An evaluation of socio-economic conditions and environmental interactions on a section of the east coast of Grenada

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ABSTRACT

Socio-economic monitoring (SocMon) in Grenada commenced in late May 2008 with a training workshop in the east coast town of Grenville, the site selected for the project. SocMon Grenada was part of a regional project *Socio-economic monitoring by Caribbean Fishery Authorities* (Fisheries SocMon) funded by a US Coral Reef Conservation grant for and jointly implemented by the Center for Resource Management and Environmental Studies (CERMES) of the University of the West Indies, Cave Hill Campus, and the Caribbean Regional Fisheries Mechanism (CRFM). Grenada opted to participate in this project because of the perception at the Fisheries Division that certain east coast communities were impacting on coastal ecosystems in a manner that was likely to negatively affect the quality of life of those communities over time.

The survey site, which is located along the east coast of mainland Grenada encompasses nine villages and one town. Within the site there are a variety of coastal resources which impact and are impacted upon mostly by adjoining communities. These resources include the sea itself, coral reefs, seagrass communities, beaches, mangroves wetlands and typical coastal vegetation. Human utilization includes sand mining, charcoal production, fishing and agriculture (both plant and animal husbandry).

The socio-economic survey revealed a wide selection of public concerns and perceptions regarding primarily issues as sand mining, coastal degradation, improper waste disposal and community involvement in decisions pertaining to the coastal zone.

To further validate the results of the assessment and to provide feedback to stakeholders the results of the survey should be disseminated to people within the study site and the public in general. Additionally, they should be encouraged to participate in any decisions related to the assessment.

A mechanism and individuals need to be identified in order to continue the socio-economic monitoring periodically as well as provide feedback and input at the policy or planning level.

As a consequence of intermittent delays, the activities of the project were carried out over a very prolonged period resulting in the validation workshop being held almost two years later in February 2010.

SocMon Grenada suffered from crippling absenteeism by team members and other supporters of the project which on several occasions paralyzed the execution of project activities. However, the primary activities such as the initial training workshop, development and execution of a survey questionnaire, analyses of results and a concluding validation workshop were eventually completed.

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1 INTRODUCTION

1.1 SocMon Caribbean

SocMon Caribbean is aimed at understanding the human dimension of coastal and marine resource management within the region (Bunce and Pomeroy 2003). In practice it involves periodic monitoring of interactions between humans and their environment using a variety of tools including structured questionnaires, secondary sources of information and interviews with key persons. It is hoped that the knowledge and understanding so acquired will be put to use in more effective planning and resource use management and thus promote sustainable livelihoods. The knowledge gained during a SocMon exercise is of great benefit to coastal residents and other resource users by engendering a greater appreciation of their own role with respect to conservation and resource use.

1.2 Situation overview

The study area (approximately 15.5 km from north to south in a straight line) is located on the east (Atlantic) coast of the island. Despite the usual high wave action, the coastline has historically enjoyed the protection of an almost continuous barrier reef ranging between 50m and 100m from the shore. The wide sandy beaches that existed just over 30 years ago provided excellent nesting grounds for endangered leatherback and hawksbill turtles. The wide band of coastal vegetation (20m-17m wide) of sea grapes, coconut palms, almonds, fat pork, goat's foot (*Ipomea spp.*), mangroves and legumes was an effective buffer between the beach and human settlement infrastructure.

The study area consists of nine coastal settlements including the town of Grenville. Due to its location, fishing and other coastal livelihood associated activities such as agriculture, crabbing and charcoal making are the main activities. The town is a commercial centre and consequently some of the activities are non-traditional. Coastal degradation - erosion and resultant loss of vegetation (especially mangroves), loss of prime land and beaches and sea water incursion- has accelerated very rapidly over the past thirty years as a direct result of state sanctioned large-scale sand mining by a single corporation. On the surface, coastal dwellers seem ambivalent to this destruction since no loud outcry ensued. As a consequence of commercialization, waste disposal was added to the problem of coastal degradation. Improvements in housing and transportation infrastructures further exacerbated deforestation while intensive agriculture close to the sea added to the chemical pollution of near shore waters threatening the function of the barrier reef system.

The Grenada Fisheries Division accepted the opportunity to utilize a small grant of US$2500 to conduct socio-economic monitoring on a section of the east coast in 2008 for the following reasons:

- The selected site represented an almost unbroken line of human settlements with close interaction with the sea and other coastal resources (Figure 1). In fact the site consists primarily of fishing villages.
- Due to its exposure to the Atlantic Ocean, the coastline is continuously subjected to high-energy wave that changes the character of the coast to which coastal residents have to adapt.
- The coastal resources are diverse ranging from coral reefs and seagrass meadows to beaches, mangroves and estuaries.

- The area has been, and continues to be, subject to accelerated degradation mainly as a consequence of large-scale sand mining but with other factors such as inappropriate waste disposal playing a role also. This has affected the quality of life of residents not least in terms of lost economic opportunity.

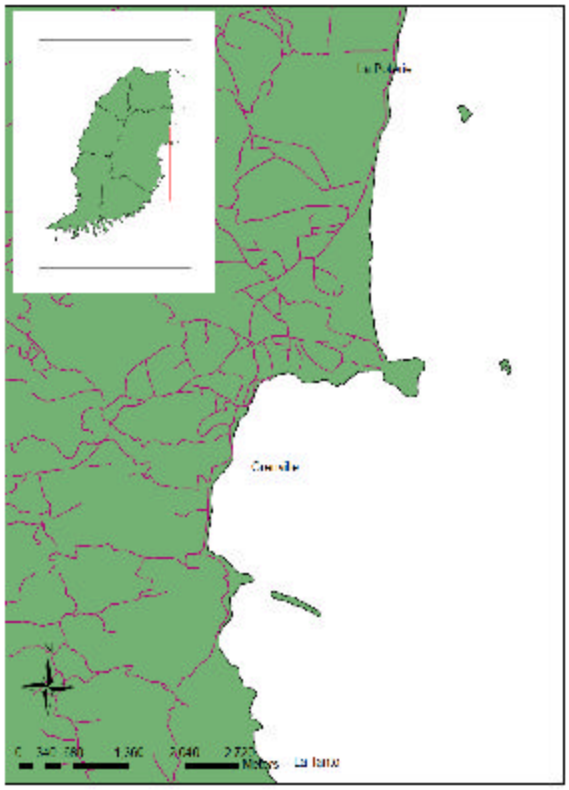

Figure 1 Site map and enlarged area showing the SocMon Grenada study site - La Poterie, St. Andrew's to La Tante, St. David's with the town of Grenville in the middle

1.3 Goal and objectives

The goal of this study was to assess the importance of coastal resources to fishing and other stakeholders in coastal settlements. From this goal, the following objectives were developed (Pena 2008):

1. To build linkages among stakeholder agencies
2. To contribute to public awareness and responsibility (especially among those within the study site) regarding coastal resource management
3. To provide input at the policy-making level
4. To establish a link to the sea egg governance project (MarGov small grant) and others

1.4 Organisation of the report

This report is divided into five sections. Section 1 comprises the introduction in which an overview of the situation in the SocMon study area is described as well as the goals and objectives for monitoring. In Section 2 the methods and tools used to execute the project are described. In section 3 the results are presented in format that links the results with the specific project objectives. A general discussion of results and conclusions with examination of specific

aspects of the study and lessons learned follows in Section 4. The report concludes with Section 5 with recommendations for further monitoring and management

2 METHOD

2.1 Training

The Fisheries SocMon project was introduced to its intended participants during a SocMon training workshop held in the town of Grenville on 27-29 May, 2008. Grenville may be considered to be the social centre of the study site since it is the only town within the study site and is almost midpoint between the end-points of the study area. The training workshop was conducted by Ms Maria Pena (Project Officer, CERMES) and Dr. Patrick McConney (Senior lecturer, CERMES). A total of 21 persons attended representing various agencies, schools and individuals (Appendix 1). In keeping with the fourth project objective (Section 1.3) Ms Roxann Nayar who was commencing a postgraduate study on Grenada sea egg fishery was also present and supported by Dr. McConney. The training workshop covered a wide selection of relevant topics and introduced participants to the SocMon process through practical work. Additionally, participants were able to make key decisions for monitoring during the workshop. The full content of the workshop is contained in Appendix 2. A detailed description of the training workshop may be found in the workshop report (see Pena 2008).

2.2 Preparatory activities

In order to execute the project certain key decisions had to be made. These included the following:

- Determination of the study site (Figure1)
- Solicitation of the Grenada Education and Development Programme (GRENED) for financial administration of the project grant
- Composition of the SocMon team based on the diverse expertise of individuals present at the workshop
- Decision on the roles of the SocMon team members
- Identification of secondary sources of data and key informants
- Decision on the primary tools of the study
- Development of a public awareness/education strategy

2.3 SocMon team

Table 1 shows the members of SocMon Grenada Team, the skills each brought to the team as well as the role each had committed to perform in carrying out the study.

