

**Assessing the Feasibility of Alternative Livelihood Options for Communities Surrounding the
Molinière-Beauséjour Marine Protected Area, Grenada**

**La Evaluación de la Viabilidad de las Opciones Alternativas de Sustento para las Comunidades que Rodean el
Molinière-Beauséjour Áreas Marinas Protegidas, Granada**

**Évaluer la Faisabilité des Options Alternatives de Subsistance pour les Communautés qui Entourent la
Molinière-Beauséjour Zone de Protection Marine, de la Grenade**

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ABSTRACT

During the late 1980s, the Molinière-Beauséjour area was identified as a priority area for inclusion in a System of National Parks and Protected Areas for Grenada. This 0.6 km² area was considered to contain the healthiest reefs in Grenada. While pristine in condition and attracting many visitors and divers, at the same time, the reefs and their near shore resources were threatened by intense fishing worsened by the accessibility of the resources. The open access of these different uses led to significant user conflicts, among fishermen and between fishermen and tourism users. Therefore, the Molinière-Beauséjour Marine Protected Area (MB MPA) was legally declared in 2001 with the primary purpose of *providing a management framework to reduce user conflicts as well as protect coral reefs and associated resources*. Due to the declining importance of fishing livelihoods to MPA communities caused by continued resource degradation and heavy fishing pressure, information that suggests that some people feel that the benefits brought by the existence of the MPA are mostly for tourists. The fact that people have high expectations from tourism development related to the MPA, the importance of identifying options for alternative livelihoods in the six communities surrounding the MBMPA was targeted for focus in the CERMES-implemented, *Socio-economic Monitoring by Caribbean Challenge MPA Managers project (CC SocMon)*. This paper reports on monitoring conducted to assess MPA impacts on communities' livelihoods, strengthen community participation in MPA management and ownership by examining potential linkages between resource protection and livelihoods, and identify socio-economic conditions enabling alternative livelihood options

KEY WORDS: Socio-economic monitoring, Caribbean Challenge, alternative livelihoods

INTRODUCTION

Socio-economic Monitoring by Caribbean Challenge MPA Managers Project

Socio-economic monitoring for coastal management in the Caribbean (SocMon Caribbean) is a globally networked, regionally adapted, practical methodology of socio-economic monitoring for coastal management. Consultation with representatives of the MPA community associated with the Caribbean Challenge Initiative indicated the need for capacity building in socio-economic monitoring for the development of an effective regional system of MPAs. This need for MPA capacity building in socio-economic assessment and monitoring has also been identified in various training needs and capacity assessments (Gombos et al. 2011, Parsram 2007). The Caribbean Challenge Initiative and regional training in SocMon provide a major opportunity for uptake of SocMon for achieving improved MPA management capacity and therefore conservation of coastal resources. With strengthened capacity for management through socio-economic monitoring, MPA managers, authorities and field staffs will also increase their capacity for adaptive management through learning-by-doing.

The Centre for Resource Management and Environmental Studies (CERMES) at the University of the West Indies, Cave Hill Campus was awarded a grant of just over USD \$68,000 by The National Fish and Wildlife Foundation (NFWF) to support Socio-economic monitoring by Caribbean Challenge MPA managers. The project's long-term conservation outcome is increased capacity for effective MPA management among Caribbean Challenge (CC) countries through the use of social and economic monitoring data in MPA decision-making. The goal of this project is to build capacity for improved and effective MPA management among Caribbean Challenge countries by promoting the use of social and economic data in MPA management.

The project involves eight MPAs across three CC countries - Grenada, St. Vincent and the Grenadines, and St. Lucia. Participating MPAs in Grenada and the Grenada Grenadines are the Molinière/Beauséjour Marine Protected Area (MBMPA) and Woburn/Clarke's Court Bay Marine Protected Area (WCCBMPA) in Grenada, and Sandy Island/Oyster Bed Marine Protected Area (SIOBMPA) in Carriacou. Each project site was awarded a sub-grant of USD \$2,500 to conduct a socio-economic assessment or monitoring programme. The project's duration was 1 September 2011 to 28 February 2013. This paper provides an overview of a socio-economic assessment conducted at the MBMPA.

