60 km of reef (Brathwaite 2005). Laying beneath the calm waters of the west coast, fringing reefs, patch reefs, and the two ridges of bank or barrier reefs lay within 1 km of the shore (Brathwaite 2005). The Barbados Marine Reserve is known to hold some of the Barbados' only actively growing corals (Lewis 1960, Wells 1993, Chapman 1997). Most recently, Blackman and Goodridge (2009) recount that the reefs in the study area are in "fairly good condition". They are known to serve as spawning/breeding/nursery and feeding areas for fish. The outer bank reef (or "bar" as a barrier reef is called by locals) known as "Dottins" is the shallowest bank reef on the west coast, and is known to be one of the liveliest reefs, frequented by many fish for feeding. Reefs are also an important feeding area for the Critically Endangered hawksbill turtle.

The Caribbean holds the greatest richness of marine species within the tropical Atlantic (Roberts et al. 2002). Although frequently targeted by fishers, fish such as Haemulidae and Parrotfish, Butterflyfish, Blue tangs, Surgeonfish, Groupers, Coneys and Hinds are still found to be prevalent on the reefs of the BMR area (Blackman and Goodridge 2009). On the other hand, species that were once prevalent in the past—from "velvets" (a.k.a. Coneys, *Cephalopholis fulva*) and rock hinds (a.k.a. *Epinephelus adscensionis)*, to "cobblers" and "sea eggs" (a.k.a. black and white sea urchins, Diadema, or *Tripneustes ventricosus*) and staghorn coral (*Acropora palmate* and *A. cervicornis*)—are not seen very often, if at all, in the area today. Some "Beachfront Executives"[27], however do feel that a few of these species may be on their way to recovery, having seen them now and again more recently.

Of the other ecosystems in and around the BMR, much of the swampy mangrove areas are now gone, and many waterways are now canalized. At one point, they served very important roles (feeding, breeding and nursery areas for fish), where fresh water and sea water met, primary productivity was high and nutrients were plenty. It was also where the tangle of prop roots provided shelter and security from predators. Mangroves were also important for shoreline stabilization and decreasing water turbidity and siltation, and improving water quality in general. Now that these areas have been

[27] Colloquially used for water sports operators, divers, fishers etc. who are on the water every day making a living.

canalized, dredged, and had their water diverted, these important sites have been lost or decreased dramatically in ecological importance, leaving the adjacent ecosystems in poorer health as a result. Although seagrass is generally no longer found in the area, it did serve an important role in stabilizing sand, acting as a nursery for reef fish, and serving as food for green turtles. Tidal pools, particularly around Holetown, are important for fry, and large rays make use of sandy-bottomed areas for feeding. Sandy beaches of the west coast are important nesting area for the Critically Endangered hawksbill turtles[28]. Barbadians also enjoy the sandy-bottomed areas for their daily 'sea baths'.

Luckily, Barbados has an overabundance of knowledgeable and dedicated people working in academia, government, industry, non-governmental organizations and the private sector who have the best interest of the environment at heart. Barbados has and is in the process of developing legislation and initiatives to combat many of the islands' threats. Legislation, such as the Marine Areas (Preservation and Enhancement) Act (1976, 1981), the Fisheries Act (1993), the Marine Pollution Control Act (1998), the Coastal Zone Management Act (1998) as well as the Coastal Zone Management Plan, Fisheries Management Plans, and the Physical Development Plan have all been developed, in part, to contend with activities which put the island's species and habitats at risk. Implementation of these ideas, laws and plans, however, is not straightforward without the necessary resources. An example would be the implementation of the Marine Pollution Control Act of 1998 (Government of Barbados 1998b). It was developed "to help combat the steadily deteriorating coastal water quality in some locations that has resulted due to the increased physical developing occurring along the coastline" since the late 1960s (Government of Barbados 2002). As of the July 2006, the Environmental Protection Department, which is responsible for maintaining coastal water quality, had only three field officers to cover the island's 92 km of coast and over 15,000 km gully network (Headley, EPD pers. comm. 2006).

It is clear that Barbados has important marine resources and that managing them is a priority. The BMR is a critical part of its strategy but its effectiveness may finally be determined by stakeholder "buy in". This thesis explores how participation has been used

[28] The Endangered green and Critically Endangered leatherback sea turtles are only occasional visitors to the west coast and use other beaches in Barbados for their nesting.

in relation to the BMR. It examines: 1) the outcomes of fisher participation in decision-making for the BMR; and also looks back in time at 2) the history of the reserve; as well as 3) the process of participation that contributed to such outcomes. It pays particular attention to coastal fishers—one of the stakeholder groups most intimately connected to the reserve, and also one of the most marginalised of groups on the island.

4. Methodology

"A man should look for what is, and not for what he thinks should be." (Albert Einstein)

4.1 Data collection

4.1.1 Documents, reports, key informant interviews, observation

To obtain an understanding of the history of development and review of the BMR, I sought out and read documents, reports and newspaper articles, interviewed key informants, and used directed, continuous and participant observation. The documents, reports and newspapers dealt primarily with the development and review of the BMR, but also included those which touched on the reserve's ecological status, the fisheries of the coastal areas of Barbados, development, coastal zone management, history, socio-economics of the area, culture and other factors that may have affected the reserve. Key informants were drawn from both the fishing and non-fishing communities, and included those in positions of authority, people with great experience, people who were well connected, and others who were intimately knowledgeable about the BMR, its implementation development and review. In terms of observation, I used directed and continuous observation as well as participant observation at times as part of my method to collect data. I observed at the fish landing sites, at the BMR, on the beach, on the water both with fishers and BMR staff, during a stakeholder round table run by Axys in 2006, during fish frys, as well as at offices of the public sector, private sector and academia, and in people's gardens and houses. This additional information collected was not coded and analyzed, but used as a means of achieving a greater understanding of the issues at hand, as well as to triangulate the data.

4.1.2 Semi-structured interviews

I conducted 108 semi-structured interviews (comprising of 90 set questions, with additional questions and discussion included where appropriate) with fishers ("Fisher", n=55; roughly 37% of all fishers in the area[29], as estimated by Mascia 2000) and non-

[29] It is possible that my sample size represented a larger percentage of the total coastal fishers in the area. Mascia's (2000) estimate of less than 150 fishers was of the total number of fishers in the area—both coastal/neritic and oceanic fishers. Although most fishers fish in both areas depending on the season, more and more fishers are going further out to sea to fish and not bothering with the coastal fisheries. Hence the number of current coastal fishers may be less than 150. Moreover, within Mascia's estimate, Mount

consumptive users "NonCon" (n=53) associated with the marine reserve who had and had not attended round tables for the review of the BMR ("RT" and "N", respectively). The resulting four groups included: 1) "Fisher RT", 2) "Fisher N", 3) "NonCon RT" and 4) "NonCon N".

For reasons discussed in the literature review, the set of indicators used for the questionnaire as well as for the historical review were based on Renn and Webler's "fairness and competance" model (as well as similar indicators from other researchers' more recent work e.g., Smith 1998, Chess and Purcell 1999, Bunce and Pomeroy 2003, Garaway and Esteban 2003, Mahon and Mascia 2003, McConney et al. 2003b, Chase et al. 2004, Pomeroy et al. 2004, Reed 2008) (Renn et al. 1995). The indicators are as follows:

1. To analyze the outcome of the process: Was participation, as used, successful? Was there awareness and understanding, a good opinion of the reserve, a perception of fairness and benefit to all? Was there buy-in, belief in the theory, and compliance? Did stakeholders feel empowered and involved in the decisions that affected their lives?

2. To analyze the background and history: How was participation used throughout the BMR decision-making process? Who was involved, when and how? What other background forces were at play?

3. To analyze the qualities of the process of participation: How well was participation used? Was there fairness and competence in decision-making? Was all needed information provided, made easy to understand? Were the consequences explained? Was there sufficient time? Were all topics, and all points of view including scientific and local/fisher knowledge, presented? Did all participants have the opportunity to defend their point of view, raise questions, and challenge others? Were parties stopped from dominating the conversation? Was the discussion facilitated but not guided by the facilitators' point of view? Were all treated equally and did all have equal influence?

The fishers included in the study were largely from six landing sites of the central west coast of Barbados, all within of the parish of St. James (Fitts Village, Paynes Bay, Brooklyn/Paynes Bay North, Holetown, Mount Standfast and Weston, from south to

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Standfast had roughly 30 fishers. During my fieldwork, I was not able to find more than 1 fisher who came from Mount Standfast, and in fact, I found him not at that landing site, but at Holetown. Hence my sample size of 55 fishers may represent a greater percentage (> 37%) of the dwindling number of coastal fishers.

north). Although Weston and Paynes Bay were considered 'primary landing sites', they are minor players in the Barbados fishery when compared to both Bridgetown Public Market and Oistins Fish Market; the other communities' landing sites were considered either 'secondary' or 'tertiary' sites. The fishers interviewed were a charismatic and dynamic group of people with a great many years experience (from 2 to over 60 years, with an average of 28 years and a standard of deviation of 16 years, based on the fishers interviewed), and a long cultural heritage.

Non-consumptive users included people whose employment brought them to be familiar with the BMR (e.g. people who conserve or help to maintain marine resources, such as the Coastal Zone Management Unit, Fisheries Division, academics or NGOs; or those who benefit from its existence, such as water sports and dive operators).

For the semi-structured interviews, I sought to interview all coastal fishers from Fitts Village to Weston. It being the "off season" for flying fish and most larger pelagics, fishers who fish both oceanic and coastal waters were more available as they were not far out at sea in ice boats for several days at a time. I continued returning to landing sites for interviews until all coastal fishers I had seen had been approached. I visited landing sites daily at various times during the day so as to obtain the largest number of fishers possible and so as to allow fishers who were skeptical of my purpose to become more at ease with my presence. I interviewed all who were willing to participate. Twelve fishers I approached were unwilling to be interviewed. Both full- and part-time fishers from the six landing sites were interviewed. Fishers who lived in other areas of the island, who were in the central west coast at the time, were also interviewed (n=3). They knew the area well and had also taken part in some form of meeting/interaction with the BMR. I interviewed a wide variety of fishers: those who fish full-time and part-time; those who fish from the shore, a moses or a launch; those who fish shallow shelf reef fishes, deep slope and bank reef fishes as well as coastal pelagic fishes; those who use pots, hand lines, seine nets, cast nets and spear guns; those who fish primarily for subsistence as well as those who fish for commercial purpose or for bait; and those who are relatively new to the livelihood as well as those who have made a go of it for a great many years.

For the control group, I sought out those who were dependant on the area's marine environment and whose use was non-consumptive. I wanted to interview a similar

number of people for the non-fisher group and targeted people from the government, academia, non-governmental organizations, commerce/recreation/tourism realms who had various different types of jobs (researcher, technician, manager, owner, employee, diver, boat operator, sales etc.). I targeted employees of the Barbados Fisheries Department (FD), Coastal Zone Management Unit (CZMU) and the National Conservation Commission (NCC, who have been responsible for the management of the marine reserve), as well as stakeholders from other government agencies whose action or inaction impact the marine environement. I also targeted fishers' organizations (e.g., BARNUFO, when the people were not coastal fishers themselves), academic institutions (both Bellairs Research Institute of McGill University as well as the University of the West Indies, Cave Hill). I targeted scuba divers and other entrepreneurs who are dependent on the marine environment to make their living (e.g., water skiing, glass bottom boats, catamarans). For these stakeholders, I used the snow-ball technique.

Interviews generally ran from approximately 45 to 120 minutes long (although some were multi-part interviews that ran up to 6 hours in length). On-site collection of data took close to four months (spread over two field visits). Participants were not offered compensation for participating. For each person I approached for an interview, I described the purpose of the questionnaire; discussed the confidentiality of their responses, including whether they would mind being quoted; described how the information was going to be used; and answered any questions they may have had. I captured participants' answers to questionnaires and keynote interviews with in situ note-taking. So as to make the interviewee more at ease, no audio recordings were taken of the interviews. As a result, I tended to capture the wording of what was said, but not the dialect. This is reflected in the quotes used within the report. The topics discussed came about from an evolving dialogue with participants based on a structured questionnaire. The questions used involved indicators from various studies and guidelines covered in the literature review.

I covered participation in decision-making up to and including the development and review of the Barbados Marine Reserve (a.k.a., Folkestone Marine Reserve). I did not bring up the proposed Folkestone Marine Management Area (FMMA) which was a result of the review of the BMR. Because the FMMA proposal had not been officially accepted

by the government, I thought it better not to talk about it at all. Any mention of it would only serve to increase the stakeholders' knowledge in part, and possibly their suspicion. I did not feel it was my place to intervene.

4.2 Data analysis

For the questionnaire data, I analysed them three ways: 1) by percentage for the answers given to each indicator/question, grouped by stakeholder category (e.g., *"50% of Fishers who had attended RTs felt that the RT facilitators (Axys) had made the information easy to understand"*); 2) by common comments denoting the general mood of the stakeholders (e.g., *"[Axys] raised the issues and those who had knowledge participated,"*) and 3) by a rating, based on percentages, that captures the general response of how each stakeholder category responded to the indicator (e.g., *"Fishers who had attended RTs generally felt that Axys was unsatisfactory in responding to their concerns and input"*). I noted the percentage of stakeholders who responded a certain way in a clustered column format diagram. I did not use statistics other than percentage, for the semi-structured interview does not lend itself easily to statistical analysis with great confidence (Bunce et al. 2000). For the identification of quotations, I included the information for each categorie (i.e., *"Fisher"* or *"NonCo*n", and RT participant or not) but also included additional information to better characterize the stakeholder, while keeping their anonymity. For NonCons, I included whether they came from: a) academia, b) government, c) NGO, or d) the private sector. For example, a government employee who had attended a RT would be described as *"Government NonCon RT no. 1*". For fishers who had attended RTs, I combined them into one group and left the description at that level since there were so few (n=6), and any more information may have divulged their identity. Here they are described as *"Fisher RT no. 2"*, for example. For the fishers who had not participated in RTs, I categorized them by their landing site: a) Fitts Village, b) Paynes Bay, c) Brooklyn, d) Holetown (including Mount Standfast due to its small numbers (n=1), and e) Weston. For example, a fisher from Weston who had attended a RT would be characterized as *"Fisher RT no. 3"*, while a fisher from Paynes Bay who had not attended any RTs, would be characterized as *"Paynes Bay Fisher no. 4"*. For the few fishers who did not come from these landing sites (n=3), I placed them in the RT category, or in the landing sites categories furthest from the reserve (i.e., Weston or Fitts

Village depending on whether they came from the north or the south, respectively). For the general rating for each stakeholder category, I weighted the percentages' decimal equivalent, added the results for each possible answer and I used a three-tiered rating system to help judge the results per indicator. For example, indicators/questions with possible answers of *good, ok, poor* or *n/a*:

Rating = [(2*good)+(1*ok)+(0*poor)+(0*n/a)]/total # of participants in category

Ratings' range: (0.00 to 2.00)

Therefore 0 to 0.67 → rating of *unsatisfactory* or *weak*[30]

0.68 to 1.33 → rating of *satisfactory* or *effective*

1.34 to 2.00 → rating of *exemplary* or *strong*

For indicators/questions with possible answers of yes, no or n/a:

Rating = [(1*yes)+(0*no)+(0*n/a)]/total # of participants in category

Ratings' range: (0.00 to 1.00)

Therefore 0 to 0.33 → rating of *unsatisfactory* or *weak*

0.34 to 0.66 → rating of *satisfactory* or *moderate*

0.67 to 1.00 → rating of exemplary or strong

For example, for the indicator *Seeking your Concerns and Input* (where stakeholders are asked to judge how well Axys sought their concerns and input, with possible answers being *good, ok*, or *poor*), *"83% of Fisher RTs answered poor, 17% answered ok, 0% answered good and n/a was also 0%"*. To determine the weighted rating, I performed (2*0.00)+(1*0.17)+(0*0.83)+(0*0.00), obtained 0.17, judged it to be in the lowest third (i.e., < 0.68 out of maximum rating of 2.00), and therefore determined that *"Fisher RTs judged Axys to be poor in seeking their concerns"*. I included a table of ratings for each indicator and each category of stakeholders at the end of the section. Certain indicators did not lend themselves to being rated, and hence were left in the percentage mode, such as their reason for not attending any/all RTs. This was included to gain greater insight.

[30] When judging the quality of the RT in terms of fairness and competence, ratings would be unsatisfactory, satisfactory or ememplary. When judging the effectiveness of participation, ratings would be weak, effective or strong.

5. Results & Discussion

> "Only out of debate [will you] get a healthy resolution." (Brooklyn Fisher no. 10)

The Results & Discussion Section is divided into three sections corresponding to the questions asked:

1. Outcome: Was participation, as used, successful? Was there awareness and understanding, a good opinion of the reserve, a perception of fairness and benefit to all? Was there buy-in, belief in the theory, and compliance? Did stakeholders feel empowered and involved in the decisions that affected their lives?

2. Background and history: How was participation used throughout the BMR decision-making process? Who was involved, when and how? What other background forces were at play?

3. Qualities and process: How well was participation used? Was there fairness and competence in decision-making? Was all needed information provided, made easy to understand? Were the consequences explained? Was there sufficient time? Were all topics, and all points of view including scientific and local/fisher knowledge, presented? Did all participants have the opportunity to defend their point of view, raise questions, and challenge others? Were parties stopped from dominating the conversation? Was the discussion facilitated but not guided by the facilitators' point of view? Were all treated equally and did all have equal influence?

5.1 Outcomes of fisher participation with the BMR

> "Meetings have come and gone and I cannot say at the moment if [the situation] is better." (Fisher RT no. 2 when talking about the impact of the RTs)

Although a plethora of indicators could be used, this thesis covers stakeholders' knowledge of, compliance with, views and beliefs about the BMR as well as feelings about empowerment when judging the outcome of the BMR participation process. Effective participation would entail that there is a greater awareness and understanding of the BMR. It would also include stakeholders having a good opinion of the reserve and a perception that it benefits all. There would also be buy-in, belief in the theory and compliance with BMR boundaries, rules and regulations if participation was effective.

Moreover, stakeholders would feel empowered and involved in decisions related to the BMR that affect their lives.

5.1.1 Awareness of the BMR rules, regulations and boundaries

> "I have documents that will show me that." (Academic NonCon RT no. 1 when asked about the location of the BMR boundaries)
>
> "No fishing. Beyond that, people can do anything and it don't mean a thing." (Brooklyn Fisher no. 1 when asked what BMR rules he knew)

Indicators Within this section, indicators reviewed include interviewed stakeholders': a) awareness of boundaries; and b) awareness of rules and regulations.

A few things stand out when viewing the results of interviewed stakeholders' knowledge of the BMR[31] (figure 3). First, Fishers (both RT and N), as well as NonCon Ns knew the location and boundaries of the BMR the better than NonCon RTs. When interviewing the former, there was never any hesitation in answering this question, except perhaps the outer or western boundary, which they usually had right regardless of their hesitation. Second, NonCons were most likely only to know the general location of the reserve. Third, although most knew it, many showed hesitation and doubt about the location of the outer boundary. Fourth, stakeholders tended to know/mention rules that affected them the most, and not know/mention rules that were of no consequence to them. Fifth, aside from this generality, the "no fishing" rule was, by far, the most well known and mentioned of all BMR rules, regardless of whether if it directly affected the stakeholder or not. Fishers knew it best, although the differences were marginal. Sixth, the exception to the "no fishing" rule—that of allowing cast net fishing on sandy sections of the BMR—was known by most fishers who had attended the RT, but not known, more often than not, by all other groups.

There were very few false assumptions about the BMR rules. However, one could say that the number of NonCons with false assumptions was actually larger since many of

[31] It should be noted that current boundaries and rules were discussed. Had the proposed unofficial new boundaries and rules of the FMMA been brought into questioning, there may have been a greater difference between those who had attended the RTs and those who had not. Because the new FMMA had not yet been accepted, I did not want to cause more harm than good by circulating partial information. There had already been rumours/half-truths circulating about the new reserve stretching from Fitts Village to Weston, causing many fishers to be up in arms.

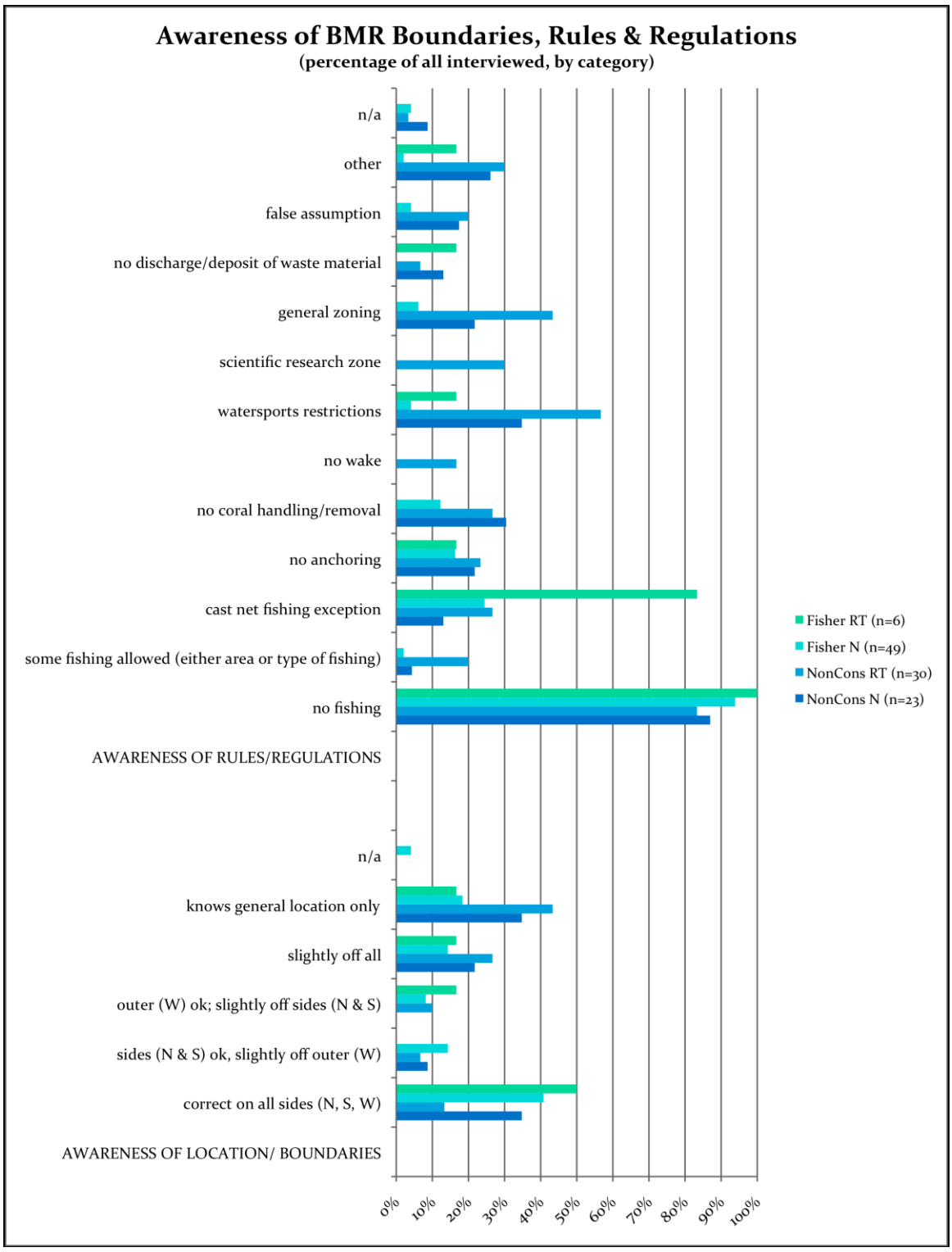

Figure 3. Awareness of BMR boundaries, rules and regulations

them thought that there was absolutely no exception to the no fishing rule. Looking at the data this way, more than three quarters of NonCons would have had false assumptions about the BMR rules and regulations. Officially, however, bait fishing is still restricted in the BMR, hence I have not shown the data this way. It is an unofficial agreement between park management and fishers. The Coast Guard did not know (or mention) it when interviewed.

During the entire question set about knowledge of rules, regulations and boundaries, many stakeholders expressed grievances and aggravation—a point I felt to be particularly noteworthy. For example, when asked about the rules, Weston Fisher no. 5 replied promptly and sternly, "No fishing. That's for tourists. Folkestone is for tourists." Others may have been more subtle, but they had the same opinion: "[I] don't know much about down there. Know for sure [you] can't fish,…but [tourists] can scuba dive," (Fitts Village Fisher no. 1). Others were much more straight forward and to the point: "No fishing. Gotta be white and be snorkeling or be Tiger Woods. It's just tourist oriented. We's only fishermen," (Brooklyn Fisher no. 10). Along the same lines, some showed their discontent with the BMR and the entire area, including the approach many hotels are said to have had against black Barbadians: "No fishing. Can't even bathe. People don't bother to go there, period, because they would run you out," (Weston Fisher no. 7) and "you can sit [on the hotel chair], they won't bother you. Me? Forget it!" (Private Sector N no. 9).

Some, including fishers, did find merit in the BMR, although this view was in the minority of views voiced. When asked if they understood the BMR, Fisher RT no. 5 said, "Yes, part of what they were trying to do, preserve some of the reef, that makes sense."

Many points should be noted about the results of this section. Although legislation for the BMR was in place by 1981, boundaries, rules and some say enforcement were largely absent during most of the BMR's life. Mascia (2000) states that the "seaward boundary of the BMR was never demarcated with buoys, and the shoreline signs required by the 1981 Regulations were not installed"; reserve staff have stated that the boundary demarcation has been destroyed, lost, replaced over many times. During 2006, some buoys were present to mark the northern and southern extremes of the reserve as well as the zoning within the reserve. The seaward boundary buoys were not at sea, but on shore awaiting repair. There was not a sign that told of rules for the BMR, nor its boundaries

(aside from markers on the waters when not destroyed or lost) anywhere within the reserve or on its adjacent shores.

The boundary which gave most trouble was the seaward extent of the reserve—that which is rarely marked, most awkwardly described, and least understood (e.g., does it include the bank reef or not? Is it a jagged boundary or a straight line? Is it 1 kilometer from and following the land?). It seems also to have been described differently over the years, in different publications, and by different officials (e.g., "a jagged boundary 950 to 650 meters from shore"; "1 km from shore"; "outside the bank reef"; to "where you can't see the bottom").

Many were also confused about the orange balls marking off the swimming areas (placed by hotels), thinking that they marked the boundaries and zones of the reserve. Others were suspicious of new buoys, thinking they were from the reserve and were denoting further regulations which curtail their actions (these new buoys were for a student's project at Bellairs, and had nothing to do with restrictions).

Another example of confusion centered around bait fishing. During my field studies, many of the fishers talked about being able to catch sprats and jacks in the reserve with cast nets. Others were unaware of it. Some thought it was only in sandy areas, while others thought it was anywhere. In addition, some fishers thought there was only a certain time of day when it was allowed; others thought it was possible at any time. Moreover, many of the other non-consumptive resource user stakeholders had no idea about this "rule" at all. Any fisher fishing in the reserve to them would be breaking the law. Moreover, the Coast Guard was not aware or did not talk of this rule—even the head of the Coast Guard, Commander Shurland: "If an area is no fishing, it's no fishing. We're not marine biologists who can tell the difference between the fish they're targeting"; "If it is permitted someone from Folkestone would have said something to us" (Commander Shurland pers. comm. 2006). Sure enough, however, when talking with the Manager of the reserve, a non-official exception to the no fishing rule had been made (Nicholls pers. comm. 2006). Fishers were allowed to cast their nets in search of bait in sandy areas of the reserve. On one hand, this could be looked at as something good: the fishers themselves talked with the BMR staff, sought out change and achieved it. On the other hand, because of its non-official status and limited awareness, it has proved to be

detrimental to fishers' reputation. Mr. Nicholls said that it is too much trouble to change the law, so the exception went without official recognition. As a result, fishers are perceived as criminals to many, blatantly breaking the no fishing law, when really they are following an agreed exception to the no fishing rule.

A great majority of the people interviewed, when asked about whether the rules were simple and easy etc., stated that they were and were straightforward, …if they were marked and people knew them. The problem was that they were not marked. Nowhere on shore were there signs or markers, and the markers on the water were few and far between—that is when they have not been swept away or broken. For those who live or work in the area, they may be familiar with the rules and regulations that affect them. Many, however, were not. Even those who lived in the area (and within the reserve/adjacent to the waters in the reserve) or who have worked closely with the reserve were generally unaware of the rules and boundaries. More than once, people whose job it was to work with the BMR said they knew where to find the rules and boundaries, but did not know them off hand. It is, therefore, extremely likely that tourists would be uninformed of the rules and boundaries as well. With hotels being heavily concentrated in the area adjacent to the reserve and no signs in sight, most people who frequent the area feasibly could be totally ignorant of the rules, regulations and boundaries of the reserve. Even the BMR pamphlets and web sites up until 2010[32] did not have them marked or described in a way that people were able to decipher what the boundary zones were compared to the shore etc. They also gave the false assumption that the sunken ship, the Stravronikita was part of the reserve, which it is not.

