



## *Fondation pour la Protection de la Biodiversité Marine*

**FoProBiM**

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### **Support for Coastal and Marine Environmental Management and Protection for Caracol Bay, Haiti**

for  
**The Caribbean Large Marine Ecosystem (CLME)**

**August – December, 2012**

Prepared by:  
Jean Wiener



 **UNOPS**



**Caribbean  
CLME  
Project**

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## **I. The Caribbean Large Marine Ecosystem Project**

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### **A. Background**

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The focus of the Caribbean Large Marine Ecosystem (CLME) project is to improve the management of shared living marine resources, most of which are considered to be fully or over-exploited, through an ecosystem level approach. A preliminary Transboundary Diagnostic Analysis (TDA) identified three priority transboundary problems that affect the Caribbean Large Marine Ecosystem (CLME):

- unsustainable exploitation of fish and other living resources,
- habitat degradation and community modification, and
- pollution.

The final TDA will serve as the science basis for development of an agreed program of interventions including fishery reforms, conservation measures and pollution control. A Strategic Action Programme (SAP) with a shared vision for the CLME will be developed and required priority interventions, reforms and investments agreed to. The proposed project will facilitate the strengthening of fishery governance in the Caribbean at the regional, subregional and national levels by working with existing structures, strengthening horizontal and vertical linkages both politically and technically.

Typically, the LME approach includes five modules that focus on different aspects of the ecosystem: (1) productivity, (2) fish and fisheries, (3) pollution and ecosystem health, (4) socio-economics, and (5) governance. With many marine resources being shared there will be an emphasis on transboundary or shared living marine resources which require cooperation for governance. Another reason is that a regional approach will facilitate the use of limited capacity within the region.

In the CLME project, governance is recognized to be much broader than management, and has many dimensions, including the interactions among all stakeholders that influence resource use outcomes as well as the principles that guide these interactions and the institutional arrangements within which they take place. These factors clearly influence how successfully the region can manage its various LMR issues.

### **B. Objectives of the CLME project**

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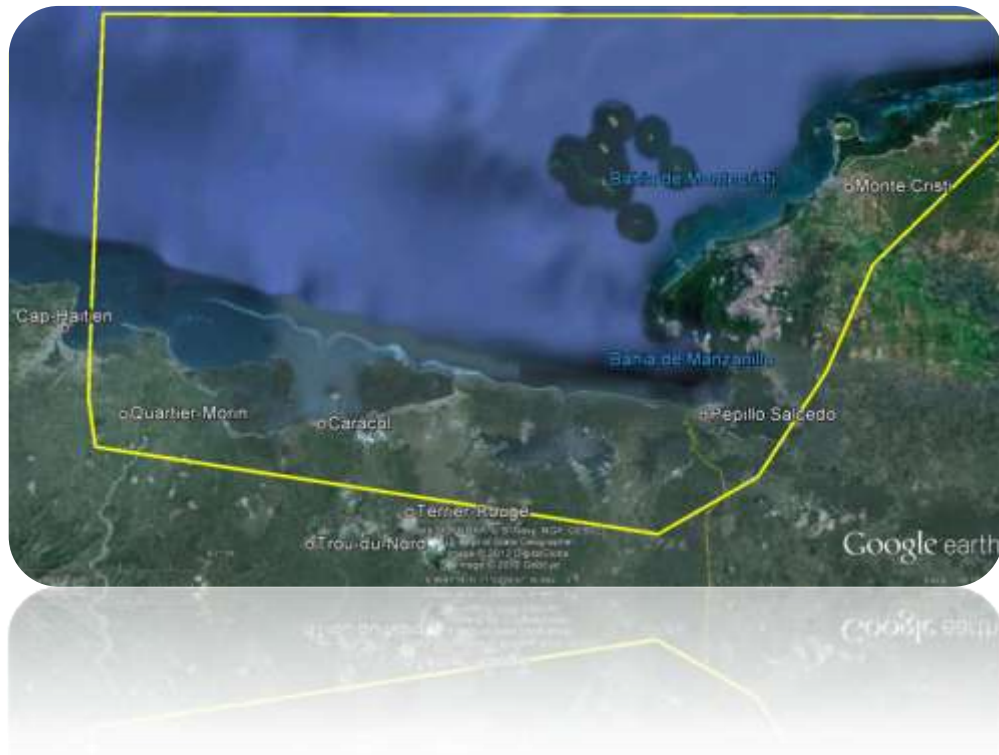
- Contribute towards the integrated sustainable use of coastal and marine zones by reviewing existing policy frameworks and management interventions undertaken on the basis of the principles and values of governance.
- Facilitate sharing of best practices and technical approaches towards improvement of coastal and marine governance between Dominican Republic and Haiti, based on dissemination of lessons learnt and greater involvement of stakeholders in the decision-making process.

