

FINAL CONSULTANCY REPORT



Environmental
And
Socioeconomic
Studies for OPAAL Demonstration Site
In
Saint Lucia
Pointe Sable Environmental Protection Area



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**Consultancy Completed
By**



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ACRONYMS

CANARI	Caribbean Natural Resources Institute
CEPro	CEPro Consultants Limited
ESDU	Environment and Sustainable Development Unit
NICE	National Implementation Coordinating Entity
NDC	National Development Corporation
OECS	Organisation of Eastern Caribbean States
OPAAL	OECS Protected Areas and Sustainable Livelihoods
PA	Protected Area
PSEPA	Pointe Sable Environmental Protection Area
SLASPA	St. Lucia Air and Sea Ports Authority
STDC	Southern Tourism Development Corporation

I. BACKGROUND

Component 2 of Organisation of Eastern Caribbean States (OECS) Protected Areas and Sustainable Livelihoods (OPAAL) Project deals with Protected Areas Management and Associated, Alternative and New Livelihoods. The component's objective is to promote biodiversity management and conservation through the establishment of new protected areas (PAs) and strengthening of existing PAs, complemented by support for alternative and or new livelihoods in areas in proximity of the aforementioned protected areas. Under the ambit of the OPAAL project, a Sustainable Livelihoods Assessment and a Monitoring and Evaluation Assessment was conducted and a management plan and monitoring plan were prepared for the Pointe Sable Environmental Protection Area (PSEPA). An independent national Coastal Habitats Mapping Project was executed, which characterized the seagrass beds, mangroves and coral reefs in the marine areas of the Pointe Sable Environmental Protection Area, which supplements information generated by national resource management agencies on a limited basis.

To continue the work already started in the PSEPA, the OECS contracted CEPro Consultants to complete a biophysical inventory and socioeconomic studies in the area. This work combined two activities listed within the OPAAL project: detailed site preparation studies to identify potential environmental and socio-economic adverse impacts of project interventions, identification of safeguards and mitigation measures to be factored into project activities such as livelihoods sub-project design; and site management planning, and baseline environmental and socio-economic studies to determine the status of the resource base, its use, and the nature of communities associated with the site.

The site studies planned for the PSEPA were to comprise two components:

1. environmental (EA) and socio-economic site assessments (SEA)
2. environmental and socio-economic baseline studies to feed into the design and implementation of the monitoring and evaluation for the PSEPA, and to guide project interventions to be undertaken during implementation of the management plan for the site.

The specific objectives of the site studies were to undertake environmental assessments (EA) and socio-economic site assessments to determine the environmental and socio-economic characteristics and issues facing the PSEPA so as to:

- a. identify the potential future impacts of respective project interventions during project implementation;
- b. identify the appropriate environmental safeguards and mitigation measures for application;
- c. inform environmental screening of alternative and new sustainable livelihood activities;
- d. identify OPAAL activities and livelihood sub-project proposal activities which should be excluded from financing due to their i) inability to meet the selection criteria, and ii) likely level of negative impact on affected environment and communities;

- e. provide major inputs for the future revision/updating of the PA management plan;
- f. indicate the qualitative and quantitative value of the natural resources; and
- g. provide a baseline to contribute to monitoring and evaluation of management effectiveness of the site.

The consultancy commenced on 15 January 2010 and ended on 27 April 2010. The outputs for the project were:

1. A proposed plan of work with provisional details for carrying out the consultancy. The work plan included but was not limited to the items and areas to be covered, responsibilities for each work activity, etc. The work plan was reviewed by and discussed with the staff of the ESDU and National Implementation Coordinating Entity (NICE) then revised as appropriate. The final agreed work plan guided the subsequent activities of CEPro in relation to specific tasks.
2. A report for the site which detailed the results of the biophysical assessments and socioeconomic baseline studies.
3. A report (this report) on the consultancy to include, *inter alia*, details on if the results, and recommendations of the studies should be incorporated into the site management plan (i.e. if the findings require changes to the management plan strategies and activities), an indication of the problems faced during the consultancy, the possible impact they may have on follow-up activities, lessons learnt and recommendations for future studies.