Table 1 Composition of the SocMon team showing organisational affiliation and skill requirements of each team member

Name	Organisation	Skill requirement or role
Sandra Ferguson	Agency for Rural Transformation (ART)	Social Scientist/Study design/questionnaire design
Cloide Phillip	Grenada Community Development Organization (GRENCODA)	Community specialist/Field researcher/graphic design
Paul Phillip	Fisheries Division	Marine Biologist /Deputy team leader/Coastal zone specialist/ advisor
Margaret Frame	Ministry of Finance	Statistician/data analysis/processing
Crafton Isaac	Fisheries Division	Fisheries Biologist/leadership/ data

Name	Organisation	Skill requirement or role
		analysis/processing/reporting and presentation
Ashlyn Campbell	Grenada Educational and Development program (GRENED)	Community specialist/community liaison
Steve Nimrod	St. George's University (SGU)	Marine Biologist/data analysis/processing/questionnaire design
Alvin Charles	St. Andrew's Anglican Secondary School (S.A.A.S.S.)	Student/advisor and researcher
Dessima Williams	GRENED/ Brandies University	Social Scientist
Glenda Williams	GRENED	Community specialist/identification of key informants

2.4 Secondary data

At the SocMon training workshop participants identified the main sources of information that would help inform the strategies employed for the study. Table 2 lists these sources and the type of information each might be able to provide that would be relevant to the study.

Table 2 Secondary sources of data and information provided by each

Secondary data source	Type of information provided
St. Andrew's Development Organization (SADO)	• Coastal Conservation • Beach protection • Community involvement • Advocacy
Gravel and Concrete Corporation	• Sand mining • Economic data • Coastal erosion
Forestry Department	• Status of mangroves • Mangrove services • Charcoal production
Physical Planning Unit	• Plans for the Greater Grenville project
Ministry of Finance – Statistical Unit	• National census • Poverty survey
National Parks	• Parks and Protected areas plan
GRENED	• Educational levels and opportunity • Community awareness

2.5 Key informants

Prior to conducting household surveys, the team sought to identify key informants in each village to be interviewed. Information generated from these was used to design the household survey component of the study. Due to its unique location within the study site (within the main catchment area), GRENED located and engaged relevant key informants. Some of the key informants identified were:

- The General Manager of Gravel and Concrete Corporation. This corporation controls sand mining in the area
- The President of the Soubise Fishermen Co-operative

- The Head of the Physical Planning Department
- The President of The St. Andrew's Development Organization (SADO), the main community-based organization (CBO) in the area
- Mr. Claude Douglas – sociologist and author with an intimate knowledge of the area

2.6 Household surveys

A survey of households within the study site was conducted using a structured questionnaire developed along guidelines contained in the SocMon Caribbean manual (Appendix 3). The questionnaire comprised 23 questions but due to limited testing some of the questions concerned with household activities, and goods and services were only found to be deficient during actual surveys. A total of 350 households were selected based on the overall number of households (2,848) and recommended sample sizes provided in the SocMon Caribbean guidelines (Bunce and Pomeroy 2003; section 3.4). Demographic data were derived from the Population and Housing Census (Grenada), 2001 and is reproduced here in Table 3.

Table 3 Household size by village

Village	No. of HH	HH size by sex		Total HH size	Avg. HH size
		Male	Female		
St. Andrew					
Grenville	473	707	734	1441	3.0
La Poterie	196	409	729	808	4.1
Tivoli	404	729	687	1416	3.5
Conference	223	345	342	687	3.1
Pearls	281	521	496	1017	3.6
Telescope	425	742	734	1476	3.5
Soubise	303	493	525	1018	3.4
Marquis	161	296	270	566	3.5
Cafe	108	219	180	399	3.7
St. David					
La Tante	274	472	472	944	3.4

(Source: Population and Housing Census, 2001. Ministry of Finance)

Due to the number of households in the study site, the team decided to conduct 350 questionnaires based on the formula per village illustrated in Table 4.

Six interviewers (three male and three females) administered the questionnaires. Three of the interviewers were teachers and three were upper level post-secondary school students. They were equipped with folders, notebooks, writing materials and ID tags. They were also supplied with a digital camera. Prior to commencing actual interviews, the interviewers participated in a half-day training workshop conducted by Mr. Claude Douglas, a sociologist, who was hired to train the interviewers in appropriate interview techniques.

Table 4 No. of households surveyed per village within the study site

Village	% total no. of HHs	Number of questionnaires per village (% of 350)
Grenville	16.6	58
La Poterie	6.9	24
Tivoli	14.2	50
Conference	7.8	27
Pearls	9.9	35
Telescope	14.9	52
Soubise	10.6	37
Marquis	5.7	20
Cafe	3.8	13
La Tante	9.6	34
TOTAL	100	350

The interviewers were supplied with notebooks and were instructed during their training in the kinds of observations worth noting due to their importance to the objectives of the survey. For example they were to note the questions that were readily or reluctantly answered and which, if any, elicited a hostile attitude. Notes were to be taken of other signs of affluence or poverty, use of coastal resources and the sharing and quality of community services such as public wash houses and toilets. In addition, interviewers were encouraged to record photographically, as many observations as possible in order to create a photo library to complement the survey results.

The questionnaire data were entered into an Excel spreadsheet. The data were analysed with assistance from CERMES. The results of the SocMon study were presented at a validation meeting held in Grenville on 18 February 2010. Persons who participated in the SocMon training workshop (27-29 May 2008) were invited to the validation meeting. During the validation meeting, the overall value of the results was discussed and a strategy was devised to communicate the information to the respondents of the interviews. Additionally, the limitations and shortcomings of the survey were analysed. Returning to the study site and sharing the results with the residents was considered to be one of the most important of follow-up action (see Appendices 4 and 5) since stakeholders' response to the results of the study will inform the next phase of the process.

3 RESULTS

3.1 Household demographics

As illustrated in Figure 2 the ages of respondents were almost normally distributed. Most of heads of households were between 20 and 50 years of age (72%). Interestingly, 5% household heads were less than 20 years old.

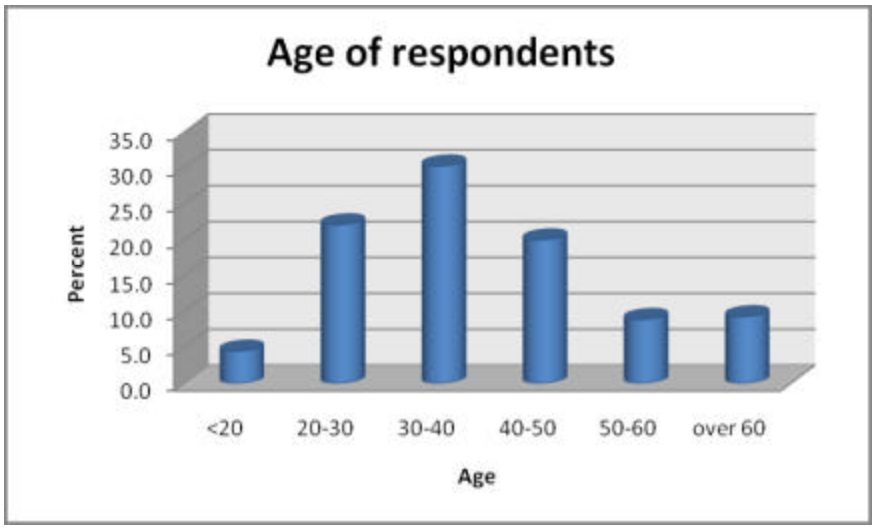

Figure 2 Age of respondents

3.2 Household activities

Figure 3 illustrates the kind of activities households are involved in that have direct connection to coastal resources. Recreational use including swimming and for wellness (51%), faming (51%) and fishing (39%) were identified as the top three activities using coastal resources. Sea egg harvesting was noted as a household activity by only 4% of respondents and may be indicative of pre-moratorium behaviour.

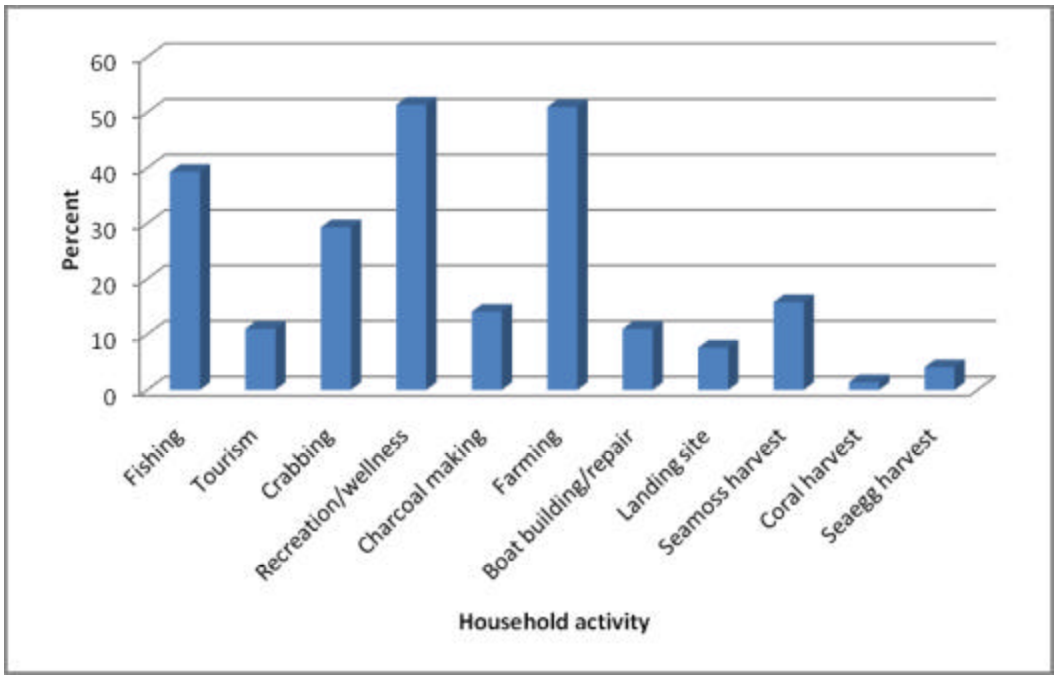

Figure 3 Household activities

3.3 Resource conditions

This variable sought to elicit from coastal resource users their perceptions of changes in the quality of coastal resources over time, 10 years ago and currently (in 2009).by ranking their responses (Figure 4). The majority of respondents (64%) stated that resource conditions in the past were either very good (36%), or good (28%).