5.1.2 Compliance

> "Oh hell no!" (Government NonCon RT no. 2, when asked whether there was enough enforcement at the BMR)
>
> "We do our part [to follow the rules], but tourists come to Barbados and leave their brains at home." (Brooklyn Fisher no. 4, when asked about compliance and enforcement)
>
> "One of our main problems is when people don't know us, and don't know what the park is about…we need to get it out what we're really here to do." (BMR Boat Operator Gilkes pers. comm. 2006)

[32] As of mid-year 2010, NCC has created a new website. The old web site, which included a one page marginal and somewhat inaccurate description of the BMR is far outshown by the new and improved site which is quite thorough, complete, very user friendly and also very attractive. I was overwhelmed with the difference between the two sites when I first saw the new site (June 26, 2010).

> "[No matter how] good a human resource base the Coast Guard may have, there is just not enough [of us]." (Commander Shurland of the Barbados Coast Guard pers. comm. 2006)

Indicators Within this section, indicators included: a) the trend in compliance/enfractions since inception of BMR (not available); and b) stakeholders' perception of whether fishing takes place on BMR reefs (largely unreliable).

The most reliable indicator to help determine if there has been an increase or decrease in compliance with BMR rules and regulations over the years would have been the number of infractions committed by year. These records, however, seemed either not to exist or not to be found. That which was provided by the Coast Guard was very ambiguous and sparse. The next best indicator would have been people's views of whether there had been infractions against the reserve, fishers' infractions in particular, so as to see if fishers' participation had been effective (if participation has been successful, there would be more buy-in and compliance with reserve rules). "We've come a long way from when I first joined the Coast Guard. We used to [have] dynamiting of fish, and harvesting of coral," answered Commander Shurland of Barbados Coast Guard when asked about any trend in infractions since the inception of BMR. He also added that the number of infractions had decreased over the years. Others' opinions about the level of fishers' compliance with BMR rules could have also been used as an indicator of effectiveness in participation if the rules had been well known. From the results of the previous section, however, it seems as if this was not the case. This indicator was therefore dropped from the study. Comments have been included, however, to give the flavour of the conversations with stakeholders on the topic.

Most comments about enforcement and compliance dealt with not having enough enforcement. Many noted that the only rule that was enforced was the no fishing rule, despite the threats that inappropriate development and unbridled tourism activity presented to the BMR. A great majority of people commented on infractions committed by fishers. As the informal exception to the rule of no fishing is unknown to most (figure 8), people may have seen bait fishing as an infraction, when currently it was not (unofficially).

Some noted that although there was not enough enforcement, no one was to blame: "it's the whole system. We don't have enough police. We don't have a mechanism in place to enforce everything in Barbados. We may not have enough money to carry this

out" (NGO NonCon N no.1). This opinion highlighted the need for stakeholders to be well informed of the rules, be in accordance with them, and have buy-in to the reserve—hence the great need for proper stakeholder involvement in decision-making.

5.1.3 Opinion of the BMR & view of its rules, regulations and boundaries

> "Small fish. Big fish. Rules should be there for all." (Fitts Village Fisher no. 2)
>
> "The rules are fair, but their application is not." (Academic NonCon RT no. 7)
>
> "[It's] been very unfair to fishers. Hoteliers, industry, they drop sewage onto reef and have more impact than fishers…Pointing fingers at fishers, it's easy to do so; it's not as easy with hoteliers." (Government NonCon RT no. 2)
>
> "[The rules and boundaries are] simple and easy. Adhering to them isn't easy because they aren't demarcated." (Government NonCon RT no. 2)

Indicators Within this section, indicators reviewed include interviewed stakeholders': a) agreement or disagreement with rules/regulations & location/boundaries; b) perceived fairness or unfairness of rules/regulations & location/boundaries; c) perceived threats to BMR area vs. regulations enforced; and d) perceived complexity of rules/regulations & location/boundaries.

Fairness of the rules, regulations, location and boundaries of the reserve, as well as whether people agree with them or not, were some of the most contentious issues of the questionnaire. Aside from simply answering the question asked, people often commented on and qualified their answers.

When asked their opinion about whether or not they agree or disagree with the BMR rules, regulations, location and boundaries, answers were divided, with a slight positive leaning (figure 4). Stakeholders had more of an issue with the location of the reserve and its boundaries than they did with the rules although many qualified their answers with regards to the latter.

Although generally seen as positive, the rules and regulations were seen negatively most frequently by Fisher Ns (76% of whom were from landings close to or within the reserve). Also, as discussed previously, this group largely was not aware of the cast net fishing rule exception.

Opinions on the location of the reserve were generally divided. It is interesting to note that Fisher RTs (who largely came from landing sites further away from the reserve, 83% or 5 out of 6), seemed to be fine with the location of the reserve's boundaries. Fisher

Ns were more divided. Perhaps here, NIMBY—or its sister OIYBY (okay in your back yard)—was playing a role in how people answered.

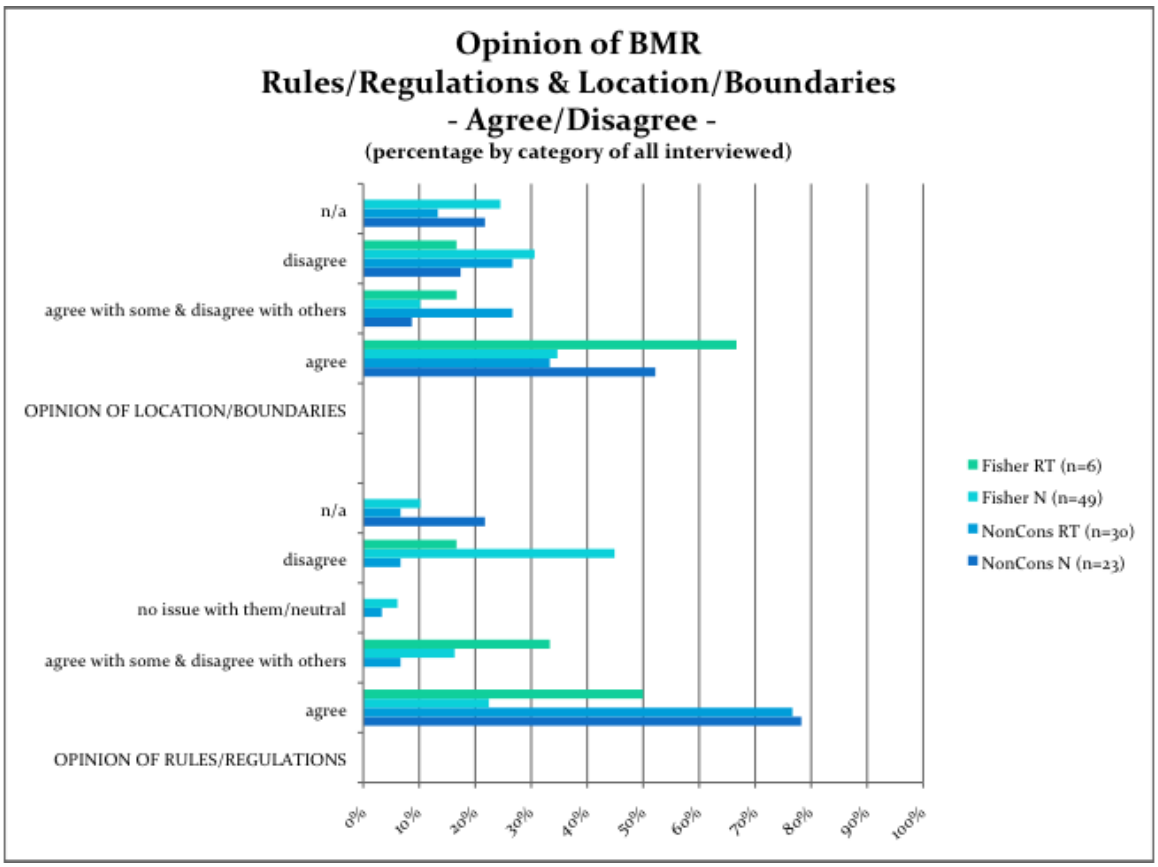

Figure 4. Opinion of BMR rules/regulations & location/boundaries: agree/disagree

Aside from being in agreement or not with the location of the reserve, questions about location brought up concerns about the attention and subsequent damage the designation of a marine reserve can bring if not properly managed and rules not properly enforced. It was thought by many that more tourists would flock to a reserve area because of its designation; but if its rules remained largely ignored and not enforced, the reserve designation would act counter to its aim of conservation. As Paynes Bay Fisher no. 12 put it,

> "If you put [the reserve] on the north coast, it will mash up all the resources there. Fishing resources there are abundant. If you put a MPA there, [the tourists] would go up there and ruin it."

Along the same lines, there was a fair amount of disagreement and concern with the placement of the reserve within waters adjacent to some of the most developed parts of the island: "With the outflow of water that comes off land when [we get] heavy rains, I

don't see the reef really gaining big strides and the park working." (Private Sector NonCon RT no.5). Some, however, were more optimistic about the rules being enforced and thought the north was a better place for a reserve:

> "There are better reefs and fewer impacts that can be controlled [in the north]. But if they wanted to chose the worst reefs to see if they can recover them, the [Holetown area would be the place to be]." (Government NonCon RT no. 2)

> "I wouldn't disagree, but we need some more. Some parks in the north would be good for reserves because it's not easily accessible and therefore more pristine. It's in better shape and has more species of fish and invertebrates. It could serve as good hatchery for west coast, near the cement plant and further north at Speightstown." (Academic NonCon RT no. 2)

Others also acknowledged the difficulty in establishing no take areas anywhere:

> "I agree. You should always give time for fish to replenish themselves. If people put restriction in any area, they will get a lot of licks for that." (Fitts Village Fisher no. 3)

The most prevalent comment by far, however, was the comment about the BMR being next to one of the most developed areas on the island, and subsequently making effective conservation problematic.

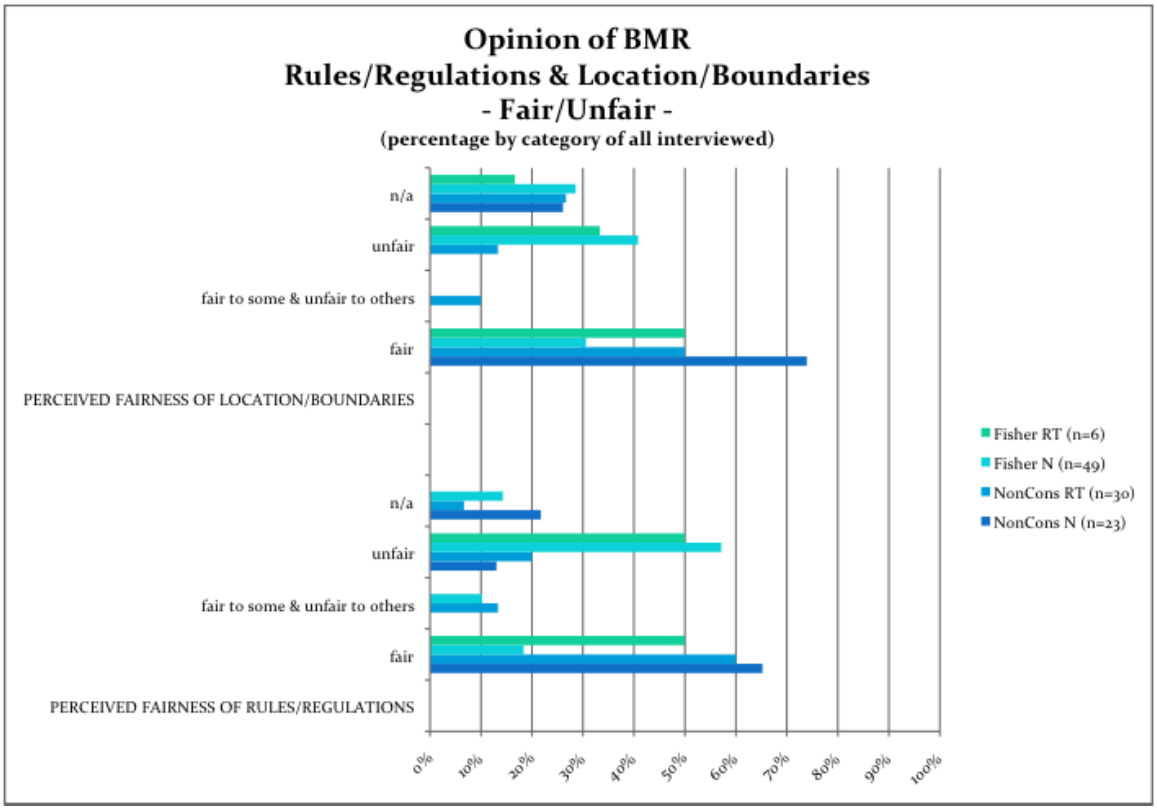

Figure 5. Opinion of BMR rules/regulations & location/boundaries: fair/unfair

When asked about fairness (figure 5), again answers were split with a slight positive lean. Fishers found the rules to be unfair the most, but those who had attended the RT

(and also those who knew about the cast net fishing rule exception) were split 50/50 fair/unfair with regards to fairness of the rules and regulations. Fisher Ns, who largely did not know about the cast net fishing rule exception, felt the rules to be unfair more often than not. Many fishers did see the benefits of having a reserve, such as Weston Fisher no. 9 who said, "If you don't do something now, it will be too late later on." NonCons felt the rules, regulations, location and boundaries to be fair more often than not, but many also included caveats to their answers (with regards to enforcement). When commenting on the current[33] zoning scheme, some also astutely noted that there were no zones where fishing was allowed and took precedence over other activities: "Unfair—they ain't got no area where you can fish only" (Brooklyn Fisher no. 1).

Discussions frequently came back to people's opinion on how the rules were enforced. Holetown Fisher no. 5, who was directly impacted by the reserve, and agreed that the reserve was needed, had this to say: "We need to preserve something. But how it's preserved and who its mainly for, I disgree with." Similarly, Paynes Bay Fisher no. 12 answered,

> "I would like my daughter to [be able to] dive and see fish. That's where it's fair. But at the same time, its not fair. It's for tourism. All jet skis and water skis can go anywhere. There should be more rules for them too. Jet skis and water sports, they're running the fish[34] all the time. Tourists should be told when they see fisherman [to avoid them]. There should be buoys marking where they can operate and where they can't[35]. Government needs tourism and fishing. But tourism brings in more money than fishing. Fishing is a poor man's thing. Jet ski man has to maintain his family too, but they should have to [obey] the rules."

This caveat, of the rules being unfair in their application, was offered by Fishers and NonCons alike. Private Sector NonCon no. 1 offered that the rules and boundaries are "easy to follow, but they have some double standards. They apply to people at the bottom, but not people at the top." Similarly, Academic NonCon no. 6 stated that

[33] Within the proposed FMMA zoning scheme, Fishing Priority Areas and Sustainable Fisheries Management Areas were proposed where fishing takes precedence; although some other activities were allowed in these areas as well (Axys 2000).

[34] "Running the fish", meaning scaring them away. Many fishers complained about jet skis running the fish, particularly sprats and jacks, coastal pelagics.

[35] The BMR does have zones where watersports are not allowed (i.e., the Scientific Zone and the Recreational Zone). Within the Watersports Zones (north and south), fast speed watercraft can be used. However "All motorized watercraft must operate at speeds less than 5 knots/no wake within 75 m from shore, and speed boats can operate at higher speeds within 75 – 200 m from shore. Jet skis must maintain speeds of less than 5 knots within 200 m of shore and can operate at higher speeds beyond 200 m from shore" (CZMU 2010). According to most interviewed, these rules are largely not enforced.

> "The rules and boundaries are easy on paper. They're not applied consistently in terms of enforcement and permission granting…The whole system of management is inconsistent as to what rules are followed, when and by whom."

Treatment of fishers on the water seems to be judged as unequal and perhaps undeserved. Although very few of those interviewed (both Fishers and NonCons) felt that fishing was a prime threat to the BMR and surrounding area—in fact it was one of the answers offered *least often* (figure 6)—the no fishing rule tended to be, by far, the rule *most often* remembered (figure 3) and only one consistently enforced. "It's very discriminatory. It's not based on the damage you could cause but on who you are," Private Sector N no. 3 said when asked about the fairness of the BMR rules and regulations. The threats which were mentioned most often were related to land-based activities that both directly and indirectly release pollutants into the water, as well as tourism and water-based recreation. Even within the Minister's address during the round tables of the late 1990s, fishing was not noted as a threat:

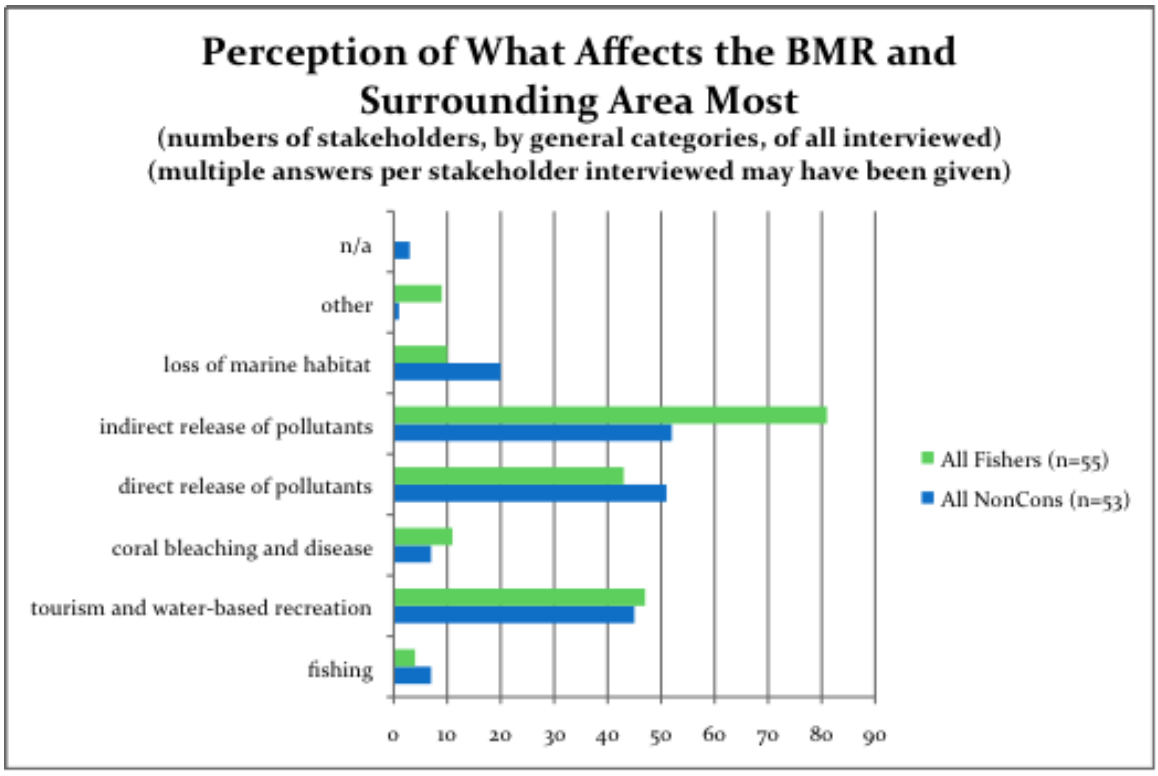

Figure 6. Perception of what affects the BMR and surrounding area most

> "Issues and problems affecting Barbados' marine environment over the past 30 years include the destruction of mangroves, beach erosion, the uncontrolled discharge of effluent into the marine environment, poorly designed coastal structures, the reduction of beach accesses, unauthorized and illegal sand mining, and poor enforcement." (Axys 2000)

Although detrimental fishing practices of the past (e.g. dynamite fishing) largely had ceased, and although many blamed land-based activities, tourism and water-based recreation for the wrongs of the coastal zone on the West Coast, fishing still seemed to have been the enfraction for which enforcement was most often (some would say "only") applied. Along with how the reserve was established (without any input of fishers), such a situation could bring much animosity against the reserve, and feelings of unfairness which would be difficult to counter or change, and subsequently render it difficult to get fishers involved and on board. Many of the comments voiced from fishers (in this section and later sections) seemed to have supported this notion. For example, Fisher RT no. 1 noted that only representatives were at the RTs despite other fishers knowing about them: "[We] needed more fisherfolk in the back... they knew about it, but didn't turn up." Similarly, Fisher RT no. 5 noted "[I] would not say that everyone [was told] but a great majority [were]. Some guys would get the memos and [not] attend anything."

When it came to the complexity of rules, regulations and boundaries, answers were just as divided or more so than previous indicators (figure 7). Further, a great many of those interviewed did qualify their answers. Like Government NonCon RT no. 2 (at the beginning of the section), they felt that they were simple and easy, but because they were not posted anywhere and largely unknown, following them was not so simple. The need for signage was so great that a NonCon who lived on the beach adjacent to the reserve offered that he had not known the rules, yet he lived basically within its boundaries. As Academic RT no. 2 noted,

> "They should have a large notice board. Most places that want you to obey the rules, put up a large board with rules and in many languages, so that it doesn't matter where you come from. If rules are important they should be publicized and prominent."

The reserve does have some buoys and markers on the water delineating the areas, but as previously stated, they are frequently in need of repair or are lost in storms. As Government NonCon N no. 7 pointed out, this situation called for signage to be posted even more so: "[You] need some sort of reference when buoys aren't there." Others pointed out the need for many signs, not solely at Folkestone Park: "You can get into water at any part within the reserve [not necessarily at the land-based portion of the park] and no rules are posted" (Academic NonCon RT no. 5).

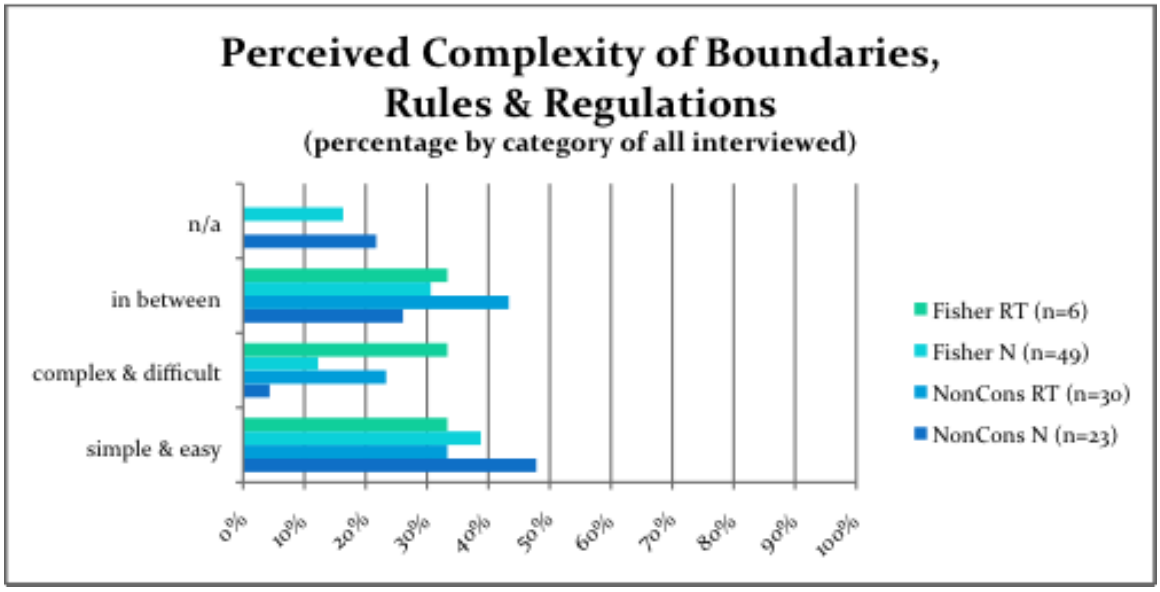

Figure 7. Perceived complexity of boundaries, rules & regulations

As seen in figure 3, on stakeholder awareness of boundaries, the most seaward of the boundaries, the western boundary by the bank reefs (that which was least often marked), gave people the most problem:

> "They need more buoys. It's hard to tell. Is it one mile out straight or does it follow the shape of the beach?...The main problem is that there's no outside boundary markers, so most people don't know [that boundary]." (Fisher RT no. 3)

Others, like Fisher RT no. 1, noted a way the outer boundary could be identified, without it being marked by buoys or signs: "When you can see the bottom, you have to go further," he added "I learnt it from the meeting." This "trick" does need to be shared with visitors and Barbadians alike, for, as Fisher RT no. 6 stated,

> "The rules may be good, but they're not published enough to have the average person aware of it. People may break the law out of ignorance,…although ignorance of the law is no excuse. It should be public information."

5.1.4 Benefits provided by BMR

> "It benefits the rich people and the upper class." (Private Sector NonCon RT no. 7)

> "Everyone else but fishers." (Academic RT no. 5, when asked who benefitted most from the reserve)

> "It benefits fishermen. Fish are able to breed and get bigger and then they come out." (Weston Fisher no. 2, when asked who benefitted most from the reserve, and before the theory had been brought up or explained)

> "It could [benefit fishers] indirectly, through spillover, but not within its boundaries. There was no intention for fishers to benefit within Folkestone." (Academic RT no. 6)

Indicators Within this section, indicators reviewed include interviewed stakeholders' perception of: a) BMR benefitting the entire community; b) BMR

benefitting some more than others; c) who was benefitting the most; d) who was benefiting the least; e) if they benefit from the BMR (asked solely to Fishers); and f) whether they think the BMR was meant to benefit fishers.

Opinions about whether the BMR was beneficial to the entire community were divided (figure 8). Fisher RTs, however, felt this was so more than Fisher Ns. It is clear, however, that those interviewed felt the benefits were largely unbalanced and weighted, favouring tourists and tourist related business the most, and fishers the least (figure 9). More often than not, Fishers did not feel that they benefitted by the reserve (figure 10). Moreover, stakeholders (with the exception of NonCon RTs) felt that the reserve did not and was not meant to benefit fishers more often than not. There were no strong differences of opinion amongst groups.

From the many stakeholder comments received, it is apparent that more than any other group, tourists and tourist related businesses were thought to benefit most from the BMR. Included in these same comments came remarks about the beneficiaries being

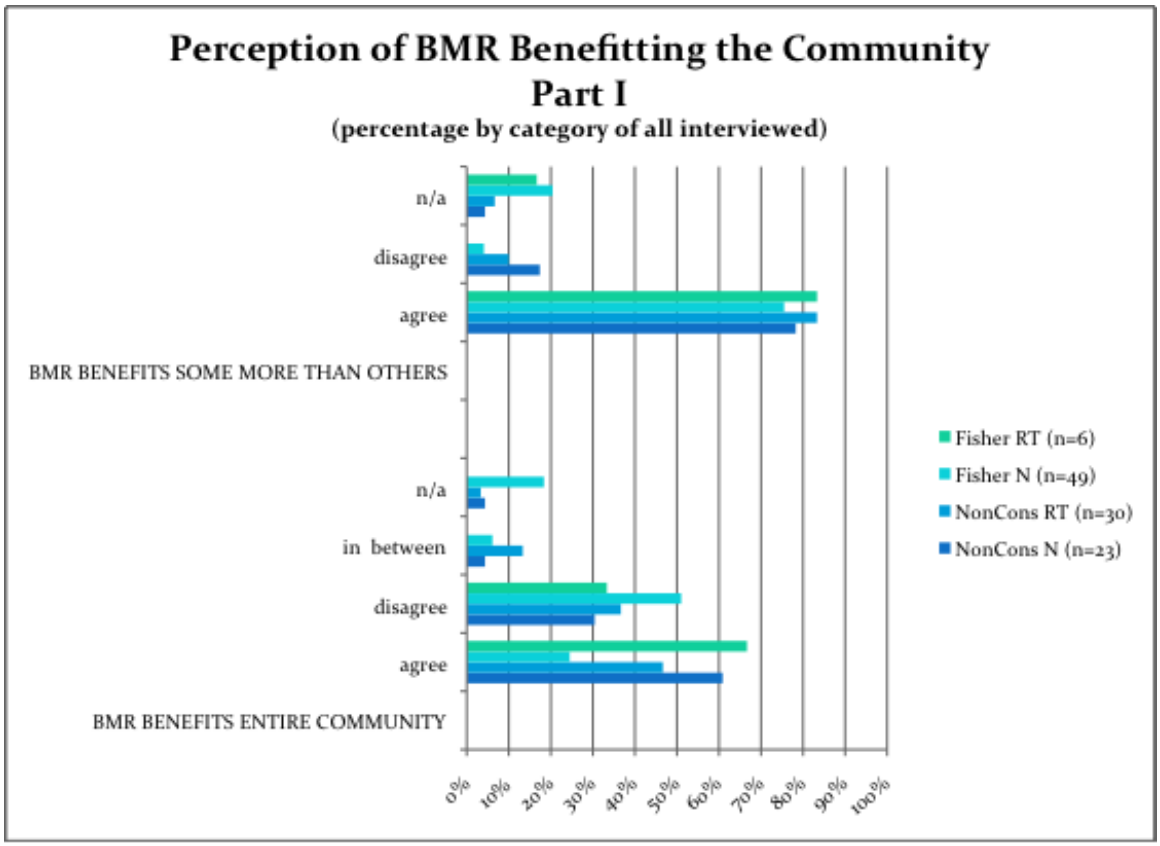

Figure 8. Perception of BMR benefitting the community: part i

wealthy, white, foreign or expatriates. Paynes Bay Fisher no. 3, for example, said, "Some people can't get fish for their family… they say it's a tourist area now." Holetown Fisher no. 9 put forth that, "everybody just understands. People understand what the park's about. Whatever the hotel sector says, goes." Brooklyn Fisher no. 3 added to the idea of inequality in Barbados and how it is exacerbated with the reserve when he said, "The average person in Barbados that doesn't have a trade, fishes to make a living. Not everyone can own a jet ski, a glass bottom boat or a catamaran." This sentiment was echoed by many: "Cruiseships [benefit the most]. Cats provide their own equipment [for snorkeling]…Only people making money is white folk" (Holetown Fisher no. 5), "People in Sandy Lane and Royal Westmoreland" (Brooklyn Fisher no. 10), "The rich, tourism, houses along the coast, hotels. They will try to tell you what you can and cannot do," (Brooklyn Fisher no. 4). Fisher RT no. 2 summed it up when he stated, "we feel threatened, encroached by tourism, white people and their invading property."