II. METHODOLOGY & OUTPUTS

The environmental and socioeconomic studies for the PSEPA involved a clear definition of the sampling objectives for the protected area (PA); open dialogue with stakeholders and regulatory organizations; extensive literature reviews; selection and utilization of specific biodiversity inventory techniques; field sampling including the identification and classification of species, habitats, communities and ecosystems; presentation, analysis and interpretation of the data collected in a format appropriate for management application; stakeholder identification and analysis; identification of alternative livelihood opportunities in the PA and recommendations needed to ease the implementation of the management plan. Outlined below are the methodologies followed and the outputs for each project deliverable to the OECS Environment and Sustainable Development Unit (ESDU).

Task 1 - The development of a comprehensive work plan for the assignment that clearly defined the roles and responsibilities of all persons on the consultancy team

Inception meetings were held between CEPro and relevant Government Ministries and Agencies during the first two weeks of the consultancy. These included the St. Lucia National Trust, Departments of Fisheries and Forestry and a representative from the Durrell Wildlife Conservation Trust. The overall goals of the inception meetings were to discuss a draft work plan and obtain consensus on the most appropriate method for

implementation of the assignment. CEPro developed a draft of the work plan – a “road map” prior to the inception meetings. At these meetings, CEPro in collaboration with stakeholders, reviewed and discussed the process for conducting the assignment; determined roles and responsibilities of all key players; identified preliminary background information related to the assignment; identified the areas within the PSEPA that would be part of the study site including but not limited to Bruceville, Moule a Chique and Savannes Bay; and finalized the work plan and timetable for the assignment. A record of these inception meetings and final work plan were prepared by CEPro and was submitted to the OECS-ESDU.

Task 2 – Environmental and Socioeconomic Site Studies

Research Team

The research team (Table1) that conducted the biophysical inventory and socioeconomic site studies in the PSEPA were intimately familiar with cataloguing the biodiversity present in natural areas, determining their status and suggesting management measures for the sustainable use and exploitation of this biodiversity. In addition, they had years of experience in working with stakeholders and local communities on issues related to the conservation, protection and management of natural resources both in the Caribbean region, St. Lucia and more specifically the PSEPA. Local experts in St. Lucia assisted the core research team whenever possible. The benefit of using these local persons was that they had the experience of working in and traditional knowledge about the natural resources in the PSEPA; had spent time exploiting these resources themselves so had intimate knowledge about the status of the resources and the changes with time; and had spent many years working alongside local communities.

Table 1: The researchers who conducted the biophysical inventory and socio-economic site studies in the PSEPA

Name	Qualification
Dr. Sherry Constantine	Natural Resource Manager & Marine Biologist
Mr. Donald Anthony	Conservation Ecologist & Wildlife Biologist
Mr. Laurent Jean-Pierre	Ethnobotanist & Anthropologist
Mr. Trevor Alfred	GIS Professional
Ms. Carol James	Environmental Sociologist
Mr. Melvin Smith	Botanist, Agriculturist, Researcher, Crop Farmer
Mr. Nicholas Samuel	Fisherman, Sea-moss Farmer, Crop Farmer; Bee Keeper (within Vieux Fort)
Mr. Hardin Jean Pierre	Fisheries Extension Officer (Vieux Fort)

Literature review

CEPro reviewed literature on the PSEPA to formulate ideas and design a framework for the assignment. The review provided an overview of significant literature published on the existing biodiversity; historical biodiversity inventories; traditional uses of the area; the ecosystems; ecological, biological and cultural significance of the area; indigenous use of extractive resources; infrastructural development; commercial, agricultural and

recreational uses of the area; rights of traditional groups; existing management practices of the area even though not formalized through legislation; and any other information relevant to the assignment. Literature sources included:

- Libraries in St. Lucia and regionally;
- Online journals;
- Non-governmental Organization reports and archives e.g. Caribbean Natural Resources Institute (CANARI), Southern Tourism Development Corporation (STDC);
- Websites;
- Reports from Ministries of Environment, Forestry, Fisheries, Tourism etc.;
- National Reports about St. Lucia presented at national, regional and international meetings and conferences;
- Reports of any consultancies completed within the PSEPA or other natural areas in St. Lucia;
- Reports from academic institutions;
- Reference sections of book chapters; and
- Proceedings of conferences, meetings, and workshops.