- Provide technical advice to decision makers on improving coastal and marine management practices.

### C. Target site

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The target area for Haiti will focus on the transboundary site from Caracol Bay up to Montecristi's coast (Hispaniola's North coast). In both countries these areas encompass biodiversity hotspots of reef fish, coral reefs, mangroves, seagrass beds, sea birds, among others. In addition, they are important for fisheries, agriculture and marine transport, as well as for potential tourism use.



## II. Goals

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- Development of an Environmental Steering Committee for the Caracol Bay area composed of major stakeholder groups dealing in coastal and marine resources (fisheries, salt, charcoal) as well as other concerned sectors (women, public).
- Development of a mangrove management plan involving all stakeholder groups (fisheries, salt, charcoal, women, public)
- Identification of major coastal and marine environmental issues as related by local stakeholders, as well as their recommendations for possible courses of action for improved management and protection of resources.

## III. Methodology

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Activities needed to accomplish this research included both primary and secondary source data gathering strategies. FoProBiM engaged in formal and informal one-on-one, individual community, individual sector, joint community and joint sector interviews and meetings in order to collect information related to environmental conditions and sector concerns within the Caracol Bay area. Secondary data gathering focused on the collection of data such as research (including maps) available relating to previous work undertaken at Caracol Bay in regard to environmental conditions.

Introductory meetings with five chosen sectors (fisheries, charcoal, public, women, salt) dealing in coastal and marine issues were held in order to discuss:

- the overall aim and approach of the research;
- the data collection process (individual and group interviews, and tape recordings); and,
- their recommendations of key informants (based upon extent and wealth of knowledge, familiarity with different geographic areas or fishing techniques);
- the development of an area mangrove management plan;
- their issues and recommendations relating to the condition of coastal and marine resources;
- the development of a local Environmental Steering Committee to take charge of future initiatives.

Semi-directive interviews were conducted with identified individuals and groups which began as exploratory but then delved into more substantive matters increasingly focused on:

- local environmental concerns and proposed solutions
- the condition of environmental resources

- the initiation of the documentation of a proposal on a mangrove management plan for the Bay
- recommendations for next steps

#### IV. Current Status of Coastal and Marine Resources in Caracol Bay

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This section is based entirely on conversations held with local stakeholders, group meetings with individual sectors, as well as joint meetings with all sectors.

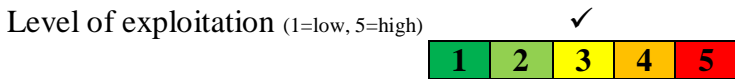
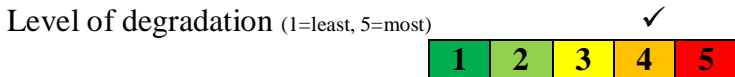
For all resources data on exact levels of exploitation and condition is completely lacking. Much more intensive scientific research needs to be undertaken at all levels.

The usual tragedy of the commons and the continuing Haitian mantra of “I can’t stop someone else from making a living (eating)” is also evident in the exploitation of all resources.

##### A. Coral reefs

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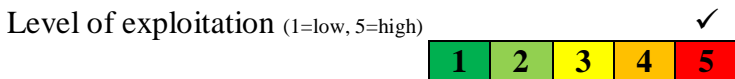
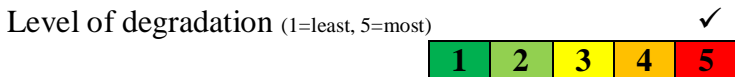
Exploitation continues at various scales for the creation of lime (*lasho*) for construction as well as export although data on exact levels of exploitation is lacking. Fishermen have expressed deep concern over the continued exploitation and the destruction of local reefs.