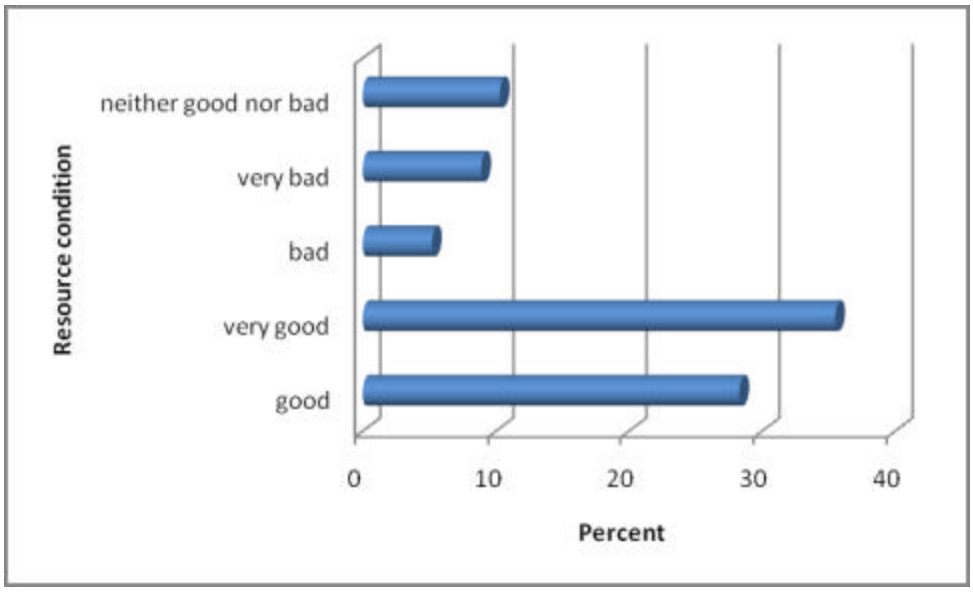

Figure 4 Perceptions of resource conditions 10 years ago

Generally, respondents seemed to be unable to provide definitive perceptions regarding the current (2009) conditions of coastal resources. This was seen in particular for mangroves and rivers where either equal or almost equal proportions of respondents perceived these resources to be in a combination of good/ very good, or bad/ very bad condition. Additionally, the majority of respondents (36%) perceived the condition of beaches in the study site to be neither good nor bad (Table 5; Figure 5).

Table 5 Coastal resources for which condition was definitively perceived

Coastal resource	Good/v.good (%)	Bad/v. bad (%)	Neither good/bad (%)
Mangroves	25	25	11
Rivers	29	30	11

Respondents perceived the condition of coastal vegetation and fish abundance to be in a bad/very bad condition. Fish abundance was thought to be in a worsened condition today with nearly half of the respondents noting it to be in a bad/very bad condition. Of all coastal resources, 28% respondents perceived coral reefs to be in a good/very good condition with the majority (16%) stating they were in very good condition (Figure 5). This seems to contradict the response of bad/very bad fish abundance but would be dependent on the types of fish respondents were referring to in relation to fish abundance.

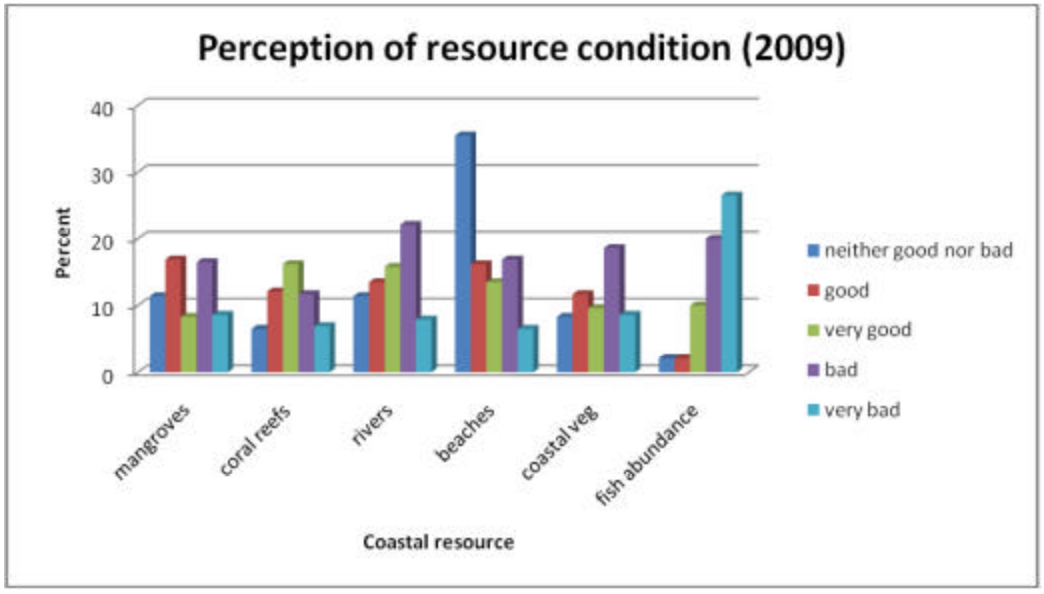

Figure 5 Perceptions of respondents to the current (2009) condition of coastal resources

3.4 Perceived threats to coastal resources

Sand mining, pollution, garbage/illegal dumping, erosion and deforestation were perceived as the main threats to the health of coastal resources. Sand mining was thought by the majority of respondents (11%) to be the most significant threat to coastal resources (Figure 6).

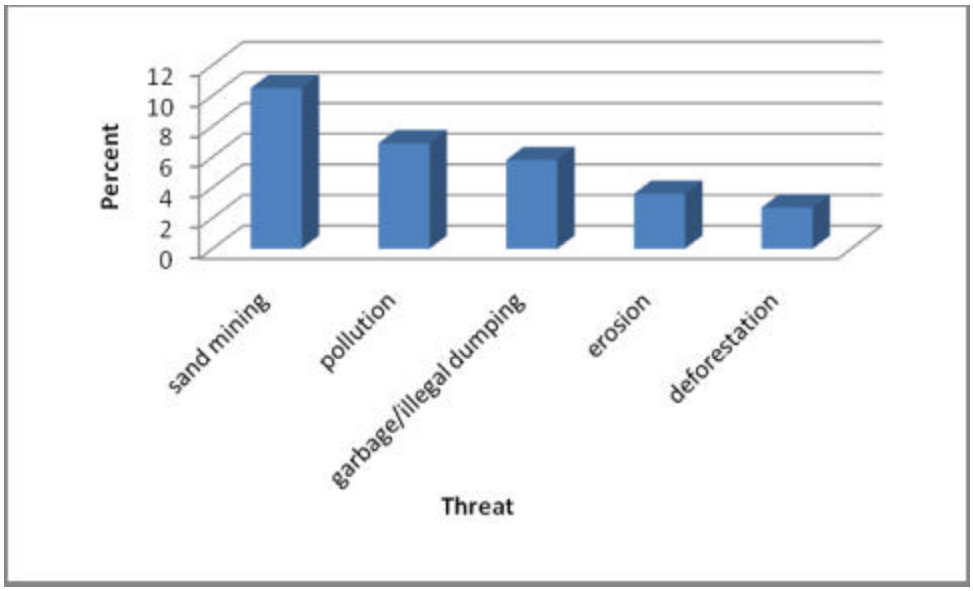

Figure 6 Perceived threats to coastal resources

3.5 Knowledge of rules and regulations, compliance and enforcement

How informed respondents were to existing rules and regulations with regard to conservation and protection of critical coastal resources and the extent to which they comply with what they do know is illustrated in Figures 7 and 8, respectively. Knowledge of rules and regulations with

respect to critical coastal resources and activities is generally quite good. Between 40-80% of respondents possessed knowledge of rules and regulations for eight out of nine coastal resources and activities (Figure 7). Poor knowledge of tourism rules and regulations was evident with only 28% of respondents being aware of these (Figure 7).

