

Socioeconomic Monitoring in the Western Indian Ocean

Seychelles Report



June 2009

By

Seychelles National Parks Authority

Introduction

Socio Economic monitoring can be a very useful tool to provide Marine Protected (MPA) managers, policy and decision makers with useful information which can help to improve the status of 'MPA' as well as help to develop better legislations. Information collected with socio economic monitoring can also show various stakeholders of an MPA how they benefit by having such an area designated in their vicinity. This is why two monitoring sites were set up in the Curieuse and Ste Anne Marine National Parks in the Seychelles. Both sites are managed by the newly formed Seychelles National Parks Authority (S.N.P.A), formerly known as the Seychelles centre for Marine Research and technology – Marine Parks Authority (SCMRT-MPA) along with 4 other marine National parks in the Seychelles.

Curieuse Marine National Parks

The Curieuse Marine National Park was designated in 1979 and is one of the most visited in the Seychelles where in 2007, more than 21,000 tourists visited the island. There are daily visits to the island of Curieuse which is found in the middle of this Marine National Park, where the management of the parks operations are based. Visitors come to the islands on a daily basis through organized tours or through private hire of hire crafts and taxi boats. A marine park entry fee of €10 is charged per person. The main attraction in the reserve includes giant tortoises in the wild, natural forest of the endemic coco de mer palm, mangrove trails, turtle rookeries, snorkeling and diving among others. It is also the only Marine Protected area in the area of Praslin/La Digue which offers B.B.Q facilities and this service is free of charge. It is evident that the Curieuse Marine National Park plays an important part in the socio-economic development of the Praslin community, especially the areas in its immediate vicinity that rely on the island as one of the major attraction for their businesses.

Ste. Anne Marine National Parks

Ste Anne was one of the first designated Marine Protected Areas in the South Western Indian Ocean. The park surrounds the waters around the islands of Ste. Anne, Cerf, Moyenne, Long, Round and Cahée island. The park is visited mostly by tourists on daily excursion where the trip includes a glass bottom boat, followed by snorkeling and B.B.Q. It is also frequented by yachts as it provides shelter from prevailing winds in a quite and relatively unspoilt environment. There are currently 3 hotels in the Ste Anne Marine Park and there are plans for the construction of 3 new 5 star hotels, as well as a planned high end residential development with a marina. There is going to be a significant increase in development terms in this MPA resulting in increased marine and coastal activities and increased pressure on marine and coastal resources.

Figure 1.0 below shows the location of both MPA's in relation to the inner granitics of the Seychelles archipelago.



Figure 1.0 – Location of Curieuse and Ste Anne Marine national Parks

Purpose of the Socio economic monitoring

The main purpose why the socio economic surveys were carried out at both sites was to look at the current conditions of these marine protected areas and get feed back from various stakeholders with regards to the sate of the natural environment, the threats as well as their views the tourism activities/developments. The information collected in the long term will show whether the various tourism activities and developments in these two marine parks are actually benefiting the community or not. The information should also show whether the stakeholders believe that the management of these two parks is on the right track or whether if there are things that needs to be changed.

The first socio economic studies relating Marine protected areas and fishermen was carried out by Dr Tim Daw of Newcastle university as part of a regional project. There have also been a few other studies on a smaller scales looking at other issues such as poaching. However, for this particular Socio economic monitoring, looking at the perception of the stakeholders on tourism, sate of the environment and the management of Ste Anne and Curieuse, is a first for both of the sites.

Initially, the plan was to collect the information in August/September at Ste Anne and November/December on Curieuse. However due to various factors at institutional, national and international level, the first stage of data collection only took place in May/June 2009 for both sites.

Methods

Socioeconomic assessment can be either participatory or extractive in nature and can be either product or process oriented (Bunce et. Al 2000). Stakeholders input in this survey was seen to be very important which is why apart from getting information from secondary sources (mainly the National Statistics Bureau), surveys were conducted in the field to consult the various stakeholders. The main method used to gather data was by interviewing the various stake holders using questionnaires designed from the Socmon WIO manual. The following parameters were recorded ; tourist profile, community incentives, perception of resource conditions, perceived threats, awareness of rules and regulations, enforcement, perceived Coastal management problems and solutions , non-market and non-use values. Other information were also noted during the time when the various stakeholders were being interviewed.

In order to facilitate the surveys and keep them short. The forms were separated into 4 different groups; Residents, tourists, boat operators (taxi boats) and tour operators. The Surveys were conducted with people visiting the two MPAs and the residents were visited at their homes.

Results

Curieuse results

Perception of resource conditions

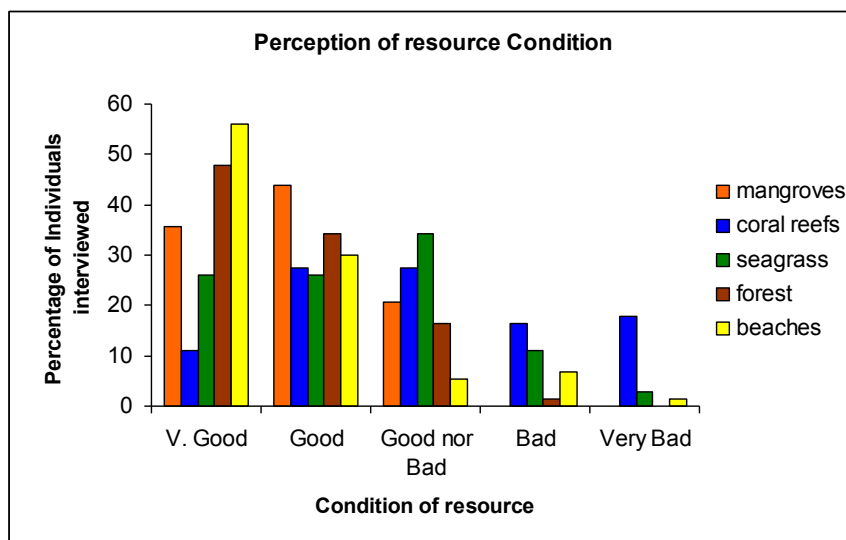


Figure 2 – Perception of resource conditions according to various stakeholders interviewed.