Interviews with Stakeholders

Based on the resources (time and financial) available, a maximum number of stakeholders were selected to be interviewed (Table 2). These stakeholders, or “interested parties,” were grouped into the following categories: international/donors; national political (legislators, governors); government agencies (Fisheries, Forestry and Environment Divisions); commercial/private for-profit (e.g. tour operators); non-profit (nongovernmental organizations); civil society; and users/consumers (e.g. fishers, farmers etc.). During these interviews, the specific interests these stakeholders have in the management of the natural resources in the PSEPA were determined.

Table 2: List of stakeholders interviewed during the consultancy

NAME	AGENCY	PORTFOLIO	CATEGORY
Bishu Tulsie	St. Lucia National Trust	Executive Director	National/Political
Lavina Alexander	St. Lucia National Trust	Programme Officer	National/Political
Crispin d’Auvergne	Sustainable Development & Environment Section	Chief Sustainable Development & Environment Officer	Government Agency
Laverne Walker	Sustainable Development & Environment Section	Sustainable Development & Environment Officer	Government Agency
Sarah George	Department of Fisheries	Deputy Chief Fisheries Officer	Government Agency
Seon Ferrari	Department of Fisheries	Fisheries Extension Officer	Government Agency
Thomas Nelson	Department of Fisheries	Fisheries Biologist	Government Agency
Hardin Jn. Pierre	Department of Fisheries	Extension Officer (PSEPA)	Government Agency
Daniel Medar	Department of Fisheries	Fisheries Officer	Government Agency
Matthew Morton	Durrell Wildlife	Eastern Caribbean	International &

	Conservation Trust (DWCT)	Manager	Non-profit
Adams Toussaint	Department of Forestry	Assistant Chief Forestry Officer	Government Agency
Rebecca Rock	Department of Forestry	Head of Mapping Unit	Government Agency
Anita James	Biodiversity Office	Biodiversity Project Coordinator	Government Agency
Susanna Aurelien	Survey and Mapping Section	Senior Cartographer	Government Agency
David Alphonse	Physical Planning Section	Physical Planning Technician	Government Agency
Kingsley Powlette	Southern Tourism Development Corporation	Chairman	Nongovernmental / Non-profit
Michael Chitolie	Vieux Fort Town Council	Chairman	National/Political
Wendy Eristee	Solid Waste Management Authority	Enforcement Officer	National/Political
Fishermen (a fisher consultation was held)			Civil Society and Users
Boat Owners (a fisher consultation was held)			Civil Society and Users
Lena Francis		Sea- moss Farmer	
Candita Joseph		Sea-moss Farmer	Civil Society and Users
Nicholas Samuel	ACAPG	Charcoal producer, former fisherman, bee keeper and sea-moss farmer	Civil Society and Users
Magdaline Nelson	ACAPG	Member, praline producer	Civil Society and Users
Roger Graveson			
Mr. McFarlane		Sea urchin fisher	Civil Society and Users
Kentigern Louis	National Development Corporation	Operations Manager	National/Political
Julius James	St. Lucia National Trust (former employee)	Former Area Manager of the South	National/Political
Vishal Bhalla	Coconut Bay Beach Resort & Spa	General Manager	Commercial/ Private for Profit
Gibbs Bakie	Coconut Bay Beach Resort & Spa	Grounds Manager	Commercial/ Private for Profit

Vegetation Classification

Literature reviews, site visits and discussions with the relevant agencies, especially the Department of Forestry, were used to define the vegetation classes of the PSEPA. The appropriate scale of the vegetation classification and mapping of the PSEPA was determined from the previous work that had been completed within the area; namely the study of Graveson (2009). Some of the existing maps that were used included the St. Lucia Natural Trust maps that were completed during the preparation of the protected areas systems plan; maps available from the Physical Planning Department; maps from the Department of Forestry; maps developed by Graveson (2009) and aerial

photographs. The data contained in these maps were ground truthed via site visits. Polygons for unmapped portions of the study area were delineated and mapped using air photo interpretation where available, site visits and existing literature. Attempts were made to seamlessly join all edge areas between all the different sources of vegetative class boundaries. Eight (8) vegetation classes were defined for the PSEPA.