##### B. Fisheries

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All resources are overexploited. Particular comments were targeted at conch, and sea cucumbers, although the lack of fin fish was also duly noted.



### C. Mangroves

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The exploitation of mangroves for firewood and charcoal are the primary concerns for this resource. Although believed to be somewhat stable over the past years, the creation of salt pans through the destruction of mangroves continues.

Although there has been an extremely limited attempt to manage the exploitation by the Brigade Maritime en Action (BMA) they have basically amounted to naught.

Level of degradation (1=least, 5=most)



Level of exploitation (1=low, 5=high)



### D. Sea grasses

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Lush sea grass beds remain, although basically an unknown resource to local coastal stakeholders. The importance of sea cucumbers and their continued extreme exploitation has raised concerns.

Level of degradation (1=least, 5=most)



Level of exploitation (1=low, 5=high)



### V. Creation of Steering Committee

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Since the beginning of August, 2012 more than 35 meeting both formal and informal have been held within the Caracol Bay area in the communities of Caracol, Bord de mer de Limonade, Jacquezy, and Montolon with the ultimate goal of gathering information on local area issues related to coastal and marine resources, beginning to seek solutions to the issues, and the formation of a Steering Committee in order to guide future actions for the concerned communities.

After 12 weeks of consultations with various sectors within their communities as well as joint community meetings these sectors were requested to send representatives to a final meeting scheduled to form a local Caracol Bay Steering Committee which would have as a role the management of area natural resources and facilitate future protective measures.

It was decided that in order to remain manageable the committee would be composed of seven members representing four different sectors (women, salt, fish, charcoal) with at least one member of each sector and one member from each of the three main communities (Caracol, Jacquezy, Bord de mer de Limonade) represented at all times. One member each would play the roles of Coordinator, vice-Coordinator, Treasurer, and Secretary. The other three representatives would be simple members and/or special committee leaders. An unlimited number of non-voting members composed of government representatives (e.g. ministries, local government, law enforcement) as well as a technical representative (FoProBiM) would also form part of the committee as advisors. Because the committee has no constitution at the moment all regulations are subject to modification until a constitution can be adopted.

Although approximately 20 other stakeholders also attended this final meeting (as is often the case in Haiti with “open” meetings) their contact information was not taken as they were not officially invited. The following is a list of the invited participants and their designated roles within the committee.

<b>Name</b>	<b>Association</b>	<b>Community</b>	<b>Contact</b>	<b>SC member</b>
Jackson Cadet	BMA	Caracol	3670-8058	Coordinator
Josué Jean-Baptiste	Pecheur	Limonade	4659-8682	Vice-Coordinator
Gerline Nosime	Femme	Claudine	4859-5853	Treasurer
Maudeline Pierre	Femme/Sel	Jacquezy	3679-2098	Secretary
Joel Charles	Sel	Champin	3793-0780	Public Relations
Childebert Pierre	Charbonier	Champin		Member
Edner Petit	Charbonier	Limonade		Member
Léosthène Pierre	MARNDR	Caracol	3652-2183	Advisor
Wilson Menard	CASEC	Jacquezy	3822-7657	Advisor
Krinere Thelise	CASEC	Limonade	3657-8557	Advisor
Elephète Manassé	Mairie	Caracol	3689-8537	Advisor
	FoProBiM			Advisor

BMA – Brigade Maritime en Action

MARNDR – Ministère de l’Agriculture des Ressources Naturelles et du Développement Rural

CASEC – Conseil d’Administration de la Section Communale

FoProBiM – Fondation pour la Protection de la Biodiversité Marine

Although invited, unfortunately, no representative of the Ministry of Environment was able to attend.