As it can be seen from figure 2 above, for most of the various resources, most people interviewed thought that these were more or less in good condition, except for coral reefs which appeared to get a lower rating than the others. The main reason for that is because of the slow recovery of the coral reefs in the Seychelles of which about 90% were destroyed during the mass bleaching of 1998. Some respondents were not too sure on how to respond to the conditions of seagrass as they did not usually pay much attention to this particular type of ecosystem.

Perceived threats

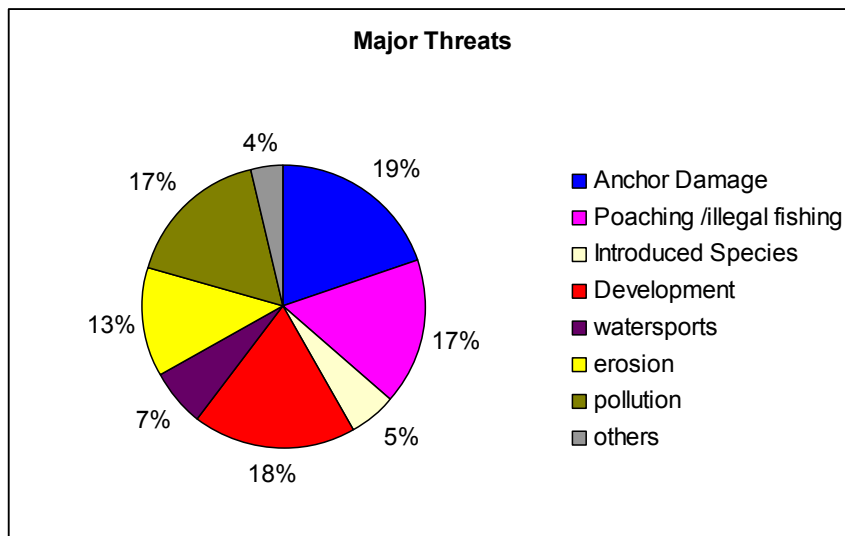


Figure 3 – Perceived threats to the natural environment in the Curieuse National Park.

Figure 3 above indicates that according to the respondents anchor damage, development, pollution and poaching are the major threats to the various ecosystem of the Curieuse marine National park. The people surveyed pointed out that most of the anchor damage was from yachts visiting the marine parks, especially cruise liners and smaller cruises. Uncontrolled development on the islands (mainly Praslin), especially in terms of hotel, was another issue on point where respondents believed was having serious adverse effect on the various ecosystems. Pollution, mostly from hotels nearby was also pointed out as an issue. Illegal fishing/poaching was also seen to be a detrimental factor which was affecting the Curieuse marine park.

Awareness of Regulations

The survey also recorded the level of awareness amongst the various stakeholders with regards to various activities relating to a marine park. They were asked whether there were aware of the existence of eth rules and regulations on issues like fishing, use of mangroves, hotel and residential development, water sport, lighting of fires for fires and collection of shells, sand etc... For most of the various activities the great majority of people interview were aware of the existing rules and regulations, with very few people not knowing that there were laws for activities like fishing and collection of shells in a marine protected area. Please refer to figure 10 in appendix for further details.

Compliance and Enforcement

With regards to compliance, there were quite a few areas where the stakeholders interviewed thought that there was very little or no enforcement at all. The issue of hotel development was the most argued one where most people thought that there were no or very little enforcement with regards to the new developments. The only activity which most stakeholders agreed that there was compliance was the lighting of fires on beaches for BBQ's etc., as most said that the great majority of park users adhered to the existing regulations. Figure 4 below provides more detailed information with regards to the issue of compliance with regards to the various activities that takes place in the Curieuse Marine National Park.