It was not only fishers who saw it this way. Private Sector RT no. 3 plainly stated, "it's more or less a tourist attraction." Academic N no. 2 explained his view about how tourist-related businesses benefitted the most by the reserve:

> "Divers, hoteliers, and NCC when they collect fees from visitors. The greatest direct beneficiary is from the operations associated with [the reserve]—hoteliers, perceptually, whether or not the reserve achieved its objectives. The fact that they can say to their visitors that there is a marine park has potential to benefit them. It makes the hotels marketable to a particular niche."

When asked about who benefitted most and least, Academic RT no. 6 succinctly captured the general stakeholder attitude by offering "Most? Those with tourist connections. Least? Those with fishing connections."

Tourism was not the only player viewed to be benefitting from the marine reserve. A foreign university and its research institute (McGill and the Bellairs Research Institute) were also singled out by all stakeholder groups as profiting from the BMR. The location of BRI at the northern extreme of the reserve said to some that McGill was one of the prime beneficiaries: "The way it's set up, with McGill students right next door, it's largely research oriented," (NGO N no. 1). Brooklyn Fisher no. 9 offhandedly commented that McGill University benefitted the most, adding "They're uninterrupted doing whatever they're doing."

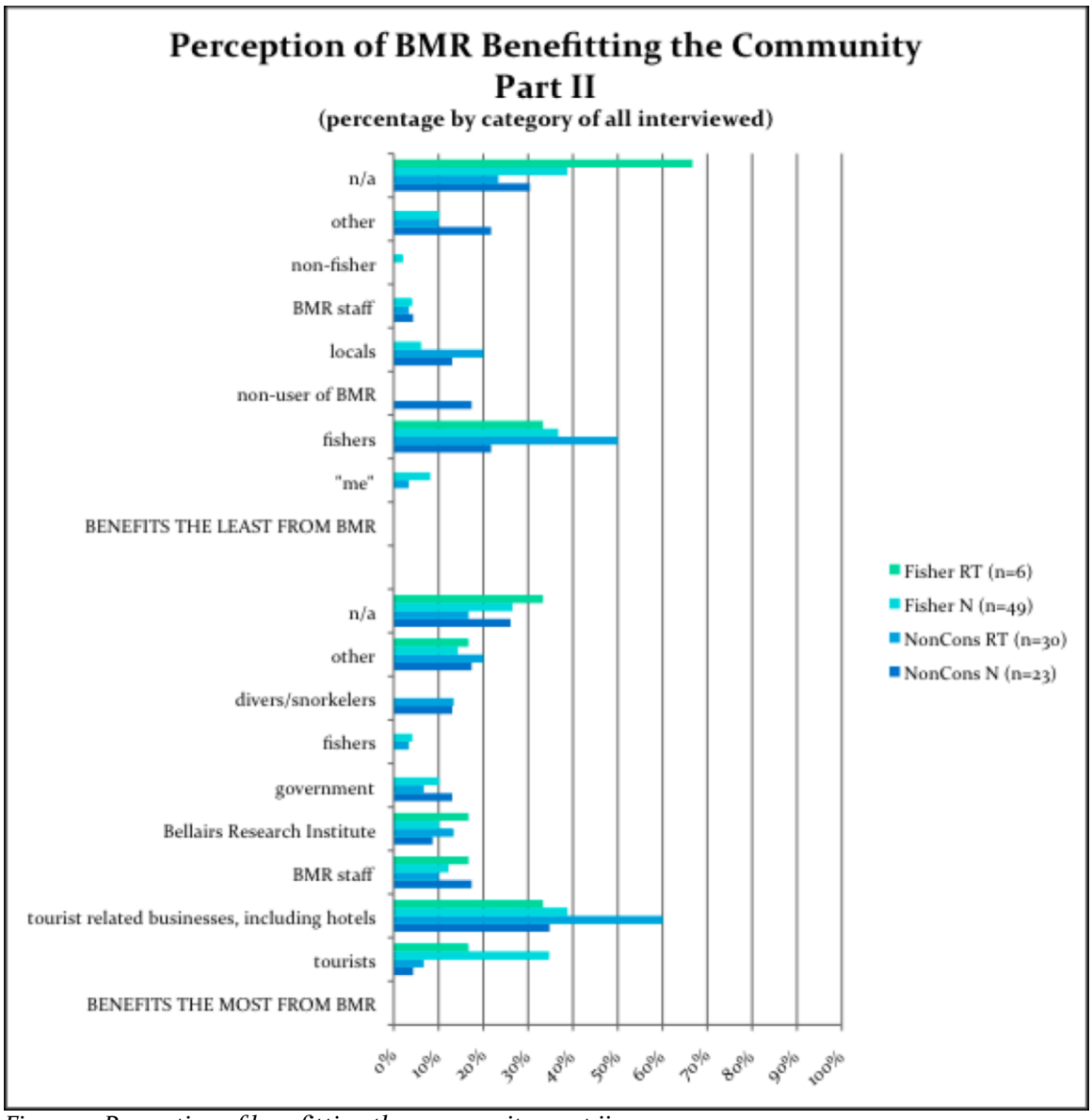

Figure 9. Perception of benefitting the community: part ii

Many stakeholders called attention to Barbadians' tenuous link to the water as a reason they would not benefit from the reserve. They offered that Barbadians are generally not connected to the water, some are even frightened of it and subsequently, many are not able to swim. Any leisure or recreational water-based activities would be ruled out as benefitting local Barbadians. Government NonCon N no. 2 replied that he did not think Barbadians benefitted from the reserve at all, and continued by saying, "I don't think that it's Folkestone's fault. People in the community are not equipped to benefit from Folkestone. People who can't swim, dive, snorkel, can't benefit because they can't go in it." This lack of connection to the water and all things marine was also echoed by

others: "Anything on water is difficult for people on land to understand," commented Academic RT no. 1; and

> "If you walk from the center of the island to the water, you'll find only 5% of Bajans can swim. They don't know the names of the fish they're buying or how to tell if they're fresh. So, how [are they] going to have any idea or concern for the sea? How you going to get them to support a cause?"

said Brooklyn Fisher no. 1. Private Sector NonCon N no. 5 echoed this notion: "Not a question of benefiting. They don't care either way. The sea is here and will always be here. They don't see underneath." It seems that the "blue blanket" that covers the ocean is like forested strips along a highway—if people don't see the clear cuts behind, they do not generally get upset.

The land-based part of the park was thought to be of benefit to the community in the eyes of some stakeholders even if the marine part was perceived not to be:

> "The sea don't have a back door. There's fear of the sea. Don't see [Bajans] going too far out. [The reserve] does and doesn't have the potential. People aren't educated about it. The land-based part does [benefit the community]. Every bank holiday it is full of Bajans partying and picnicking. They don't swim though." (Private Sector RT no. 3)

The lack of "windows to the sea"/public access to beaches was mentioned as a potential niche the reserve could fill. Due to the dominance of wealthy expatriates, tourists, hotels and the like have along the west coast, there is not much open area for locals: "Even though we don't officially have private beaches…along the west coast it's hard to get to beaches. The park itself allows you to get to the beach," (Government NonCon RT no. 4). The concept of Barbadian "windows to the sea", however, was not commonly associated with the reserve. During my field studies, I was more likely to see school children and Caucasian snorkelers at the Folkestone Park (the latter presumably tourists, since it was during the week days when many locals would be working, and because 90% of the population is of African descent, CIA 2010, Government of Barbados 2002). Locals more commonly used fish landing areas and local fish markets as a social gathering area. Both young and old, fisher and non-fisher, Bajans sat chatting, discussing politics, slamming dominoes, playing checkers, simply staring out at the ocean or having a sea bath at the open public space provided by fish landing areas on the west coast. Aside from the land-based park, other benefits from the reserve were rarely brought up.

When stakeholders were asked who they felt benefitted the least, or when directly asked if the reserve benefitted fishers, more often than not their answers pointed to fishers

"getting the short end of the stick". Fishers and NonCons alike viewed fishers as being the group that benefits from the reserve the least (and the least likely to benefit the most, figure 9). Government NonCon N no. 1, when asked if everyone benefitted, replied, "That's a big question. It definitely benefits the dive operators, researchers and watersports. Fisherfolk are the only people that are disadvantaged." "Law abiding fishermen," (Fitts Village Fisher no. 3); "The guys that can't fish there," (Brooklyn Fisher no. 7);

> "Fishermen are the ones who really been affected. Have to go all the way out to the ocean to get fish. It's like telling a taxi man he can't use the highway to get to the airport. Should have a shorter swimming area" (Holetown Fisher no. 9);

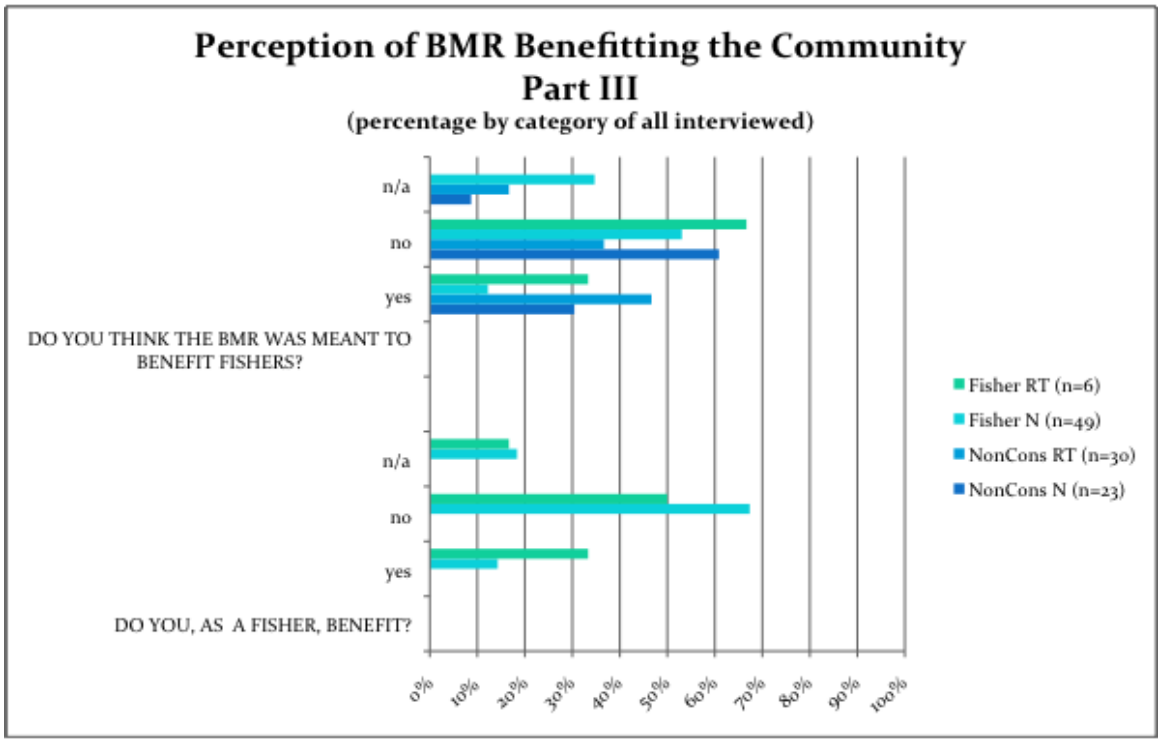

Figure 10. Perception of BMR benefitting the community: part iii

and "Fishermen. Nobody else really," (Government RT no. 7) were other comments that captured many stakeholders' notions of who benefits least by the reserve. NonCon RTs, however, were positive about the reserve being meant to benefit fishers slightly more often than not. There was also a slight difference when comparing Fisher RTs and Fisher Ns. Fisher RTs seemed to have a more postive outlook slightly more frequently than Fisher Ns about whether the reserve benefitted them, as well as whether it was meant to benefit them. They seemed to be more optimistic about a future "indirect" benefit through spillover and/or leakage. For example, Fisher RT no. 2, when asked if he benefitted from

the reserve, said, "Directly? No. Indirectly, I feel like some day I will." Other Fisher Ns also had a slight optimism about the future: "Problably [I will benefit] in the long run. Presently? No," (Paynes Bay Fisher no. 12). Others offered (unprompted) that they felt they benefitted from the reserve already: "Indirectly. [I] catch a few outside the park," (Weston Fisher no. 9). Certain fishers seemed to acknowledge a rationale of why it should benefit fishers, such as Fisher RT no. 6. When asked if he thought it was meant to benefit fishers, he said

> "Yes and no. Not as designed. It can benefit fishers once the fish leave the reef. Fish use the area to reproduce. They won't be disturbed by fishers. Past the juvenile stage, when they leave the reef,…that's when the fisher benefits."

Others saw the potential spawn from reserve fish and currents can bring to fishers: "No. But big fish will spawn more than smaller fish and not all will stay in the park. Some will swim out," (Private Sector RT no. 3). He was also quick to add, however, that "No, Folkestone is for tourists."

Many gave what seemed to be contradictory answers about the BMR's benefits. Paynes Bay Fisher no. 13, when asked about whether he has seen fishers fish the line, said "Yes, that's the only benefit we got," but when asked directly about whether he benefited from the reserve, he said "No, I don't get anything from it." What is more, when asked if he thought the reserve was meant to benefit fishers, he said "I would believe so, don't think it did though." Perhaps fishers who answered this way think that "spillover" and "leakage" are not benefits brought about by the reserve. They're "indirect" benefits and hence "don't count". When asked directly about benefits to them, they may only be thinking about the fish on the inside, which they cannot touch. As Academic RT no. 6 pointed out, going back to the original purpose of the park from the US Peace Corps days, "There was no intention for fishers to benefit within Folkestone," as opposed to the proposed FMMA which would have benefits for fishers within the reserve, for there were zones where fishing was the priority activity. He continued to say, "It would have indirectly, through spillover, but not within [its boundaries]." Perhaps some fishers were too bitter towards the reserve to acknowledge any benefit it may have brought them (directly or indirectly), but when asked about a certain activity, without the qualifier of benefitting them or not (e.g., whether "fishing the line" take place), they acknowledged its occurrence. Regardless of the reason behind it, many answered in this

contradictory way, and this should be kept in mind when reviewing the data—that the number of fishers (both RT and N) who felt the reserve benefitted fishers may be larger than that recorded.

At times, some—totally unprompted—did see a benefit the reserve brings, or could bring, to fishers and others. For example, Fitts Village Fisher no. 3 stated, "I feel that fish got a chance to breed and replenish themselves." Others were optimistic about the reserve's potential once it was well established: "People whose activity is restrained [benefit the least]—fisherfolk. But that may be only in the short term," (Government NonCon N no. 1). Others looked to a change in management as potentially bringing about benefits in the future: "With proper management, it should benefit the entire community," (Fisher RT no. 2); "It can. It has potential once it's properly managed," (NGO NonCon RT no. 1); and "It's managed, marginally. Its potential is not realized at all," (Government NonCon RT no. 5).

As one can see from the previous comments, some stakeholders pointed to past management of the reserve as the source of its faults. Academic NonCon RT no. 7 described these faults of the BMR at length:

> "They do a pretty poor job, even at providing a public facility: it's only open 9 to 5. People are at school and work during those hours. And it's not open on week-ends, so locals don't benefit at all. [They do] a pathetic job at education. Cruise ships come in en masse and walk on the reef. Poor job at enforcement too. They can tell people what they're not allowed to do, but don't have the powers to take them to court."

Similarly, yet with a touch of positive, Holetown Fisher no. 9 viewed the general management of the reserve to be lacking (and the need for outreach) when he said, "Folkestone really [does] nothing for the island, for the people at least. Bunch of people sitting in offices…The park rangers are good boys though."

Although there are many different ways stakeholders could benefit from the BMR, many were not mentioned. Being involved in the decision-making process/empowerment was not brought up at all, nor were any ecosystem services (aside from provisioning services)[36].

[36] As defined by the Millenium Ecosystem Assessment of 2005, "ecosytem services" include: 1) "*provisioning services*, or the supply of goods of direct benefit to people, and often with a clear monetary value,…such as fish from the oceans"; 2) "*regulating services*, the range of functions carried out by ecosystems which are often of great value but generally not given a monetary value in conventional markets. They include regulation of climate through the storing of carbon [e.g., by seagrass]…, the removal of pollutants by filtering the water [e.g., by oysters and/or water filtering through vegetated land, not

As can be seen from the above, the majority of people felt that the BMR had not been successful and had provided few if any benefits to the area. This is despite the results from the longitudinal studies of CZMU/UWI/Bellairs on reef fish abundance from 1987, 1997 and 2002 as well as FD neritic catch data (including jacks, crevalle, bonita, pot fish) from a similar timeframe (1984 to 2003)(unpublished data).

Abundance data within the reserve (South Bellairs and Sandy Lane) show a noticeable increase inside the reserve over the years (at South Bellairs) and an increase inside compared to sites outside the reserve (at Sandy Lane). From the 2002 abundance data, Sandy Lane had a greater abundance of fish than adjacent areas (71.2[37] and roughly double to triple the abundance of sites outside the BMR, which range from 18.6 to 36.7). In fact, fish abundance at Sandy Lane is comparable to the greatly hailed northern sites (Six Men's and Heywoods, abundance of 78.6 and 109.7 respectively) which stakeholders say are "less accessible", more "pristine", have less tourism/development and consequently has a vast abundance of fish (Academic RT no. 2, Government RT no. 2, and many fishers). And although South Bellairs has a similar mean number of fish as adjacent areas in 2002 (23.2), its abundance has increased close to 10 fold since 1987 (ratio of 2002/1987 equal to 9.7; other sites range from 0.7 to 4.1, except again for the more northern sites of Six Men's and Heywoods, with ratios of 8.7 and 7.8, respectively).

Catch data over similar time periods also show a difference. When 2003 catch is compared to 1987[38], the Paynes Bay[39] ratio is greater than 3.5, whereas all other sites have ratios of less than 2.5, including the busy landings of Bridgetown and Cheapside where many of the island's fishers take their catch. If recovery after fish kills is reviewed, there is a large difference between the site closest to the reserve and those further away. When the 2003 catch data are compared to the 1994 data (when the west coast experienced a

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impervious pavement], and protection from disasters such as…coastal storms [e.g., by coral reefs]"; 3) "*cultural services*, not providing direct material benefits, but contributing to wider needs and desires of society, and therefore to people's willingness to pay for conservation. They include…coastal formations that attract tourists"; and 4) "*supporting services*, not of direct benefit to peope but essential to the functioning of ecosystems and therefore indirectly responsible for all other services [e.g., the formation of coral reefs and/or the processes of seagrass growth]" (CBD N.d.)

[37] No. of fish individuals, count means.

[38] Because of the different sizes and popularity of fish landing sites, landing sites are highly uncomparable. I, therefore, have not compared catch at Paynes Bay directly to other areas, but have only compared ratios of catch over the years. Also these years correspond best to those of the reef fish abundance data within the reserve.

[39] Paynes Bay is the landing site closest to the BMR.

fish kill from the months of August to September, Parker pers. comm. 2010), the 38 times increase at Paynes Bay is quite noteworthy. It is also much greater than the 3-fold increase Oistins experienced during a similar experience (i.e., recovery since the 1999 fish kill—this fish kill did not affect the west coast). It should be noted that Oistins' increase was the largest for the island during that period, but is still less than one tenth the increase of the Paynes Bay's recovery from its fish kill.

Despite these findings, many fishers and non-consumptive resource users felt the BMR was a total failure. As Paynes Bay Fisher no. 12 stated, "Down here's dead, but in the north, that's where the action is." Even within the Axys report, the BMR is tagged "failure"—a 10-page section is based on it ("*Failure of the Existing Folkestone Marine Reserve as a Protected Area*")(Axys 2000). While it is true that external impacts, enforcement, infrastructure maintenance and replacement, inclusion of fishers and management of the reserve have been less than exemplary in the past, the data above show that there may be some benefit. Moreover, the 2008/2009 Reef Watchers program that surveyed the reserve noted that the reserve is in "fairly good condition" (Blackman and Goodridge 2009). Also, papers by Rakitin (1994), Rakitin and Kramer (1996), and Chapman and Kramer (1999) show encouraging results[40] on ecological success of the reserve in terms of abundance and size of fish (and which Axys cited). Axys (2000), however, put that data to the side but held up one study—where net emigration of fish from inside to outside the reserve could not be detected (Chapman 1997)—and pronounced that there is "no evidence to indicate that, as presently designed and operated, the Folkestone Marine Reserve is functioning as an effective fishery management tool, nor is it having a positive effect on yields to fishermen in fished areas outside the reserve."

Many fishers acknowledged the potential benefit the reserve could bring in the future, if it was properly managed and land-based activities were taken care of. It was the in-between time that created much of the friction between fishers and the reserve. If the reserve had engaged the services of fishers in some way during this transitional period, or trained them in some other related job, this may have eased the tension between the

[40] All three of these studies showed a greater abundance and size of fish on fringing reefs within the reserve than outside; and Rakitin (1994) showed that fish taxa which were most vulnerable to fish traps had a greater difference between inside and outside the reserve (abundance and size greater within the reserve).

parties, as well as the tension on the reserve (due to illegal fishing out of spite or necessity). At the BMR, there was no training in alternative, or complementary employment that was sustainable. Many fishers were quite upset with this scenario, particularly since they saw their "participation" as information giving with nothing in return. For example, Paynes Bay Fisher no. 14 said,

> "We helped them and they never helped us. I gave them some ideas and would have liked to help put it in place…They [threw] us away and didn't give us a job…they didn't hire any of us."

Many fishers were very interested in monitoring and helping out in any way they could. "We watch the reefs, fish growth, new growths of coral on the reefs, sand further inward to the beach. When BARNUFO is doing research, we tell them," said Fisher RT no. 2. Other fishers had been involved formally in monitoring and research, but this was done through CERMES, UWI, BRI, CZMU, and FD, not the BMR. In other areas, many fishers who had taken part in such research had bought into the theory of MPAs and the benefits it could bring (e.g., Glovers Reef where fishers were involved with research and monitoring, as cited by Garaway and Esteban 2003)[41].

5.1.5 Belief in the system/theory

> "Easier to bait a fellow outside his door than to wait for him to go down the gap." (Government N no. 4, when asked why he thought fishers were "fishing the line")

> "Where they got the park situated, there's a lot of hotels. No reef able to live with all that sewage. If they had a park in the north of the island or on the east coast, where no hotels are, it could work." (Holetown Fisher no. 7, when asked about the ecological theory of marine reserves, spillover and the possibility at the BMR)

> "They're gonna stay there [within the BMR] because they stay safe." (Brooklyn Fisher no. 7, when asked about the ecological theory of marine reserves, spillover and the possibility at the BMR)

> "Yes, if they give it a chance." (Private Sector RT no. 8, when asked about the ecological theory of marine reserves, spillover and the possibility at the BMR)

> "After a time, ya. Don't think it would happen over night. It would take 10 to 20 years. The stock was so depleted, it would take time before it came back." (Weston Fisher no. 9, when asked about the ecological theory of marine reserves, spillover and the possibility at the BMR)

> "Yes, but it should have happened by now, but it hasn't happened, has it?" (NGO RT no. 4, when asked about the ecological theory of marine reserves, spillover and the possibility at the BMR)

[41] Had St. Hill's ideas (section 5.2.2) been implemented—those of involving fishers in monitoring sprats and jacks in exchange for being able to fish bait within the reserve—they would have served fishers and the BMR well. Unfortunately, when she left, her plans died.

Indicators Within this section, indicators reviewed include interviewed stakeholders': a) witnessing of "fishing the line"; b) perceived reason for "fishing the line"; and c) belief in the ecological theory of reserves and the possibility of "spillover".

Aside from asking stakeholders outright, another way belief in the ecological theory of reserves was judged was by asking about the occurrence of "fishing the line" and why they thought fishers would be there.

"Fishing the line" was witnessed, more often than not, by all groups (figure 11). "Yes, all the time" offered Holetown Fisher no. 9, a full-time fisher on the water every day, when asked if he had seen fishers "fishing the line". Those who had witnessed it least often were NonCon Ns. This may be showing that it does not happen much. Alternatively, it may be that they are not noticing it, for it is of no concern to them, or possibly that they are not by the reserve all that often. All other groups would have heard about it (during the RTs) or it would be of concern to them (as fishers). Just under three quarters of NonCon RTs and Fisher Ns had witnessed it, and all of Fisher RTs had.

The reason stakeholders felt fishers were fishing on the boundaries of the reserve varied, and some offered multiple reasons. Close to half the time Fisher Ns and NonCon (RTs and Ns) thought it was due to spillover or leakage. Fisher RTs more often than not did not mention spillover or leakage but simply said that they were good fishing grounds—they didn't necessarily attribute this to the reserve, nor did they say it was not due to the reserve either. A few stakeholders felt that fishers were at the reserve boundaries because they *thought* that they would catch more fish, not necessarily because they actually were catching more. Others, however, felt that there must be more fish there, because "fishermen are not going to waste their time," (Government RT no. 3). When asked if he had seen fishers on the boundaries of the reserve, Weston Fisher no. 6 responded "Ya, [I do], because I'm a fish finder. I'm not going to the fish desert. I'm trying to shoot fish!" The next most common reason offered by Fisher RTs was that they lived close by and had always used the area—it was their traditional fishing grounds. Private Sector RT no. 5 offered that Dottins (one of the bank reefs of the reserve) had fishers on its boundaries because of its shallowness: "Dottins is a fantasitic dive site. It's always full of life. It's the shallowest bank reef on all west coast." Many, like Fitts Village Fisher no. 3, said the area had been known to be a quality spot for fishing, but

also recognized the potential positive effect the reserve was having on the area: "It was always known for having good fishing. Now that will be better." A few stakeholders felt that the fishers were at the boundary of the reserve simply taking advantage of the different life stages of fish: "Generally, once fish get a certain size, they will move off the inner reefs to the bank reef where there should be more space and food available…They will move out, but it's not density dependent" (Government N no. 4).

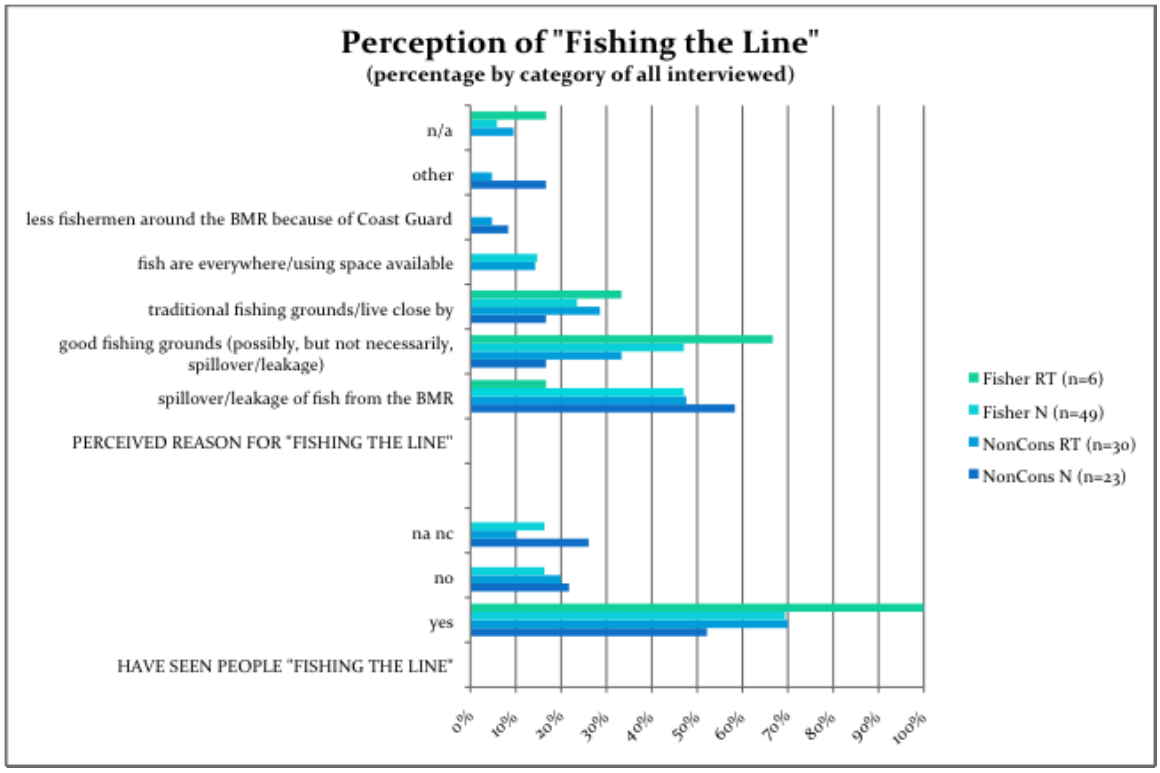

Figure 11. Perception of "fishing the line"

When asked directly about the ecological theory of the reserve and the possibility of spillover (figure 12), answers varied and frequently included caveats. More often than not, all groups thought it does happen, or could possibly happen. "I think that's happening now. That's why [fishers] are passing so close [to the reserve]," offered Government RT no. 3.