**VI. Primary concerns and proposed solutions for the various sectors as presented during stakeholder consultations (no order of priority):**

Sector	Primary Concerns	Sector Proposed Solutions
<b>Fisheries</b>	<ul style="list-style-type: none"> <li>• overfishing (specifically fish, conch and sea cucumbers)</li> <li>• marine pollution</li> <li>• conflicts with Dominican fishers in both Haitian waters and DR waters</li> <li>• fishers using small mesh nets (!!)</li> <li>• habitat loss (primarily mangroves)</li> <li>• need for fisheries reform</li> <li>• unaware of laws / no respect of laws</li> <li>• rehabilitation of mangroves for the benefit of fisheries</li> <li>• coral harvesting / need to protect reefs</li> <li>• government is non-existent in the sector</li> <li>• need for education (all types)</li> <li>• better equipment</li> <li>• bay/fisheries being poisoned by planned mines in upper watersheds</li> <li>• waste water from the Industrial Park needs to be watched/managed (poisons)</li> </ul>	<ul style="list-style-type: none"> <li>• modernization of the fishing fleet (education, new bigger boats, improved gear)</li> <li>• re-establishment (respect of) of fishing seasons and laws (fisheries reform)</li> <li>• installation of FADs</li> <li>• reduction of habitat loss (habitat rehabilitation)</li> <li>• develop other sources of income from the sea</li> <li>• pay fishers not to fish so sector can recover</li> <li>• declare new laws</li> <li>• undertake scientific surveys to determine the condition of resources</li> <li>• have armed wardens for law enforcement</li> <li>• fund for fishers who can't fish anymore (insurance)</li> <li>• boats and fishers need to have ID and respect the laws</li> <li>• fishermen need to pay taxes</li> <li>• engage in talks with the DR in order to limit conflicts</li> </ul>
<b>Women</b>	<ul style="list-style-type: none"> <li>• everyone buys on credit and no one repays causing a lack of revolving funds for women merchants</li> <li>• need more credit from “official” institutions at a lower rate</li> </ul>	<ul style="list-style-type: none"> <li>• lower of interest rates at lending institutions (e.g. Banks, FONKOSE)</li> <li>• somehow make everyone repay individual /private loans</li> </ul>
<b>Salt</b>	<ul style="list-style-type: none"> <li>• competition from cheap salt from DR</li> <li>• cutting of mangroves</li> <li>• problems with salt pans (edges/ landslides)</li> <li>• poor quality salt being produced</li> <li>• archaic conditions</li> <li>• salt is not clean or good for sale</li> <li>• 90% of workers in salt sector are women (although they want modernization, are afraid of being put out of work)</li> </ul>	<ul style="list-style-type: none"> <li>• modernization of production (education, methods to increase production and quality)</li> <li>• edge stabilization of salt pans</li> <li>• development of alternative income generating activities</li> </ul>

<b>Charcoal</b>	<ul style="list-style-type: none"> <li>• loss of income if protective measures are initiated</li> <li>• competition - because fisheries are so bad people are entering the charcoal sector</li> <li>• cutting trees causes no rain, heat, and nothing can grow</li> </ul>	<ul style="list-style-type: none"> <li>• development of alternative income generating activities</li> <li>• engage in reforestation activities</li> <li>• more efficient/different stoves for cooking</li> </ul>
<b>Public</b>	<ul style="list-style-type: none"> <li>• no real concerted efforts by the local stakeholders to come together to effect changes</li> <li>• feel forgotten</li> <li>• no resources to do their work</li> <li>• ashamed to say you work for the government</li> <li>• 95% of houses do not have any type of bathroom</li> <li>• taxes from the Industrial Park go to far away Ft. Liberté</li> </ul>	<ul style="list-style-type: none"> <li>• stakeholder groups need to be better organized in order to present ideas and initiate solutions</li> <li>• need resources to carry out their mandates</li> </ul>

Great concern for the safety of Haitian fishers was expressed. There is no knowledge on the parts of the Haitian fishers concerning anything related to the EEZ and territorial waters of each nation. It became clear that the local fishers were unaware that one of their prime fishing areas at the Seven Brothers (*Los Siete Hermanos*) may actually be within the Dominican EEZ/territorial waters and thus one of the primary reasons for continued conflicts. One Dominican individual in particular, often in some type of uniform and accompanied by others, named Miguel, was apparently particularly violent and has taken part in the seizure of Haitian boats and has also shot several fishermen. The Dominican representatives at the meeting said they would look into this situation.