Biophysical Report

As part of the biophysical assessments, CEPro's team of experts inventoried all the floral and faunal species (marine and terrestrial), their abundance and density as appropriate. In addition, information on the quality of the habitats colonized by the flora and fauna was collected. These data facilitated the understanding and the determination of the status and trends of plant and animal populations, as well as elucidated large-scale patterns of ecosystem health. CEPro based all data collection activities on sound technical and scientific criteria and methodologies. Accurate scientific information and interpretation ensured the validity of the inferences made. The biological inventory for the PSEPA consisted of lists of critical terrestrial, freshwater and marine species and their associated habitats. For terrestrial areas the taxa researched included trees, lichens, ferns, shrubs, flowering plants, grasses, herbs, birds, insects, reptiles, amphibians and mammals. For the marine and freshwater areas, the categories included fishes (marine and freshwater), crustaceans and other invertebrates, seagrasses, turf and macro algae, hard and soft corals, sponges and gorgonians. Current and potential anthropogenic and environmental hazards and their impacts on the biodiversity present in the PSEPA were identified. A plan for monitoring of these, including frequency, feedback mechanism and relevant actors was developed.

Socioeconomic Report

As part of the socioeconomic studies completed, CEPro verified the accuracy and subsequently utilized all secondary data and information collected on the socioeconomic issues and conditions, which may have an effect on the PSEPA and its management. A stakeholder identification and analysis activity was completed for the site. These techniques allowed for the identification and assessment of the importance of key people, groups of people, or institutions that may significantly influence the success of the management measures proposed for the protected area. Within the context of the management issues specific to the PSEPA that need to be addressed, the stakeholder identification and analysis provided a basic understanding of the social and institutional context in which the planning process should take place. Further, a number of livelihood subprojects that would allow for the diversification of the use of the resources in the PSEPA and present opportunities for the local communities to earn additional income were identified. These commercial activities were determined from interviews with a large number of key stakeholders in the area. It was recognized that a diversification in livelihoods was needed because a large number of the activities undertaken presently by local communities in the PSEPA are unsustainable and will have to be carefully monitored or restricted if the resources are to be protected for future generations. Based on the socioeconomic data that was collected and the results of the analyses completed, CEPro made recommendations on how socioeconomic

trends and issues could be factored into decision making regarding site management and how stakeholders could be actively involved in site management activities.

Summary

The results and recommendations made in the report of the biophysical and socioeconomic site studies for the PSEPA should definitely be incorporated into the site management plan. These results do not require that changes be made to the management plan strategies and activities. However, they add value to the strategies and activities proposed and provide valuable background information that will help ease the implementation of the management plan. Therefore, the results and recommendations should be amended to the management plan and be viewed as additional critical information that is needed by the management entities to successfully implement the conservation activities proposed for the biodiversity of the protected area.

III. PROBLEMS FACED

A. Time Constraints

The consultancy began on 15 January 2010 and ended on 27 January 2010. This left only three months to complete the work outlined in the terms of reference. Thus, the research team had to be smart about how the work was conducted so that the time could be maximised and the best results could be produced. Due to these time constraints, the decision was made not to carry out any sampling for plant and flora species on the Maria Islands. One reason was to avoid replication of the studies that had already been completed on these islands. One of the key pointers in the terms of reference for the consultancy was that every effort should be made to not duplicate studies already completed in the PSEPA. This lack of duplication of effort would ensure the resources available (both human and financial) would be utilised in areas where little research work had been completed.

The most recent survey of the vegetation on the Maria Islands was that of Graveson (2009). However, Anthony (1993) also provided a complete listing of the plant species present on the Maria Islands. The most recent survey of the animals in this area was that of Daltry (2009) and Toussaint et al. (2009). However, Anthony (1993) also provided a complete list of the reptile and bird species present on the Maria Islands. A study completed by *Physalia* Limited in 1994 provided an almost complete list of the insects observed on the islands. A large amount of work had also been completed on the reptiles present on the islands, for example Corke (1987) and the continuing work of the Durrell Wildlife Conservation Trust. Noteworthy here, is the fact that the Maria Islands are a nature reserve. This means that extraction of organisms from this area is strictly prohibited. It is therefore highly probable that old records of species composition, density and abundance may still be relevant today. Thus, research efforts for this consultancy were focused on other areas of the PSEPA where little research had been completed to date on floral and faunal species. The results of this consultancy provides more value to efforts at managing the floral and faunal resources present in the PSEPA since most of the work focused on areas that have not been intensely studied. Given

more time to complete the fieldwork aspect of this consultancy, further exploration and a more in-depth field investigation and data analysis would have been attempted.