> "Yes, there is evidence. If there's less fishing pressure, spillover is probably likely. But it may not be significant because of the condition of the reef. From my casual observation, the habitat is not spectacular, and there's not a lot of difference between inside and outside of Folkestone. There are bigger fish and more of them within the Folkestone area though,"

said Academic RT no. 6. Quite a few fishers felt it was happening and admitted that they, themselves, "fish the line". For example, Weston Fisher no. 7 said "Yes, that is what is happening right now… [I] could just sit there and drop [a line] and get fish." Fisher RT

no. 1 also said, "I go by the reserve and do one drop and get a lot of fish." In addition, this fisher added a comment that suggested that he looked at the reserve as Gell and Roberts (2003) suggested, as savings account and that he was living off the interest: "Don't want to rob there and rob others who come after us. If we fish there all the time, won't have no fish for those who come after us."

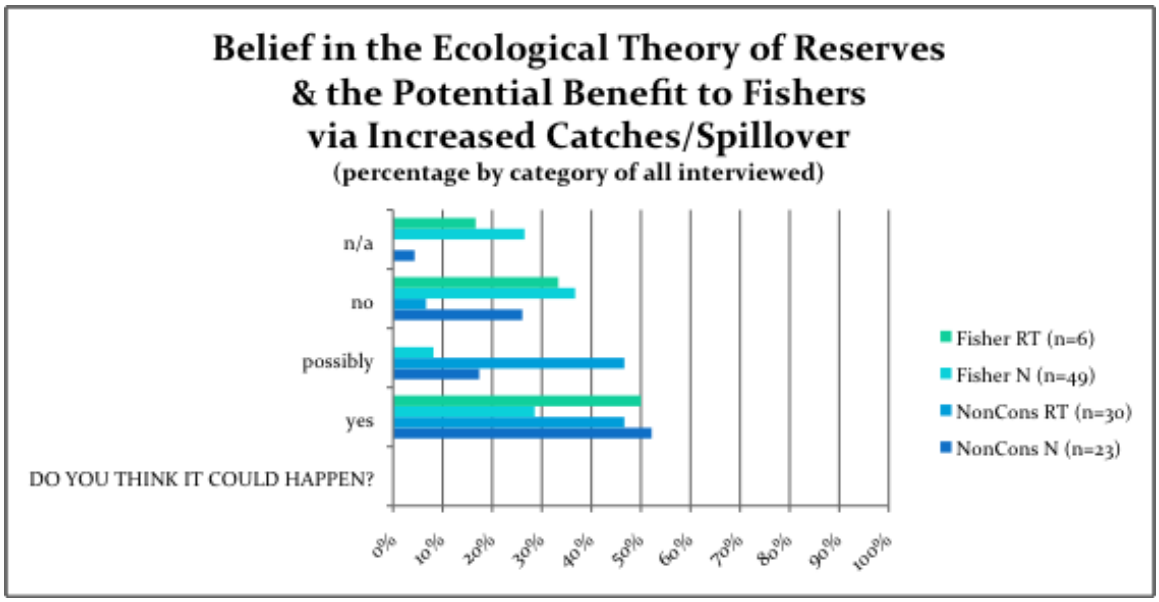

Figure 12. Belief in the ecological theory of reserves & the potential benefit to fishers via increased catches/spillover

For some, the outer boundary, although lucrative, was troublesome and avoided. Fishers admitted to fishing the line, but because the outer boundary is unclear (having no markers), there were frequent disputes with the Coast Guard as to whether or not they were within the reserve limits. Subsequently, they did not fish there as often as they may have: "Yes, that's normally what is happening. When guys know that, they fish around the edges. But with the threat of Coast Guard, they don't frequent it much," (Fitts Village Fisher no. 3). Similarly, Paynes Bay Fisher no. 12 stated that he fishes the line,

> "…a few times a month. The Coast Guard may still come and harass you though. I can't deal with that kind of issue…There are more people there in terms of divers. You can catch good fish there, more fish than over here."

Several stakeholders believed the ecological theory of reserves and its potential for spillover or leakage, but felt that the BMR has other problems, such as land-based sources of pollution, that would hinder a build-up of fish within the reserve, and spillover from happening, or happening to a great degree. Government N no. 2, when asked if he thought

build-up and spillover could happen, said "Don't think so, or on a very small scale. Unfortunately Folkestone is sandwiched by a lot of tourism on either side…" This sentiment was echoed often:

> "I can agree with [the theory of reserves and spillover]. But the point I'm making is as long as the reef at Folkestone is [close to] tourism, all the pollution from land will kill the reef. As long as the water is polluted, the reef will die. We human beings have to stop polluting the waters. It's as simple as that," (Fitts Village Fisher no. 2);

"[Build up of fish and spillover] could happen, but not with the water pollution," (Private Sector RT no. 2); and "No, not in its current configuration. Watershed management is needed to control what goes into it,"(Government RT no. 1).

> "No [build-up and spillover won't happen]. For the coral to come back, [you] would have to destroy the hotels, and deal with the runoff. You can put boundaries, but still can't stop runoff or hotels pumping fresh water into the sea. That destroys the reef too. It's much less salty. The reef is pushing out lots of fish, but never know how long it will last,"

proposed Paynes Bay Fisher no. 12, who continued to say,

> "It could happen if you dealt with coastal pollution. [You] would see results in 3 to 5 years for sure. But that's not possible. There's too much development on this coast."

Along the similar lines, some stakeholders felt that reserve was disturbed too much for a build-up of fish to occur. "It could work if they allowed the fish to be there in peace, and that's not happening, especially certain times of year. Because of jetskis, sprats disappear and we catch nothing," offered Brooklyn Fisher no. 4. Still others felt that spillover would be unlikely at the BMR due to the characteristics of the fish species and where the reefs were located with respect to the reserve boundaries:

> "Normally [reef] fish stay on the reef and don't really travel. Government won't straddle the park on the reef because they want to keep the fish on the reef," (Holetown Fisher no. 4).

Some felt, because of the conditions, that a build-up of fish was possible, but spillover was unlikely to happen:

> "It's a safe haven for fish, so they congregate. There's more fish there than any other place. They'd come out eventually, not too far, looking for food," (Weston Fisher no. 1);
>
> "I think fish are really happy in there. They would move out but not to big extent," (Government NonCon N no. 8); and
>
> "No, over the years fish have become territorial and [do] not go far from natural environment unless something running them... The fish won't go out of his environment because his environment has become friendly. He may run for the day, but he will come back. He may go to the ocean or other habitats at different stages of [his] life. Reef fish don't go far… Spawn would go out though. The current is so strong it would go to St. Lucia," (Fisher RT no. 2).

Still others suggested that fish feeding by tourist boats would keep the fish within the reserve:

> "The fisher are getting programmed to know where food is. There's been a lot of fish feeding over the past ten years," (Academic RT no. 8).

5.1.6 Empowerment & stakeholders' perception of their involvement

> "You can get three people or you can get 97 people and write a report." (Brooklyn Fisher no. 10, when talking stakeholder input to the review process)
>
> "I attended meetings, contributed to discussions, but was not involved in decision-making." (Academic RT no. 6)
>
> "No, I'm just a fisher." (Weston Fisher no. 6, when asked if he had been involved in any BMR decision-making meetings or RTs)
>
> "You're the first person that comes out…I didn't hear about them. You seem to know more about them than me." (Private Sector RT no. 6, when being asked if he had been involved in any BMR decision-making meetings or RTs)
>
> "Fisherfolk ain't got no big house, no big money, so we don't count. I could be dead." (Weston Fisher no. 5, when talking about involvement in BMR decision-making)

Indicators Within this section, indicators reviewed include interviewed stakeholders' perception of their involvement in BMR decision-making, such as: a) planning boundaries; b) making rules and regulations; c) monitoring; d) maintenance of buoys or other equipment; e) problem solving and management; f) enforcement; and g) their desire to be involved.

As seen in figure 13, a clear majority of stakeholders interviewed (fishers and non-consumptive users alike) felt they had not been involved in BMR decision-making and management—including those who had attended the RTs. In fact, those who had attended the RTs responded quite similarly to those who had not attended. Generally speaking, NonCon RTs were the most positive of the groups in feeling like they had been involved in decision-making—although they too, more often than not, answered that they had not been involved. When stakeholders were asked if they would like to be involved, a great majority said yes.

Much of the discussion around the direct questions of whether stakeholders had been involved in the various components of decision-making revolved around indirect or limited involvement to no involvement and a lack of empowerment.

Comments about the lack of involvement in decision-making came from all groups, with some comments being self-depricating or in a manner that noted contention about how they see others view them. "I ain't nobody. I ain't got much to say,…Big fish make the rules. We're small fish," said Weston Fisher no. 3. "My opinions don't matter. They're set in their ways," replied Paynes Bay Fisher no. 12 and "There's not a lot of

fishermen at this point in time, so they think [our opinion] is not important…Only when I get the questionnaire[42], right here, [do] I get a chance to give a response," commented Brooklyn Fisher no. 1. Holetown Fisher no. 2 replied, "They do all that stuff themselves,"

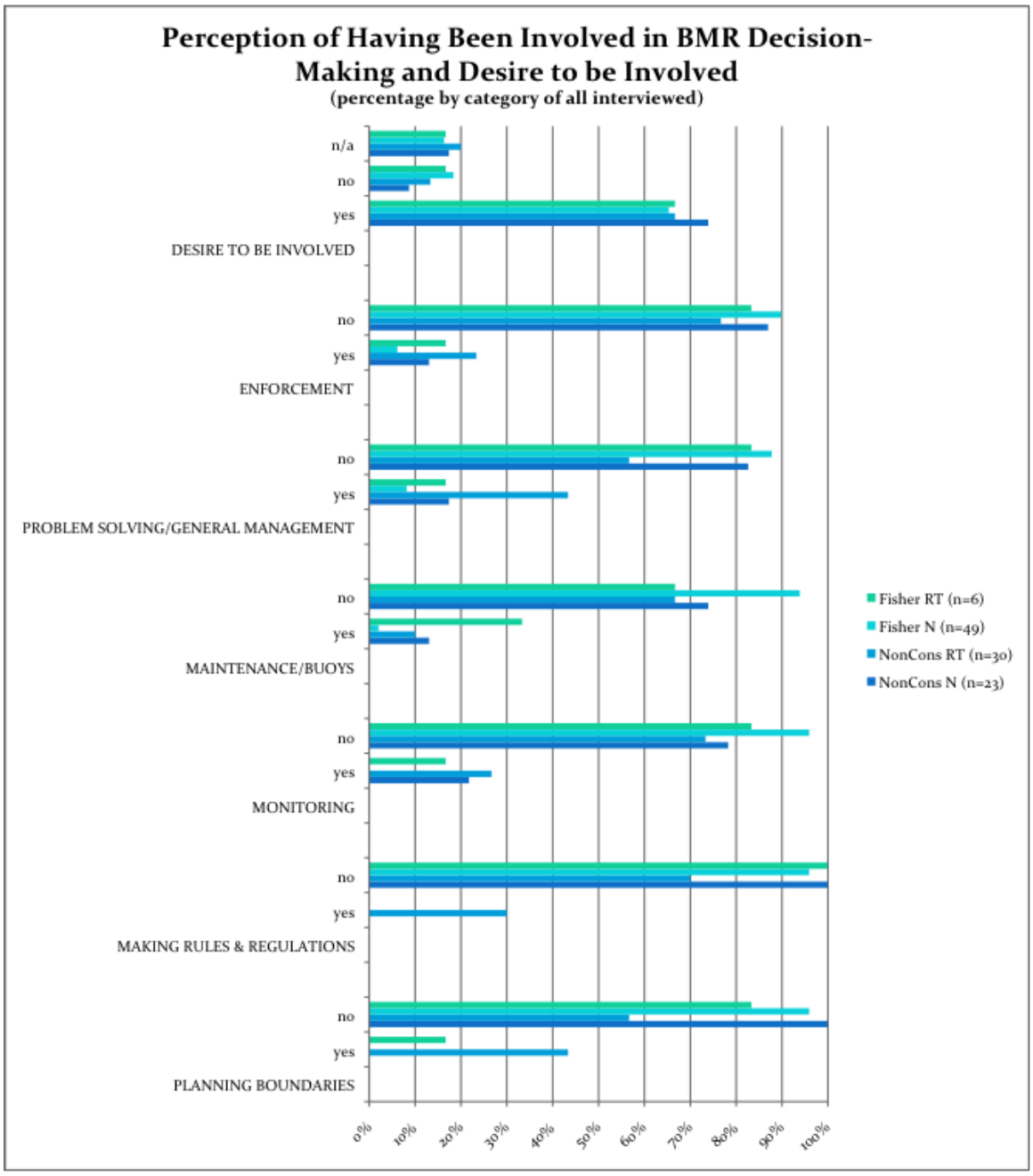

Figure 13. Perception of having been involved in BMR decision-making and desire to be involved

[42] He was talking about questionnaire for this study as the only time he had given his input.

when asked about his involvements. "I make suggestions but nobody tends to listen. People do what they want to do," commented Private Sector RT no. 4.

Other stakeholders felt that their contribution was not listened to and used, that Axys "had pretty much spelled it out," (Government RT no. 3, when asked if he had been involved in the decision-making process). Fisher RT no. 5, who had attended the RTs at the beginning, felt his input had been ignored: "Not directly. I started to get frustrated after the big shots started taking over. They appeared to be listening, but at the end of the day, we were still back at square one." Similarly, Private Sector RT no. 2 said, "Sometimes they approach and ask you, but they've already come up with a plan." Brooklyn Fisher no. 1 offered that "When [they] had meetings, everything was done behind our backs. They held town hall meetings long time ago—6-8 years…[but they had] already made up their minds." Others felt used, in that "they got their minds made up and knew what [they were] going to do…. They take info from other people to strengthen what they want to do already. [They're] not targeting the right people" (Holetown Fisher no. 9).

Others voiced an opinion that their involvement was not about seeking their input, but about being informed: "They don't really ask. They tell you what they're going to do," (Brooklyn Fisher no. 4). Holetown Fisher no. 9 echoed this sentiment when he talked about only being asked questions once the decisions were made, "No, they started a project, went into full gear, made up their minds, then started asking questions." Many stakeholders commented that they had been involved, but their involvement consisted of attending the RTs and listening to what was being proposed: "Yes, [I was involved in making boundaries], but not directly. Indirectly. I sat and listened at meetings," (Fisher RT no. 3); "I listened to them speak about where the boundaries were going to be," (Private Sector RT no. 9); and "I attended one…I was just attending. I was being there but not doing much. Might not have been invited as such," (Government RT no.4). This last stakeholder, who did not think he had been called upon to contribute, was also surprised at how many RTs there had been when told.

Other stakeholders felt they had been called upon to comment on Axys' plan, such as Academic RT no. 4 who stated, "[Axys] came in with a set of boundaries that we could comment on. We discussed what could happen in each zone." Similarly, Government RT

no. 6 also felt his job was not to help make the decisions, but to give comments to those who did: "No. Not directly, I was giving comments."

Many felt that their comments and input had no weight, but that meetings were scheduled to inform people about what others had decided. Subsequently, they did not find it worth their effort in attending: "No [I was not involved in any decision-making]. Some guy may go to college and [tell us] this is what he learnt about. [They would call] a meeting and [say] this is what they decided. When they call meetings, that's why people don't go,"(Holetown Fisher no. 5) and "I didn't want to waste my time hearing people jammer on," (Brooklyn Fisher no. 3).

Others brought up the group and "representative" nature of involvement, such as Private Sector RT no. 8 when he said, "We had to sit in groups. It wasn't direct. We had input, yes, but input as a group, not as an individual…A process was being set by others…I went to nearly all [the RTs]. I wanted to hear and understand." Similarly, another NonCon N said, "Not me personally. Indirectly. [My work] was part of the consultative process after the boundaries were actually designed." Other comments about the respresentative nature of the RTs included: "They get a few fishermen's voice, and that's it," (Brooklyn Fisher no. 1) and as mentioned above, "You can get three people or you can get 97 people and write a report." (Brooklyn Fisher no. 10). Other stakeholders who attended, felt the frustration of being a "backbencher" rather than the representative at the table. Representatives were the only ones who were officially able to address the discussion during most of the RT. Backbenchers had a chance to comment, but only at certain times during the meeting, mostly at the end of the discussion. They were able to bring up points through their representative, but it seems many did not. Therefore, even if a person said he had attended RTs, he may not have contributed at all.

Many, when asked if they were involved, commented on the lack of knowledge they perceived people directly involved in decision-making to have. Comments against these "decision-makers" included those against government bureaucrats and foreign consultants, marine biologists and PhDs. For example, Brooklyn Fisher no. 10 maintained that, "I's the ordinary fisherman. The man on the street. Nobody in [a government agency] has experience. They do the legislation, but got no background in fishing." Similarly, Holetown Fisher no. 9 said "[they] just came in on [their] high horses and

didn't know heads nor tails." "They bring in people from outside and don't ask the locals. They don't know the problems in Barbados," commented Brooklyn Fisher no. 7, a sentiment heard often during the interviews. "The government brings in experts from somewhere else to tell us what we already know," voiced Holetown Fisher no. 9. Along similar lines, but when asked if he benefitted from the reserve, Brooklyn Fisher no. 4 said, "It benefits the tourism industry. It benefits us if they listen to us and stop bringing in people from afar with PhDs." Private Sector RT no. 6 pointed out a benefit of having Barbadians familiar with locals involved in the process: "A lot of locals know more about the sea than the people they're bringing in…If a local spoke to me, I would listen more than if [they were] a foreigner." On the other hand, NGO N no. 1 noted that, "Axys acted as a conduit, from stakeholder to stakeholder, for gathering info and putting it back out. They're a foreign company. If someone was hired locally, they would consciously have to put their biases aside."

The majority of stakeholders voiced the desire to be involved in decision-making, such as Holetown Fisher no. 7 who, when asked if he had been involved, said, "No. I wish I was." Others stated that they would have liked to have been involved, but doubted their involvement would have been incorporated: "Yes [I would like to be involved] but I doubt they'll listen. If asked, I would go and tell them my ideas. I tell the turtles ladies where the nests are" (Holetown Fisher no. 10). Some had been at the beginning, but were angry about the degree to which they were involved (or not involved). Paynes Bay Fisher no. 14 had been incensed by being involved at the beginning, but not all the way through the process, nor given any compensation for his loss. He and others perceived that Axys had gone to them solely for missing information, but when they obtained it, the fishers felt they had been tossed aside. Still others said they had taken it upon themselves to do what they could. When asked about monitoring, Fisher RT no. 5 said, "No. I do a little myself…but it didn't have anything to do with Folkestone." Similarly, Private Sector RT no. 4 said, "no, but I observe. Monitoring is in my work. I see how fish change behaviour and grow," and Fisher RT no. 2 commented, "We watch the reefs, fish growth, new growth of corals on the reefs, sand further inward to the beach. When BARNUFO's doing research, we tell them." Others took enforcement upon themselves. When asked if they had been involved in enforcement, Private Sector RT no. 1 said, "Yes, self-policing. We

speak to the person involved [with the enfraction] and direct them right away." Similarly, Brooklyn Fisher no. 4 said that he tells many tourists on jetskis about any enfractions they are committing, and added, "Tourists come to Barbados and leave their brains at home." Conversely, some who felt they had responsibility, felt that they actually had no power behind to perform their job well. Still others, however, felt that it was not in the nature of Barbadians to get involved. "Fishers argue at the beach and at the rum shop. You'd be the only one up there for a petition. Everyone else backs down," commented Brooklyn Fisher no. 3. Similarly, Fisher RT no. 5 said, "A lot is very unfair. But there's nothing one man can do about it. They go to the shop and drink and say what should be done. Then at the last minute, everyone pushes me out front, and they all step back and tighten their lips." Brooklyn Fisher no. 1 put forth that, "No one ever takes out the placards and protests. It's something to do with the culture of the people. It takes a lot."

Recap

Indicators	Maximum Rating	Ratings			
		Fisher RT (n=6)	Fisher N (n=49)	NonCon RT (n=30)	NonCon N (n=23)
Interviewed stakeholders': ***Awareness/knowledge of the BMR rules, regulations and boundaries***					
Awareness of boundaries	2.00	1.33	1.18	0.70	1.00
Awareness of rules and regulations	12	2.33	1.59	3.33	2.26
Opinion of the BMR & view of its rules/ regulations & location/boundaries					
Opinion of location/boundaries	2.00	1.50[43]	0.79	0.93	1.13
Opinion of rules/regulations	2.00	1.33	0.67	1.63	1.57
Perceived fairness of location/boundaries	2.00	1.00	0.61	1.10	1.48
Perceived fairness of rules/ regulations	2.00	1.00	0.46	1.33	1.30
Perceived complexity of boundaries, rules/regulations	2.00	1.00	1.08	1.10	1.22
Perception of benefits provided by BMR					
BMR benefitting the entire community	2.00	1.33	0.55	1.06	1.26
BMR benefitting some more than others	1.00	0.00	0.04	0.10	0.17
If they (fishers) benefit from the BMR	1.00	0.33	0.14		
Whether they think the BMR was meant to benefit fishers	1.00	0.33	0.12	0.47	0.30

[43] Only one of the Fisher RTs were within or close by the reserve, hence this could be a reflection of NIMBY or rather OIYBY (ok in your backyard). The Fisher Ns would more likely reflect the opinion of fishers whose landing sites are within or close by the reserve (n=37 or 76% of Fisher Ns vs n=1 or 24% of Fisher RTs).

Indicators	Maximum Rating	Ratings			
		Fisher RT (n=6)	Fisher N (n=49)	NonCon RT (n=30)	NonCon N (n=23)
Belief in the system/theory					
Have seen fishers "fishing the line"[44]	1.00	1.00	0.69	0.70	0.52
Perceived reason for "fishing the line"	2.00	1.00	1.40	1.29	1.33
Belief in the ecological theory & the possibility of "spillover"	1.00	0.50	0.37	0.93	0.70
Perception of empowerment					
Planning boundaries	1.00	0.17		0.43	
Making rules and regulations	1.00	0.00		0.30	
Monitoring the reserve	1.00	0.17		0.26	
Maintenance/buoys	1.00	0.33		0.10	
Problem solving/management	1.00	0.17		0.43	
Enforcement	1.00	0.17		0.23	
Their desire to be involved	1.00	0.67	0.65	0.67	0.74

Answers wrt BMR	Fisher RTs	Fisher Ns	NonCon RTs	NonCon Ns
Good/successful	14%	13%	20%	29%
Neutral/moderately successful	38%	33%	50%	50%
Poor/unsuccessful	48%	53%	30%	21%

The overall results of the effectiveness indicators is mixed, and leans towards being negative. It does not seem that the Axys RT process had that much of a positive effect on stakeholders, for Fisher and NonCon alike: indicators for Fisher RTs and Ns as well as NonCon RTs and Ns showed similar percentages of successful (14% vs. 13%, 20% vs. 29%, respectively), moderately successful indicators (38% vs 33%, 50% for both, respectively) and unsuccessful indicators (48% vs 53%, 30% vs 21%, respectively). The most popular rating for Fishers (RT or N) seemed to be poor/unsuccessful, whereas that of NonCons (RT or N) seemed to be neutral/moderately successful. Roughly a quarter of

[44] Although this indicator does not reflect the effectiveness of the BMR decision-making process, it is included in the table to show the overall view by stakeholders.

NonCons' indicators signaled success, while only about a seventh of the Fishers' indicators pointed to success.

When each category of indicators is reviewed, some differences come to light. Stakeholder participation, as it was delivered through the BMR process, could be judged as moderately successful/effective in making Fishers opinion about BMR and views of its rules/regulations & location/boundaries more positive (4 out of 5 indicators were more positive for Fisher RTs than Fisher Ns; 1 remained the same and denoted moderate success). NonCons' indicators, however, largely did not change when RT attendance was taken into consideration, and when they did, it was for the worse (perceived fairness of location/boundaries went from successful to moderate success). In terms of: a) stakeholders awareness and understanding of the BMR (no change at all in indicators); b) the belief in the system/theory (one indicator each changed, and all denoted moderate success to success), the RTs generally did not denote an effect on Fishers or NonCons. The least successful categories for effectiveness were stakeholders' perception of: a) the benefits provided by the BMR; as well as b) empowerment for which a majority of the indicators denoted a lack of success, particularly for Fishers. Fisher RTs' answers indicated that they did not feel part of the decision-making process for the BMR even though they had taken part in the RTs. NonCon RTs had similar answers, largely noting non-participation in the BMR decision-making. NonCon RTs' answers with regards to planning boundaries and problem solving/management denoted moderate effectiveness. All stakeholders seemed to have wanted to take part in the decision-making process, whether they had been involved in the RTs or not. Although it is easier to say that you would like to be involved, than actually taking the time and effort to be involved, it should be noted that Fisher RTs had a great desire to have been involved.

As would be expected from the initial establishment of the BMR and how the rules largely were enforced since then (being focused to a great degree on the no fishing rule, not others—see section 5.2), Fisher Ns' opinion of the reserve seemed to be worse than NonCon Ns. In agreement with the theory, however, involving Fishers in the decision-making process (here through the RTs) seems to have improved their opinion of the reserve. Fisher RTs seemed to have a more positive opinion and perceived fairness of the location/boundaries and rules/regulations of the reserve and whether they saw the reserve

as benefitting the entire community than fishers' who had not attended the RTs. Although this may indicate a positive effect of the RTs on views and opinions, it may have also been a result of where Fisher RTs lived (76% of Fisher Ns lived near or within the reserve boundaries, whereas only 24% of Fisher RTs lived near or with the BMR). They may have been positive about the location/boundaries because they did not affect them directly.

Surprisingly, in terms of the reasons behind fishers "fishing the line", Fisher Ns seemed to believe in "spillover" more than Fisher RTs, possibly denoting a more negative result from the RTs—which would not make logical sense if Axys had been explaining and promoting the BMR. Going back to the individual percentages, most Fisher RTs thought they were good grounds, but did not state that it was due to spillover (or nor did they rule out spillover). Again, a possible alternative explanation could be based on where the fishers live. As noted, most of the Fisher RTs were not from in or close by the BMR. They may have said fishers were "fishing the line" for they were good fishing grounds simply because they were not familiar enough with the area to have given a definite answer. Anywhere fishers frequent often would be good fishing grounds—as one fisher said "I'm a fish finder. I don't go the fish desert…" (Weston Fisher no. 6). The good grounds answer does not necessarily tell why they're good grounds. It should also be noted that both groups of fishers had largely perceived there to be fishers "fishing the line" frequently.

Aside from differences and similarities between those who had attended RTs and those who had not, one of the most telling indicators of successful or unsuccessful outreach was the very small number of fishers who had taken part in any of the RTs (n=6 of 55 interviewed; and as per Mahon and Mascia (2003), only 2 to 3 fisheries stakeholders related individuals—from Weston and BARNUFO—took part in the process from RT 3 forwards, i.e., after "representation" had been introduced. Because one of the BARNUFO representatives at the time was not a coastal fisher, possibly only 2 coastal fishers from Weston would have taken part in the process from RT 3 forward).