## VII. Mangrove Management Plan

The short duration of this project has not allowed for the required consultations with local stakeholders and laying of groundwork necessary to formulate a significant document relating to the protection of area mangroves.

At the final meeting, along with the creation of the Steering Committee, some time was set aside in order to develop the table below which is to be used as a base template for future potential initiatives.

### Caracol Bay Mangrove Environmental Management Plan

Environmental Target	Activity	Objective	Target	Indicators	Target Date	Behavior Modification	Responsible Entities
<b>Reduction of mangrove exploitation</b>	Creation of charcoal and fuel wood	Reduce the use of charcoal	40%	Quantity of charcoal consumed annually reduced	2016	Adopt eco-friendly methods to reduce charcoal consumption (alternative fuels)	Ministries of Environment, Agriculture, and Commerce; local businesses; local stakeholder groups; NGOs; individuals
<b>Increase mangrove cover</b>	Replant and protect area mangroves from exploitation	Increase forest/habitat cover	10%	Forest cover increase; Quantity of charcoal consumed annually reduced	2016	Mangrove cutting reduced/stopped	Ministries of Environment and Agriculture; local businesses; local stakeholders; NGOs; individuals

## VIII. Recommendations for next steps

Goal	Actions
<b>Determine the condition of resources and management needs</b>	Undertake intensive scientific research in order to determine the condition of resources and management needs; including water quality monitoring, bio-inventories, and socio-economic assessments
<b>Strengthen the newly formed steering committee</b>	Develop the Steering Committee's constitution through a direct consultative procedure involving as wide a constituency of stakeholders as possible
	Provide needed resources for the Committee to undertake its assigned tasks
<b>Strengthen local law enforcement capabilities</b>	Update all fisheries and related environmental legislation
	Develop laws specifically dealing with the creation of MPAs and ensure they are integrated into national legal policies for PAs
	Provide training to locally engaged "game wardens"
	Increase environmental education and awareness raising at all levels and in particular in relation to coastal and marine issues and the creation of MPAs
<b>Ensure that ecosystem based approaches are embraced for protection and management of resources</b>	Undertake ecosystem service valuations at specific target sites nationwide
	Develop and increase information on marine ecosystem services so it is well represented within all aspects of educational and legislative actions
<b>Develop sustainable activities for alternative income generation</b>	Increase educational activities promoting non-destructive sustainable activities such as increasing mesh sizes and alternative fuels
	Develop projects for environmentally friendly sustainable alternative income generating activities
<b>Strengthen all activities within the target site</b>	Continue to develop national, bi-national, and regional mechanisms at the public, private, and NGO levels
<b>Enhance the monitoring, assessment and reporting capacity for area resource management</b>	Develop capacity building activities within concerned sectors (e.g. environmental monitoring, reporting, assessments)

## IX. Major Meeting Reports

Progress report  
September 11, 2012

Informal meeting to begin to establish contacts for project activities were held in the local communities of Caracol, Jacquezy, Boue, Bord de mer de Limonade, Montolon, and Ft. Liberté on July 25<sup>th</sup>-30<sup>th</sup>, Aug 13<sup>th</sup>-17<sup>th</sup>, and Sept. 3<sup>rd</sup> and 4<sup>th</sup>. Contacts with interested groups/individuals in Montolon have been difficult to establish due to “non-presence” of individuals during our dates of visit.

Contacts were established through previous contacts (previous projects) as well as through recommendations from other individuals who directed us to persons of interest (notables).