Situation Overview

The Molinière/Beauséjour Marine Protected Area is just 0.60 km² in area, 2.2 km long and extends seaward up to 0.8 km from the coast. The main settlements bordering the MPA are, from South to the North - Grand Mal, Mt. Moritz, Molinière, Happy Hill, Beausejour, and Brizan with a population of 3,340 persons (Roby 2010). In addition to the local population, snorkelers, and scuba divers, as well as visitors from the many yachts, participate in many activities taking place in the area.

Over the years, coral reefs in the MPA have degraded from pristine to seriously stressed condition due to overuse, pollution, sedimentation and the effects of climate change coupled with the lack of effective management prior to 2010 for proper monitoring, conservation and protection. In addition, the MPA has been impacted by resource depletion and user conflicts. In 2010 there was a formal management structure in place that brought some progress however; new problems associated with the global economic crisis arose. As many lost their jobs, they resorted to livelihoods in other sectors that do not require much capital input, sectors such as fishing and farming. Additionally, most persons feel that with the loss of livelihoods due to the establishment of the MPA that the onus is on MPA management to provide some form of alternative livelihood options. This alternative livelihood assessment is very timely in that Molinière/Beauséjour Marine Protected Area management has never addressed it after its designation in 2001. There is the perception by the community that the establishment of the MPA has brought benefits only to the tourists and tourism businesses, and not to them.

The goal of the SocMon project was to assess the feasibility of alternative livelihood options for the communities surrounding the Molinière /Beausejour Marine protected Area (MBMPA). Study objectives were:

- i) To assess how the MPA impacts livelihoods of the communities in the area,
- ii) To strengthen community participation in MPA management and MPA ownership based on examining potential linkages between resource protection and livelihoods, and
- iii) To identify the socio-economic conditions that will enable alternative livelihood options: tourism and its related development.

METHODS

Following an assessment of secondary data and a reconnaissance survey, key informant interviews were conducted with 18 individuals from within the six communities as well as individuals from academia and government agencies who have working relationships with the MPA. Eight key informant variables were used to collect data, three of which were original SocMon Caribbean variables. Two of these were revised and adapted to collect the required data for the study. The development of five

new variables was necessary to measure information - such as changes or impacts due to the MPA, support for MPA management, knowledge and awareness of the MPA, business and service provision and livelihoods – specifically to address the objectives of the study. The data were analysed using simple descriptive statistics and narrative summaries were compiled. Validation meetings will be held to provide feedback of the results of the study to the communities.

RESULTS

An overview of results of the key informant interviews is presented under two headings reflecting the objectives of the study:

- i) MPA impacts on community livelihoods and identification of socio-economic conditions that will enable alternative livelihood options, and
- ii) Linkages between resource protection and livelihoods: strengthening community participation in MPA management and ownership

Details of the results of the assessment may be found in the site monitoring report on the CERMES website http://www.cavehill.uwi.edu/cermes/cc_socmon.html.

MPA Impacts on Community Livelihoods and Identification of Socio-economic Conditions that will Enable Alternative Livelihood Options

Marine-related livelihoods prior to 2010 MPA launch — Most persons identified fishing and fish vending, 40% and 31% respectively, as the main marine related jobs the community was involved in prior to 2010 and the launch of the MBMPA. Other ways of earning a living included boat building (9%), boat repair (7%), sand mining (7%), jet skiing (2%), net mending (2%), and engine maintenance (2%) (Figure 1).

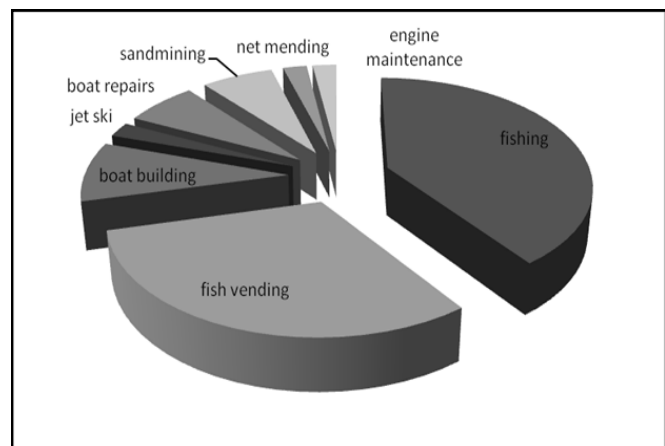


Figure 1. Marine-related jobs prior to the MBMPA launch.