5.2 Background & history of fisher participation with the BMR

"Conservation doesn't happen in a vacuum." (IIED 2010)

5.2.1 Development and early implementation of the BMR

"No one [came] to the community and [told us] what they [were] going to do. No leaflet. No one [told] us about meetings going on. We [woke] up one day and the rules changed. Can't do that." (Holetown Fisher no. 11)

"Culturally, the idea of participation in management is a recent thing. It was not employed in the '60s. There's no way any government official would have asked for it." (NGO N no. 1)

"Folkestone is for tourists, but not by world-class standards. It's not an attraction that draws [a great deal of attention], like Harrison's Cave." (Private Sector RT no. 3)

Formally established in 1981, the Barbados Marine Reserve was in mind's eye over a decade earlier, and tossed back and forth between Barbadian, Canadian and US expatriates, research institute directors and volunteers throughout its development. Mahon and Mascia (2003) recount that the Barbados National Trust first thought of establishing a west coast marine reserve in the late 1960s. Sander, the Canadian Director of McGill's Bellairs Research Institute, then expanded on the idea in his 1972 presentation at the Caribbean Conservation Association's Annual General Meeting. It is said that this presentation then spurred the Ministry of Housing, Lands and the Environment to "[begin] thinking of a marine park in early 1973" (Cotter 1972). The Parks and Beaches Commission (a statutory board of the Ministry, and currently the National Conservation Commission, NCC) was delegated administrator, and set about bringing the idea to fruition. It is said[45] that they "sought advice from government agencies, scientific groups and private individuals" and subsequently formed a technical committee, the Underwater Park Committee, in 1974 to advise the Commission on matters related to the expanded idea of the marine reserve (Cotter 1972, Mascia 2000, Mahon and Mascia 2003).

The reserve was put into law in 1981 through an Act, the Marine Areas (Preservation and Enhancement) Act and its subsidiary legislation the Marine Areas (Preservation and Enhancement)(Barbados Marine Reserve) Order and Regulations, 1981. Aside from a 1998 amendment, which changed the governing body from the Minister of Lands to the Minister for the Environment, and also increased the fines and imprisonment terms for those who break the regulations and are found guilty, this is the same legislation under which the BMR currently operates. The legislative directives

[45] Little information is presently available on said meetings with stakeholders.

which established the BMR were based on US laws and regulations, specifically those for Key Largo Coral Reef, Flower Gardens, Looe Key, and St. Thomas U.S.V.I. Marine Sanctuaries (Cotter 1982).

Via the Marine Areas (Preservation and Enhancement) Act, the Minister was given the power to:

> "designate any portions of the marine areas of Barbados as restricted areas where he considers it necessary for: a) the preservation and enhancement of the natural beauty of; b) the protection of the flora and fauna and wrecks found in; c) the promotion of the enjoyment by the public of; and d) the promotion of scientific study and research in respect of such area."

As Mahon and Mascia (2003) noted, "these regulations require[ed] Ministerial approval, but not Parliamentary consent." The Commission, with permission of the Minister, was also given the power to buy any land needed to fulfill these objectives; also make regulations related to the "the provision of guides required by visitors to the restricted areas", the prescription of "fees to be charged…" among other things. These powers and provisions, however, were never used.

The location of the reserve was chosen for two reasons—neither of which was based on ecology: Holetown was the location where English colonists first landed in 1625; and the area was adjacent to a parcel of land which was government owned (Cotter 1982). Colonial history and government convenience thus determined the location of the BMR—two more factors which emphasized (and continue to do so) its roots. It was also the hub of the developing tourism industry for Barbados, and is presently one of the most developed (and environmentally challenged) areas of the island.

On the ground development of the reserve was done principally through a US Peace Corps volunteer. In 1979 it is said that Cotter, the Peace Corps volunteer, "was assigned to work with the Parks and Beaches Commission to develop its idea for an "underwater [tourism] attraction" in the historical region of Folkestone" (Mahon and Mascia 2003). He was to help on "technical aspects of marine biology and parks establishment" (Cotter 1982). As the BMR was initiated during a period when public participation was essentially unheard of in the conservation realm, it was established largely without stakeholder involvement. In fact, Mascia (2000) bluntly describes the process which led to the reserve's development as being "highly centralized, non-participatory and opaque." Most of the decision-making was said to have been done basically through one person:

the US Peace Corps volunteer (Mascia 2000). Although Cotter was noted to have had plans to consult with a broad array of marine resource users, these plans were abandoned for reasons unknown (Mascia 2000). He did consult with the Head of the Fisheries Division (a British expatriate at the time) and the Parks and Beaches Commission, and held a meeting with local stakeholders to discuss the BMR—which was, for its time, quite avant garde (Mascia 2000). This meeting was held six months after the Ministerial Order defining the borders of the BMR was passed, and consisted largely of non-consumptive users; fishers were not included (Mascia 2000, Mahon and Mascia 2003).

It was the marginalized fishers—left out of the decision-making process and not involved in the subsequent information session—who suffered most from the establishement of the reserve. Although other stakeholders, to a large extent, had not been consulted and had experienced BMR rules which affectd their actions, the no fishing rule seemed by and large the only regulation that was and is consistently enforced[46] and the unconsulted fishers were the only group who were and continue to be officially[47] denied access to the area (Axys 2000, Mascia 2000, pers. obs. and multiple interviews with both fishers and nonconsumptive resource users 2006). The fishers were not compensated in any way for the development of the BMR within their traditional fishing grounds (Nicholls pers. comm. 2004). Nor were they offered training in alternative or complementary employment (Nicholls pers. comm. 2004). The options left to fishers put them in awkward positions and in a "tense relationship" with management (Axys 2000, Nicholls pers. comm. 2004). Adams and Hutton (2007) remind us that,

> "population displacement from PAs has a direct impact on livelihoods…Forced resettlement exposes displaced people and those in receiving communities to a wide range of risks of impoverishment...These include landlessness, joblessness, homelessness, economic marginalisation, food insecurity…mortality, loss of common property and service and social disarticulation…"

By closing their traditional grounds to fishing, fishers of the area had three options, none of which were particularly attractive. First, they could continue fishing within the reserve, have their once well-respected reputation be tarnished by being lawbreakers, and risk imprisonment and fines. Alternatively, they could stop fishing in the area, and start

[46] This is aside from the rule prohibiting watercraft to enter an area buoyed off for bathing and swimming, which was already a rule established in 1964 by the Harbormaster (as per Mascia 2000).

[47] There has been a relaxation of/informal change to the no-fishing rules: bait fishing is now allowed within the BMR on sandy-bottomed areas (Nicholls pers. comm. 2004). This exception to the rule, however, is unofficial and not widely known.

fishing in other areas. For this option, they would have to invest more time, energy and gas in getting to their new fishing grounds. They may not be familiar with the area and would also be impinging on other fishers' territory. Finally, they could stop fishing altogether. Here, they would incur financial losses and lose the security and social network they had established through the years with other fishers. Moreover, their family and social traditions, passed down through generations, would come to a halt. As can be expected, fishers were tremendously troubled and offended, and felt marginalized and disenfranchised by the reserve. They were affected so much so that 25 years after the implementation and six years after a review which sought to include a wide range of participants (with a special effort to include fishers), mention of the BMR was met with shouts, jeers, and heckles by many fishers. One fisher adamantly stated that "Folkestone was the worse thing that ever happened to Barbados" during the first week of field research in 2006.

Management of the reserve during this period, also contributed to its problems. The NCC—a statutory corporation whose "primary task is not to provide services (as with a normal government agency), but to maximize its revenues given its fixed budgetary allocation"—was and is the main agency responsible for managing the BMR (Mascia 2000). Some believe the NCC concentrates on cost-effectiveness to the neglect of conservation. NCC is also a land-focused organization in charge of parks. NCC's general approach with the BMR had been a "laissez-faire" type of management, with the exception of a period in the mid 1980s (to be discussed in the next section), and, a seeming increase in attention to the reserve of late[48]. NCC resources are spread out over many other land-centric competing activities and services, and the BMR often ends up with little resources. No user fees are collected at the reserve. The Folkestone Marine Museum, gift shop and rental kiosk for snorkeling equipment generate minimal finances. As Mascia (2000) notes, the NCC runs its initiatives based on "cost effectiveness" and generally "selectively invests its resources among its mandates in order to generate maximum revenues." This has the effect that "programs perceived to be revenue earners, such as Harrison's Cave…receive significant investment, while programs perceived to be

[48] As seen through their new web site (http://www.nccbarbados.gov.bb/mpa) and the increased activities listed on it. For example, as opposed to 2010, in 2006 the reserve was not involved in any monitoring or outreach programs (aside from school children's day trips to the park).

revenue drains are subject to divestment" (Mascia 2000). From Mascia's (2000) work and many others' opinions, it is highly probable that the BMR was in the latter category. Subsequently, the reserve's needs in terms of conservation, management, monitoring, and even basics such as signs and buoys were not attended to. Signs along the beach, called for within the Acts, were never posted. Seaward boundaries were never delineated with buoys. Buoys that were put in place, were damaged or destroyed, lost frequently and replaced infrequently[49].

During this period, management personnel allotted to the park was meager, insufficient, and solely the realm of government employees without a strong background in the marine realm, nor its management (Cumberbatch 2001). Management of the BMR was intended to be comprised of: a) the Minister of Housing, Lands and Environment (who would have the final say in administrative decisions); b) the Parks and Beaches Commission (who would be in charge of administrative decisions, permits, research projects and coordination with government and public agencies); c) a Park Supervisor/Marine Biologist (in charge of the marine reserve functioning on a daily basis); d) Park Naturalists (no specific duties were mentioned for this post in the 1982 document by Cotter); e) Receptionists (to support the Park Supervisor in administrative duties); and f) the Barbados Coast Guard (who would have "the authority for arrest and issuance of citations")(Cotter 1982). In reality, however, after four Park Naturalists had been trained by the US Peace Corps volunteer, none remained in 1987, and a Staff Marine Biologist was not found (St. Hill 1987). A former lifeguard stepped up to take on the role of Park Naturalist, but as of 1987, had not received any formal training with regard to the reserve (St. Hill 1987). Although the coastal and marine-focused governmental organizations of the CZMU and FD were consulted on occasion, neither was directly linked with reserve management. Many of those in charge of the reserve had either more land-based backgrounds, or were government appointees/bureaucrats with little to no resource conservation backgound.

The original purpose of developing the reserve included the protection of the flora and fauna and wrecks, as well as research. It seems, however, that the preservation and

[49] Mascia (2000) noted that the buoys were never replaced. During my field studies (2006) however some buoys did exist. Seaward presence of the reserve was not demarcated by buoys and many buoys were on shore awaiting repair.

enhancement of its beauty, as well as the promotion for entertainment of the public and revenue generation garnered most of the management's attention. As referred to by the sign at the BMR Visitor Center,

> "Folkestone's mission statement is to provide high quality recreational activities for Barbadians and visitors that will educate and entertain them. We believe in sustaining the natural marine environments and exposing our guests to its beauty. Our service will provide for family oriented entertainment utilizing modern technology and provide for a financially strong park that the nation will be proud of."

Although the purpose of the reserve was to protect ecosystem functioning via an increase in size and a zoning scheme; its location, format and function were generally geared towards tourism and foreigners. The central west coast, where the reserve is located, is an area commonly referred to as the "Platinum Coast." In the past, people from various communities used the area in and around the BMR for fishing, however, "more recently [since the 1960s], this area has become one of the prime marine recreation sites for tourists" (Axys 2000). It is presently one of Barbados' most developed areas (in terms of commercial, residential and tourism development). It is where a great many high-end hotels, including the famous Sandy Lane Hotel (a luxury 5 star hotel, spa and golf course "preferred by royalty, celebrities and many of the world's leading businessmen" (Sandy Lane Hotel N.d.)) are found. Moreover, the two largest zones of the reserve were geared to water sports, as they were

> "the largest attraction to the sea in the Holetown area…[and it was the intention of] the Parks and Beaches Commission to promote water sports and manage them in a controlled fashion, compatible with other park activities" (Cotter 1982).

Moreover, the reserve was also adjacent to a foreign university's research center (Bellairs Research Institute, McGill University), and had a zone adjacent to the center restricted for scientific research only. As mentioned, other management efforts related to conservation, monitoring and enforcement (aside from no fishing) were lacking.

Largely conceptualized and developed by what could be deemed "the elite", "the other", "foreigners", Barbados Marine Reserve did not start its life with many inroads to the local community. The top-down process was largely dependent on one person's knowledge, view and background; and its regulations were in the hands of one person's judgement. Parliamentary consent was not needed, and a multi-stakeholder advisory committee or co-management team was unheard of at the time. The BMR management was also troublesome due to: a) it being run by a statutory corporation whose main focus

was economic, not ecologic; b) its staff not having experience in marine conservation, but rather terrestrial and bureaucratic issues; c) its human and financial resources, for various reasons, were lacking. As was typical for the era, the BMR had been established and managed largely by those unfamiliar with the area—expatriates from Canada and the US, as well as bureaucrats from Bridgetown. Locals, fishers in particular, had been largely excluded from the process and marginalized.

5.2.2 Implementation of the BMR: hope and abandon part i

> "We called a meeting with them and educated them about fishing." (Holetown Fisher no. 9)
>
> "[St. Hill] was attempting to reduce the disparity in *de facto* use rights and socio-economic impacts established by the *de facto* regime that emerged in the wake of the 1981 BMR Regulations." (Mascia 2000)

The laissez-faire type management was generally how the BMR was run for much of its life. Four years after the official Acts were instated, however, one individual started trying to make a strategic difference to the ad hoc BMR paper park. St. Hill, the Environmental Education Officer (EEO) or "policy entrepreneur"[50] brought on by the Ministry of Tourism and the Environment, sought to right some wrongs originally brought about with the original establishment of the reserve (Mascia 2000, Axys 2000, Mahon and Mascia 2003). Her vision and strategic planning for the reserve included both: a) a widening of the decision-making process from solely that of the MPA-inexperienced, land-focused, finance-driven NCC to a wide array of stakeholders with much marine experience and from public, private and governmental sources; and b) a leveling of the playing field in terms of costs and benefits for stakeholders.

While Cotter (1982) describes the management team proposed for the BMR to be quite structured, St. Hill (1987) notes that it ended up being quite sparse to almost non-existent. St. Hill tried to tackle this need in her management plan by calling for the development of a Marine Reserve Advisory and Coordinating Committee (MRACC). This Committee would be comprised of various government stakeholders who consulted with other non-governmental stakeholders (both public and private, and including fishers)

[50] "Policy entrepreneurs" have been described as individuals who are "advocates for [policy] proposals or for the prominence of an idea. …their defining characteristic, much as in the case of a business entrepreneur, is their willingness to invest their resources—time, energy, reputation, and sometimes money—in the hope for a future return. That return might come to them in the form of policies of which they approve, satisfaction from participation, or even personal agrandizement in the form of job security or career promotion" (Kingdon 1995 as cited by Mascia 2000).

on matters at hand. It was a way of widening the field from which help could be found for the reserve. It was also a way of involving stakeholders in matters that affected them and that they affected. The MRACC members were to be taken from agencies responsible for "environmental management and policy coordination (Environmental Unit), protected areas (NCC), coastal zone management (Coastal Conservation Project Unit (CCPU), presently CZMU), land use planning (Town Planning Department), water quality (EED now EPD), fisheries (Fisheries Division), tourism (Ministry of Tourism and Sports) and harbor use (Ministry of Transport and Works)" as well as the Barbados Coast Guard, the Barbados Police Force, Bellairs Research Institute, Eastern Caribbean Safe Divers Association, Beach Operators Association, and the Fishing Cooperative Society as necessary (St. Hill 1987, Mascia 2000). This was a dramatic change from NCC being the sole agency responsible for the reserve.

St. Hill also tried to level out the playing field with a permit and registration system. Mascia (2000) described this initiative as an attempt

> "to reduce the disparity in *de facto* use rights and socio-economic impacts established by the *de facto* regime that emerged in the wake of the 1981 BMR Regulations" by "increas[ing] the access and use rights of consumptive appropriators [fishers] while restricting the rights of nonconsumptive appropriators [e.g. researchers, large tourist enterprises, water sports operators (large organizations and individuals), glass bottom boat operators] operating vessels within the BMR"

and making the fees associated with permits and registration appropriate for the size of the institution, organization or enterprise (Mascia 2000).

During the St. Hill era, a group of fishers (largely from Holetown) had approached the BMR about the issue of not being able to catch migratory pelagic fish used for bait within the reserve and how the BMR had affected the basis of their livelihood. After presenting their situation, they requested the rules and regulations to be changed. By using provisions found within the original Acts, St. Hill found a way to allow fishers to fish for bait, benefit the reserve, as well as dissuade other stakeholders from thinking that they could simply lobby and be able to change the rules. Fishers would be allowed to catch sprats, only with a permit, on the condition that they would be conducting scientific research by collecting monitoring data about coastal pelagics. The reserve would subsequently use these data to see how the stocks were doing and whether they could withstand fishing. The reserve's management would then have a sound basis from which they could determine management action. The fishers would not only be allowed to fish

for bait, but they would also be taking part in the decision-making process by contributing to monitoring. They would have more confidence in the management action for it would be based on data they collected. All this would be able to happen within the laws as they were written, for it was based on conducting research. If the study deemed it possible to catch sprats in the reserve without affecting the ecosystem, then they would have had sound data upon which they could have officially changed the rules of the reserve. It seemed like a win-win situation all round.

After St. Hill resigned[51], all was abandoned unfortunately. St. Hill's suggestions—the management plan and MRACC, its permit, registration and research system, as well as a snorkel trail—were either not developed, not maintained, not formally established nor continued once she resigned in 1988. The reserve continued on its path of basically being a "paper park" without stakeholder involvement. One quasi exception was that of fishers' fighting for the right to fish for bait within the reserve—it was kept on, unofficially however, and without the monitoring component attached. Without this materializing in full, it ended up having significant negative effects as a result. Because the regulation was solely laxed, and not made official, it was not a widely known change. Many fishers were unclear about whether they could fish in the reserve, for what, when, how, or where. Moreover, other stakeholders were either not aware, as in the dark as the fishers about the specifics of the unofficial change, or unable to abide by the change in rules for it was not made into law. This not only led to confusion and regulation violations, it cast a light on fishers as being lawbreakers (whether they were or not), as not everyone was aware that the management of the reserve had allowed bait fishing within the reserve to resume. So although it was a victory for fishers in terms of obtaining the right to be involved in decision-making, it was a loss for their reputations. Moreover, research was not carried out, no data were made available, and the effect bait fishing had had to the system (if any) is still unknown.

5.2.3 Revisiting the BMR: hope and abandon part ii

> "They want to listen but the government bring in people that don't listen to us. They pay the Canadians a lot of money for same things we tell them." (Brooklyn Fisher no. 6)
>
> "There was a fisher [at the RTs]. But that's not enough." (Private Sector RT no. 4)
>
> "I would generally say nothing, watch what others say, take notes." (Government RT no. 3)

[51] St. Hill went to work for the CARICOM Secretariat in Guyana.

> "Selective consultation of a few fisherfolk will not achieve the level of legitimacy required." (McConney 1998b)

> "[Axys has] their own way. They wanted to work with what they decided on and not what we recommended." (Private Sector RT 1)

General Description of Events In 1997, the Government of Barbados set out to revisit the BMR. They developed TOR for the review, determined its scope and set its goal, which was to "determine the feasibility of upgrading and enhancing the facilities at Folkestone as a recreational park and marine reserve" [hereafter referred to as "the review"] (Axys 2000). In March 1998 the lead facilitators of the review—"Axys Environmental Consulting (B'dos) Inc., in association with the Environmental Planning Group Ltd., Gillespie and Steel Associates Ltd., and Bellairs Research Institute" [referred to as "Axys" from here forward]—were identified and hired by the Government of Barbados (Axys 2000). Axys consisted of professionals largely from Canada as well as Barbados whose role was to review the BMR and produce a report with various proposals for redevelopment.

The initial study and review took place within 16 months at the end of the 1990s/beginning of 2000. Years later (during my second field survey period in 2006), Axys held more round tables over a couple of months, this time to determine the institutional setting for the reserve.

As depicted by Axys (2000), the proposed plan for the new marine management area was to be created through "a phased approach that involved technical assessments and planning, in combination with public consultation and involvement". The meetings with stakeholders started in March of 1998 and those with a group of fishers commenced two months later. The first round table was held in March of 1999, and the last in July of 1999. The final report was submitted in March 2000. The round table process was meant to be a channel by which representatives of stakeholder groups could provide input to the plan laid out by Axys. As described by Axys (2000), a

> "Round Table Process was employed to ensure that stakeholders had direct involvement and input to the development of the FMMA…to engage the stakeholders in a series of mediated discussions to resolve conflicts and formulate management plans for the Folkestone Park and Marine Reserve…[round tables] were mechanisms through which the preferred options were investigated and fine-tuned, and recommendations formulated for the Final Report."

Many of the proposals[52] offered in the final Axys document were top notch in terms of participation, but sadly have not, of yet, been widely implemented. Some, however, are being carried out unofficially or in a rather ad hoc/yet to be institutionalized process.

The next sections expand on and critique the process Axys took while creating the proposal for the Government of Barbados.

Foreign facilitator The main facilitator of the process was Canadian, Jeff Green, of Axys. From the comments received during the questionnaires, he seemed well liked and accepted by fishers who participated in the round table process. For example, Fisher RT no. 2 said, "I believe Jeff really took the interest of the fishers at heart." Having a foreigner as the lead had both its strengths and weaknesses. As mentioned by some stakeholders, there could have been a feeling of impartiality to the decision-making process by having someone from "outside". There would not have been any history or baggage that would have come along with the main facilitator. The situation could have also been seen with a fresh eye.

On the other hand, having a foreigner brought in for facilitation would have made the decision-making situation a little more superficial and shallow, unless the outsider did a fair amount of "homework" on the BMR. S/he would have had to inform him or herself about the area, its people, their culture, values, habits, etc.—i.e., qualities that may have affected the process and have had to have been appropriately dealt with. If not, the participatory process may have not ended with buy-in and empowerment. As Stringer and others remind us,

> "Unless stakeholder identification and selection are explicitly considered at the outset, there is a danger that adaptive management only engages the "usual suspects;" that small but vocal group of stakeholders who are already widely engaged in research and policy debates. This may reinforce the marginalization and exclusion of groups whose voices are rarely heard, [and] thus limiting social learning."(Stringer et al. 2006)

[52] It should be noted that the aim of this thesis is not to review the proposals developed, but to review the participation process used to develop them. At the time of study, the Axys proposals had not been officially accepted or rejected by government, nor put in place. To study the proposals, I would have had to have mentioned them to stakeholders (without knowledge of whether they would be implemented or not). This may have created more of a stir in the community than was necessary or desired. Hence I felt it prudent to study the process, not its resulting proposals. The Axys proposals will be mentioned where relevant to the study.

As Garaway and Esteban (2003) also remind us, facilitators and meeting organizers should not fall into the trap of having more well-off fishers, and potentially those who routinely attend meetings, be those who attend RTs; this, however, seemed to have been the case with the BMR review. Although when one looks at the island's inhabitants, fishers are of more modest means; when one looks at fishers as a unit, most who attended the RTs seemed to have been better-off or well known. Most were either launch owners (more capital is needed for buying, maintaining, and running a launch than a moses) or their fishing gear and general apparel pronounced them as having a fair amount of available cash (spear guns, scuba, wet suit and booties, much gold jewelry etc.). They were also well-known by many of the government employees and academics. One government employee interviewed noted that the same "civil servants and the same agitators were at the town hall meetings. Average Joe Public was missing." These more well-off and well-known fishers were not representative of fishers of more modest means, the typical fisher or the coastal poor—those who were the most marginalized. The situation (economic, socio-cultural, and environmental), needs and limitations of Fisher RTs would have been different and hence not representative of the general coastal fisher. In a largely class-based society, these fishers may not have been in the same social circles as those of more modest means—information and knowledge would have not bridged the gap either way. The less well-off and less-known fishers remained as such. They did not participate in the RTs. They did not gain knowledge nor broaden their network of acquaintances. They did not contribute to the discussions and debates. They did not have any of the benefits that participation may have brought.

Another point with regards to a foreign facilitator is that it may have taken quite a long time for 'outsiders' to have been accepted and trusted by stakeholders. Unless the facilitator was very perceptive, this lack of trust (and consequent silence or nonattendance) may have been perceived as apathy or agreement and consensus. Again, unfortunately this seemed likely the case. Although one of the facilitators claimed that "[the fishers] came to the table and did not feel disadvantaged," (Green pers. comm. 2006) fishers felt differently:

> "there was a great amount of [fishers] at first, then it fizzled out. [Fishers] started to get frustrated after the big shots started taking over. They appeared to be listening, but at the end of the day, we were still back at square one… At the end of the day, the big-headed fellas'

> ideas were in the program. They were not sharing ideas. You get frustrated about that." (Fisher No. 5)

Fatigue and frustration with the process may have even been misconstrued as concensus if the facilitator was not in tune with the participants of the RTs. Government RT no. 5 felt this had generally been the case during the RTs: "General consensus meant that no one spoke up anymore. Consensus [came about] when you were tired and [had] given up."

Moreover, by having an outsider be the facilitator, it may not have strengthened the sense of responsibility for the staff of the BMR, nor may it have stoked their respectability in the eyes of other stakeholders or in their own eyes. Helping to manage conflicts amongst stakeholders is one of the main reasons MPAs are created; when the staff is not involved in conflict management, it contributes to the sense of futility of the marine reserve, lack of respect for the staff, and/or a reliance on "foreign experts" to "make things right". As McConney (2001b) noted about fisheries, "a "foreigner factor" exists whereby information or advice from an outsider may be more readily accepted than from a local. This is a serious weakness." Again, judging by some of the comments made by those interviewed, this seemed to have been the case. Only one BMR staff member participated in (but did not facilitate) the meetings. Others did not feel they were welcome to even attend, never mind participate. This resulted in little to no ownership of the product for a great majority of the BMR staff. Moreover, many comments from both Fishers and NonCons, unfortunately, did not give the perception of having much respect for the BMR management.

Furthermore, with a foreign consultant facilitating the process, there would have been less chance for continuation or follow-up. Here, once Axys' Canadian members returned to Canada and the Bajan contingent dissolved, only a few of the proposed recommendations were implemented in an ad hoc fashion. In fact, ten years after the review was complete and the feasibility study was submitted, the FMMA had not been officially accepted, announced nor implemented (Brathwaite pers. comm. 2010). As with the St. Hill Era, continuity was a major problem. It is said, however, that Nicholls, the General Manager of the reserve, did "keep the study alive" and had been implementing some of the recommendations (Green pers. comm. 2006).

Call for involvement Axys had a general request and call for participant involvement at the beginning of the process, using a variety of activities and means. The process was technically open to all. They identified the stakeholder groups to be included in the process[53], and made special efforts to include certain stakeholder groups, such as fishers (because of their previous marginalization by the BMR development process); and the tourism sector (because they had been seemingly boycotting the meetings and, with their economic power, could feasibly veto proposals at a later date). Flyers, displays at local events, public notices, meetings with different associations and government organizations (including attending the stakeholders' own meetings), boat tours of the reserve, hand delivering letters of invitation, and phone calls were used to get the message out and involve the public. Axys also made daily visits to fishing sites to ensure the wary, previously marginalized fishers that their participation at the "round tables was required and that their concerns would be justly represented in the report" (Axys 2000, Cumberbatch 2001, Sinclair and Green pers. comm. 2006). The facilitation team went door to door to tell people about the initiative and get them involved (Axys 2000, Cumberbatch 2001, Green, Selliah and Sinclair pers. comm. 2006). They also placed a two page article in the Sunday Sun, the local newspaper informing Barbadians about the study (Axys 2000, Sinclair pers. comm. 2006).

Although their attempts to include many stakeholders in the process were vast, some had flaws which resulted in them being less effective than planned. While Axys' idea of formally inviting individual stakeholders seemed to have been a good, direct and personal way to involve them, it ended up having the opposite effect for some. Many stakeholders (Fisher and NonCon alike) who knew of the invitations, yet had not received one personally felt that the process was closed to "outsiders". Subsequently, they reportedly did not dare attend meetings to which they had not officially been invited.

Study area The area of study—and also the basis from which Axys drew RT participants—also turned out to be a troublesome issue. Axys generally considered it to be the limits of the current BMR but later expanded it north (to Weston) and south (to Fitts Village) along the coastline. The eastern boundary of the study area focused on

[53] These stakeholder groups included "fishers, divers and water sports operators who use the area, government agencies with administrative and enforcement responsibility for the area, residents, hotels and commercial operations directly within the study area" (Axys 2000).

Folkestone Park and the foreshore of the current marine reserve (in terms of working area), while efforts to include stakeholders extended to the coastal side of Highway 1. By so doing, Axys missed many stakeholders and in a fashion which was divided generally by socio-economic class as well as ethno-cultural differences. Matters were made worse when this is coupled with the "by invitation only" idea. In this extremely tourism-focused area of Barbados, the coastal side generally no longer houses modest residential dwellings, particularly not those of many black Barabadian fishers. The coastal side of the highway is dominated by large pricey hotels, villas of expatriates, or wealthy Barbadians (Bryan, Town and Country Planning, in charge of the Holetown area, pers. comm. 2006). Although there were two homeowner associations included in the round tables, many of those who lived on the other side of the road, or up from the park within the watershed were not included.