Respondent knowledge of rules and regulations pertaining to garbage, sand mining are fishing was very common with greater than half of the respondents confirming such knowledge in all cases (80%, 77% and 61%, respectively; Figure7).

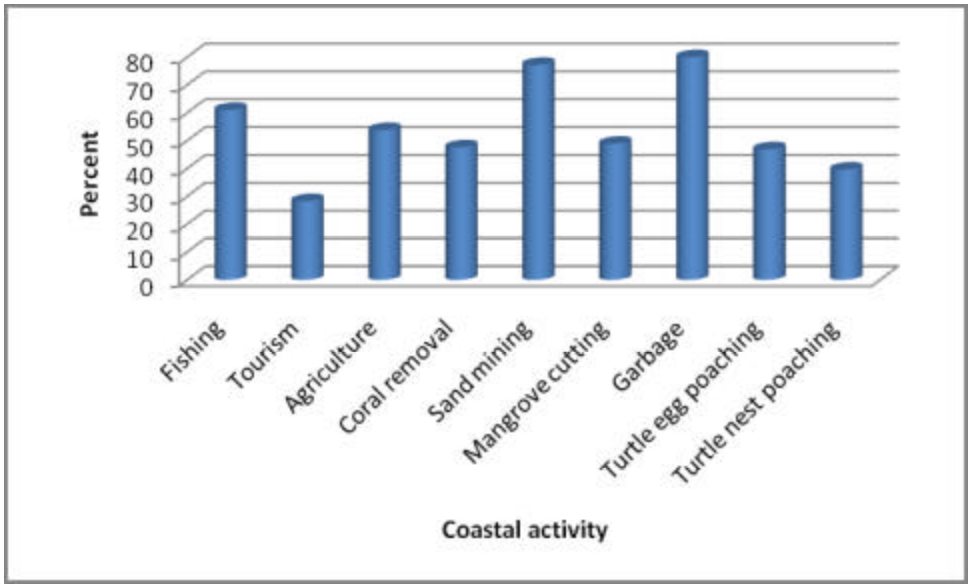

Figure 7 Knowledge of rules and regulations relating to coastal resources

The degree of compliance with rules and regulations appears to be quite high with a total of 78% of respondents suggesting partial or nearly full compliance. However, the majority of respondents (72%) indicated there was either very little enforcement or no enforcement of rules and regulations (Figure 9). Enforcement appears to be quite closely positively correlated with partial or non-.compliance. Due to the limited enforcement of rules and regulations regarding coastal resources, there is a relatively high percentage of partial or non-compliance (66%).

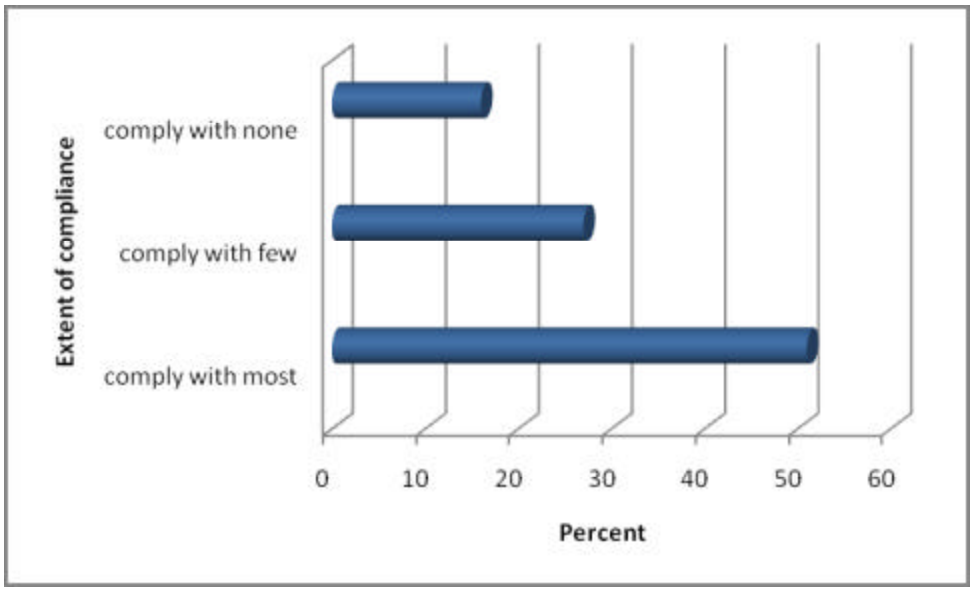

Figure 8 Extent of compliance with rules and regulations

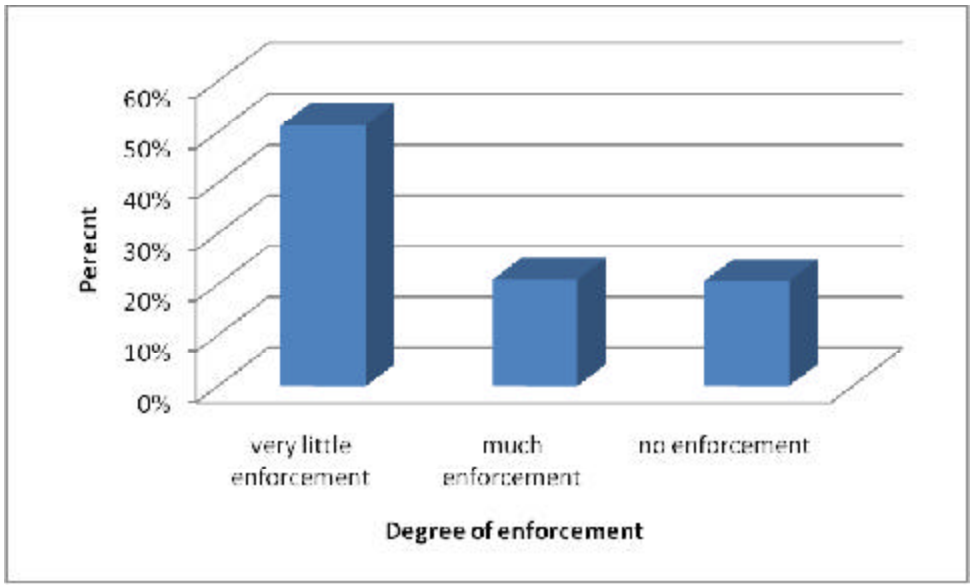

Figure 9 Perception of the extent of enforcement of rules and regulations

3.6 Community problems

The three primary community problems identified by respondents were a combination of unemployment/idleness/lack of motivation; crime and juvenile delinquency; and drug abuse (Figure 10). Some respondents considered some of the unemployment to be voluntary resulting in idleness. Some sociologists will argue that unemployment by itself may lead to increased crime and delinquency.

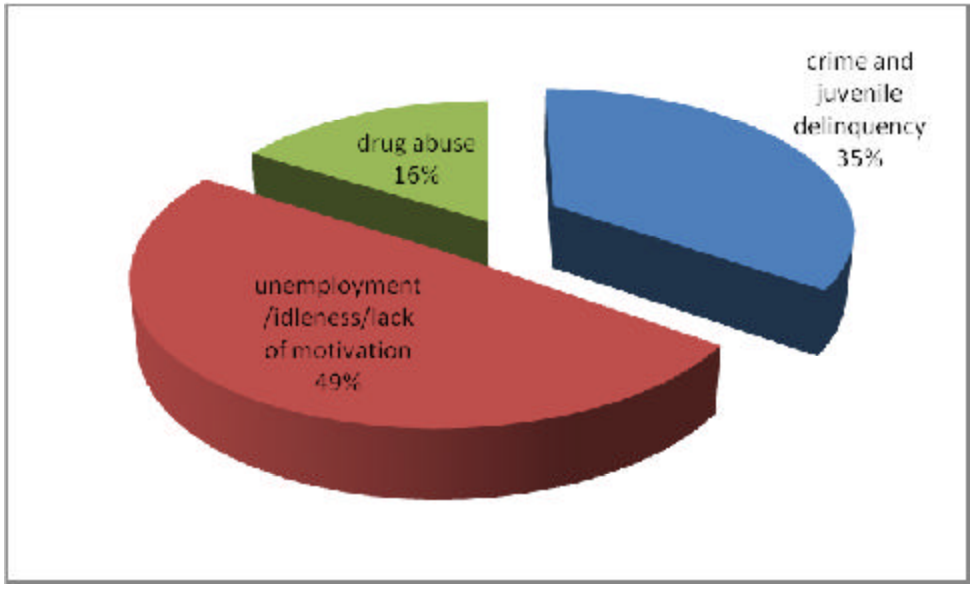

Figure 10 Top three community problems

3.7 Participation in decision-making

As is relates to the use, protection, and management of coastal resources (Figure 11) it should be noted that almost equal proportions of respondents are either involved at some participatory level (132 respondents) or do not participate in decision-making (140 respondents).