MBMPA Impacts Livelihoods, Livelihood Trends and Livelihood Vulnerability

All key informants stated that the rules and regulations implemented by the MBMPA and its management had affected the ways in which people earn a living in the area. Key informants noted that persons were forced into other forms of jobs which were mainly construction and farming (39% each). Additionally government programmes such as de-bushing (6%), kayaking (3%), and subsistence livelihoods [i.e. sales from rock fishing and part-time fishing] (3% each) were other means by which people make a living in the area. It should be noted that most persons were not trained for these various types of employment. A fairly large percentage of key informants (10%) noted the trend of people towards illegal activities, notably gambling and theft. The majority of key informants (89%) noted that current MPA-derived livelihoods are vulnerable to numerous threats and pressures. These threats were management regulations and restrictions and their associated impacts (59%), increasing financial costs/pressures (14%), competition among users (9%), pollution (9%), environmental changes (5%), and uncertainty in catch (4%)

The most significant threat identified was that of management regulations and restrictions (Figure 2). Key informants noted that due to MPA management, fishermen (spearfishermen and fishermen using boats) are increasingly vulnerable because they now have to travel further to conduct certain types of fishing which has an associated cost in terms of operation and requirement for training in new techniques as well as time to adapt to new fishing areas. Changing environmental conditions including those associated with climate change were also identified as a threat to MPA-derived livelihoods.

Diversifying current livelihoods, interest in alternative livelihoods and knowledge of livelihood programmes —

All key informants believe there is a need to diversify livelihoods in the communities adjacent to the MBMPA. A number of reasons for this need were provided including creation of employment opportunities (52%); improved social and financial stability (22%); provision of new skills

(13%); youth empowerment (5%), reduction in crime (4%) and habitat and species protection (4%). All key informants believe that people from communities adjacent to the MPA are interested in pursuing alternative livelihoods. Persons see tourism-related jobs in the food and hospitality sector (restaurants, bars, small guesthouses, dive shops, art and craft shops, kayaking, glass bottom boat tours, MPA tour guiding); aquaculture and mariculture industries (seamoss and fish farming); and manufacturing as the most beneficial alternative livelihoods for communities adjacent to the MPA. Government support, stakeholder organisation, development of strategies, development of infrastructure, monitoring, private sector investment, a stable political environment, research and monitoring to ensure sustainability, and development of tourism-related jobs were suggested as also being important to encouraging the creation of alternative livelihoods. Key informants went on to note that any attempts to diversify livelihoods must be well planned out and executed.

The main reasons for not pursuing other livelihoods were a lack of finances (37%) and lack of training and skills (34%). Other reasons included lack of land availability and access for development, personal reasons, low confidence in investment, no time, and lack of infrastructure for small business development (Figure 3). Only one person was unable to provide a reason for non-pursuit of other livelihoods. There was low awareness among key informants (28%) of current livelihood programmes introduced to the community by organisations. There have been some alternative livelihood programmes implemented but the government de-bushing programme is the only current one which operates annually only for short periods of three weeks to a month. There has been no initiative by MPA management to address alternative livelihoods in the area.

Support and need for local businesses —

All key informants believe communities support local businesses and will support further business development provided that it can bring benefits to them. It is generally thought that some businesses can create other business linkages which can

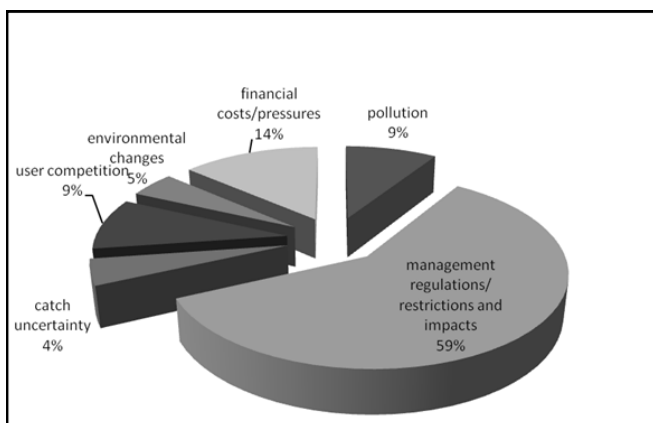


Figure 2. Threats to MPA-derived livelihoods.