While it is well studied and understood that land-based activities can have a damaging effect on the marine environment (e.g., Agardy et al. 2011), and that there were provisions within the legislation[54] to address these issues, in addition to stakeholders from the watershed not being systematically[55] included in the RT process, their activities went largely unaddressed. Despite the source of many of the threats to the BMR being land-based, the watersheds adjacent to the reserve have not been zoned (in 1981) or suggested to be zoned (in 2000) any differently than any other commercial area on the island (Bryan, Town and Country Planning in charge of the Holetown area, pers. comm. 2006). Moreover, the two golf courses in the area (Royal Westmoreland and Sandy Lane)—which some would consider potential major contributors to pesticide and fertilizer inputs to the BMR—did not have representatives at the meeting. In addition to not having been able to provide input to the process, many stakeholders from further up the watershed did not learn from, nor were they properly implicated in the process.

It should be noted that there were some positive aspects with regards to land-based activities and stakeholders from the area's watersheds. Representatives from government organizations involved in coastal and watershed management (such as CZMU, EED,

[54] The *1976 Marine Areas (Preservation and Enhancement) Act* stipulates that the Commission "may, with the approval of the Minister, enter into agreements for the use and control of any land required by it for the purposes of this Act."

[55] Whether residents were included from the start of the process or not is under debate. Some said they received an invitation, while others maintain that they had to push to be involved.

TCDPO), for example, were included in the planning process. By attending the round tables, these representatives would have heard concerns voiced about activities under their jurisdiction, and although not officially worked out during the round table process, topics regarding these areas of interest, concern and contention would have had a chance to be reported back to their organizations. Moreover, two landowner organizations (from Sandy Lane and Sunset Crest) did take part in the round table process (although both organizations included landowners from further up in the watershed, they also had had property on the coastal side of Highway 1. This, therefore, may not have indicated a conscious effort on behalf of the facilitators to include stakeholders from further up in the watershed, but a coincidence). Moreover, daily visits to fish landing sites by two Axys team members did attempt to address oversights concerning the focus of invitations, for fishers at least. The article placed in the local newspaper also could have addressed the issue of greater participation from the area's watershed. Unfortunately, the article was submitted after the first and major round table process had finished. It was thus more of a means of informing stakeholders about results rather than involving them in the process. There were some proposals for modifications to land-based activities included in the final Axys document (Axys 2000). This included an *Environment and Socio-economic Impact Assessment* (of roughly 30 of the total 624 pages), as well as *Holetown Watershed Management Proposal* (roughly 10 pages, submitted by the Holetown Watersheds Group/Sunset Crest Property Owners Association). In the end, however, the official zoning of the proposed reserve ended at the high water mark with the exception of the government-owned land already zoned as Folkestone Park.

Location and timing of round tables Where and when the round tables were held may have created hurdles for effective participation. They were generally held in buildings where fishers may have been out of their element and potentially not at ease (but where government officials, academics, large entrepreneurs may have been comfortable). "At meetings, fishers don't say nothing," said Fisher RT no. 2, "But if you come to the markets, you'll get all the info." They may have also had to travel to attend the meetings (Axys 2000), and considering the level of skepticism about the effectiveness of the RTs by fishers, this may have been a deciding factor about whether or not they

would have attended. As Brooklyn Fisher no. 1 said, "[They] want you to come to them instead of them coming to you—they do things backwards."

An alternative, more informal strategy (familiar to and used by Axys elsewhere) would have been much more successful at reaching more fishers and contributed to getting them more involved. This type of set up was used for the Harrisons Caves review. Here, the Axys team visited and had a meeting at a site where stakeholders themselves frequented (at a minimart) (Devonish and Reed pers. comm. 2006). The meeting was said to have been "very informal" yet "very fruitful", and had much mingling and social learning (Devonish and Reed pers. comm. 2006). Axys, however, did not use this type of strategy for the fishers and the BMR review. Their meetings did not take place at fish landing areas, although Axys did have two members of their team visit the fish landing areas throughout the process, and there was one boat tour with many stakeholders before the RT process began. Had this type of informal meeting taken place on the beach at landing areas, there may have been more voices heard, perceptions understood, information shared, consensus built and buy-in for the BMR.

In terms of their timing, the first 9 round tables were held between March and July 1999 (Axys 2000; dates are unknown for most of the 3 other round tables held in 2006). Although Axys did have members of the facilitation team visit the landing sites throughout their process (March 1998 to February 2000), unfortunately most of the round tables (during which the majority of stakeholder input would have been given) were held during the main offshore pelagic fishing season (November to July) when many of the potential participants would have been at sea for many days at a time, and hence not easily available for the meetings. The off-season or hurricane season (June to October, when offshore pelagics are less abundant) would have been a better time to have held the round tables if Axys had wanted to make sure fishers were at the meetings. During these months, many of the boats from the offshore fleet are hauled out for maintenance, fishing effort is focused on the coastal species and fishers are out at sea for much shorter periods (same day trips)(McConney N.d.).

'Representatives' During the second round table, stakeholder participation was narrowed down and representatives from the various stakeholder groups[56] were identified to form the "planning group that would carry on the Round Table process" (Axys 2000). The round table format included representative (the one who may speak for the group) at a U shaped table; and "backbenchers"/other stakeholders from each group seated behind the representatives. Only one representative from a particular group was allowed to sit at the table (although exceptions were permitted, pers. obs. 2006). Limited room was provided for 3 to 4 "backbenchers" (Green pers. comm. 2006). The representatives were given a chance to comment on that which was presented by the facilitator, and the facilitator also allowed backbenchers a chance to comment at the end of the session. At the end of round tables, Axys asked all backbenchers if they had anything to add and breaks with refreshments and food took place.

With the fishing community not yet well organized nor cohesive, and seriously marginalized by the initial development process and hence very leary of any new initiative that could potentially curtail their freedom, fishers were not served well by this "representative" format. Mahon and Mascia (2003) noted that fishers' voice at the table was generally carried by two fishers from Weston and a representative from BARNUFO (both comparatively well-known and well-off). With "collective action…not the norm in the fishing industry," and BARNUFO and other fisherfolk organizations only recently established (est. March 1999), the representative process may not have been as truly representative of the general opinion, information, and knowledge of fishers as one would have liked for such a process (McConney 2001b). McConney (1998a) notes that coastal fishers are not particularly geared towards cooperation, and demonstrate "the greatest tendency towards individualism"—hence, even if organizations were formed in advance, they may not have been very functional. He further points out that there is a general lack of cohesion between boat owners and fishers, and the latter often resent the former because of their "higher socio-economic status" (McConney 1998b). Fishers who I had interviewed who had attended the RTs had been boat owners and/or sported expensive gear or clothing. Those who had not attended were both owners and crew. Without

[56] The stakeholder groups included Planning and Environment, Housing and Settlement, Tourism, Research and Education, Fisheries, as well as Trade and Commerce

cohesion between these two groups, information may not have transferred from the RTs to other fishers. Judging by the answers given about fishers awareness of and involvement in the RTs, this seemed to have been the case. These factors would also decrease the chance for successful empowerment of, and buy-in by, stakeholders. In the end, the RT process did not have what Renard (2001) would have called "representation" (i.e., "people who legitimately speak on behalf of stakeholders"), for BARNUFO and other fisherfolk organizations were not well established. Nor would the RT process have had what Renard (2001) would have called adequate "representativeness" (i.e., "people who may not represent any particular group, in a political sense, but whose views are representative of the needs and interests of a given sector"), for a majority of the fishers who attended were not of modest[57] means.

The RT and representative format also may have discouraged non-representative, yet interested parties, from participating. During RTs 1 and 2, fishers had had the most number of participants in attendance of any stakeholder group—from more than twice to 15 times as many participants as other stakeholder groups (as divided by Mahon and Mascia 2003). After RT 2—when the representative format had been introduced—fisher participation dropped off dramatically from 15 to less than 5, and had only 2 "representatives" attended most meetings (Mahon and Mascia 2003). Moreover, during a RT I had attended in 2006, there was not much in the way of discussion between "backbencher" stakeholders and their representative at the table.

As Stringer and others (2006) remind us, "group dynamics in participatory research can discourage minority perspectives from being expressed." A great majority of the NonCon representatives at the RTs were affiliated with government, academia or from large private operations. Many were heads of established associations or organizations. The vast majority of these NonCon stakeholders would have been comfortable in such a setting and with public speaking; the newly created coastal fishing representatives may not have been. During the RT I attended, three out of four of the participating fishers participating seemed to have been more meek and mild mannered than the general

[57] Although fishers interviewed generally were not well to do, relatively speaking those who had attended RTs were better off than others in that they were boat owners or wore expensive gear or clothing. Garaway and Estaban (2003) note a difference between owners (and those with more power) and simple fishermen. Boat-owners and non-owners are not necessarily in the same circles, and are not aware of the issues with which the others have to deal (Garaway and Esteban 2003).

population of fishers I had encountered on the coast. They talked very little during the RT. Perhaps they did not have anything to say. Perhaps they did, but did not say it.

Although the Axys team did make a point of asking all backbenchers if they had anything to add, this may not have been sufficient for some (Academic RT no. 2, pers. obs. 2006). As the inquiry was done "in session", the more shy or unconfident of the group may not have said anything despite being asked, and potitically sensitive issues may not have been brought up. This resulting lack of input from participants may have been construed incorrectly. As Government RT no. 5 noted, "General consensus meant that no one spoke up any more. Consensus [came about] when you were tired and [had] given up". Along the same line, Academic RT no. 2 pointed out that,

> "if an issue is raised, I may have knowledge or I may not. If I don't know much about it, I may let others do the talking…They raised issues and those who had the knowledge participated. Those who didn't sat back and listened."

Had Axys had more breaks and taken them throughout the RT instead of solely at the end of the meetings, timid stakeholders may have had time to approach the facilitators with the concerns they were not confident enough about saying "in session" (Academic RT no. 2 and pers. obs. 2006). The breaks would have also allowed for greater networking possibilities amongst the different stakeholders, which would have allowed for greater social learning and trust built amongst groups.

Limited time and a straw man Although the 16-month timeframe generally seemed adequate for the development of a management plan, it was rather tight for a full participatory representative process. The three-month period that was allocated to the round table process may not have been sufficient for a thorough exchange of information amongst stakeholders, their representative, other RT attendees, the facilitation team and back. This would be especially true for organizations that were newly established, such as the fisherfolk organizations. Both facilitators commented on the limited and insufficient time they had for such an extensive process (Green pers. comm. 2006, Cumberbatch 2001).

Seemingly to facilitate and accelerate the process, the facilitation team came to the meetings with a type of straw man draft of what they thought should be proposed to the Government of Barbados. Axys collected and reviewed baseline information and identified key issues and conflicts in the development of the straw man. They also had

input from some key stakeholders contacted prior to the round tables in a type of "participation in information giving" process (Cumberbatch 2001, Green pers. comm. 2006). During the RTs, stakeholder representatives were said to be given the opportunity to provide input to and comment on the straw man—including most, if not all, of the main areas of interest for redefining the reserve (zoning, regulations, enforcement, fees and revenues, agency responsibility and organizations). Stakeholders then helped select the "preferred option for further elaboration" by the Axys team (Cumberbatch 2001).

Unfortunately, coming to a meeting with a quasi product-in-hand, no matter how good their intentions were, could have been taken badly by participants. If the straw man was not so easily taken apart and put back together with the input of stakeholders, and if the Axys team was firmly fixed to its suggestions, this may have left stakeholders frustrated and with the opinion that their input and comments were of no value. Subsequently, it would have enhanced their feelings that attending the meetings were futile. This unfortunately seemed to be the case with the Axys RTs. As Fisher RT no. 2 commented,

> "They listen, which is good. Anyone could listen, but [they] don't have to respond…With the boundary issue, everything was pre-set and you could say you didn't like it. But it's already set in stone. You were there just to say you were in it. They needed you to ratify it."

Similarly, Fisher RT no. 3 noted,

> "If they have [the review] in stone, [they] still listen and give you a say. [They may] use some of what you say to boost what they have already in place…to support their views."

It was not only fishers who had this point of view, Government RT no. 5 noted,

> "The process was amenable, but… there were times when we said our concerns over and over to Axys to shift their thinking. They were not a blank slate. They had some concepts they were fairly gung-ho on, but presented them as a straw man. It took a long time to shift their thinking. It was frustrating. They wanted the stakeholders to come to their way of thinking rather than them coming to the stakeholders' way of thinking."

Because they presented the straw man as their starting point, the background information used to come to this conclusion, although perhaps given to the participants, may not have been thoroughly heard, understood, learnt and vetted by stakeholders. Stakeholder learning and capacity building, therefore, would have been limited.

Although it had been promised to stakeholders, the final report was said to have been given to government without stakeholders' review (with some exceptions). In the end, many of the stakeholders who had participated were left with questions as to whether or not their concerns and input were heeded and incorporated in the final product. As

Fisher RT no. 5 commented, "[Axys] would sit down and look as though interested. They were writing everything down, but I haven't seen any results."

The missing sector Although great efforts were made to include it in the process, the tourism sector was largely absent from the meetings despite its prominence on the western coast. The tourism sector has great economic strength in Barbados, and hence most probably substantial political influence. Many interviewed surmised that the tourism sector felt the meetings were of no importance to them and that they could use their power to veto the final product if it was not to their liking (also Mahon and Mascia 2003). This could potentially derail all that had been accomplished. In addition to having made the hard work of the participating parties for naught, it would have further marginalized and infuriated the fishers in that their input was sought, but overruled by others' opinions—others' opinions who happened to have had the interests of non-Bajans as their priority.

Recap

The BMR was established in a way which instilled the notion that it was meant for wealthy foreigners and powerful Barbadians, at the expense of local Barbadians of more meager means. Who established it, how it was established, how it was put into law, where it was located, who ran it and which rules were enforced encouraged the idea of park as colonial remnant. From day one, negative attitudes surrounded the reserve; its rules, regulations and boundaries were hazy and little known; and the BMR's potential was never realized. The reserve was basically a paper park under control by those largely unfamiliar with the area, its ecosystems, and their management[58]. Still, for its era, the BMR was ahead of its time for having a marine-based reserve, using zoning, having some input from non-governmental entities, and should be commended for such.

The BMR experienced a glimmer of hope when the "environmental entrepreneur", St. Hill arrived. Guided by her vision and methods, an attempt was made to right past wrongs. The BMR would have been guided by a wide array of stakeholders with various

[58] Although using today's standards to judge yesterday's events could be deemed quite unfair (hindsight is always 20/20), it is these types of events that made cracks in the reserve's foundation, and which account for many of the reserve's faults and problems to be overcome today.

backgrounds (including fishers, marine-based organizations and all other organizations whose action or inaction would affect the reserve). This new multistakeholder advisory committee would have contributed to building better suited management efforts where all groups would have benefitted from and "paid" for the reserve based on their past, their capacities and their economic means. St. Hill had also developed a means of monitoring the reserve's effectiveness, allowing fishers to catch bait. Unfortunately, these sparks of hope soon extinguished once St. Hill resigned.

Most recently, Axys organized a very comprehensive effort in inviting participants to the round table process. Their course of action, however, may not have been as thorough and effective nor as well suited for Barbados as planned, or was hoped. In the end—because of such things as they way they invited people, the use of "representatives" and a straw man, details of how they conducted their meetings—there were not enough stakeholders who had been thoroughly involved and had buy-in to the process. Many who were involved questioned the impact of their involvement. Moreover, as with the previous era, good work was done and ideas developed, and excitement was created around the participatory process, but it all ended up being largely for naught, as many years later the plan had not officially been put into place.

5.3 Qualities & process of fisher participation with the BMR

> "However beautiful the strategy, you should occasionally look at the results." (Sir Winston Churchill)
>
> "No one monkey can run no show." (Fisher RT no. 5)

To judge how well the participation process was carried out with the BMR process, this thesis takes "fairness and competence" of participation as its base (sensu Renn and Webler 1995). "Fair and competent" participation in the marine reserve's decision-making process would have included adequate attempts at involving all stakeholders. It also would have consisted of satisfactory attempts at providing all stakeholders with an equal opportunity to access needed information and knowledge that facilitated informed decision-making. Furthermore, each and every stakeholder should have had an ample opportunity to discuss his or her position and point of view. They should have all been treated equally (or equitably) and have had equal influence on the decisions. Within this

section, each of these parameters is broken down into several indicators that are used to judge the quality of stakeholders' involvement in decision-making.

5.3.1 Attempts at involving stakeholders in the BMR decision-making process

> "Fishermen don't talk with nobody. We're too small. We should but politicians don't ask us anything…We don't have that kind of voice…People in the offices never seen a fish from the net. If they'd come, they'd learn a lot." (Paynes Bay Fisher N no. 9)
>
> "They don't come around and ask no questions. They just do as they please. Some of the guys who make decisions, [I] doubt they can even swim. They very seldom go to the beach." (Holetown Fisher N no. 7)
>
> "On one or two occasions. Not a consistent kind of thing. The heads make most of the decisions, [but] we have to live with their decisions. We don't get to consult [with them]." (Holetown Fisher N no. 8, when asked if the BMR staff tried to meet with him)
>
> "I would hope so, but no. Everybody on this beach got a part to play, because everybody's affected." (Holetown Fisher N no. 9, when asked if he thought everyone was told about the RTs)

Indicators Within this section, indicators reviewed include interviewed stakeholders perception of: a) whether they had contact with Axys/BMR employees; b) the frequency of their contact with Axys/BMR employees; c) Axys/BMR attempts at meeting with them; d) Axys/BMR attempts at making involvement easy; e) Axys/BMR seeking their concerns; f) all stakeholders having been told about the RTs; and g) their reason for not attending any or all RTs.

As can be seen in figure 14, many stakeholders have had some form of contact with BMR employees; the frequency of this contact, however, is sparse. Some Fisher Ns and NonCon Ns had not had any contact with the BMR staff. Fishers (RTs vs Ns) showed the greatest difference in contact with BMR staff, with Fisher RTs unanimously having had contact with BMR staff (usually the Park Naturalists and Boat Operators) and roughly only 25% of Fisher Ns having had contact. The contact both groups had, however, was very rare—usually a few times a year or less. A few NonCons (both RTs and Ns) did have contact more often (mostly during governmental meetings) but again this was rare. Moreover, only one of the six Fisher RTs came from a landing site close to the reserve; none were from landing areas directly adjacent to/within the reserve[59].

[59] In other words, land adjacent to the area of water between the north and south boundaries of the reserve.

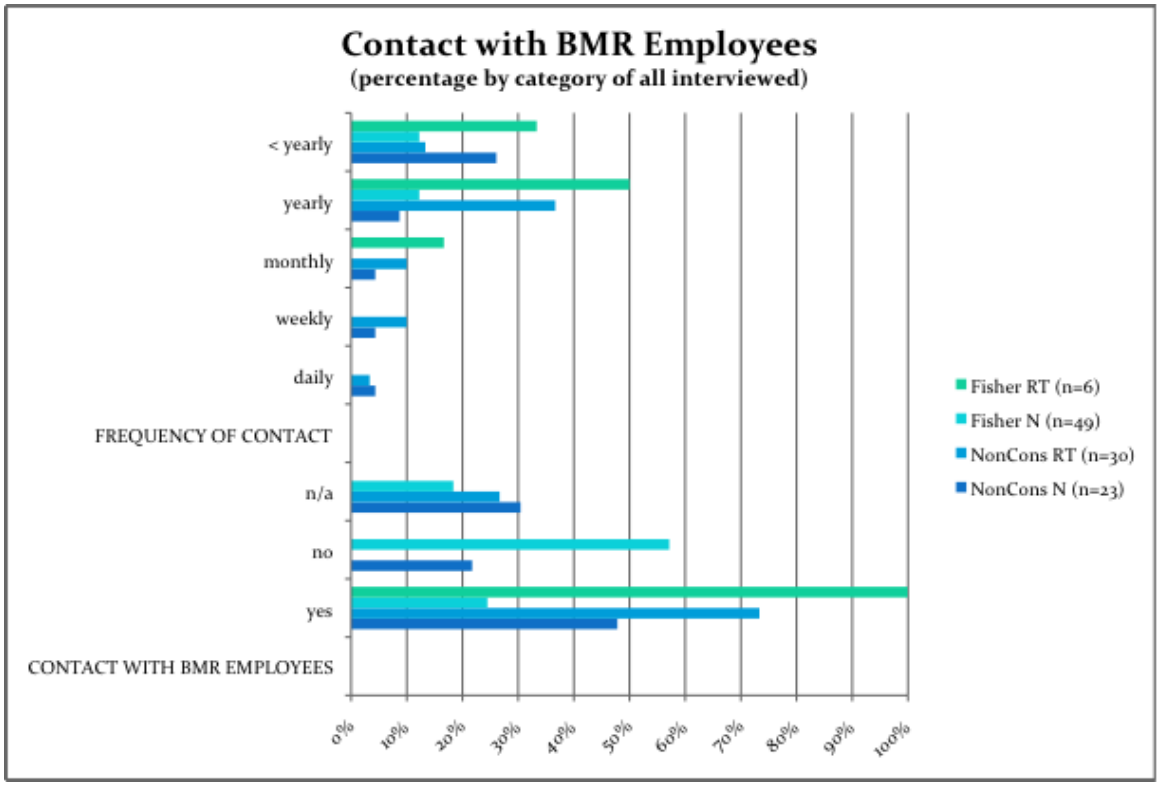

Figure 14. Contact with BMR employees indicators

When the stakeholders interviewed were asked about their view of the BMR staff and Axys consultants' attempts at: a) meeting with them, b) making their involvement with the reserve easy, and c) seeking out their concerns and input, answers were mixed, and most responded with Axys in mind (figure 15). When they were asked about Axys' attempts to meet with them and ease their involvement in decision-making, Fisher RTs generally found these to be mediocre to poor (Fisher Ns and NonCon Ns generally agreed), whereas NonCon RTs judged these to be mediocre to good. When asked whether they felt Axys had sought their concerns and input, most judged this as poor, except for NonCon RTs who judged it more often than not as good. So although Fisher RTs generally felt Axys had done a fairly good job at meeting with them and making their involvement easy, they were less positive than others when it came to Axys' attempt at seeking their concerns. This result may have come from various reasons, and may also have been shown in the data that present the reasons why many did not attend the RTs (figure 16).

As figure 16 shows, when those interviewed were asked if they thought everyone was told about the RTs, the general perception was that this was not the case (with the

exception of NonCon RT who were slightly more frequently positive than not); and when asked why they didn't attend all or any of the RTs, answers varied, but the most frequent answer was that they had not been invited/did not know about them.

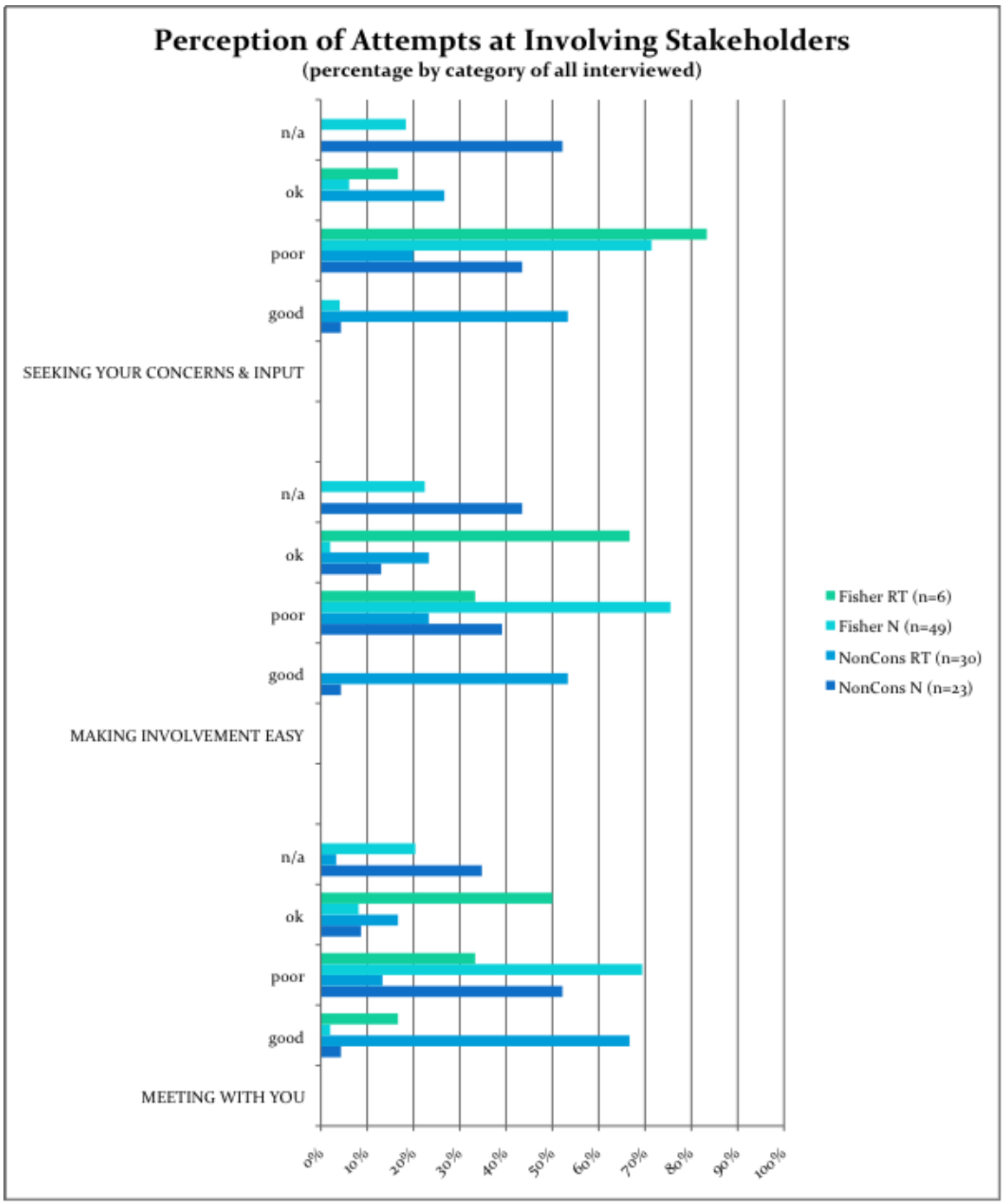

Figure 15. Perception at attempts of involving stakeholders

Although the consultants had gone to great lengths to try to involve stakeholders (fishers in particular), the results of the questionnaire, at first sight, point to the opposite.