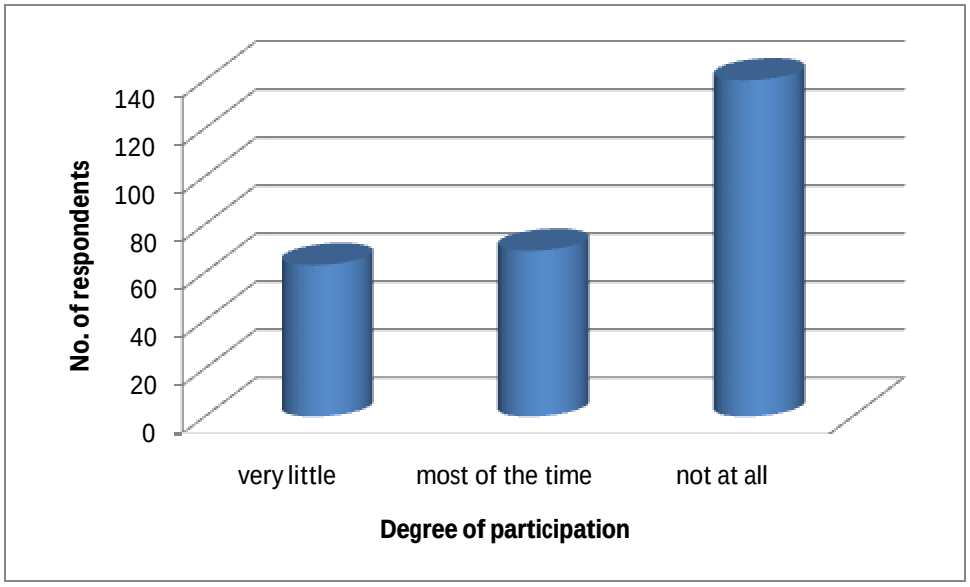

Figure 11 Participation in decision-making by number of respondents

3.8 Need for improved coastal management

Almost three-quarters of the respondents (74%) believe there is a need for improved management of coastal resources, with 53% of respondents noting the need is a significant one.

This question was an important question because it is a measure of how those who live in the coastal zone view power.

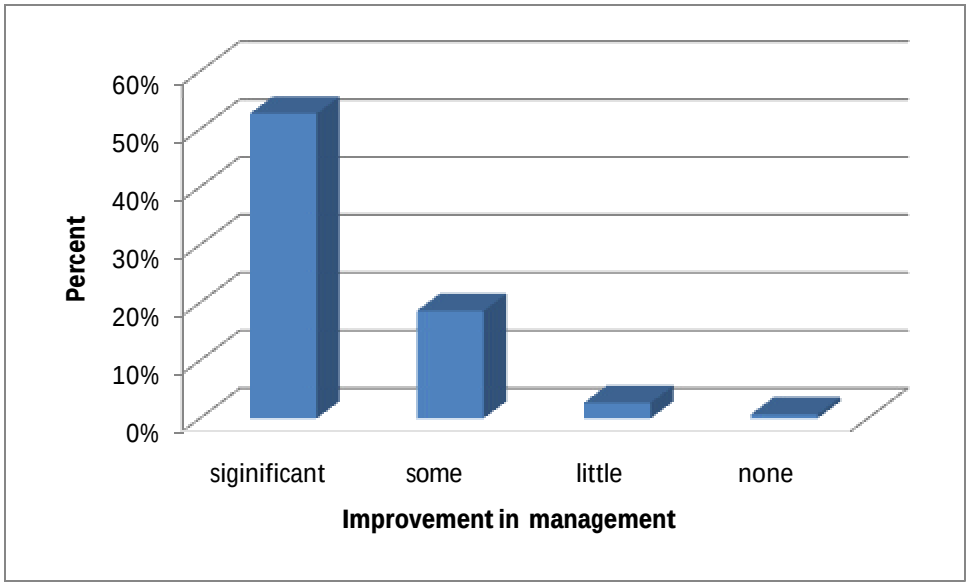

Figure 12 Degree of improvement in management

3.9 Image library development

During the household survey period, an extensive collection of photos and images of the study area was developed. This is a valuable product for future monitoring.

4 DISCUSSION

As already stated the bulk of the responding household heads (72%) belong to the 20 – 50 year age group. Surveys revealed that just less than 5% of household heads were under 20 years of age. Although not a common occurrence, this is sometimes encountered in rural districts for reasons related to among other things, emigration or unstable common law relationships. The data suggest that older folks reside within households headed by younger persons (possibly sons, daughters or even grand children) since only 10% of them head households.

Generally people in the study area are dependent on coastal and marine resources for livelihood and other activities. Therefore any decisions regarding management and/or development of coastal and marine resources must take these stakeholders into consideration.

Most respondents noted that the condition of coastal resources 10 years ago was either very good or good. However, perceptions of the current condition of specific coastal resources, in particular, mangroves, rivers and beaches were ambiguous. Some of these resources, in the respondents' minds exist in opposed conditions (good and bad) simultaneously. This may be due a lack of basic ecological knowledge as to indicators of health of these ecosystems and resources. This assessment of the people's perception of the state of coastal resources is a good candidate for subsequent monitoring. Perhaps prior to future monitoring, educational information (such as fliers and radio programs) on these ecosystems and resources could be provided to raise

awareness about the condition of these habitats and resources since the lack of basic ecological knowledge does not make for informed assessments.

A note of caution should be sounded here regarding peoples' perception of the status of coastal resources. The rate of coastal erosion and accompanying overall degradation in the study site at some places was too rapid for it to be reliably measured. Perception can be comparative and compared to the present, 10 years ago might appear pristine.

The perceived poor condition of fish abundance is particularly concerning since a fairly large proportion of respondents (nearly 40%) are involved in fishing as a household activity. This poor level of fish abundance should be brought to the attention of the Fisheries Division for further monitoring.

The respondents perceptions of threats to the health of coastal resources is almost logical in its ranking. After decades of relentless large-scale sand mining (state sanctioned and illegal) it is no surprise that this activity was identified as the primary threat among the five perceived threats (sand mining, pollution, garbage/illegal dumping, erosion and deforestation). Throughout the study site, nesting beaches for turtles have been affected by this activity. Defecating in the rivers or on the beach attracts a social stigma that causes people to rank it highly as form of pollution. Based on discussions with interviewers we learned that pollution often refers to use of the Grenville and St. Andrew bays as a toilet rather than chemical runoff. Although there is no regular testing for agrochemicals and coliforms, there is sufficient anecdotal evidence to verify that this pollution occurs. Physical evidence of the other three threats are too glaring to avoid notice and have been recorded on photographs. Awareness of serious problems affecting the coast as well as livelihoods seem to be high but has not been converted to either advocacy or with the exception of a few instances, any form of positive community action. This apparent apathy may help to explain why large-scale coastal degradation continued for decades unchallenged.

In general, community problems such as drugs, crime and unemployment continue to be major issues for householders in the study site. Not surprisingly unemployment (and resulting "idleness") is the main concern. The national level of unemployment is 30% of the workforce. The site location has no relationship to the perceived problems. Unemployment, crime and use of illicit drugs and their trafficking are cross-cutting issues that can only be effectively addressed at the national level.

Knowledge of rules and regulations as they relate to the coastal zone appear to be widespread. Regulations governing sand mining, wrongful disposal of garbage and illegal harvesting of turtles and/or their eggs are well publicized. It would be interesting during a subsequent monitoring activity to determine how much of such knowledge is due to persons sensing that an act is wrong or harmful as compared to actually being able to refer to specific regulations and accompanying penalties. This would apply to such items as agricultural regulations (which are not familiar to many agricultural officers), removal of coral (which was a common practice in order to manufacture lime) and tourism.

Compliance (with a few and most rules and regulations) was high (83%) and correlated positively with enforcement (very little and a lot) of rules and regulations (78%). It should be noted that enforcement is somewhat lower than compliance and could be attributed to the fact that 100% of respondents are aware of at least some of the rules and regulations pertaining to coastal resources and as a result have responsible attitudes towards the use of natural resources to such an extent that significant enforcement is not required. This awareness among respondents may be due in a large part to the vigorous education campaign by the Fisheries Division and is reflected in the levels of compliance reported by respondents. This is not to say that illegal activities do not occur. Illegal sand mining continues south of Grenville, albeit on a much smaller scale. Additionally, the illegal harvesting of sea eggs and slaughter of leatherbacks continues unabated. Although the Fisheries Division has been successful in obtaining convictions regarding the illegal harvest of sea eggs, heavy sentences being handed down by the Magistrates Courts is less of a deterrent when compared to the lure of inflated prices per pound of sea egg roe.

Except for the main household activities of fishing and farming it can be concluded that most livelihood activities (in terms of population) occur outside of the coastal area. In this respect one of the failures of the study was the inability to objectively evaluate the social, cultural (and "wellness") values respondents placed on coastal resources. If the quality of these resources is not a direct 'bread or butter' issue then it is easier for persons to develop a casual attitude regarding their health

Active participation in decision-making with respect to resource management is also a national issue and this is corroborated by the minority of respondents (24%) who claim to participate in such activities most of the time. However, such being the case there exists within the study site a group of persons who can form a nexus to mobilize other communities in grassroots decision-making and advocacy. While it is true that the different levels of involvement was not quantified any level, if even simply as a land owner, can serve as a basis on which to build upon.

The need for significant management of coastal resources is well identified with almost three-quarters of the respondents in the affirmative. Since people in the area have noted the need for improvement in management of coastal resources it is hoped that this need will encourage them to participate more in decision-making.