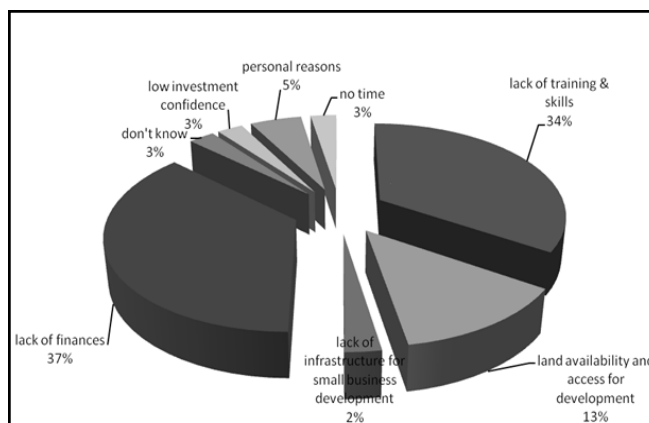


Figure 3. Reasons for not trying other livelihoods.

provide more income opportunities for local communities. Fifty-seven percent of key informants feel that any tourism-related businesses would be most appropriate for adjacent MPA communities to engage in. The type of business thought to be the best fit for the area by the majority of key informants (27%) was stay-over visitor accommodation. This was followed by dive shops (16%), restaurants and bars (14%), art and craft shops (11%), and a supermarket (11%). Larger supermarkets with greater choices were recommended by 11% of persons interviewed. It was thought that a pharmacy, fish and vegetable outlets, marine equipment supply store and manufacturing businesses were also needed. However, these types of businesses were recommended by only 3% and 5% of key informants.

Linkages Between Resource Protection and Livelihoods: Strengthening Community Participation in MPA Management and Ownership

Stakeholder support for the MBMPA — Perceptions of stakeholder support for the MBMPA vary. Over half (56%) of the key informants think that stakeholders are supportive of the MPA and its purpose while 22% in each case believe there is mixed or no support. Key informants think that some stakeholders may have mixed support for the MPA because they perceive MPA benefits to be inequitable. The community feels left out. People living outside the area and who have dive shops, day charters, and yachts appear to have more benefits than those within the area.

Stakeholder awareness of the MBMPA — Just over half of the key informants (55%) believe that stakeholders are aware of the MPA and its purpose, whereas 17% think they are not. Twenty-eight percent of persons believe that some stakeholders are well informed and some are not. In general, businesses (dive shops and day charters) are thought to be better informed than the communities around the MPA.

Key informants suggested a combination of ways that MBMPA management could improve and increase awareness about the MPA, the most popular of these being meetings (29%), the use of media and social networks (26%), and ongoing outreach (21%) (Figure 4). The majority of key informants (67%) stated that there had been various initiatives that had worked well in maintaining community awareness about the MPA. Twenty-two percent of persons noted there had not been any such initiatives while 11% did not know. Persons were able to recall recent MPA promotions in 2010 with the launch of the MPA and the educational outreach programme in June/July 2012, as well as signs and billboards. However, many persons noted that in spite of this, more needs to be done on a consistent and regular basis to create more understanding of the MPA and its concept.