Only 6 of the 55 fishers interviewed had taken part in at least one RT (data above) and only 2 fishers had taken part in most to all of the RTs (Mahon and Mascia 2003). Moreover, most fishers had responded that they did not attend because they were unaware of the RTs. Axys had reportedly visited stakeholders from Weston to Fitts Village and gone door to door along the coast, as well as used a wide array of other methods to include stakeholders in the RTs. From the responses received from Fishers about Axys'

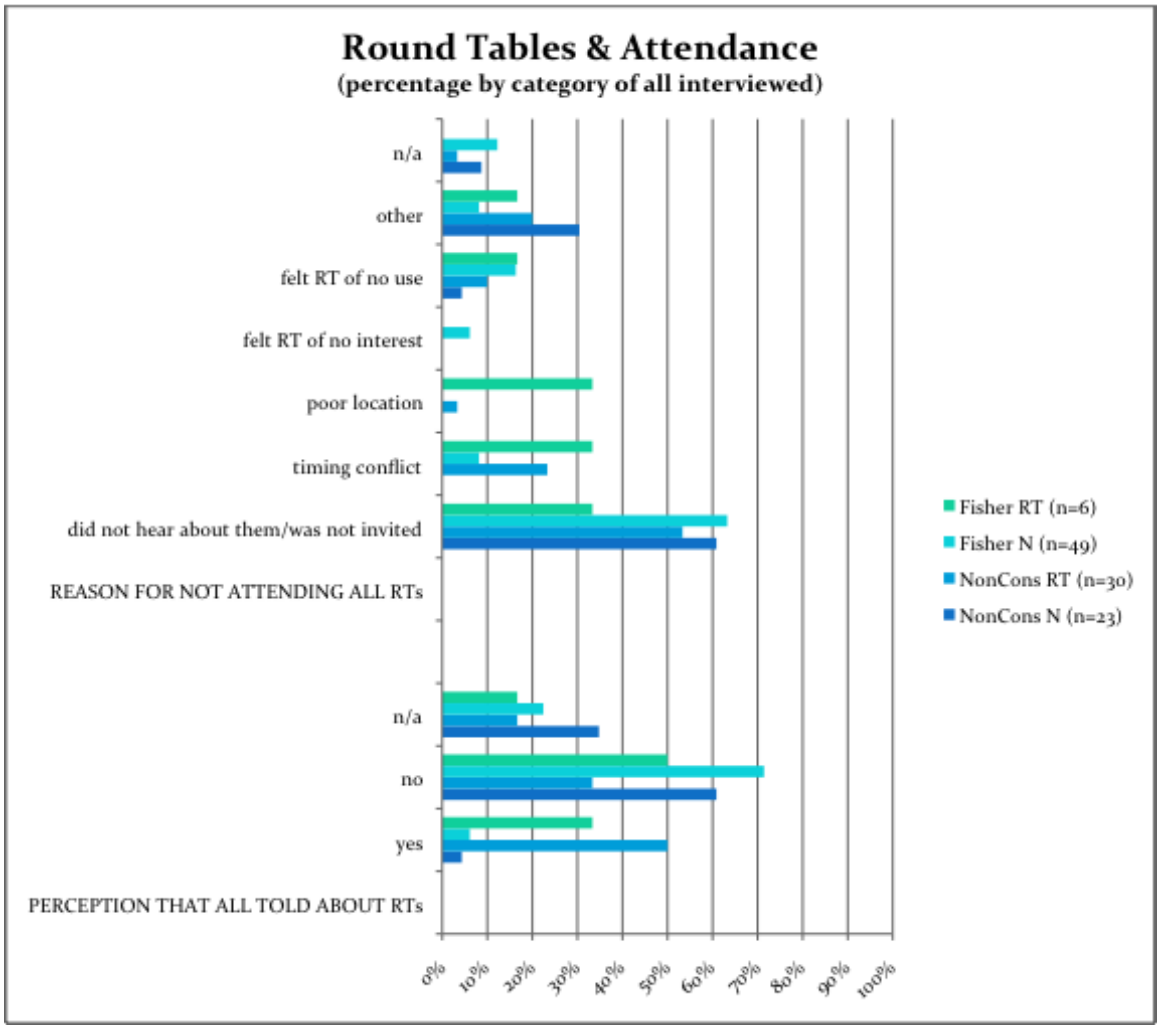

Figure 16. Round tables & attendance

attempt to truly involve them, many fishers seemed to have been missed. This inconsistency may have been due a variety of reasons. With the main focus of the invitations having gone out to those on the west side of Highway 1, an area clearly dominated by large hotels and restaurants, most coastal fishers were likely missed. Some fishers said they knew about them, but felt that they were not welcome (not an answer

offered on the questionnaire), as they had not received an invitation (even though the meetings were supposedly open to all). Fishers also seemed to have had a timing or location problem with the meetings. Some interviewees also speculated that many may have answered the "easy" or "polite" answer that they "did not hear about them", when really they had, but felt the RTs would have been of no use. Other reasons why fishers did not attend RTs were many. With representatives being the main people allowed to speak during the RTs, both Fisher and NonCon who had attended at least one RT echoed the futility and/or frustration of attending if you were not a representative. Some also felt that although they may have been invited to attend the RTs, they viewed the plan as a *fait accompli* by the time they arrived. Private Sector NonCon RT no. 2 commented, "Sometimes they approach and ask you, but they've already come up with a plan." Paynes Bay Fisher No. 14 echoed this sentiment when he said, "When you're big you're big…they don't take advice from people who know…all that [the recommendations to government] was prearranged…They had set up what they wanted to do." This perceived differential in power was brought up often, such as Private Sector NonCon N No. 3's comment that, "They will not take your input, so what's the point? The small man has no say." Some also felt that Axys approached fishers at the beginning solely to obtain needed knowledge rather than involve them in decision-making: "All they wanted was information on fishing or fish movement…they only wanted information on what they didn't know," commented a Paynes Bay Fisher no.14, "Fishing there was very good. They found out from us how good it was and then called it [quits]."

What is not seen numerically from this data, but seen from that of Mahon and Mascia (2003) and also heard throughout the interviews, was that although there may have been a few fishers at the RT, their numbers dwindled after the second RT when the concept of group "representative" was introduced (as discussed in section 4.2.3)(Mahon and Mascia 2003, Axys 2000).

5.3.2 Information and knowledge coverage during RTs[60]

> "[You] don't get a lot of information…you have to speculate or it's up to you to get advice." (Fisher RT no. 3)
>
> "That's a complex one. When an issue is raised, you may have knowledge or may not…if you don't know much about it, you let others do the talking." (Academic NonCon RT no. 2 when asked if enough information had been provided)
>
> "All topics were brought up but not given enough attention." (Government NonCon RT no. 2)
>
> "[RT Stakeholders] were not informed enough to participate meaningfully. They didn't know what they needed to know…They came with positions and interests and wanted to get information about what was being proposed…The information given was mainly on what the project was about and what [Axys] was hoping to achieve. There were *technical* presentations made, but maybe not with scientific knowledge." (Academic RT no. 6)

Indicators Within this section, indicators reviewed include RT participants' perception of Axys: a) providing them with information; b) making information easy to understand; c) explaining consequences; d) providing sufficient time; e) covering all topics necessary to make informed decisions; f) having had scientific knowledge presented; and g) having had fisher and local community knowledge presented.

Generally, those interviewed were quite split in their opinions on Axys' provision of information and knowledge, whether they made it easy to understand and how well they explained consequences (figure 17). In general, it seems that NonCon RTs tended to feel that there was enough information, that it was explained well enough, but they were divided as to whether the consequences were explained sufficiently well. When asked to judge how well Axys was at making information easy to understand, Government RT no. 5 noted, "[It was] good for me. For everyone else at the meeting, maybe not. [They] had presentations, allowed for questions. [It wasn't] just reports." Fisher RTs, on the other hand, generally felt Axys had not provided enough information, and were divided to unopinionated about whether it was explained well or whether the consequences were covered sufficiently well. As Fisher RT no. 1 explains, "Sometimes they don't give enough information. You have to have the theory behind you." This may have been due to facilitators aiming for the average stakeholder, treating all of the stakeholders equally (as per a comment by Academic RT no. 7's that stakeholders should be treated fairly, not

[60] Due to infrequency of contact with BMR staff, and the fact that they were not part of the facilitation team for the RTs, most of the remaining questions have been answered with the Axys facilitation team in mind.

equally, due to their different needs etc.). This would have resulted in insufficient information for some, and sufficient for others.

In their 2003 study, Mahon and Mascia commented on the effect not dealing with consequences had on the results of the RT process:

> "The extent to which stakeholders were adequately informed to participate in the development process must also be considered. In this regard, the [RT] process was constrained by a lack of technical information. Lacking were clear guidelines for what was possible for a [marine management area], particularly with regard to the feasibility of zone demarcation, maintenance and communication to users of the sets of rules that would apply to each zone. Consequently, stakeholders devised a set of zones that may not be feasible because they will be costly to demarcate and maintain, and that users may find difficult to learn and use…Without such technical assistance, participatory processes may create unrealistic expectations or lead the group to develop plans that cannot be implemented effectively."

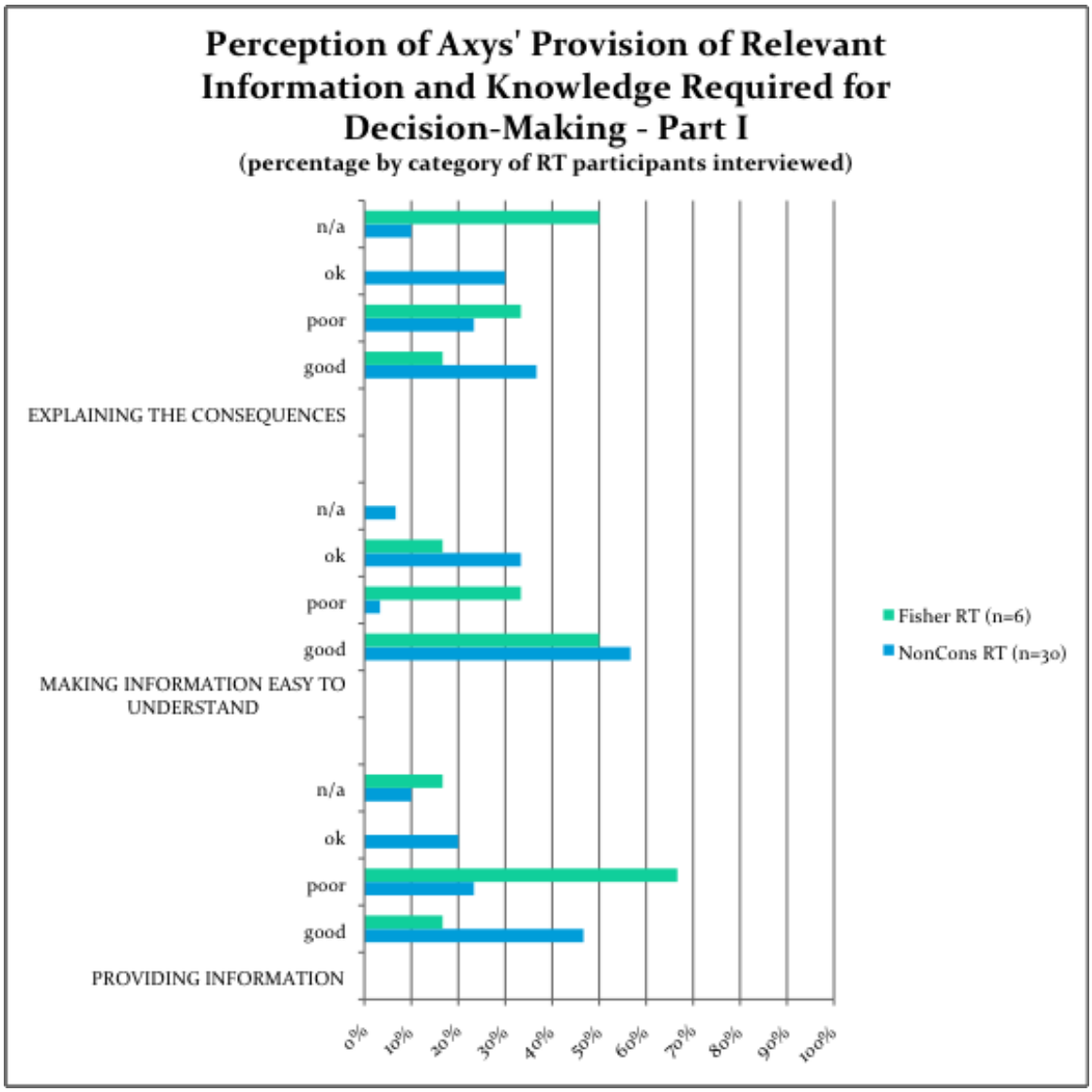

Figure 17. Provision of relevant information and knowledge required for decision-making part i

The authors fault the insufficiency of knowledge on Axys missing "personnel with good practical knowledge and experience in MPA development and management, including enforcement and stakeholder education" (Mahon and Mascia 2003). Moreover, although Axys did include Barbadians within their study team, the main players seemed to be Canadian. As such, if they had not done sufficient homework, they may have been proposing information that was largely inappropriate for Barbados and the BMR. This seemed to have been the case with their resulting proposal (see Axys 2000 for details). Zones in the newly proposed FMMA were complex and detailed, far more so than the current BMR, which stakeholders already had difficulty adhering to due to lack of posting of rules, regulations and lack of demarcation of boundaries; and which the Coast Guard and BMR had difficulty policing and maintaining due to the lack of resources. If the resources available to the BMR remained the same (in terms of money, people, time), it would be insufficient by far, for the newly proposed FMMA.

Generally, making information easy to understand tended to be where Axys excelled, given that it was provided; whereas explaining consequences seemed to be their poor spot. Whether there was enough information provided seemed to have mixed reviews.

When asked about the topics, the presenters, and the sufficiency of time given for the RTs, again, answers seemed to be mixed with no great differences between Fisher and NonCon (figure 18). Both Fisher and NonCons RTs tended to be divided about whether there was sufficient coverage of relevant topics and about whether fisher and local community knowledge was presented. My questionnaire did not seek to determine whether stakeholders truly had the right info and understood it, it simply asked them if they thought they had sufficient info. I relied on stakeholders who were very familiar with MPAs and fisheries to distinguish whether information was sufficient and correct. Many Academic NonCon RTs offered their opinion about subjects not covered. Academic NonCon RT no. 4 voiced the concern of many that there was insufficient coverage of zoning, rules, and the relative health of the different reefs found along the coast. Other Academic NonCon RTs interviewed felt that use and impacts were insufficiently covered. Academic NonCon RT no. 5 thought that land-based sources of pollution should have been dealt with, but also felt it was too big a problem to be covered during the scheduled

RTs. Some offered the opinion that when participants did not have the knowledge, they would be tempted to simply listen: "[Axys] raised the issues and those who had knowledge participated" (Academic NonCon RT no. 2). Some offered their opinion that

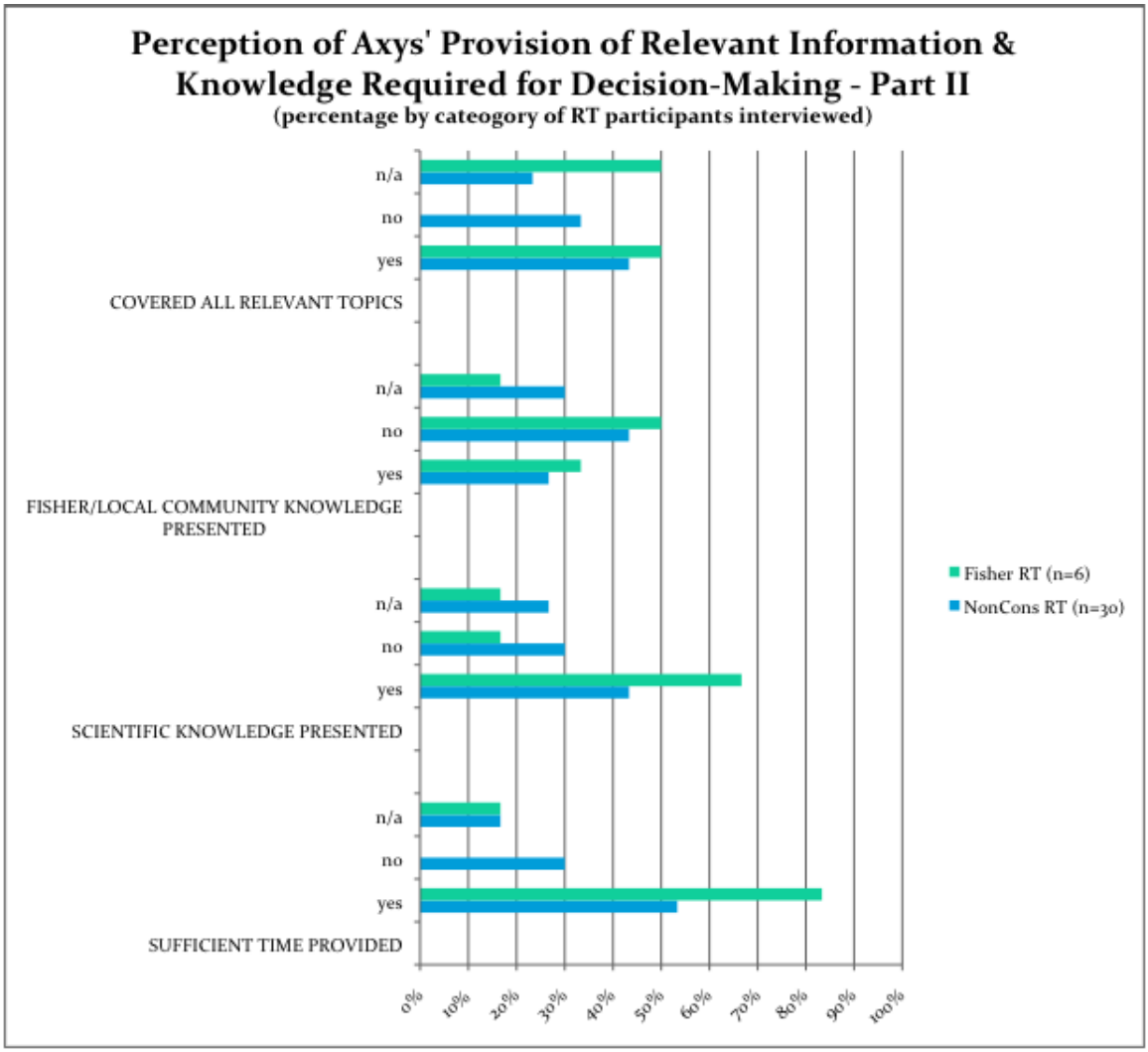

Figure 18. Provision of relevant information and knowledge required for decision-making part ii

RT participants were not informed enough to participate meaningfully and that they did not know what they needed to know. These participants, it is thought, would have answered affirmatively or not at all to the question of whether all relevant topics were covered. Others interviewed offered that participants basically went to the RTs to defend their positions and interests as well as be informed of the general plan being proposed, not necessarily to contribute to its making. This may explain the largely positive responses to the discussion opportunities questions (section 5.3.3) as compared to the mixed responses to the information questions. Both Fisher and NonCons RTs tended to be divided about

whether fisher and local community knowledge was presented. Those who were more positive added a caveat that it had been presented by the Axys team, not by fishers or the local community themselves. Others added that it was given in the comment, question and answer period by the representatives at the table. This perhaps explains the division about whether or not this knowledge had been offered during the RTs—some specifying by whom (facilitator or participant), others specifying when (formally or informally at the table), and still others simply answering without any specification. NonCon RTs were also divided as to whether scientific knowledge was presented, whereas fishers seemed more certain that it had been. A possible explanation for this difference could be that perhaps the latter took technical information as scientific. Although both generally felt there was sufficient time, NonCons RT were more skeptical about this more often than fishers.

5.3.3 Discussion opportunities during RTs

> "They wanted everyone to talk, not just one or two." (Fisher RT no. 1)
>
> "But of course everybody doesn't [talk and ask questions]. Some [are] shyer than others. [You] can't do anything about that but give them the opportunity." (Government NonCon RT no. 5)
>
> "They tried to get people's ideas, but they were fixed in their ways and already had what they were looking for and where they were going." (Government NonCon N no. 7)

Indicators Within this section, indicators reviewed include RT participants' perception of Axys: a) providing the opportunity to defend their position; b) providing the opportunity to raise questions; c) providing the opportunity to challenge others' point of view; d) stopping parties from dominating the conversation; and e) encouraging discussion but not guiding it to highlight Axys' own views.

Fishers RTs and NonCons RTs generally had similar responses, with both having had more often than not positive perceptions of their opportunities for discussion (figure 19). Grant, the new President of BARNUFO at the time of my field studies (2006), voiced the overall opinion of Axys' discussion opportunities when he said, "they allow[ed] anyone to speak and encourage[d] you to [do so]." Axys seemed to have done well at giving all stakeholders the opportunity to defend their position, raise questions, challenge others opinions, and even stopping parties from dominating the discussion. Their weakness, it seems, had to do more with guiding the discussion to their point of view.

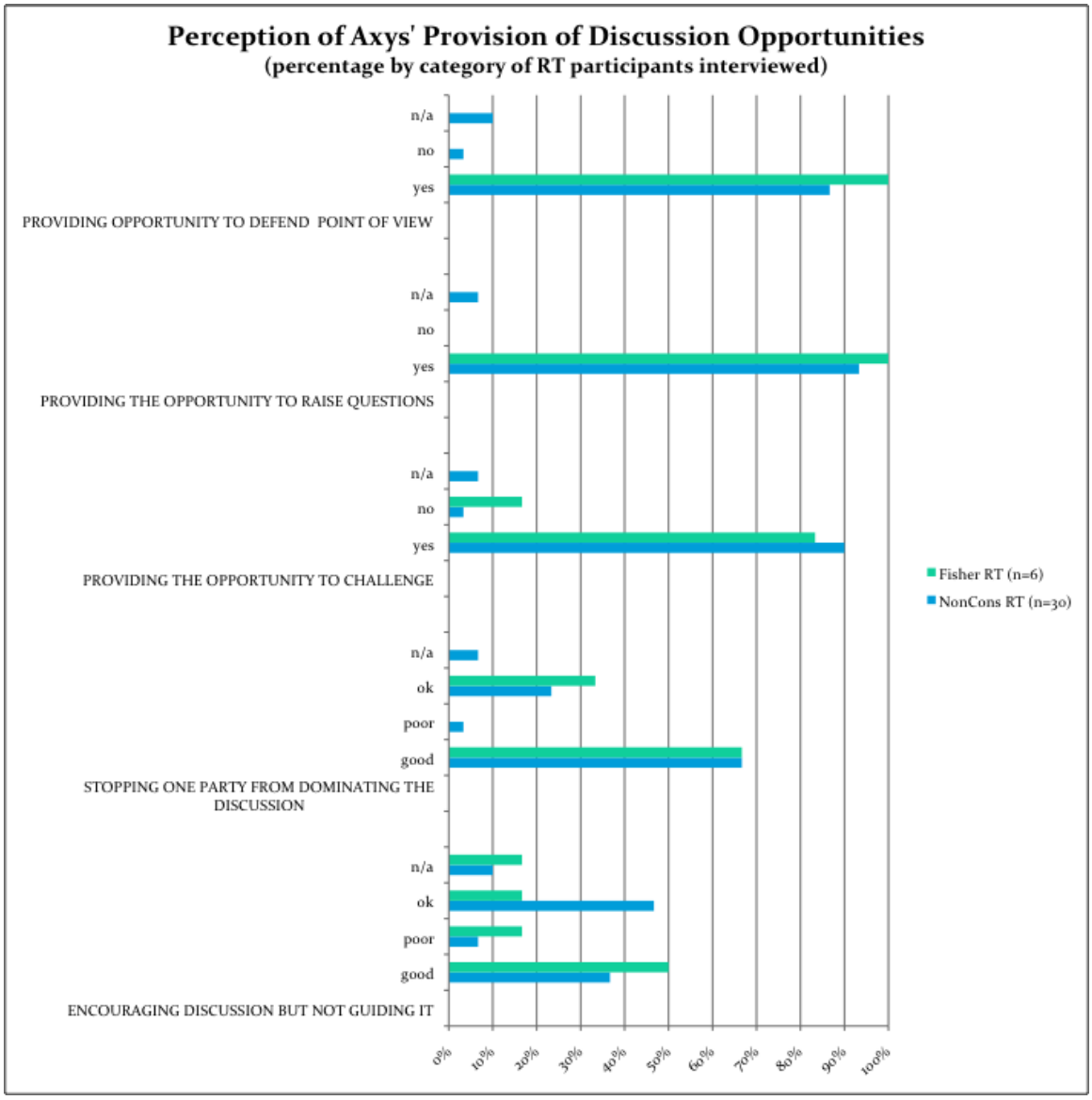

Figure 19. Discussion opportunities

Many of the indicators were highly positive by both groups for the dicussion opportunities questions. Although this positive sentiment was echoed many times, some offered slightly more negative spin, adding that "they were good, once it stayed within the context of what they wanted to talk about," (Private Sector NonCon RT No. 8). This caveat was repeated by many and shown in the data by the more mixed opinion about how well Axys facilitated rather than guided the discussion to their views. However, even in the more negatively viewed qualities of stopping domination of the meeting by one party and not guiding the discussion themselves, Fisher RTs and NonConRTs judged Axys' performance to be neutral to positive.

5.3.4 Equality of treatment/influence & response to concerns/input

> "It was a well balanced meeting. There were representatives from every possible group. Don't know about [the equality of] their influence though." (Academic NonCon RT no.3)
>
> "Even if they have [their ideas set] in stone, they still listen and give you a say. They use some of what you say to boost what they have already in place… to support their views." (Fisher RT no. 3)
>
> "I believe Jeff [the lead facilitator from Axys] really took the interest of fishers at heart…They listened, which is good. But anyone could listen, [they] don't have to respond." (Fisher RT no. 2)
>
> "[Axys] averaged out opinions rather than getting true consensus. They took the middle ground." (Academic RT no. 6)

Indicators For this section, indicators reviewed include RT participants' views of Axys: a) treating each group equally; b) being influenced by each group equally; and c) responding to their concerns and input.

When asked about the equality of treatment by and influence on Axys during the RTs as well as the perception of Axys' response to stakeholders' concerns, those interviewed were divided (figure 20). Respondents seemed most satisfied with their treatment, but were most divided when asked about their influence on and perception of Axys' response to their input and concerns. Many voiced skepticism about if and how their input would be used and their concerns responded to. Fisher RTs seemed somewhat more pessimistic than NonCon RTs when it came to their perception of Axys' response to their concerns.

Equality of treatment by Axys, as mentioned, seemed to be satisfactory for Fisher RTs who seemed to have been given additional attention to try to make up for the slights of the past. Academic NonCon RT no. 1 noted that Axys "favoured fishers because [they] saw them as underdogs. [Fishers] came to the table and did not feel disadvantaged". Government NonCon RT no. 5 commented on Axys' strategy by saying "[they were] very nice to fishers. Gave them a heck of a lot of weight as they were the disadvantaged group". Academic NonCon RT no. 7 astutely pointed out that Axys "treated each group fairly, not equally. [It's] not appropriate to treat each group equally [when there are varying] levels, abilities and knowledge."

During the interviews, and this section of questioning in particular, a well-voiced comment came up that had to do with perceived power differentials "behind the scenes". As an Academic NonCon RT hesitantly noted when asked about the equality of influence

of each group, "They were pretty good", followed by a long pause, "[I] think that certain groups can influence things politically. [They're] backed by power." Similarly, in a more candid and blunt manner, Fisher RT no. 2 voiced his feelings about a perceived power differential on the west coast of Barbados when he was talking about the effect he thought the RTs would have: "We feel threatened. Encroached by tourism. White people and their invading property. In the long run, it's all talk."

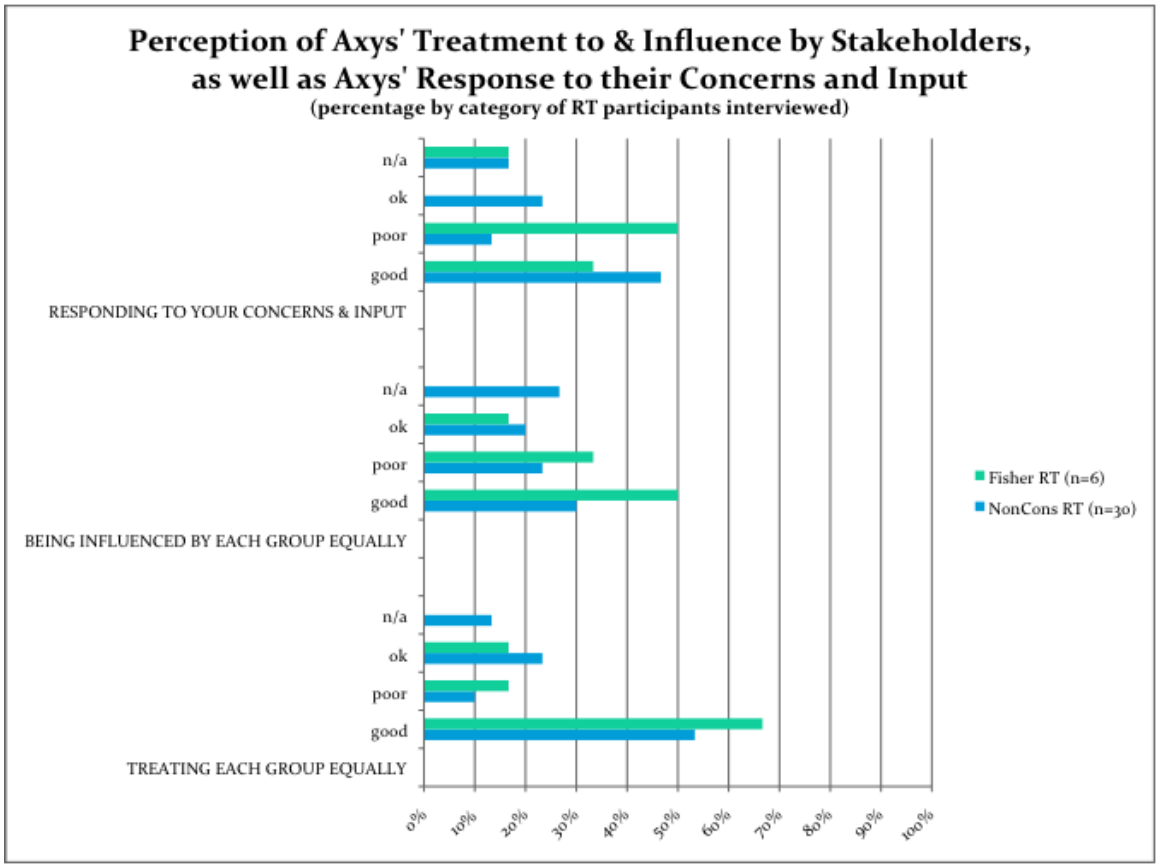

Figure 20. Equality of treatment, influence and response

Part of the reason for the skepticism, particularly by fishers, may have had to do with the report's review, or lack their of, by RT participants. By not putting as much effort into getting back to stakeholders with the report as they did in trying to build it (or simply running out of time), Axys lost some stakeholders' confidence and built up skepticism. "[They were] good, but when you leave the meeting, you don't know," said Private Sector NonCon RT no. 6 when asked about Axys' equality of influence and treatment. Many participants of the RTs, particularly fishers, had mentioned that they had not seen the report before Axys submitted it to the government. Whether this was

intentional or whether Axys simply ran out of time to send the report out for review and incorporate feedback, many RT participants had felt that this had been an empty promise.