### Caracol

<b>Sector</b>	<b>Person</b>	<b>Contact info</b>
Public	Luzdan Phénélon	Mayor of Caracol 3777-1072
Women	Luzdan Phénélon	Representative of women’s sector 3777-1072
Fisheries	Charles Joel	Asosyasyon Peché Champin/Karakol (APCK) 3793-0780
Public	Charles Joel	Administration des Sections Communales (ASEC) 3793-0780
Fisheries	Kadet Jackson	President - Brigade Maritime en Action (BMA) 3670-8058
Fisheries	Percival Joseph George	Vice-Président Brigade Maritime en Action (BMA)
Church	Joseph Fancique DuVillage	Curée Pawas Caracol 3734-0651
Charcoal	Renomé Pierre	
Salt	Vadius Auguste	Marin Salant 3822-2275
Private	Alix Celestin Arnold	Association ORAKADET – Organ. Artisan Karakol pour le Development ak Travail
Private Indiv.	Kolas Landry	Former Mayor of Caracol 3740-4397

### Boue

<b>Sector</b>	<b>Person</b>	<b>Contact info</b>
Charcoal	Rodrigue Faustin	4686-1311
Fisheries	Felisa Sinsilain	4692-6052

### Montolon

<b>Sector</b>	<b>Person</b>	<b>Contact info</b>
None		

### **Jacquezy (Section of Caracol)**

<b>Sector</b>	<b>Person</b>	<b>Contact info</b>
Women	Luni Joseph	Association Famn – Secretary – RAFAT 3606-1970
Private	Claudiel Joseph	JJA – Jeune Jacquezy en Action 3768-9331, 3393-5439
Salt	Kolas Telemak	4724-2044
Charcoal	Monak St.Lot	3625-7331
Private	Manol Estimé	Rasemblement Paysant Jacquezy (RPJ) 3750-4750
Private	Mimose Jn. Baptiste	Gwopman famn Vayan Jacquezy 3679-2098
Private	Modlyn Pierre	Gwopman famn Vayan Jacquezy 3679-2098
Private	Ultilde Lemorain	Credit Famn Jacquezy 3769-0049
Private Individ.	Berllamy Charles Pierre	Old President of Cooperaf pecher Jacquezy 3900-5624

### **Bodme Limonade**

<b>Sector</b>	<b>Person</b>	<b>Contact info</b>
Charcoal	Raymond Apollon	4686-8299
Fisheries	Cheremie Antoinier	4721-6479

### **Ft. Liberté**

<b>Sector</b>	<b>Person</b>	<b>Contact info</b>
Public	Plaisimond Robert	Police Commissioner of Ft. Liberté

Information concerning all project activities including meetings has been passed on to Dr. Jean Vilmond Hilaire, Minister of Environment, Mr. Astrel Joseph, Director of Soils and Ecosystems, and Mr. Lucienna Exil, Technical Officer. Through the ministry of environment we are still attempting to contact the environmental officers for the Northeast and the North departments.

The following have been prepared and are ready for distribution to participants (flyer has already been distributed during preliminary meetings):

- An informational flyer on the CLME in French.
- Educational pamphlet on mangroves in Créole.
- Abridged version of Haitian fisheries and coastal and marine laws in French and Créole.

A first formal meeting with concerned individuals and sectors has been scheduled for October 11, 2012 in Caracol. We are expecting to invite 30 organizations (x2) and individuals.

Other meetings will be scheduled for mid-November, and mid-December culminating with the establishment of the steering committee.

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### **CLME Caracol Joint Meeting #1**

October 11, 2012 - 0800 to 1500

#### **Locale**

*Brigade Maritime en Action* headquarters, Caracol, Haiti

Thirteen informal meetings were held by FoProBiM within local target villages including *Caracol*, *Bord de mer de Limonade*, *Montolon*, and *Jacqzy* from September 17 to October 5, 2012 in order to inform and prepare area stakeholders primarily those utilizing coastal and marine resources, concerning the activities of the CLME project. At the end of these meetings invitations were presented, and representatives designated by the local stakeholder sectors for this Oct. 11 meeting.

#### **Participants:**

Although the initial invitation was for 30 local stakeholders to attend, 61 stakeholders were present representing such sectors as fisheries, women's groups, salt producers, charcoal producers, public (5 – Haitian ministry of agriculture, 2; mayor's chief of staff, 1; ASEC, 1; CASEC, 1), church, youth, merchant, education, Dominican Ministry of Environment (Mr. Julio Lopez), and FoProBiM. Many individuals claimed to be representing only one sector, but just as many were clear that they were involved in several different sectors (e.g. fisheries and salt; public and salt; fisheries, salt and charcoal).