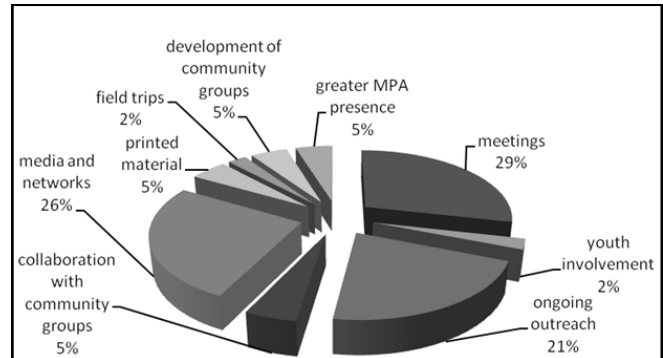


Figure 4. Ways of improving or increasing MPMPA awareness.

Stakeholder interest and involvement in MPA management

— Thirty-nine percent of persons interviewed were able to identify stakeholders interested in management of the MBMPA - community members, schools in Happy Hill, the Happy Hill Family Day Organisation, the Happy Hill Football Club, fishermen and the Fishermen's Cooperative in Grand Mal. Fifty percent of key informants said they were not aware of any stakeholder organisations that are interested in MPA management, while 11% believe there is no interest in management. Three main stakeholders have been involved in management of the MBMPA. Many of the key informants (67%) knew of the involvement of the North West Development Authority Inc. in MPA management followed by 17% for the Happy Hill Family Day Organization and 6% for the Southern Fishermen's Cooperative. Twenty-eight percent of key informants either did not know or were not aware of any stakeholder involvement in MPA management, while 6% believed there was no stakeholder involvement.

Encouraging stakeholder participation in management

— The majority of key informants (67%) thought that not enough had been done to encourage stakeholder participation in management of the MPA. Only 28% believe that stakeholders have been encouraged sufficiently to participate in management. Generally, key informants feel that more needs to be done in the community to raise awareness about the MPA and gain interest in MPA management. In cases where there have been awareness-raising activities, key informants stated that there has been no follow-up to increase participation.

Stakeholders positively and negatively affected by MPA management

— Fishermen (55%) and dive shops, day charters and tour operators (30%) were identified by key informants as the stakeholders that are being positively affected by MPA management. Persons interviewed believe that boat, rock, and seine fishermen are positively affected by MPA management due to a number of reasons including increases in fish stock size and the spill-over effect due to protection of corals resulting in increased

catches, increase in fish quality, awareness of other available opportunities, ability to use normal fishing grounds (seine fishermen), and use of areas not used previously for fishing. Some people noted that dive shops and day charters were benefiting from management since increases in fish populations are attracting more visitors to the park. A few key informants noted that the community (7%) and bars (4%) also benefit from management. Only 4% believed that none of the stakeholders are positively affected by management of the MBMPA.

In general, fishermen are also thought to be negatively affected by MPA management. Key informants (78%) thought that fishermen combined - boat, seine and spear fishermen - are the stakeholders that are most negatively affected by MPA management due to area restrictions resulting in increases in operation costs and effort. Of that proportion, 56% of key informants believe that spear fishermen are most negatively impacted by MPA rules and regulations. A minority of persons interviewed (13%) think the community has been negatively affected, and 9% were unable to identify stakeholders affected negatively.

Influence on decision-making and management — Community groups and organisations were recognised by the majority of key informants (32%) as being in a position to influence decision-making and MPA management. Property and business owners (20%) such as dive shops and day charters, fishermen and traditional users (18%), and community leaders and other influential people (12%) were also perceived to be influential in MPA management and decision-making. The yachting sector, government and petroleum industry were also thought to be in positions to influence management, however, these were suggested by a minority of key informants.

DISCUSSION

Assessment of MPA Impacts Livelihoods of the Communities in the Area and Identification of Socio-economic Conditions that will Enable Alternative Livelihood Options

Prior to the launch of the Molinière-Beauséjour marine protected area in 2010, over 75% of the MPA-derived jobs were related to or involved the extraction of marine resources. This high dependency on, and unsustainable use, of the area led to reef degradation and resource depletion. There was a need for protection and conservation of the marine and coastal resources. Some of the other jobs available e.g. sand mining, boat building, and jet skiing began to dwindle as regulations were now enforced, and fishermen were buying bigger boats to be able to access distant fishing grounds. With the global recession looming overhead, most turned to fishing and farming as livelihood options as they both require less capital input. Nevertheless, these livelihoods brought continued pressure on to the already stressed marine resources, as bad farming

practices resulted in excessive nutrient runoff while continued fishing, i.e., seine and rock fishing, reduced the population of important species.