Recap

Indicators[61]	Maximum Rating	Ratings			
		Fisher RT (n=6)	Fisher N (n=49)	NonCon RT (n=30)	NonCon N (n=23)
Interviewed stakeholders' perception of: ***Attempts at involving stakeholders in the BMR decision-making process***					
Whether they had contact with BMR employees	1.00	1.00	0.24	0.73	0.47
Frequency of their contact with BMR employees	2.00	0.83	0.12	0.83	0.35
Axys/BMR attempting to meet with them	2.00	0.83	0.12	1.50	0.17
Axys/BMR attempting to make involvement easy	2.00	0.66	0.02	1.30	0.22
Axys/BMR seeking their concerns	2.00	0.16	0.14	1.33	0.09
All stakeholders having been told about RTs	1.00	0.33	0.06	0.50	0.04
RT participants' perception of Axys: ***Information and knowledge coverage during RTs***					
Providing them with information	2.00	0.33		1.33	
Making information easy to understand	2.00	1.17		1.47	
Explaining consequences	2.00	0.33		1.03	
Providing sufficient time	1.00	0.83		0.53	
Covering all topics necessary to make informed decisions	1.00	0.50		0.43	
Having had scientific knowledge presented	1.00	0.67		0.43	
Having had fisher and local community knowledge presented	1.00	0.33		0.27	
Discussion opportunities during RT					
Providing the opportunity to defend their position	1.00	1.00		0.86	
Providing the opportunity to raise questions	1.00	1.00		0.93	
Discussion opportunities during RT (cont.)					
Providing the opportunity to challenge others' point of view	2.00	0.83		0.90	
Stopping parties from dominating the conversation	2.00	1.67		1.56	
Encouraging discussion but not guiding it to Axys' own views	2.00	1.17		1.20	

[61] Stakeholders' reasons for not attending any or all of the RTs was omitted for the answers to this question did not lend themselves to indicating a rating for Axys of exemplary, satisfactory or unsatisfactory.

Indicators[62]	Maximum Rating	Ratings			
		Fisher RT (n=6)	Fisher N (n=49)	NonCon RT (n=30)	NonCon N (n=23)
Equality of treatment/influence & response to concerns and input					
Treating each group equally	2.00	1.50		1.30	
Being influenced by each group equally	2.00	1.17		0.80	
Responding to their concerns and input	2.00	0.67		1.17	

Rating	Fisher RTs	Fisher Ns	NonCon RTs	NonCon Ns
Exemplary	33%	0%	29%	0%
Satisfactory	33%	0%	67%	17%
Unsatisfactory	33%	100%	5%	83%

In general, it seems as though Axys was judged as more or less satisfactory by both Fishers and NonCons who had attended the RTs. Fisher RTs were more divided in their opinion, and found Axys satisfactory to exemplary two thirds of the time, and unsatisfactory a third of the time; NonCons RTs largely felt that Axys had been satisfactory to somewhat exemplary close to all of the time, with the one exception being the presentation of fisher and local community knowledge at the RTs. Both Fishers and NonCons who had not attended the RTs deemed Axys and BMR's attempts at involving them in the decision-making process as unsatisfactory, with one exception by NonCon Ns judging their contact with Axys/BMR employees as satisfactory. Axys' greatest weakness seemed to have been in attempting to involve stakeholders in the process, particularly, attempting to make stakeholders involvement easy, seeking out their concerns, having told all stakeholders about the RTs where Fisher RT and Ns as well as NonCon Ns judged them to be unsatisfactory; NonCon RTs were the only group to have judged them as satisfactory for these indicators.

It seems as though, despite their great effort to seek out and include stakeholders at the beginning of the process, some of Axys' approaches and actions impeded more postive outcomes for fishers. The coastal range of Axys' invitations resulted in a tourism-

[62] Stakeholders' reasons for not attending any or all of the RTs was omitted for the answers to this question did not lend themselves to indicating a rating for Axys of exemplary, satisfactory or unsatisfactory.

related and wealthier stakeholders focus. Moreover, those who had not directly received an invitation felt that it was not their place to attend. Axys seemed to have ended up with the "same old" stakeholders which did not help to widen their outreach efforts. Axys' use of representatives, as well as the format and rules of their meetings, also hindered reaching a wider audience. Had Axys done their homework well, they would have realized that Barbadian fishers were not known to be involved in collective action, and that the fisherfolk organizations that existed, had only just been created and hence were not extremely functional. Other stakeholders, aside from fishers, also voiced frustration and futility in attending the RTs when they were not the representative at the table. Moreover, in not holding their meetings at fish landing sites, as they similarly did for another project, Axys missed a grand opportunity to have involved, or at least to have informed, a greater number of fishers. Although having a few fishers at the table is indeed a positive step, it does nothing to help get the general population of fishers on board and make them feel as if they are part of the process, making up for what was done when the BMR was originally created. The intent was there, but the homework and follow through was not done.

Fisher RTs and NonCon RTs differed in opinion largely when it came to Information and Knowledge Coverage. Fisher RTs generally judged indicators more poorly than NonCon RTs when it came to: a) providing them with information, b) making information easy to understand, and c) explaining the consequences. NonCon RTs judged Axys more poorly than Fisher RTs when it came to: a) providing sufficient time, and b) having had scientific knowledge presented. The inappropriate use of representatives in the BMR-fishers situation bottlenecked information and knowledge to and from stakeholders. Moreover, the equal treatment Axys gave to each stakeholder group—once they were involved in the meetings—hindered stakeholders' needs to be addressed and their abilities and knowledge to be fully used. It seems as though Axys made a great effort in trying to involve fishers, but once there, they treated them the same as others, despite their history, needs, knowledge and abilities. It seems as though Axys presented information, but did not explain it sufficiently enough or in appropriate terms for some, and did not include enough information for others. Use of McConney's (1998c) "common science"—a methodology used in Barbados fisheries management with fishers and fisheries

managers/scientists where "common sense and simple fishery science" are used to provide a "common ground for all stakeholders [with widely ranging backgrounds] to contribute in a meaningful way"—would have been a prudent idea. Although Academic NonCon RT no. 4 said that Axys "tried, didn't succeed, but tried," to treat and be influenced by each group equally, and that it was not Axys' fault because of the different capacities of the different groups to "get their point across, communicate concerns and represent themselves", others disagree. It is the job of a good facilitator to make sure that this happens. As Reed (2008) reminds us,

> "It is not enough simply to provide stakeholders with the opportunity to participate in decision-making though; they must actually be able to participate (Weber and Christopherson 2002). When decisions are highly technical, this may involve educating participants, developing the knowledge and confidence that is necessary for them to meaningfully engage in the process…Power inequalities within groups represent an equally important barrier to meaningful engagement. It is necessary to consider how inequalities in age, gender and background can be overcome to enable stakeholders to participate on a level playing field."

In addition to allowing stakeholders the opportunity to bring up questions and points they did not feel comfortable enough to raise during the regular plenary sessions, more breaks and work in small, multi-disciplinary break-out groups would have also enhanced trust and relationships amonst participants (Reed 2008). Judging from many of the responses from the stakeholders, this was greatly needed. In fact, having stakeholders work together in smaller break-out groups of similar interest and background, then subsequently in groups of various different interests and backgrounds, with plenary sessions that allow stakeholders to share their thoughts and ideas with other groups in between has been a methodology that seems to have worked very well—in terms of actual product and creating bonds amongst various groups (Morgan et al. 2005, Wilkinson et al. 2009). Another idea that could have been added was to have allowed stakeholders to individually and anonymously submit questions, opinions and suggestions so as to get the individual opinions of those who are more shy and perhaps not as confident before they were swayed by group thought.

Axys strengths seemed to be in providing opportunities for discussion, where both Fishers and NonCons judged them as satisfactory (2 out of 5 times or 40%) to exemplary (3 out of 5 times or 60%). Their weakness within this category was in the areas of not guiding the discussion to their own view, as well as providing the opportunity to challenge others' point of view, where they were judged as satisfactory, not exemplary.

This situation may have come about because of the little time allocated to the RT process. In light of limited time and subsequent effort to expedite the process, Axys may have had a tendency to push their view and may have favoured certain parties' opinions (that favoured theirs) over others (that were in conflict with theirs). They may have also tended to avoid a thorough discussion about the possible consequences and simply sought to bring the opinions together, with little attention to consequences. In light of the resulting zoning plan, this may have been the case. Knowing that the current, simple and straight forward zoning plan was generally not complied with, nor enforced sufficiently, having had a much more complicated and complex zoning scheme would have seemed to have been the wrong answer to the BMR's problems. This, however, seemed to have been the proposition brought forward by Axys.

Axys was also deemed unsatisfactory, by both Fisher RTs and NonCon RTs, in their attempt at having fisher and local community knowledge presented. This may have been due to the lack of information presented officially by the facilitation team, but also may have been due to the low numbers of fishers and local community members who attended the RTs and felt comfortable enough to speak.

Equality of Treatment/Influence and Response to Concerns and Input were also judged differently by the two groups. NonCon RTs generally judged Axys as satisfactory, whereas Fisher RTs judged them as exemplary for treating each group equally, but as unsatisfactory when it came to responding to their concerns and input. Academic RT no. 7 noted that Axys needed to treat "each group fairly, not equally. It's not appropriate to treat each group equally [when there are varying] levels, abilities and knowledge of different stakeholders." Axys seemed to have gone out of their way to have made the fishers who attended the RTs feel welcomed, but once there, Axys may not have tended to the differences within the group well. Moreover, not getting back to fishers with the proposed report to review before it was submitted to the government may have caused more problems than they expected. Because of this, many fishers and other stakeholders questioned their intentions. As pointed out by stakeholders and seen from the interviews, fishers do not forget. No matter how well the RTs went, if the stakeholders involved did not see the final product before it was submitted, they would be skeptical of the whole

process thinking that the facilitators may have chosen what they wanted from the advice given. This type of comment was prevalent in the interviews.

When the indicators were compared to see if both groups—NonCons and Fishers—had similar responses, this generally seems to have been the case. Within the Discussion Opportunities category, the two groups most certainly answered similarly, with the exception that their ideas about whether Axys encouraged discussion but was not guiding it (where the groups were slightly more divided in their thoughts). Within the Information and Knowledge (Part II) category, again, the two groups were fairly similar in responses, with sufficiency of time and coverage of topics being where they differed the most; NonCons were slightly more dissatisfied with these matters than Fishers. They differed most in their opinions in the Information and Knowledge (Part I) category. Here Fishers were less satisfied than NonCons when it came to providing information, making it easy to understand, as well as explaining the consequences. Fishers' opinion on whether they felt all stakeholders had been told about the RTs also differed slightly from their NonCon counterparts, with fishers being more pessimistic about the subject.

6. Conclusions

> "We are not certain, we are never certain. If we were we could reach some conclusions, and we could, at last, make others take us seriously." (Albert Camus)
>
> "Sometimes when you start losing detail, whether it's in music or in life, something as small as failing to be polite, you start to lose substance." (Benny Goodman)

6.1 Outcome of the participation process

The indicators used to judge outcome of the participation process point towards mixed results. The most positive of the outcomes had to do with the opinions and views of the BMRs location/boundary and rules/regulations; whereas the most negative was that of whether they felt empowered and had taken part in the decision-making process. In terms of opinion and view (whether they agree with the BMR and think it is fair), four out of five indicators were better for Fisher RTs than for Fisher Ns. Attendance at RTs did not seem to have affected NonCons in their opinion and view of the reserve—it had been moderately good to begin with. The largest surprise and upset was that Fishers and NonCons who had attended the RTs did not feel they had taken part in decision-making. Overall, there was very little difference between those who had attended RTs and those who had not, be they Fisher or NonCon despite the great effort Axys made with regards to involving people in the RTs. Here lack of attention to details during the RT process would have been the main culprit.

As for the other indicators, there was moderate awareness of boundaries and a poor understanding of the rules and regulations of the reserve for all groups (except for the no fishing rule, which all groups knew); there was no difference between those who had attended the RTs and those who had not. This may not have been directly related to the Axys review process for it was a new reserve Axys had been forcusing on during the RTs. It may have been more related to the lack of boundary and rule markings for the reserve throughout its life time. As for the perception whether the BMR benefitted the entire community fairly, most did not feel this was the case and there was largely no difference between those who had attended the RTs and those who had not, be they Fisher or NonCon. This may have been due to the reserve's history, as well as socio-economic and cultural aspects of the island's people, and deeply ingrained lack of trust amongst stakeholders. In terms of buy-in and belief in the system and theory of marine reserves,

there was generally no difference between those who had attended the RTs and those who had not—the great majority seemed to understand and believe in the theory. Stakeholders largest concern with regard to the possibility of the theory playing out at the BMR seemed to be focused on other factors (such as land-based sources of pollution and factors related to tourism) which continued unbridled. One of the most telling and basic signs of the limited success of the RTs was the number of fishers who had attended the RTs. Of the 55 fishers interviewed, only 6 had attended a RT, and only 2 to 3 had attended the RTs regularly, neither of whom were directly from an area within or directly adjacent to the present reserve (Mahon and Mascia 2003). Moreover, from listening to the Fishers who had not attended the RTs, it seems as if the information given to the few in attendance had not been passed on to others. Likewise, any benefit of being at the RTs were not shared by Fisher Ns either. Had Axys been able to include more fishers in the RTs, or had this information been passed on to others, their overall success may have been much greater.

6.2 General overview of background and history

The Barbados Marine Reserve is a no take MPA developed in the 1960s to early 1980s when stakeholder involvement was not in decision-makers minds. The reserve is located on a SIDS with a history of colonialism which subtly affects socio-economic and cultural aspects of the present day. Barbados, although rated high for the area in terms of human development index, has limited resources and is greatly dependent on tourism for its economic development. The BMR is located on the west coast adjacent to one of the most developed and tourist-dependent areas of the island.

The BMR's decision-making process (from development to review), involved increasing stakeholder involvement—particularly for fishers who had been largely excluded and marginalized during the development and early implementation of the BMR. This involvement during the review stage did have an effect, although not as great as it could have. Midway through the lifetime of the reserve, there was a great push from one person to include fishers in the decision-making process and even the playing field. Her efforts, unfortunately resulted in very little permanent change once she left her post. One change that had been adopted—in part—served fishers well (due to the permission given to catch bait fish within the reserve) but also poorly (due to the permission being

unofficial, largely unknown, and hence making fishers look like law breakers). Some 20 years after the reserve was first established, during the Axys review of the late 1990s, early 2000s, there was a concerted effort to right past wrongs and involve stakeholders, particularly fishers, in the review. Great enthusiasm and hope again developed. Many who attended the RTs had good things to say about the process. However, when the indicators of effectiveness, as well as the thoughts and opinions of the stakeholders were explored more thoroughly, it was clear that the lack of attention by Axys to small, but important details in the quality of participation and to the effects of background factors, had squandered much of their effort.

6.3 Quality of the participation process

For the Axys review, there was generally fairness but not necessarily competence in the decision-making process—at times things were too fair. Axys should have strived more for equity, not equality of participants. Information seemed to be provided but insufficiently and without great explanation of consequences and effects and without recognition of different stakeholders' background and knowledge. Power structure, socio-economics and culture seemed to have affected participants at the RTs. Many were silent and their silence was taken as understanding and agreement instead of having to do with being uncomfortable to speak up, disagreement or frustration. General categories of stakeholders were present at the table, but more fine scale division, which would have separated out the marginal of the marginal (e.g., unknown and less well to do coastal fishers) seemed to have been missed. In the end, fishers were at the table, but the RTs did not have Renard's (2001) "representation", nor "representativeness". All were given discussion opportunities—here, in fact, Axys did very well. Whether participants used this opportunity or not, and felt comfortable enough to bring up their points, was where Axys seemed to have failed. No one party seemed to dominate, except the facilitators themselves who were perceived as being quite married to their proposals and not easily swayed. Overall, it seemed as if much of Axys' troubles stemmed from a lack of time, or poor use of time for the process. In terms of equality of influence, many were unsure and unfortunately quite suspicious for Axys had not provided all stakeholders with the results of the RTs before the final document had been sent to the Government of Barbados.

6.4 The devil is in the details

Although it does seem that participation can be effective, details do matter, a great deal. It is not simply a matter of whether or not stakeholders were involved in the decision-making process. How they were involved, at what stages, as well as if and how background factors were taken into consideration also seemed to have mattered tremendously. Conservation is not only about managing the natural systems. To a large degree, it is about managing people. Just as different ecosystems need different strategies, so too do different people. People are not the same everywhere one goes. Thus strategies for participation need to be geared towards and tailored to those differences.

Although Axys seemed to have included a wide array of stakeholders in the process, and had included fishers from early on, lack of attention to details both in the quality of participation and in the effects of background factors (history, culture and socio-economic background) seemed to have impared their efforts. The following points outline the details missed and lessons learnt.

6.4.1 History and deeply engrained lack of trust attended to, but not sufficiently Trust does not develop over night. Lack of attention to historical and more recent past, as well as to the present day socio-economic situation and culture contributed to the ineffectiveness of stakeholders participation, and of fishers participation in particular. Barbados' colonial history and current subtly hierarchically and racially-based culture; the power of tourism and marginality of fisheries; as well as miss-steps during the BMR's early development should have all been considered. After stakeholders had been treated less than optimally once, and particularly when much of the poor treatment overlapped and was compounded by other factors, a great deal of time and effort to overcome the resulting suspicion, doubt, and mistrust was needed.

In the 1960s to early 1980s, when the BMR was being created, stakeholder participation was not in the minds of many decision-makers. Although Barbados was forward thinking when it came to conserving the marine environment through protected areas and using an ecosystem concept, it was not an exception to the top-down decision-making process of the times. The reserve was largely established by foreigners and expatriates on the booming tourist-centered Platinum west coast. When the BMR was first developed and implemented, access to many of their traditional fishing grounds were

taken away and their landing areas were razed to make way for tourist development. Fishers were not included in any of the BMR decision-making (nor were many other stakeholders at that point in time), nor were they included in the information session which happened six months after the reserve was established. Moreover, they were, and continued to be, largely the only party that had their activities curtailed. This was despite the many other rules and regulations for the reserve, and threats to the reserve from other activities and sectors, particularly those which were tourism-related. How they were treated vis a vis tourists, tourism-related businesses and other threats from development of the area helped to embed a sense of suspicion, being wrong-done by and mistrust about the BMR and any activities, events, organizations or individuals related to it (or even perceived to be related to it or benefiting from it). Mistrust and suspicion developed against fishers as well. The unofficial change in the no fishing rule (allowing fishers to catch bait within the sandy areas of the reserve) may have given fishers the bait they needed. At the same time, however, because the rule was not officially changed and widely recognized, fishers came to be known as law breakers, when really they were adhering to an ad hoc rule and agreement. This detail of not making the rule official made a great difference, unfortunately for the worse.

The development and implementation of the reserve to the present day ingrained much resentment, reservation and scepticsm about the BMR. This feeling of inequality and lack of trust, which started many years ago and were maintained by the way rules were enforced, may have been more difficult to overcome than originally thought by Axys. The past does not generally get left behind. As Academic RT no. 6 astutely noted, "fishers don't forget." Actions and inaction of people lay the foundation upon which future relations are built. If the foundation has a crack, it must be fixed and attended to before the remaining structure is built. Although Axys had not been extremely "culturally myopic" (Pimbert and Pretty 1995), they may have been "historically myopic" by not paying sufficient attention to the details of history and not having taken adequate time and energy to repair the foundation faults before, or even while, moving on. Relations and trust, therefore, remained poor despite the time, money and energy put into the RT effort.

Greater attention to opportunities for social learning would have gone a long way in developing the trust needed amongst stakeholder groups, as well as between stakeholder groups and the BMR. As Garaway and Esteban (2003) point out,

> "lack of communication networks, outreach experience or social capital are severe constraints to building local partnerships and the presence of distrust, tension or conflict between stakeholders [create] significant problem[s]".

Moreover, more Barbadians taking central roles in the facilitation process of the RTs may have also improved the situation. Barbadians know their island and its people best and having them at the forefront of the participation process/review would have added to the knowledge needed to address the BMR situation successfully. Moreover, if Barbadians, and fishers in particular, had had more prominent roles in the RTs, other Barbadians and fishers may have listened to them with greater heed and respect. Potentially, it would have also increased the trust and respect for these Barbadian leaders after the RTs were over as well. As McConney (2001b) notes, the over reliance on outside "experts" needs to be attended to. Multifaceted conservation work needs much help, ideas, creativity and effort, no matter where it is from. Foreigners need not be excluded from such processes all together. Foreign consultants, however, should be largely in supporting roles, leaving locals to guide the process at its forefront, and continue on after "outsiders" have left.

Although seemingly minor when looked at independently, when other missed details (to be discussed) are overlaid on the area's history, socio-economic and cultural climate as well as its lack of trust amongst stakeholders (previously discussed), they become large stumbling blocks for effective stakeholder participation in decision-making.

6.4.2 Invitations One of said seemingly minor details was the way Axys spread the word about the RTs. Invitations and their range of delivery (being to the more wealthy and tourist oriented stakeholders on the coastal side of Highway 1) had an effect other than what was intended. Unless stated otherwise, the very nature of an invitation unfortunately implies that certain people are invited and welcome, and other people are not; this thereby discouraged some stakeholders from attending. Moreover, the fact that the invited parties were more likely wealthy, tourist- or expatriate-related, and not marginalized fishers of lesser means (who largely live on the other side of Highway 1) made this implication worse.

6.4.3 Representatives Because Barbadian fishers did not have close knit communities, nor did they have well established fisherfolk organizations set to represent their interests, Axys' use of a representative format for the RTs (in hopes for greater efficiency), unfortunately led to less effectiveness. Information and input to and from the RTs resided with the few fishers who had attended, and went no further. Any influence on stakeholders opinions and views of the BMR stayed with the representatives only—which was quite apparent in the interviews.

Largely because of the invitations and the use of 'representatives', Axys did not reach the greater coastal fishing community the way they had wanted. Many fishers who may have wanted to take part, were discouraged from doing so or were missed entirely.

Fishers who did attend the RTs, however, were reached and postively affected by being involved in the decision-making process. Details of how the RTs were run, however, lessened the potential impact with these stakeholders.

6.4.4 Power differentials By not paying attention to subtle social cues and the socio-economic and cultural power differences amongst stakeholders, Axys missed reaching out to and receiving information and knowledge from those who were more uncomfortable (for various reasons) at the formal setting of the RTs. A different format of RT, a different location (such as at the fish landing sites), one-on-one discussions/input, more breaks and mixed breakout groups may have helped to aleviate this problem.

6.4.5 Great equality, but not necessarily equity It seems that Axys went to great lengths to make sure fishers at the table were given discussion opportunities, and and were treated equally. Perhaps, however, they treated the groups too equally at times. As NonCon RTs (many of whom had similar backgrounds as Axys) generally gave Axys a satisfactory rating for information and knowledge, it seems as if Axys treated everyone equally, even for this category. It does not seem that Fishers and others had adequate information and knowledge for the RTs. Taking time to give adequate explanations appropriate for all stakeholder groups would have helped. Those who did not understand seemed not to have asked questions, perhaps because of being uncomfortable. McConney's (1998c) "Common Science" may have been a good technique to have been used during the RTs.

6.4.6 Inadequate/misuse of time and the straw man Axys' use of a straw man upon which people could comment was a time saving technique they used, with, unfortunately, poor results. Unless it is used very carefully and facilitators are open to totally changing their proposals, a straw man can hinder rather than help the process. From stakeholders comments, it seems as if Axys did not openly and easily welcome comments and changes to their draft, and unfortunately they did not give their draft back to participating stakeholders for review. This left participants with the opinion that the proposals were set and they were simply brought there to "sign off" on the project, not to get their input. It also left them with doubts about what Axys had used or ignored, and ultimately had put Axys' credibility into question. It left stakeholders with the idea that they had had no effect on decision-making for the BMR.

6.4.7 Feasibility Other details that Axys unfortunately missed related to the feasibility of their proposals. Because they did not pay attention to the little resources available and the little institutional attention paid to marine issues by NCC, much of what they proposed seemed beyond the scope of the BMR. If management found it difficult to maintain markers and signage for the reserve in its 1981 state (with 3 types of zones, in 4 areas), the more detailed and complex zonation (with 8 types of zones, in 20 areas) proposed by the Axys process would have been highly unfeasible. Moreover, if resources remained the same, they would be insufficient for all of the "bells and whistles" Axys proposed to the BMR (such as the mobile education/interpretation unit/vehicle). Instead of increasing the complexity of the zonation scheme to attempt to suit everyone's needs, increased attention should have been given to having greater outreach and awareness, and having more stakeholders involved. In this way, the 'simple and easy' present zonation scheme would have been better known and more stakeholders may have changed their opinion about the BMR and hence may have been more willing to abide by the present simple and straightforward rules.

6.4.8 Emphasis on negative not positive aspects of BMR Another detail Axys failed to acknowledge was the successes of the BMR. Although the reserve had been largely unsuccessful in its outreach, enforcement, monitoring and the like, it had had some successes. As can be seen from the CZMU/UWI/Bellairs data on fish abundance within the reserve over time, as well as compared to adjacent sites, the reserve had some

success in conservation despite its lack of management measures. Moreover, it seemed to have had some success in supporting fisheries management, as the FD catch statistics demonstrate, particularly the comeback of the Paynes Bay site after a west coast fish kill. These and other studies were ignored, while one study which did not demonstrate success was highlighted. Had more people known of the seemingly success stories of the BMR instead of solely its failures, more may have had respect for the rules, regulations and boundaries. They may also have had confidence in the reserve, and felt that it was beneficial to a great majority of stakeholders. With this confidence, may have come more resources from government, and possibly more effective and efficient enforcement and management, and subsequently a healthier ecosystem.

6.5 An example of the way forward—learning from the past

Trust and confidence in the BMR and its management would have greatly benefitted from regular, increased and prolonged involvement of a wide array of stakeholders in the decision-making process. Such strategies would be beneficial if institutionalized and if they took history as well as socio-economic and cultural aspects into consideration. As was seen from Axys and St. Hill's experience, short injections of attention did little for the reserve and its stakeholders. Monitoring strategies, like that proposed by St. Hill (1987) had suggested for fishers and bait fish, would have benefitted all parties if put in place and institutionalized. Affected fishers would have had a short-term benefit of a job while they waited for the long-term benefit of increased fish stocks. The reserve would have had monitoring done, and by people familiar with the area and on the water every day. Greater contact and social learning between the parties would have contributed to increased trust and confidence[63]. Fishers would also have been able to witness the effects of the reserve with their own eyes and not have to rely on others' say.

[63] As can be witnessed by my first hand experience with the fishers of Barbados: they were tremendously skeptical and untrusting of me when I first began my interviews. Any association with McGill, Bellairs Research Institute, the government and the reserve itself increased their suspicion. During my field studies I visited the landing sites daily, at times simply hanging around, without a questionnaire in hand, allowing them to get to know me and me them. After two months of this routine, fishers reaction towards me changed dramatically. At first I was "welcomed" by screaming, yelling, heckling, saying that the BMR and Bellairs were the worse things that happened to the island, or fishers simply having nothing to do with me. By the time I left, I was greeted with waves, smiles, joking around and challenges to games of dominos, invitations to local fish frys, including Sunday morning's fish fry at Holetown, interviews with fishers who had held out for a long time, and offers to take me fishing, and requests that I come back soon. It was more than I could have ever wished for.

They would have been empowered in decisions that affect their lives and livelihood and worked with BMR staff towards conserving the area's ecosystems. The new monitoring initiative which involves divers from the area, as outlined by Blackman and Goodridge (2009), leads one to believe that increased and institutionalized participation of stakeholders with the BMR has a future. But here too socio-economic and cultural details should be taken into consideration. The monitoring program involves divers, not fishers. Perhaps a parallel program should be set up for fishers and catch outside the reserve, with bait fish, or within the new Sustainable Fisheries Management Areas proposed in the Axys report (Axys 2000). Let us hope this is only the beginning of increased stakeholder participation, not another repetition of past failures where fishers again are left out and marginalized.

The Barbados Marine Reserve had shown increasing promise in terms of fishers involvment in decision-making from the 1960s to 2010. The last push at participation, which happened in the late 1990s, early 2000s, was a valiant effort in including some of the more economically and politically marginal stakeholders. But like all forms of ecosystem management, techniques need to be tailored to the situation at hand. Without a continued attention to detail, the greatest efforts can fall flat. Such has been the case to date with the BMR. By learning from the past, paying attention to detail, and tailoring efforts to the situation at hand, and institutionalizing stakeholder involvment in decision-making the BMR has a chance at a more successful future.

By increasing our understanding of the theory and practice of stakeholder participation, the science of marine conservation may be advanced, guidance will be provided for marine management practices, and the lives of fishers and fishing communities who are dependent on these coastal ecosystems will be improved. This study has attempted to shed light on stakeholder participation as it contributed to the success and failures of the Barbados Marine Reserve (BMR), located on the central west coast of Barbados.

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