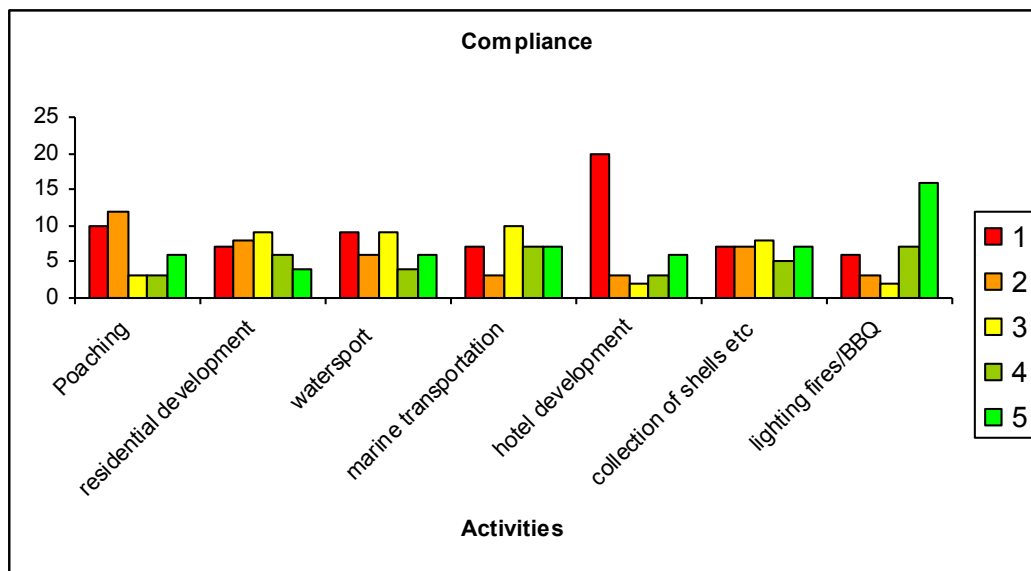


Figure 4 – Stakeholders with regards to compliance to the rules and regulations of the marine park. (1 = No Compliance, 5 = Full Compliance)

In terms of enforcement, most stakeholders thought that there was very little or no enforcement when it comes to poaching and hotel development. They felt that the most of the time, the culprits were often not apprehended or proper action was not taken against the developers if conditions were breached. However in relation to the lighting of fires for BBQ's most stakeholders thought that enforcement of the rules and regulations were sufficient. Figure 5 below summarises the results for enforcement issues in the Cureiuse Marien National Park.

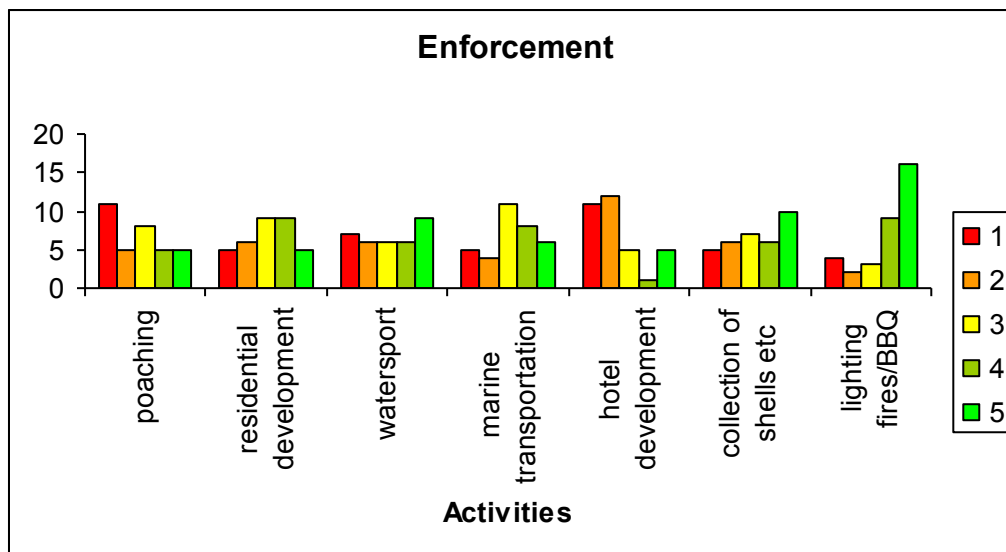


Figure 5 – Stakeholders views with regards to enforcement of the existing rules and regulations in the Curieuse Marine Park. (1 = No Enforcement, 5 = Full Enforcement)

Non- market and Non-use values

The perception of the stakeholders in relation to the use of natural ecosystems for non-market or non use values was also asses. Figure 6 below summarises the results and The letters (a to h) on the x axis corresponds to the following staments;

- The reefs are important for protecting land from storm waves. (indirect non-market value)
- In the long-run, fishing would be better if we cleared the coral. (indirect non-market value)
- Unless mangroves are protected we will not have any fish to catch. (indirect non-market value)
- Coral reefs are only important if you fish or dive. (existence non-use value)
- I want future generations to enjoy the mangroves and coral reefs. (bequest non-use value)
- Fishing should be restricted in certain areas even if no one ever fishes in those areas just to allow the fish and coral to grow. (existence value)
- We should restrict development in some coastal areas so that future generations will be able to have natural environments. (bequest value)
- Seagrass beds have no value to people. (existence value)

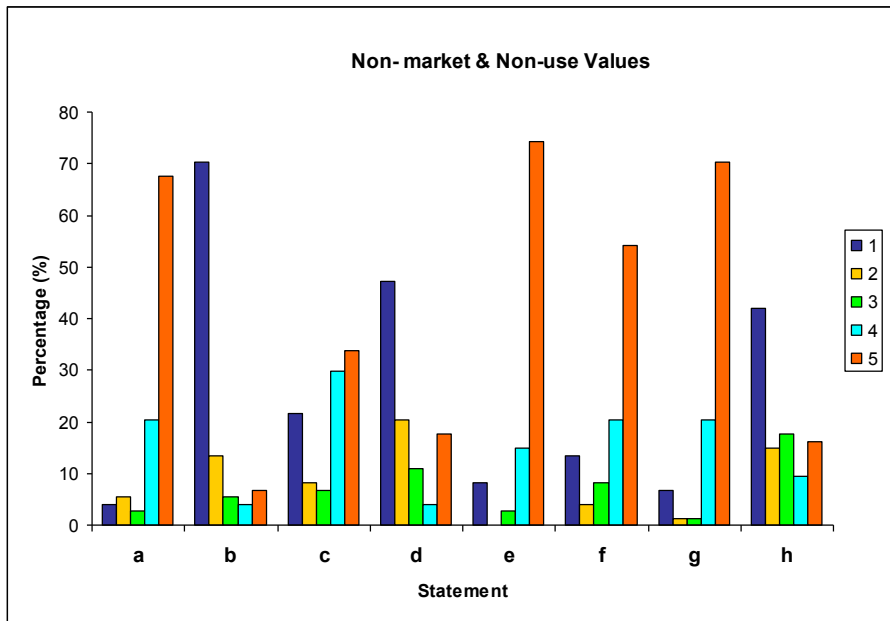


Figure 6 – Results for non-market and non-use value. (1 = Fully Disagree with the statement and 5 = Fully Agree with the statement