In addition to poor participation from SocMon team members in the monitoring process and numerous delays in progress of the project due to prior work commitments, data analysis turned out to be another problematic aspect of the entire study. Grenada had to rely heavily on CERMES not only for assistance in data entry but in the analysis of the data. However, data entry and analysis produced satisfactory results that now serve as a basis for further monitoring. Additionally, a large amount of assistance was required in the preparation of the presentation for the validation workshop.

5 RECOMMENDATIONS FOR MONITORING AND MANAGEMENT

Before considering options for carrying SocMon Grenada forward the present outputs must be managed in such a fashion that the primary recipients must be convinced of the merits of the whole exercise as well as to develop a commitment to sustain the process in the future. Therefore the local team must create a strategy to carry the results of this study to every settlement in the

study site and attempt to engage the residents in direct feedback. Clearly such an approach is, in the view of the author, much preferable to a mass media approach. This is not to imply that the mass media should be avoided in awareness-raising activities but it is believed that those who were directly involved in this study and who are directly affected by the issues highlighted during the assessment should be engaged on a face-face basis. The use of radio and television would be more effective in reaching a national audience.

In engaging the communities concerned opportunity should be provided for the following:

- Free and open comments from the community on methodology, results and perceived weaknesses in the study. Alternative approaches should be solicited and greater participation by community members in any subsequent work should be actively encouraged by the facilitators. In fact the facilitators should seek solid commitments in this regard.
- Determination of the current status of the main items covered in the study (such as environmental concerns, status of the beach, perceived community problems) during these discussions. The time interval was sufficiently long for perceptions and attitudes to change (sand mining has since been outlawed and national government has changed). This exercise could be considered a sort of "ground-truthing" which would inform the direction of further monitoring.
- The nomination and election of one or two individuals who could lead future monitoring studies.

For SocMon Grenada to be sustained most of the team needs to be reorganized to reflect a more democratic representation of the communities that lie within the study site. While technical expertise might be widely dispersed nationally, its accessibility is not related to its presence (or absence) on the SocMon team. Such an arrangement would greatly increase the efficiency with which such critical tasks, such as accessing secondary data and interviewing key informants, is carried out. When these two tasks are well managed the cost of any subsequent surveys would be significantly reduced.

6 LESSONS LEARNED

- Lessons learned during the implementation of SocMon Grenada were concerned mainly with the structure and nature of the team, and the level of commitment and unforeseen circumstances which led to unusually long delays. The team members possessed individual expertise but the team as a whole was inexperienced. The team members had no prior history (with the exception of three members) of ever working together. In particular, the lead agency, the Fisheries Division, at the management level, did not demonstrate any particular interest in the project. The following summarizes the main lessons learned from the SocMon Grenada experience: It is preferable if the SocMon team members are recruited from the communities under study. This has obvious public relations advantages but just as important is having persons on the ground to interact directly with the community both during preparatory work and in presenting results. Specific expertise should be sourced wherever available.
- Fiduciary expectations must be taken into account when professionals are recruited from their substantive agencies as volunteers. This is even more relevant when such persons reside far from the study site. SocMon Grenada's budget did not consider this reality.

Situations such as these result in weakened commitment to the process thereby promoting delays and increasing frustration of those who are left.

- The weeks prior to and immediately after general elections are not suitable for studies of this nature. Household surveys invite distrust and hostility before an election and even weeks after the event suspicion abounds.
- The nature of rural communities in Grenada necessitates an effective grassroots communication strategy. A communication specialist working closely with the team would be an invaluable addition.

7 REFERENCES

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8 APPENDICES

Appendix 1: SocMon training workshop participant list

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Appendix 2: SocMon training workshop outline

Socio-economic monitoring by
Caribbean fishery authorities (Fisheries SocMon) workshop outline,
27-29 May, 2008

[Grenada]

Preparation notes for training workshop participants

Congratulations on being selected for this training course. These notes are aimed at preparing you to obtain the most from the learning opportunity. At the end of the workshop you should be prepared for and confident enough, to design and implement your own SocMon Caribbean monitoring programme. This is why the workshop emphasises practical field exercises and teamwork, seeking to simulate real monitoring programmes as much as possible.

Training materials

There are two main course books that will be provided to you in hardcopy and electronically in CD. However, they can be easily downloaded from the internet. It is strongly recommended that you browse through or read these materials before the training

1. Bunce, L. and R. Pomeroy. 2003. *Socioeconomic monitoring guidelines for coastal managers in the Caribbean (SocMon Caribbean)*. GCRMN

   Download from: http://ipo.nos.noaa.gov/socioeconomic/tools.html or http://www.cavehill.uwi.edu/cermes under 'Publications' and 'Documents' (4.4MB)

2. Bunce, L., P. Townsley, R. Pomeroy and R. Pollnac. 2000. *Socioeconomic manual for coral reef management*. Australian Institute of Marine Science.

   Download from: http://ipo.nos.noaa.gov/socioeconomic/tools.html or http://www.reefbase.org/pdf/GCRMN_Socioeconomic.pdf (14.6MB)

Other training materials will be distributed on site as handouts, mainly of slide presentations. Should you have any training materials related to socio-economic monitoring that you would like to try or share with others, please feel free to bring them. The workshop is a learning opportunity.

Study site work

The course includes one visit to Grenville, the monitoring site, for field scoping on Day 1 of the workshop. Participants will be assigned to teams for the site visit but will have opportunities to exchange information and collaborate. At the end of the workshop participants will have completed a SocMon site monitoring plan for implementation.

Specialisation modules

A SocMon specialisation module on economic valuation will be held on Day 3 of the workshop.

Equipment required

It would be helpful if you bring some personal tools, especially a laptop computer and a digital camera. Having your own computer to use will be an advantage for several tasks.

However, if you do not have one, you may use one of the shared machines to be provided for the workshop. Likewise, a personal digital camera would be very useful, but not essential. Other equipment provided will be pen and paper.

Your follow-up

The site monitoring lead agency has an opportunity to receive a small grant (US$ 2,500) to initiate SocMon monitoring as immediate follow-up to the workshop, and perhaps to present results at the 61st Gulf and Caribbean Fisheries Institute conference to be held 10-14 November 2008 in Guadeloupe. To take advantage of this you should decide with the other participants from your country to start monitoring immediately. Planning for site monitoring will be continuous throughout the duration of the workshop. At the end of Day 3 participants will have developed an actual working plan for monitoring at the site.

You will need to bring to the training workshop any paper or electronic documents that describe the monitoring site and any information relevant to the purpose of the study. Bring electronic documents on a USB memory stick, including maps, reports, management plans and similar items. See the tables of research variables and information needs for management goals in the SocMon Caribbean Guidelines.

If you have questions specifically about preparation you may email Maria Pena at CERMES, UWI via maria.pena@cavehill.uwi.edu. For any other logistic matters, please communicate directly with Mr. Crafton Isaac. He may be contacted by phone at (473) 405 4363 or by email at crafton.isaac@gmail.com.

Appendix 3: Household questionnaire

GRENADA

[Dear respondent, this survey is aimed at determining your perceptions and attitudes regarding the status and uses of our coastal and marine resources (e.g. beaches, mangroves and coral reefs). This survey is being conducted in coastal villages from La Poterie in St. Andrew's to La Tante in St. David's. All information you volunteer will be treated confidentially and will be used solely for the purposes stated.]

[Date & time of interview..... Interviewer.....

Name of respondent (Optional)..... Respondent #.....

Respondent's age? [ ] <20 yrs; [ ]20-30 yrs; [ ] 30- 40 yrs, [ ] 40-50yrs; [ ]50-60yrs [ ] over 60 yrs

DEMOGRAPHICS

1. How many persons make up this household?.....
2. How long has this household been located in this community?.....
3. Type of household? [ ] single parent; [ ] nuclear; [ ] sibling
4. What are the 3 most important occupations of the household in order of the amount of income generated?

   1Activity.....Who?.....Income/mth.....
   2Activity.....Who?.....Income/mth.....
   3Activity.....Who?.....Income/mth.....

   5 Household activities

   Identify uses made of coastal and marine resources.

Coastal & Marine Activities/Resources		
1. Fishing		

1

Coastal & Marine Activities/Resources	
2. Tourism	
3. Crabbing	
4. Swimming/recreation/wellness	
5. Charcoal making	
6. Farming	
7. Boat building/repairs	
8. Landing site	
9. Seamoss harvesting	
10. Coral harvesting	
11. Sea egg harvesting (previous)	
12. Other	

6. Household goods and services

What household goods and services are produced by each activity?

Coastal and Marine Activities	Coastal and marine Goods and Services
1. Fishing	*Shellfish*
	Finfish
2. Tourism	*Hotel development*
	Diving
	Recreational fishing
3. Crabbing	

2

Coastal and Marine Activities	Coastal and marine Goods and Services
4. Swimming/recreation	*Swimming*
	Beach games *Picnics*
5. Charcoal making	
6. Farming	*(include animal rearing)*
7. Boat building/repairs	
8. Fish landing site 9. Sea moss harvesting	
10. Sea moss cultivation.	