B. Drought

Due to the prolonged dry season experienced during the sampling period, the worst in over a decade and the driest February since 1967 (St. Lucia Meteorological Services, 2010), plants within the PSEPA were witnessed under severe stress. The ground vegetation was dead, dying and/or dormant in most areas. Several ground vegetative species and cover species including herbs, grasses and sedges, believed to occur in the area, were not readily identifiable. In addition, many plants were not fruiting or flowering (structures that normally aid in species identification), so for many species identification was very difficult. Therefore, six species were keyed down only to the genus and not the species level. These plants included *Portulaca sp.*, *Clitoria sp.*, *Euphorbia sp.*, *Miconia Sp.*, *Cyperus sp.*, *Myrcia sp.* At least seven plant species were not identified.

Further, due to the drought conditions, wild fires had burnt out approximately 70 acres of the PSEPA and the fire hazard was high. Boreil's Pond was almost completely dry with standing water observed in only two (2) small pools. Birds were congregated mainly in the locations of the standing water. Mankòtè Mangrove was completed dry and many areas that were underwater during that time period in previous years were observed cracking in the heat. Members of the ACPAG recalled that they had never seen Mankòtè so dry. These harsh conditions had a large impact on the species observed, especially the reptiles and amphibians.

C. Access to parts of the PSEPA

Large areas of the PSEPA either belong to private land owners or are vested in the St. Lucia Air and Seaports Authority (SALSPA) and the National Development Corporation (NDC). One area under private ownership is the Boreil's Pond. Access from the road to this pond is via a gate that remains locked by the owners. Arrangements had to be made with the owner to get access to the pond and beach area through the gate. This area is very important to the PSEPA. The pond is next to Bois Chadon Beach where the sea-moss farmers cultivate their products and numerous wading and water birds frolic in the pond. In addition, the pond contains large amounts of fish that is harvested annually by local communities.

IV. LESSONS LEARNT & RECOMMENDATIONS FOR FUTURE STUDIES

There were a number of lessons that were learnt while conducting the assignment and possible studies that could be completed in the PSEPA in the future. These include:

1. The need to use local persons to assist with research activities

During the fieldwork portion of the assignment, CEPro recognised the importance of using local persons very familiar with the area and who had worked in the area for a

number of years to assist with the research being conducted. These persons were able to provide insights and information on the:

- resources present;
- traditional uses of these resources;
- changes in resource levels and quality with time;
- changes that have occurred in the area over the past 40 years and the reasons for these changes;
- general changes in environmental quality of the PSEPA over time;
- co-management arrangements that exist or had existed in the past; and
- the key stakeholders including resource extractors in the area.

These persons assisted with navigating the PSEPA and setting up transects and quadrats that allowed for representative sampling of all habitats in the area. They also assisted in identifying key persons in the local communities to be interviewed. These persons had valuable information about the biodiversity in the protected area.

2. The need to conduct data collection at different times of the year

For projects that involve cataloguing biodiversity, enough time should be allocated or arrangements should be made to allow research to be conducted during different seasons/times of the year. This is especially critical for bird and insect populations and floral taxon groups such as lians, grasses and sedges. A number of bird species were reported to occur in the PSEPA but were not observed by the CEPro team because sampling was conducted at a time when these species had already migrated south for the winter and had not started their northerly migration. Further, many plants were not in bloom or fruiting during the sampling period. In the absence of floral structures and fruit, identification and classification of a number of plants is impossible. Of more serious concern was the drought that the area was experiencing. These extreme dry conditions severely affected the biodiversity of the area.