As it can be seen from figure 6 above, most stakeholders agreed that coral reefs were also important to protect the coastline, that they wanted future generations to enjoy what they are enjoying now and in order to do so, protect some areas from fishing and development. At the same time most stakeholders also disagreed with negative statements such as clearing corals would bring more fish, coral reefs are only important to divers and fishers and that mangroves are not important for fisheries. This showed that most of them were aware of the indirect benefits from marine and terrestrial ecosystems and the need for some form of environmental protection.

In general for Curieuse, most stakeholders thought that the main resources (mangroves, upland forests, seagrass etc...) are in more or less in good condition. However with regards, to coral reefs most respondent feel that it is not in as good a condition as it should be and the main reason for that is the slow recovery of the reefs from the mass bleaching in the late 90's. In terms of threats, development, anchor damage, pollution, erosion and poaching are seen to be the most prominent ones in the Curieuse MPA. Most respondents were also aware of the existing rules and regulations relating to various activities in and around the park. With regard to compliance, most stakeholders believed that there was no compliance with regards to hotel developments, and very little compliance with regards to poaching, collection of sand/shells (etc...) as well as water sports and marine transportation. Enforcement wise, the stakeholders believe that there is very little or no enforcement with regards to hotel developments, poaching and water sports. The results also showed that most respondent were also aware of the indirect or (non-market non-use) values of ecosystems such as coral reefs, mangroves and seagrass beds etc... and that some form of protection was necessary in order to maintain these ecosystems for present and future generations.

Ste Anne Results

Perception of Resource conditions

The results at the Sainte Anne Marine park was quite similar to that of Curieuse. In terms of the perception of the conditions of the various resources, most stakeholders thought that the majority of the resources were still in good condition. This was mostly for the upland forest on the island and the seagrass beds. It has to be mentioned at this point that there is no significant mangrove habitat within the Sainte Anne Marine National Park which is why no information about mangroves was included. Similarly to Curieuse, most stake holders thought that the coral reef habitats around Ste Anne were not in very good condition and the tour operators were the ones to stress on this issue the most as the coral reefs is are supposed to be one of the major attractions for visitors in the Ste Anne Marine National Park. Figure 7 below summarises the results for the perception of the Ste Anne respondents with regards to resource conditions.

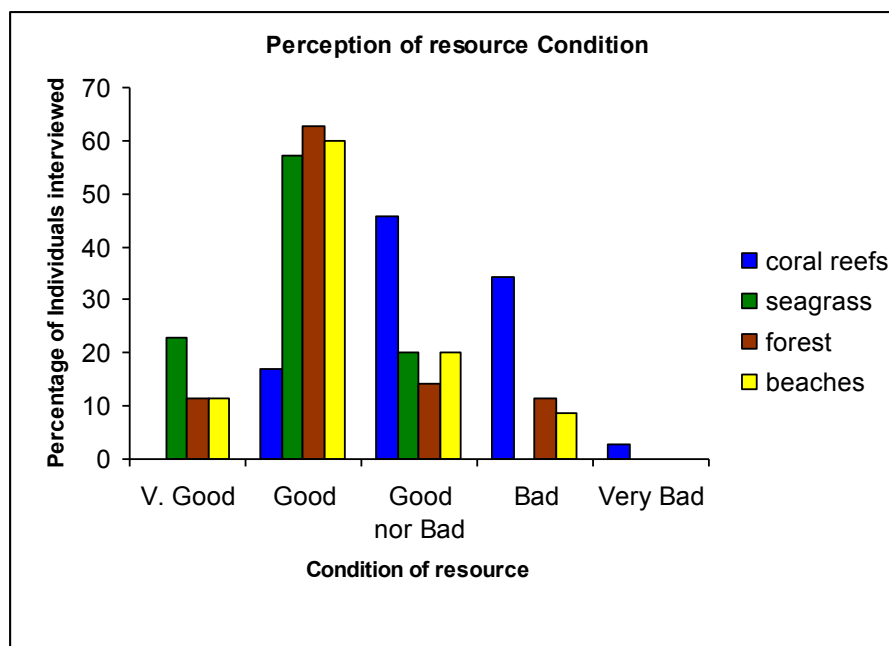


Figure 7 – Results for perception of resource conditions by stakeholders at Ste Anne Marine National Park.

Perceived Threats

There were similarities between the results from Ste Anne and Curieuse with regards to various threats perceived by respondents in the surveys. As with Curieuse, development, anchoring and poaching were seen to be issues of concern but additionally, reclamation was also an important threat. Most respondents believed that the extensive reclamation works carried out along the East Coast of Mahe during the past 20 years or so have had negative effects on the marine ecosystems of Ste Anne, especially the coral reefs. There were also concerns of pollution coming from the port of Victoria as well as the industrial

areas along the east coast of Mahe. Figure 8 summarises the results in relation to the perceived threats as viewed by the stakeholders interviewed in the Ste Anne Marine National Park.