Current MPA-derived jobs have become vulnerable due to continued resource degradation, threats and pressures, and MPA management interventions. Regulations and area restrictions imposed by management have placed fishermen at a disadvantage. As a result, fishermen have to travel further offshore and incur increases in operational costs and effort as well as time to adapt to new fishing grounds. These financial pressures may result in decreases in household income. More specifically, spear fishermen have also been disadvantaged as they have been excluded from the zoning plan, unlike other resource users, and thus have to travel outside of the MPA boundaries to fish. MPA management interventions have resulted in a trend of displacement of people who had previously been making a living from the MPA into jobs for which they were not trained. There have been a few alternative livelihood options or programmes in these communities, however, most are no longer functioning. There is a possibility that these issues may be linked to involvement in illegal activities within communities.

There is an urgent need for MPA management to pay attention to the diversification and provision of livelihoods in the communities around the Molinière-Beauséjour MPA. There is interest in alternative livelihoods. Many of the options identified as beneficial to the communities are closely linked to the tourism sector and so careful consideration must be given to the types of livelihood options promoted as the tourism sector is on a decline. Despite the interest in alternative livelihoods, management must be mindful that these options may complement rather than replace current livelihoods as persons will still have the tendency to rely on MPA resources (Brown 2011).

Some of the gaps in addressing livelihood options relate to financial support and business training, and therefore, MBMPA should seek the opportunity to collaborate with financial and business organisations from both the private and public sectors. For those with resources to pursue livelihood options, they must consider the possibility of hindrances such as necessary training skills, low investment confidence and political stability. The linkage between MPA management and the surrounding communities allows management to inform public and private sectors of specific livelihood needs and possible constraints. This form of collaboration is essential for providing appropriate livelihood options, developing livelihood programmes and skills training for those displaced from the MPA by management measures. Provision of alternative livelihoods to the community will facilitate increasing stakeholder acceptance and support of MPA. Eventually, people will realise that MPA management acknowledges the importance of the adjacent communities and the community's stake in the MBMPA. At the same time, it will aid MBMPA management in

achieving at least one component of the long-term goal of the MPA, ...to ensure provision of livelihoods... (Roby 2010).

Strengthening Community Participation in MPA Management and MPA Ownership Based on Examining Potential Linkages Between Resource Protection and Livelihoods

Community/stakeholder participation in decision-making or management activities is important for effective MPA management and good governance. However, it can be difficult and may take a long time to be achieved as MPA benefits come at a cost – a reduction in a communities' livelihood activities and this is worsened if there are no opportunities for alternative livelihoods. Apart from involving three key stakeholders on the MBMPA management board, efforts to encourage stakeholder participation in the MBMPA have been inadequate. This has to be changed.

Based on key informant perceptions on stakeholder support, there seems to be significant support for the MBMPA among the communities. This compares favourably with the results of a socio-economic survey conducted in 2010 on stakeholder awareness, attitude, perceptions, and opinions of the MBMPA to inform management planning in which a large percentage of respondents were in support of the MPA (Roby 2010). Additionally, even though it is a small proportion, key informants believe that stakeholders are interested in the management of the MPA with numerous groups or organisations thought to be capable of influencing management. However, it is thought that more groups need to be formed in the community to strengthen community participation in MPA management and ownership.

Management needs to build on the existing base of support and encourage stakeholder participation in MPA management. This can be achieved through increasing the level of awareness-raising, improve communication in the communities about the MPA and its potential livelihood benefits. There is the perception that the MPA management has benefitted only fishermen and businesses such as dive shops and day charters. The latter two are well-informed about the functioning of the MPA, as they are well represented on the MBMPA management board. The results of this SocMon study suggest that MPA management needs to improve its education efforts to make stakeholders aware of the long-term benefits of the MBMPA to the communities by highlighting the potentially positive relationship between resource protection and livelihoods. It has been suggested that MPA management make more use of one-on-one engagement, community meetings, and involve schools of the area in its awareness-raising. MBMPA management should be guided by and should fully implement the communication plan for the MBMPA (Roby 2010).