It is extremely unfortunate that although invited at different levels (with one confirmation of attendance) the ministry of environment of Haiti was not able to send a representative. Input from the Haitian ministry of environment would have provided much needed information, and shown increased public sector involvement and support for these extremely important project activities.

Participants were told that although the agenda stipulated a start-up time of 0830 that FoProBiM would be on-site by 0800 in order to meet early arrivals and begin informal meetings. They were also told that FoProBiM would remain in Caracol after the official end of the meeting in order to once again continue informal meetings and address any sector or personal concerns about the project and its activities.

#### **Meeting**

At the meeting an emphasis was placed on the different concerned sectors to organize themselves in a more cohesive manner (e.g. cooperatives, associations) as best they could at first in order to provide representatives to the eventual formation of a Steering Committee which would be designated to bring forward, in a united manner, their needs and concerns in order to seek solutions related to environmental management of their coastal and marine ecosystems as

well as potential cooperative actions with counterparts in the Dominican Republic. This recommendation was strongly echoed by the Chief of Staff from the Mayor of Caracol's office.

The agenda was followed with, as expected, the majority of time being spent on discussions revolving around stakeholder concerns and then an open discussion on their recommendations for potential solutions (please section on Primary Concerns and Proposed Solutions above) .

Great concern for the safety of Haitian fishers was expressed. There is no knowledge on the parts of the Haitian fishers concerning anything related to the EEZ and territorial waters of each nation. It became clear that Haitians were unaware that one of their prime fishing areas at the Seven Brothers (*Los Siete Hermanos*) may actually be within the Dominican EEZ/territorial waters and thus one of the primary reasons for continued conflicts. One individual in particular, often in some type of uniform and accompanied by others, named Miguel, was apparently particularly violent and has taken part in the seizure of Haitian boats and has also shot several fishermen. The Dominican representatives at the meeting said they would look into this situation.

At the next meetings FoProBiM will provide a map showing the EEZ of the DR and of Haiti in order to clarify and explain why DR fishermen would chase them off.

Community meetings are to once again take place the week of November 12-16 within each community in order to mobilize the different sectors and for them to delegate a representative to the final meeting for the formation of the Steering Committee on December 3, 2012. Methods of procedure and operation of the Steering Committee will be presented to the delegates at that time.



## Meeting Pictures



L to R: Mr. Wiener, FoProBiM;  
Mr. Morency, Mayor's office;  
Mr. Lopez, Min. of Env. DR