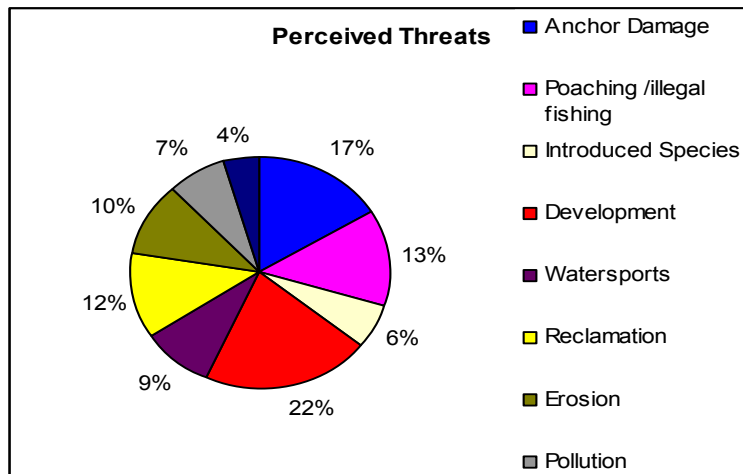


Figure 8 – Perceived threats in the Ste Anne Marine National Park.

Awareness of Rules and regulations

Figure 9 below shows the results for the Ste Anne Marine National Parks for the level of awareness of the rules and regulations within the park.

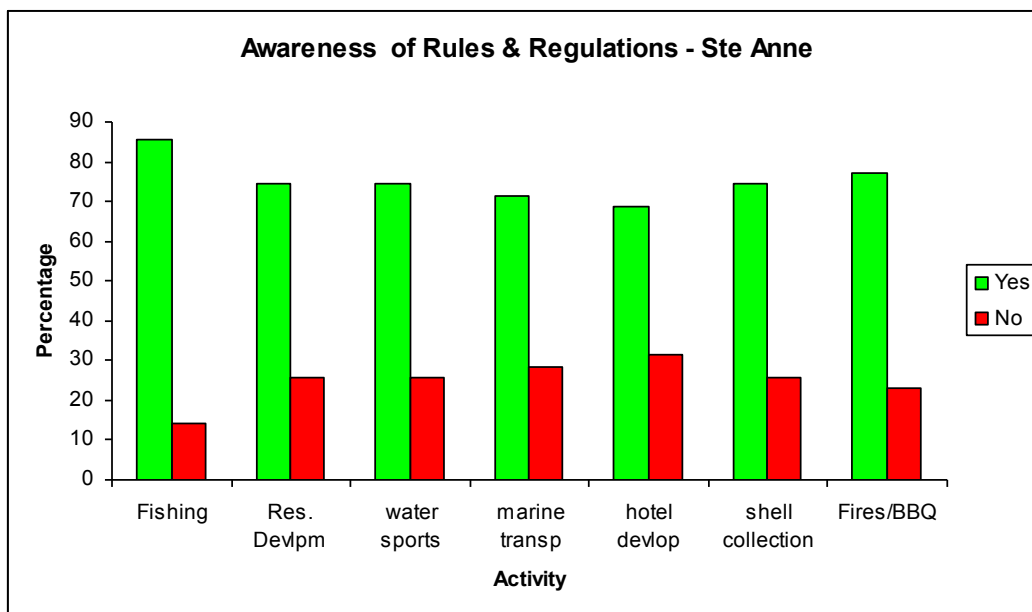
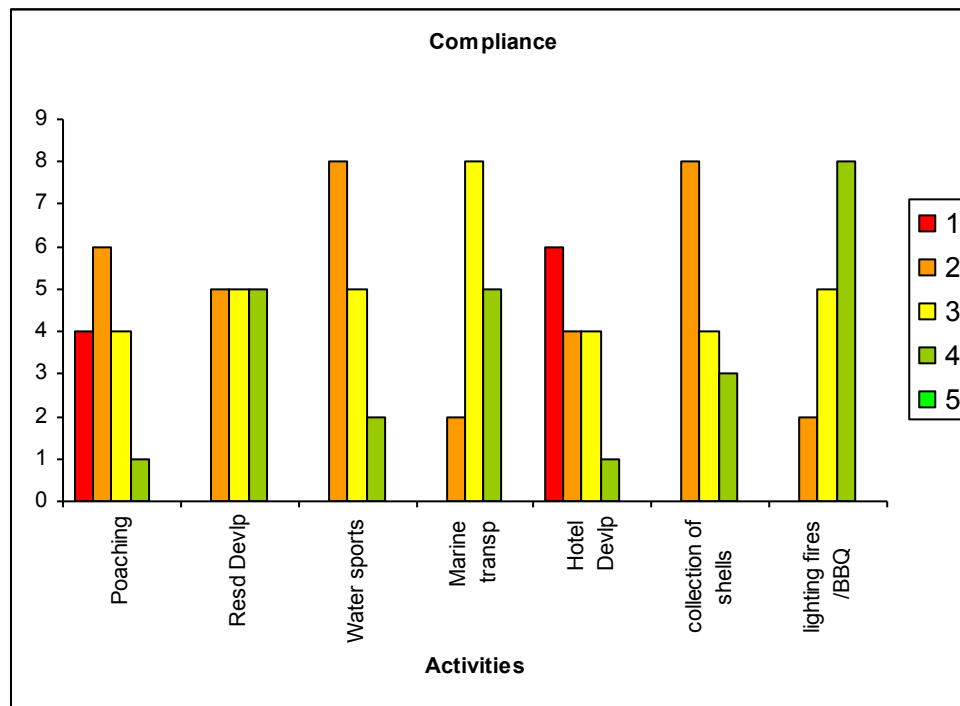


Figure 9 –Awareness of rules and Regulations by stakeholders interviewed in the Ste Anne Marine National Park.