7. Types of household uses

Identify the specific method or development being used for each coastal and marine good and service.

Coastal and Marine Activities	Coastal and Marine Goods and Services	Types of household Uses
1.Fishing	*Shellfish*	*(e.g. traps)*
	Finfish	
1.Tourism	*Hotel development*	*(e.g. guesthouse)*
	Diving	
	Recreational fishing	*(e.g. scuba diving)*
3.Crabbing		
4.Swimming/recreation	*Swimming*	

3

Coastal and Marine Activities	Coastal and Marine Goods and Services	Types of household Uses
	Beach games	
	Picnics	*(e.g. picnic tables)*
5.Charcoal making 6.Farming	*Vegetable*	
	Tree crops	
	Animal rearing	
7. Boat building/repairs		
8.		

8. Household market orientation.

Are any household goods or services sold externally (regional or Internationally)?
[ ]Yes [ ]No

If yes which of them?.....

9. Household uses.

Identify the primary household use for each good and services (own consumption, sale, shared within village).

Coastal and Marine Activities	Coastal and Marine Goods and Services	Household Uses
1.Fishing	*Finfish*	
	Shellfish	
2. Tourism	*Hotel development*	
	Diving	

4

Coastal and Marine Activities	Coastal and Marine Goods and Services	Household Uses
	Recreational Fishing	
3. Crabbing	*Crabs*	
4. Swimming/recreation	*Swimming* *Beach games*	
	Fishing	
5.Charcoal making	*Charcoal*	
6. Farming	*Vegetables* *Tree crops*	
	Livestock	
7. Boat building/repairs	Boats	
8.Sea moss harvesting 9. Sea moss cultivation	*Sea moss* *Sea moss*	

ATTITUDES & PERCEPTIONS

10. Non-market and non-use values.

(A determination has to be made on advice of sociologist)

11. Variable – perceptions of resource conditions

(i) How would you describe coastal resource conditions 10 years ago?

[ ]neither good nor bad; [ ]good: [ ] very good; [ ]bad; [ ]very bad

(ii) How would you describe the coastal resource conditions **last year** on a scale of very good (5), good (4), neither good nor bad (3), Bad (2), very bad (1)

Mangroves..... ; coral reefs..... ; fresh water (rivers)..... ;
Beaches..... ; Coastal vegetation..... , fish (abundance).....

5

12. Variable – perceived threats

What are the top 5 major threats to the health of coastal resources?

1……..; 2……..; 3……..;
4…… 5…….

13. Variable – Knowledge of rules and regulations

Are you aware of rules and regulations related to the following activities?

Fishing [ ]yes [ ]No; **Tourism development [**]yes [ ]no; **Agriculture [**]yes [ ]no
Removal of corals [ ]yes [ ]no; **sand mining** [ ]yes [ ]no;
Mangrove cutting [ ]yes [ ]no **Garbage dumping [**]yes [ ]no;
Taking turtle eggs [ ]yes [ ]no; Taking nesting turtles [ ]yes [ ]no

14. Variable – compliance

In your opinion to what extent do most persons comply with the rules and regulations?

[ ] comply with only a few; [ ] comply with most; [ ] comply with none

15. Variable – enforcement

(i) In your opinion to what extent are the rules and regulations enforced by the authorities?

[ ] very little enforcement; [ ] much enforcement; [ ] no enforcement

(ii) Do you or anyone you Know enforce any rules or regulations? You [ ], Others [ ]

16. Variable – participation in decision making

To what extent do you participate in making decisions about the management or use of coastal resources?

[ ] very little; [ ] most of the time; [ ] not at all

17. Variable – membership in stakeholder organizations

Is anyone from your organization a member of a stakeholder organization?
[ ]yes [ ]no

If yes which
organization?……

18. Variable – perceived coastal management problems

Aside from threats mentioned before what do you see as the two major problems facing coastal management/use in your community?

1.....

2.....

19. Variable – perceived coastal management community solutions

What do you see as solutions to these problems?

(a) Coastal activities and resources

1.....

2.....

(b) Coastal management

1.....

2.....

20. Variable – perceived community problems

What do you consider are 3 major problems facing the community?

1.....

2.....

3.....

21. Variable – successes in coastal management

(I) What 2 initiatives have worked well for coastal management in the community?

1.....

Why?.....

2.....

Why?.....

(ii) Do you think that the community wants improved coastal management?

[ ] significant management; [ ] some; [ ] little; [ ] none

22. Variable – challenges in coastal management

(I) What 2 things do you think have **not worked well** for coastal management in the community?

1.....

Why?.....

2.....

Why?.....

23. Variable – material style of life

Does your household own or have the following: [ ]land; [ ]house; [ ]boat; [ ]car; [ ]TV [ ]telephone; [ ]stereo; [ ]refrigerator; [ ]stove ; [ ]commercial bus;

[ ]cell phone

Observe the following

Type of roof? [ ]tile; [ ]metal; [ ]concrete; [ ]thatch; [ ]tarpaulin

Type of outside structural walls? [ ]brick/concrete; [ ]wood; [ ]thatch/bamboo

Type of windows? [ ]glass; [ ]wood

Type of floors? | |tile; | |wooden; | |concrete; | |dirt

...{e.g.coastal resources in the home}.....

THANK YOU FOR YOUR COOPERATION

8

Appendix 4: Validation meeting notes

Grenada Fisheries SocMon Validation meeting
Grenville, 18 February 2010

Participants list

- Crafton Isaac, Fisheries Biologist, Fisheries Department, Grenada
- Francis, Fisheries Officer
- Vanessa Sanderson, Soubise
- Miguel Vincent, manager Grenville Fisheries Management
- Alvin Charles, Student
- Toby Calliste, Fishmarket
- Steve Nimrod, SGU
- Johnson St. Louis, Fisheries Officer, Fisheries Division, Grenada

Welcome address given by Johnson St. Louis

- Welcome by St. Louis
- Gave overview of SocMon project and study site from La Poterie to La Tante
- Final document will serve as useful tool for government
- Fisheries Division will continue to take strong steps toward sustainable fisheries in Grenada

Validation presentation

- Gave an overview of SocMon Caribbean and the Fisheries SocMon project
- Thought east coast of Grenada was very diverse and best for SocMon
- Looked at area of coastline from La Potrerie to La Tante
- Training workshop held
- Goals and objectives decided upon
- Data collected and analysed
- Explained that there was wide stakeholder participation at the workshop
- Team was chosen. Provided information on team composition
- Election at time of implementation. One factor that delayed the implementation process. As well as Carnival.
- Every other house on streets was surveyed. Head of HH interviewed
- Photographs collected
- Going through objectives, mentioned that out of MarGov project there is now a fisheries management plan being drafted
- Mentioned that certain questions were not good e.g. the tables. Some of the questions could have been left out.
- Thought coral reefs would have had a greater worsened rating but thought that people didn't know
- Comment made that what they rated as good, bad etc is relative. Age factor should be a discriminant (analyse according to age?)
- McConney says describing shifting baselines
- Telescope beach – approximately ½ mile has been eroded

- SN – historical accounts important in the data. Crafton said this was not taken into account. It was a weakness.
- Question asked if questionnaire was pre-tested. Crafton said no.

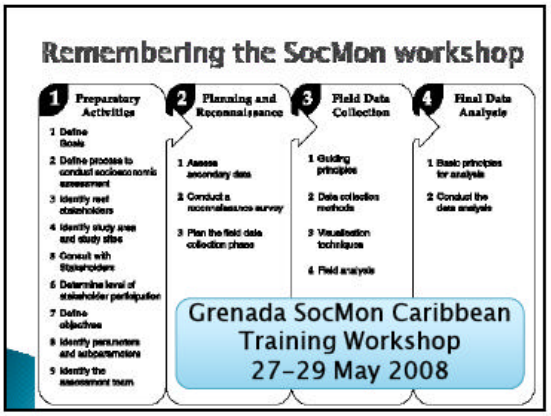
Key learning

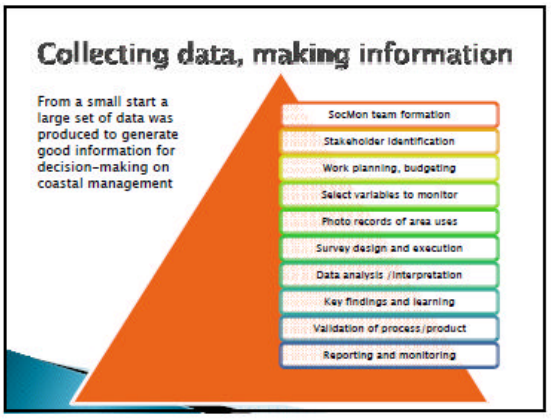
- Along the coast there is no area that is restricted to use
- Dependent on government for change