Mr. Lopez explaining the Dominican Republic's involvement in CLME



A local salt producer explaining issues



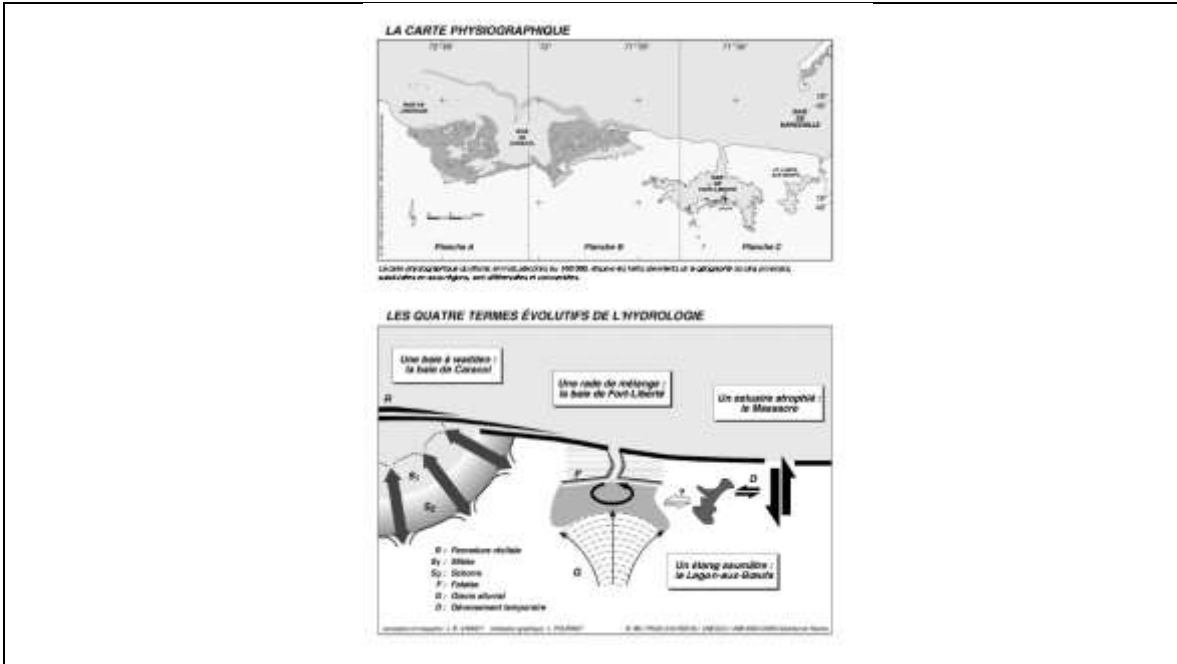
Salt pans at Caracol

## X. Documentation available on Caracol Bay resources

FoProBiM, OAS, IABAN, ReefFix, Rapid Assessment of the Economic Value of Ecosystem Services Provided by Mangroves and Coral Reefs and Steps Recommended for the Creation of a Marine Protected Area at Caracol Bay, Haïti, May, 2009

Ménanteau L., Vanney J.R., *Atlas côtier du Nord-Est d'Haïti. Environnement et patrimoine culturel de la région de Fort-Liberté*. Port-au-Prince/Nantes. Ed. Projet "Route 2004". Ministère de la Culture (Haïti)/PNUD, iv+62 pp., 1997

## XI. Maps of Caracol Bay



Hydrology of the three bays of NW Haiti – J.R. Vanney (UNDP, UNESCO)



Location of the Caracol Industrial Park in Caracol Bay – Geoeye, Google Earth, The New York Times

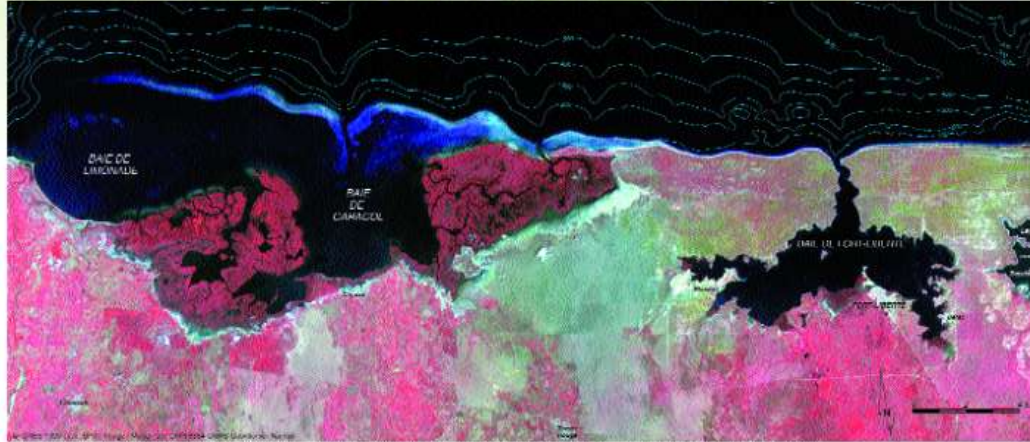


Reproduction of Map from 18<sup>th</sup> century



Multispectral SPOT 2 – 1990 – L. Menanteau

LE NORD-EST D'HAÏTI VU DU CIEL



Extrait d'une image en mode multispectral (XS) du satellite SPOT 2 (orbite 640-0105), acquise le 18/05/90. Composition couleur (Rouge = XS1, Vert = XS2, Bleu = XS3). Traitement : L. MENANTEAU

Multispectral SPOT 2 – 1990 – L. Menanteau