3. The importance of conducting one-on-one interviews with stakeholders

It was decided that one-on-one interviews rather than group consultations would be the preferred methodology to glean information from stakeholders. This decision was taken because it was felt that one-on-one interviews placed the stakeholders more at ease so they could freely share information, sometimes of a sensitive nature. In addition, personal interviews allowed for more information to be collected in a shorter space of time since the focus would be on the single interviewee and not on discussions and disagreements among many persons. The stakeholders interviewed were carefully selected so that the maximum amount of critical information could be collected in a short time span. These interviews provided information on:

- the level of interest of persons from the surrounding communities in participating in the management of the biodiversity in the PSEPA;
- their views on the need for management;
- their perceptions about the environment and environmental issues;
- their views on how the environmental quality of the PSEPA has changed over time; and
- the measures they thought should be implemented to protect and conserve the resources present.

One fisher consultation with the pot fishermen who operate in the PSEPA was completed. This was the preferred interview method because it was felt that the issues of the fishermen would be better expressed if they were in a group setting since they all face the same issues and problems. Further, the information provided by one fisherman could be corroborated by another one so that time could be saved by not having to visit a number of fishermen who would all provide the same information. This consultation was held in the Cocoa/Vigé community where the majority of the pot fishermen reside.

4. The need to have the support of the responsible agencies in country

CEPro could not have successfully completed the assignment were it not for the assistance received from the persons in the relevant Government Ministries and Agencies in St. Lucia. Noteworthy, was the assistance provided by persons from the Forestry and Fisheries Departments, Anita James of the Biodiversity Office, Laverne Walker from the Sustainable Development Unit, Lavina Alexander from the National Trust, Nicholas Samuel and Roger Graveson.

5. The need to interview as many different stakeholders and interest groups as possible

Each stakeholder group had different concerns about the management and conservation of the biodiversity resources in the PSEPA. Taking the concerns of all these persons into consideration strengthened the stakeholder identification and analysis completed and allowed for the identification of all the conflicts that existed among different stakeholders.

6. The need to complete monitoring activities for the biodiversity resources

Notwithstanding the fact that the significance of the PSEPA is well recognized, as is evident in the numerous reports on the area over the years, there is currently no comprehensive and ongoing biodiversity monitoring programme in place. This lack of monitoring activities means that there is no way to determine how the anthropogenic and environmental hazards (most importantly, resource extraction) within the site are impacting the biodiversity that exists there. This lack of monitoring is certainly one of the major shortcomings to the successful management of the biodiversity of the area. Thus, comprehensive monitoring programmes should be implemented for the protected area. Some of the critical components of this monitoring programme should be water quality monitoring; harvesting and resource extraction levels; invasive species, pests and diseases; effects of coastal development; and pollution.

7. The need for management entities to coordinate their work

One of the primary activities that will facilitate the successful implementation of the PSEPA management plan will be the coordination among all entities involved in the management and regulation of the natural and cultural resources therein. It is normal to find in natural resource management that many government agencies have overlapping responsibilities. This usually leads to lack of efficiency and poor implementation of work programmes, since the role of each agency is usually not clearly defined. In the Management Plan 2009 – 2014 (Gardner 2009), some of the institutional partners of the PSEPA including the Department of Fisheries, Ministry of Social Transformation,

Forestry Department, Durrell Wildlife Conservation Trust and the St. Lucia National Trust presented a list of activities they propose to complete in the PSEPA. Control checks must be put in place to ensure that there are no conflicts between the proposed activities and their objectives, and those of the PSEPA. Further, good coordination in the timing of these projects will be critical to ensure that they will actually be beneficial to the area. The intentions of the Southern Development Corporation (STDC) and the National Development Corporation (NDC) as it relates to the development of the land in the PSEPA should be ascertained early so that there is no conflict in the vision for the PSEPA between these development agencies and the conservation/resource management agencies.

V. CONCLUSIONS

Overall, the consultancy entitled “Environmental and Socioeconomic Studies for OPAAL Demonstration Site in Saint Lucia – Pointe Sable Environmental Protection Area” had a successful conclusion. The report of the biophysical and socioeconomic site studies for the PSEPA was guided by the knowledge, thoughts, ideas and opinions of numerous persons in the Pointe Sable area. The actions and recommendations made to ease the implementation of the management plan should ensure the protection and conservation of the biodiversity resources of the PSEPA during the life span of the management plan and long into the future.

VI. REFERENCES

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