As the graph above shows, the great majority of respondents were aware of the existing rules and regulations pertaining to the above mentioned activities, with almost up to 90% aware of the “no fishing” policy. This was the case for all categories of stakeholders interviewed and the results was quite similar to those from Curieuse Marine National Park.

Compliance and Enforcement



*Figure 10 – Stakeholders view of compliance within the Ste Anne MPA
(1 = No Compliance, 5 = Full Compliance)*

As shown by figure 10, most respondents believed that there was very little or no compliance for hotel developments, poaching, water sports and the collection of shells. However most believed that there was more or less sufficient compliance with regards to the lighting of fires/BBQ, residential development and marine transport.

In terms enforcement, most respondents believed that there was very little compliance in terms of Hotel development, poaching and water sports. The results are more or less similar to those of Curieuse where more or less the same areas/activities were seen to have insufficient enforcement. Figure 11 below summarises the results for regarding the perception of enforcement in the Ste Anne MPA, as viewed by the respondents.

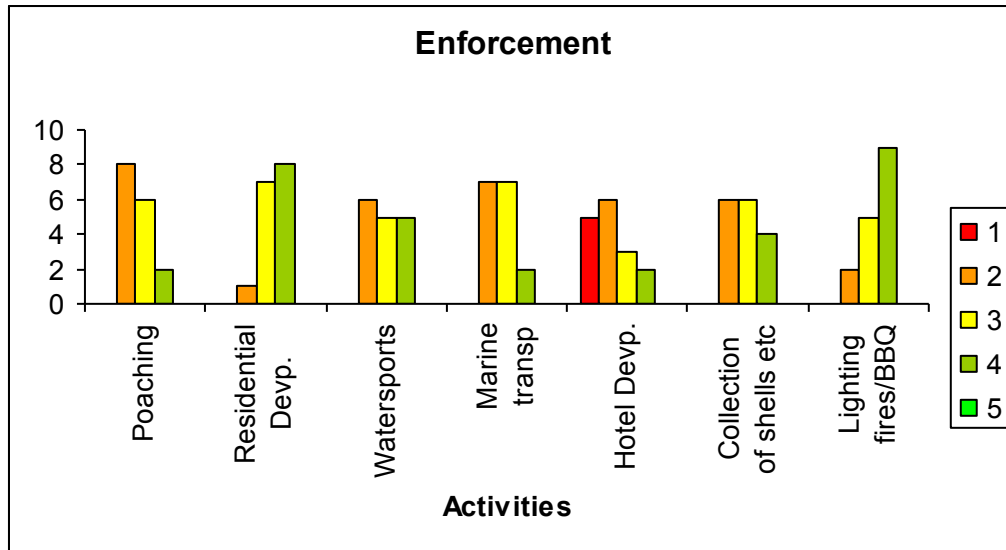


Figure 11 – Perception of enforcement in the Ste Anne Marine Park (1 = No Enforcement, 5 = Full Enforcement)

Overall for Ste Anne, the are more or less similar to that of Curieuse. Most resources are perceived to still be in good condition except for coral reefs which were seen not to be in good conditions. In terms of threats, development, anchoring and poaching are seen to be the most prominent ones but in addition, compared to Curieuse, reclamation was also seen as a threat for the Ste Anne MPA. Most respondents were aware of the existing rules and regulations but in terms of compliance, issues such as hotel development and poaching were seen to have very little or no compliance. Accordingly, these same issues were seen to be very poorly enforced within the Ste Anne MPA.

Conclusion & recommendation

Over all for both sites, most feedback from the stakeholders seemed to show that most of the resources are sill in good condition, except for coral reefs. As explained before, this is mainly due to the slow recovery of the coral reefs around the inner granitics of the Seychelles. Turner et. al. (2000) found that on 57 sites in the inner granitics, coral mortality was about 90 to 95%.

Developments, damage by anchors, poaching, pollution and beach erosion have all been identified by the stakeholders as major threats to the marine ecosystems of both Curieuse and Ste Anne marine parks. Some of the major concerns were with regards to the hotel developments, especially the size of the ones being constructed and the damages that being caused or may cause to the natural environment in and around both MPA's.

In terms of compliance, again, the same issues were of concerns and these were developments and poaching mainly. A study conducted by Woods (2004) found that only 20% of poachers thought that fish stock should be protected compared to 50% of non poachers. This gives the idea that most poachers believe that fish stock

cannot be depleted easily and therefore there is no need for MPA's. Work needs to be done therefore in terms of education and awareness to show these groups of stakeholders of the importance of MPA's.

Issues identified where park users were not complying with the rules, enforcement was also seen to be absent with these same issues. This means that there needs to be an increase in enforcement in these areas in order to improve compliance and also more education and awareness to show the stakeholders why these particular rules and regulations are there.

Most respondents also believed that there was a need to protect the natural environment and that it is necessary to have some forms of protected areas. They were also aware of the various indirect benefits (non-market/non-use values) that ecosystems have for everyone.