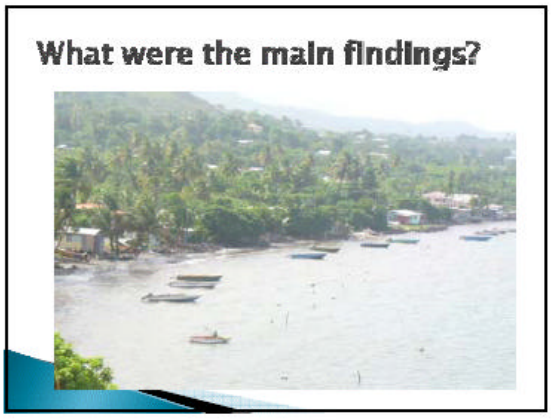
Evaluation of the process

- SocMon process – how was training workshop? Training for surveys (in-house)? Agreed that taking photo evidence was a good thing, was this a useful part of the process? Actual views on the process. Based on questionnaire non-responses was the questionnaire too hard?
- Reconnaissance survey (testing of questionnaire) was a weakness?
- SN – one of difficulties is actually communicating results to different agencies. One of the questions should have addressed the best medium of communication. In future should find out on what level people communicate, do they rely on mass media, through sports groups and church groups. Should have been one of the opportunities in this analysis.
- PM – should already have the information. Under OPAAL project there is island level information that should be available on the OPAAL website
- Dissemination of information was considered key
- Participatory process at the beginning
- Average questionnaire – not that bad. Some people thought it was too personal. Some were not informed
- Questionnaire would be main focus if CI had to do it again
- Would have asked personal information at the end. Sequencing of questionnaire.
- Interviewers came from the area
- PM – Decide on what you want to monitor. Perhaps you would want to focus on sand mining or there may something that came up in the monitoring that you didn't expect
- SN relatively good experience in keeping with the goals. Collected actual quantitative data. It has triggered further questions and areas that would require more probing. The output can go and should go a long way (Rated the SocMon experience as a 4 out of 1-5 range)
- Alvin (3.5 out of 5)
- PP – the project has achieved the objectives. Got good information. Have baseline information. There were problems with the timelines set due to elections etc. Good experience

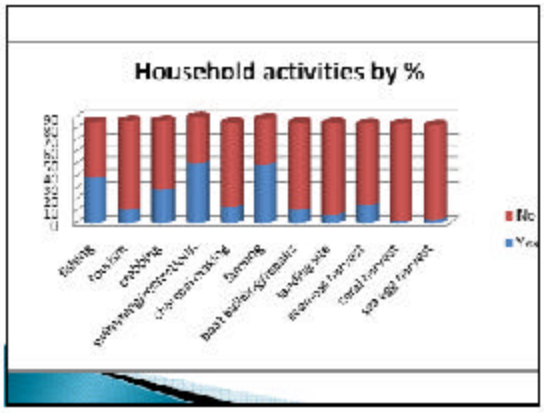
Appendix 5: Validation slide presentation



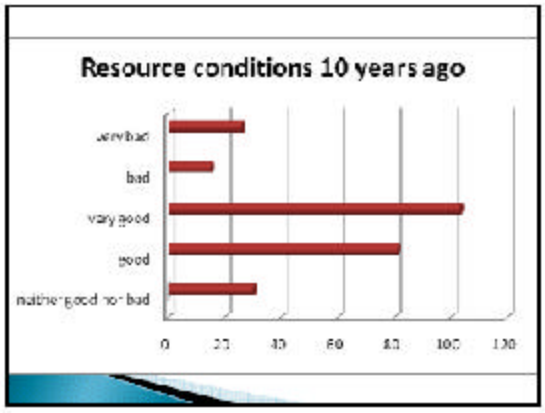


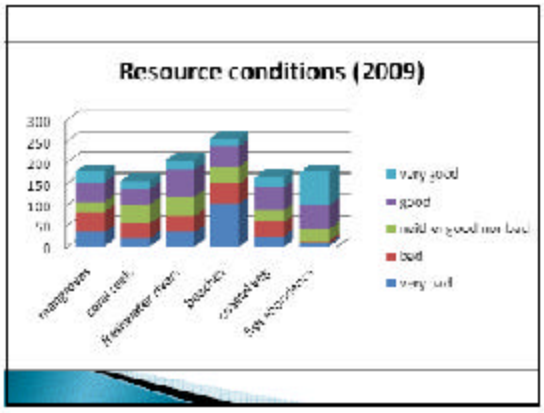


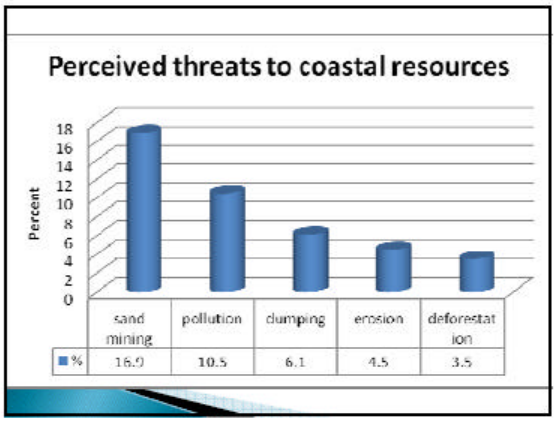
USES OF COASTAL RESOURCES


Household activities by %

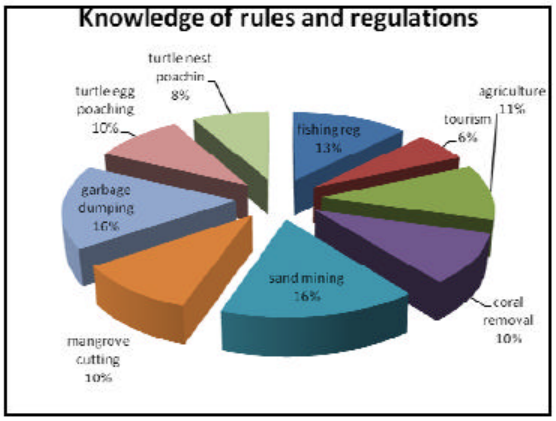
RESOURCE CONDITIONS


Resource conditions 10 years ago
very bad
bad
very good
good
neither good nor bad
0
20
40
60
80
100
120

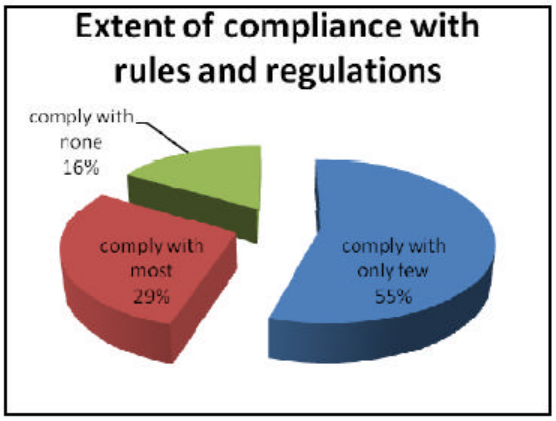

Resource conditions (2009)
300
250
200
150
100
50
0
very good
good
bad


Perceived threats to coastal resources
Percent
18
16
14
12
10
8
6
4
2
0
sand mining
pollution
dumping
erosion
deforestation
%
16.9
10.5
6.1
4.5
3.5

KNOWLEDGE OF RULES & REGULATIONS

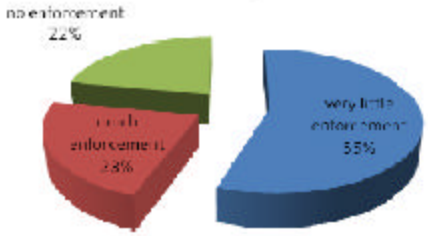

Knowledge of rules and regulations
turtle nest poachin 8%
turtle egg poaching 10%
fishing reg 13%
agriculture 11%
tourism 6%
garbage dumping 16%
sand mining 16%
coral removal 10%
mangrove cutting 10%

COMPLIANCE
Public Notice

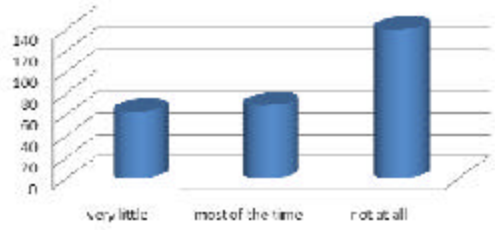

Extent of compliance with rules and regulations
comply with none 16%
comply with most 29%
comply with only few 55%

ENFORCEMENT

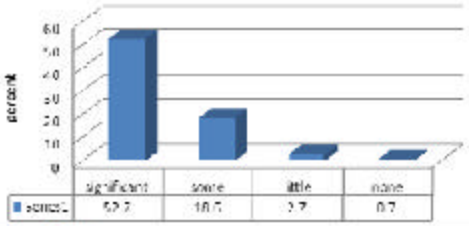
Extent of enforcement of rules and regulations



Participation in decision-making by no. of respondents



Community need for improved management



Key learning from what we found out

- General awareness among respondents of key shortcomings in management
- People are not organized/empowered to bring about desired changes (advocacy)
- Use of coastal resources varied and widespread
- Dependent on government for change

Learnt (con't)

- Worried about continued coastal degradation.

Using the information, monitoring

- Disseminate results to stakeholders (govt. agencies, schools, fisherfolk and communities
- Decide on the resources uses and threats that require further continuous monitoring
- Identify individuals groups that might participate in further monitoring and invite same

Your evaluation of the experience