The current relationship that exists between the communities and MPA management is one of demand. Management tends to engage the community when the pressing issue of compliance arises while on the other hand the community will confront MPA management when management interventions adversely affect their livelihoods. This relationship needs to change, and regular interaction between MPA managers and communities should be encouraged. Awareness promotions (distribution of brochures, open-air presentations) as completed in the past could be re-introduced to encourage this interaction. In addition, regular scheduled informal and formal meetings with MPA managers, MPA staff and stakeholders to discuss MPA plans and issues and concerns of stakeholders will encourage greater stakeholder participation in management and foster stakeholder ownership of the MBMPA. This will lead to increased stakeholder support for and success of the MPA (Pomeroy et al. 2004).

RECOMMENDATIONS FOR MONITORING AND ADAPTIVE MANAGEMENT

This SocMon study has highlighted a number of areas that should be considered by MBMPA management for effective and sustained management of the area. These include:

- i) An overwhelming need to create employment opportunities in the MPA and improve the social and financial stability of the six surrounding communities. Tourism-related jobs have been suggested as those that would be the most beneficial alternative livelihoods for communities adjacent to the MPAs. Management should therefore determine the capacity for such. Perhaps a detailed livelihoods analysis should be undertaken for the area in which further analysis of suggested alternative forms of income generation could be undertaken.

MBMPA management must consider that in order for alternative forms of income to replace MPA-derived income, they must be attractive in terms of relative value and inputs of time and labour, but if they leave sufficient periods of time or seasons when people can continue to earn income from the MPA, then local people are likely to continue to exploit the MPA resources (Fisher 2001). A delicate balance must therefore be found.

Once the livelihoods analysis is completed, a job fair for people to consider a range of employment and training opportunities could be organised by the MBMPA in collaboration with local businesses and the private and public sectors. Vocational training programmes based on priorities emerging from the job fair in order to satisfy community requirements and to provide new possible alternative income generation could then be

designed. Any training programmes or initiatives implemented should be monitored by the MBMPA to measure impact and success on the MPA and its resources.

It is important that an effective plan for the development of alternative livelihoods within the MBMPA and surrounding communities be implemented. It is our hope that this process can be used a model for other MPAs in Grenada.

- ii) Fishermen are the most negatively and positively affected MPA stakeholder group. The MBMPA needs to consider this stakeholder group carefully in future implementation of management measures. This group is both highly vulnerable and impacted by MPA management. Management should promote the formation of a fishermen's group in the area for integration and participation in MPA decision-making and management.
- iii) There is thought to be relatively high stakeholder support for the MBMPA but there is room for improvement. Similarly awareness of the MPA among stakeholders is fairly high but needs to be increased. Improved and increased promotion of the MPA should be a priority for management. Awareness-raising needs to be a continuous management activity. Regular interaction between MPA managers and staff, and stakeholders should be initiated as outlined in the communication plan for the MBMPA (Roby 2010). The level or degree of interaction between MPA management and stakeholders as well as stakeholder awareness and support should be monitored to determine changes and evaluate MPA management effectiveness.

With the exception of the socio-economic survey conducted in 2010 to guide management planning, this study has been the first socio-economic assessment conducted subsequent to the launch of the MBMPA. This Caribbean Challenge SocMon project has provided valuable insight into MPA-derived livelihoods and options for alternative livelihoods. The preparation of a monitoring program for the MBMPA has been emphasised in the management plan (Roby 2010), however focus was given to the biophysical. The need for social monitoring was indicated as being necessary for adaptive management. Therefore, the MBMPA should include socio-economic monitoring and the adoption of the SocMon Caribbean methodology in the research, monitoring and evaluation framework for the MPA. Such monitoring will allow the examination and determination of, among other things, trends in livelihoods, stakeholder attitudes and perceptions, stakeholder awareness and participation in management and socio-economic conditions within the MPA in order to inform and adapt management. New SocMon variables

have been developed specifically for this study and can be used with other SocMon variables to build a core of socio-economic variables that can be regularly measured and monitored.

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