Recommendations

- There should be more efforts to ensure that the current conditions of the MPA's are maintained or improved.
- More attention should be given to ensure the protection of coral reefs, so as to allow recovery to take place at a greater pace.
- More mooring buoys should be placed in the MPA's and specific areas with no coral cover should be designated for anchoring (zonation).
- There should be improved regulations and policies regarding developments, especially those regarding hotel developments
- Management for the two MPA's (SNPA) should increase enforcement to ensure that rules and regulations are maintained.
- MPA staff should be provided with more training, be better equipped and empowered to deal with major issues such as hotel development. As it stands it is the Planning Authority and Ministry of environment who have more power over any developments in MPA so therefore there might need to be some changes with regards to procedures for such processes.
- There should be an update of the existing laws and regulations, especially where fines are concerned.
- Facilities on Curieuse could be upgraded and a fee then charged for the use of the facilities (e.g. BBQ facilities). Curieuse currently has the cheapest landing fee of all the MPA's in the area and most services are provided free of charge. The extra revenue that will be collected can then be used for better management of the MPA.
- There should be more education and awareness programmes for the general public, especially the MPA stakeholders on the importance of having marine protected areas and also show how they can benefit directly or indirectly from the natural ecosystems in MPA's as resources.

Lessons learnt from the process

One of the most important lessons learnt was the length required for a particular survey and the design of the survey forms. Most respondents, especially the boat operators, tour operators and residents were not willing to spend more than 10 minutes answering to the questionnaires. Tourists interviewed on Curieuse also showed signs of their time being taken up in a survey when they wanted to visit the island. On the other hands those interviewed on board yachts showed to be more relaxed and more willing too provide the interviewers with information.

Another lesson learnt is that most of the time stakeholders operating in the parks as well as residents were not too keen on answering questions from staff of the Seychelles National Parks Authority, even though it was mentioned that they were from the research department. In some cases people who were approached were quite hostile, some even refusing to participate in the survey. Most people are willing to talk to students who carry out eth survey during school holidays.

Communication strategy

Following the completion of the surveys at Curieuse and Sainte Anne Marine National Park, the information collected will now be disseminated to the various stakeholders as well as the general public. This should hopefully raise awareness on the various issues which were addresses. Information to the general public will be done by the use of national media which is mainly television, radio and the newspapers. Information to MPA management as well as policy makers can be made available via the Environmental Management Plan of Seychelles (EMPS) committee as well as making the documents made available to the relevant ministries and other governmental departments.

References

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Turner, J., Klaus, R., Engelhardt, U., (2000.) *"The reefs of the granitic islands of the Seychelles."* In: Souter, D., Obura, D., Lindén, O. (Eds.), *Coral Reef Degradation in the Indian Ocean*. Status Report 2000. CORDIO, Stockholm, Sweden, 205 pp.

Woods L. (2004) "Motives for Poaching in Marine Protected Areas in the Seychelles" *MOTIVES FOR POACHING IN SEYCHELLES Western Indian Ocean J. Mar. Sci.* Vol. 3, No. 2, pp. 199–208, 2004

Appendix 1 – Figures/graphs/tables not included in the result section

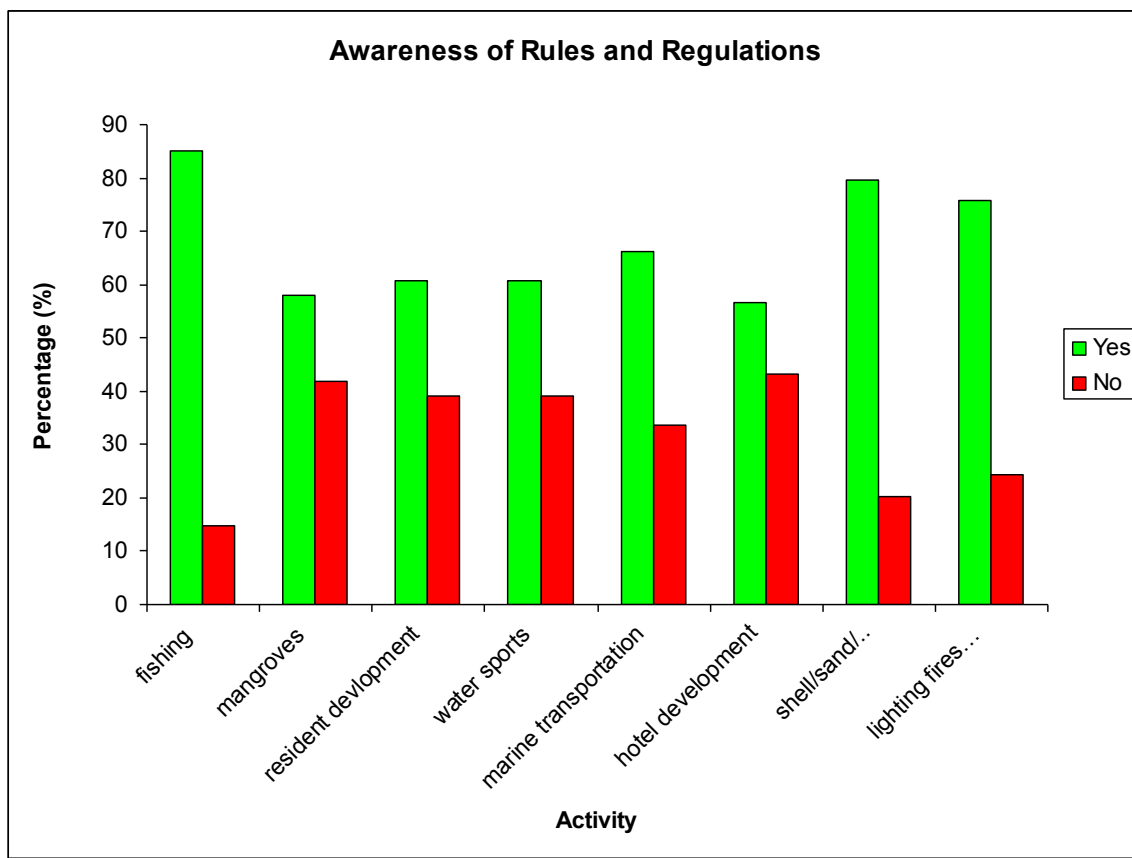


Fig 12 – Awareness of rules and regulations on in the Curieuse MPA

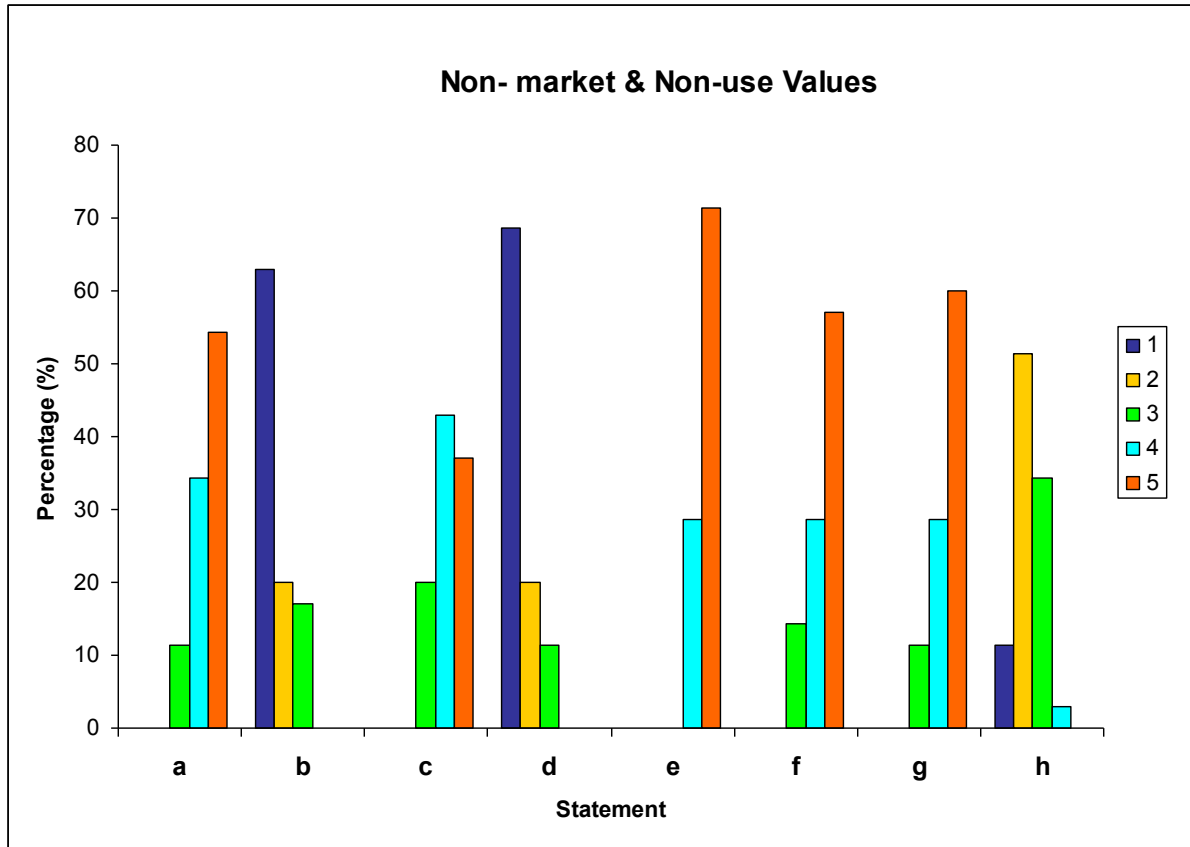


Figure 13 – Result for non-use & non-market values of resources as viewed by respondents at the Ste Anne Marine National Park.

Appendix 2 - SocMon project costs

Item	Cost (\$)
Transportation	
Inter island Ferry	300
taxi	100
Stationaries/printing	150
Lunch	100
Overnigt Stay Curieuse	200
Data Collection	300
Dataprocessing	200
Data entry	200
Total	1550

Appendix 3 - Seychelles SocMon Team

The Seychelles Socmon Team consists of the following staff members from the Seychelles National Parks Authority (S.N.P.A);

Mrs. Helena Francourt (Ste Anne Site Coordinator)

Ms. Sylvanna Antat (Curieuse Site Coordinator)

Mrs. Barbara Kilindo

Ms. Michelle Etienne

Mr. Daig Romain

Mr. Rodney Bonne

Mr. Rodney Quatre

Additionally, other people who helped with the survey includes;

Ms Gilberte Gendron (Marine unit, Department of Environment)

Ms. Kettyna Constance (Maritime Training Centre (M.T.C)Student)

Appendix 4 - Indicators selected

- Tourist profile K27
- Community Incentives K34

- Attitudes and perception
- Perception of resource conditions S19
- Perceived threats S20
- Awareness of Rules and Regulations - S21
- Enforcement S23
- Perceived Coastal Management problems and solutions - S24
- Non-market and Non-use values - S28