www.clmeproject.org

United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

The CLME Information Management System (IMS) and Regional Environmental Monitoring Programme (REMP).

INCEPTION MEETING FOR THE INFORMATION AND MANAGEMENT SYSTEM (IMS) & REGIONAL ENVIRONMENTAL PROGRAMME (REMP) for the CLME
Summary Report
Deliverable D.1.1

The "Sustainable Management of the Shared Living Marine Resources of the Caribbean Large Marine Ecosystem (CLME) and Adjacent Regions" is a GEF funded Project. Its main objective is the Sustainable management of the shared Living Marine Resources of the Caribbean LME and adjacent areas through an integrated management approach that will meet the WSSD target for sustainable fisheries.

This document summarizes main discussions and recommendations of the Inception Meeting for the Information and Management System (IMS) & Regional Environmental Programme (REMP) for the CLME Cartagena, Colombia, December 12-14, 2011.

UNESCO IOC SUB-COMMISSION FOR THE CARIBBEAN AND ADJACENT REGIONS (IOCARIBE)

INCEPTION MEETING FOR THE INFORMATION AND MANAGEMENT SYSTEM (IMS) & REGIONAL ENVIRONMENTAL PROGRAMME (REMP) FOR THE CLME

(Cartagena, Colombia, December 12-14, 2011)

REPORT

1. OPENING & ADMINISTRATIVE ARRANGEMENTS

The Inception Meeting for the Information and Management System (IMS) & Regional Environmental Management Programme (REMP) for the CLME Project was held at the Hotel Caribe, in Cartagena, December 12 – 14, 2011.

The Agenda of the Meeting is available in Annex I. The List of Participants is available in Annex II to this Report.

The main working documents considered during the meeting were:

1. Caribbean Large marine Ecosystem Regional Transboundary Diagnostic Analysis – CLME TDA
2. The emerging ocean governance regime in the Wider Caribbean Region- Policy Perspective

The CLME main project components are: (i) characterise and analyse the root and underlying causes of transboundary issues relating to the management of marine resources in the CLME through the mechanism of a Transboundary Diagnostic Analysis and develop and agree on a Strategic Action Programme to address those causes; (ii) compile and share existing sources of information required for good governance of marine resources, and identification and filling of knowledge gaps through appropriate technical programmes.; (iii) establish a culture of networking and cooperation among the countries for management of marine resources, focusing on strengthening existing institutions and structures; (iv) establish a monitoring and evaluation framework for the ecosystem status of the CLME in line with the ecosystem management approach and SAP implementation and, (v) create successes that serve as examples of how countries can collaborate to manage transboundary marine resources through 'Strengthening by doing'.

The CLME specific objectives of the project can be summarized as follows: (i) to identify analyze and agree upon major issues, root causes and actions required to achieve sustainable

management of the shared LMRs in the Caribbean Sea LME in a manner that is consistent with relevant international agreements, e.g. the Law of the Sea, the UN Fish Stocks Agreement; (ii) to improve the shared knowledge base for sustainable use and management of the transboundary LMRs by compiling and sharing existing information, filling critical data gaps and improving databases for assessments, planning and policy formulation; (iii) to implement legal, policy and institutional reforms to achieve sustainable transboundary LMR management; and, (iv) to develop an institutional and procedural approach to LME level monitoring, evaluation and reporting.

2. DEVELOPMENT OF THE INTEGRATED IMPLEMENTATION PLAN FOR REMP AND IMS

Caribbean countries recognize that the living marine resource management can only be effectively addressed through adoption of EBM approaches and application of the Ecosystem Approach to Fisheries (EAF) that is found in the FAO Code of Conduct for Responsible Fisheries. This will require a thorough baseline assessment of the system components and changes they are undergoing.

The project will achieve this aim by following the standard LME modular assessment approach and the development of an agreed decision and planning framework by applying the GEF TDA/SAP process.

The design and development of a CLME IMS will initially concentrate on existing initiatives, and on data and information generated from the five priority transboundary fisheries and the Regional Monitoring & Environmental Framework (REMP).

A review of existing monitoring programmes will be undertaken in order to identify a suite of Ecosystem Status Indicators (ESI) which can adequately describe the status and track trends of the CLME environment (status and process indicators) while still being cost effective and technically feasible. Consideration should be given to including socio-environmental indicators which evaluate the effect of the project on the quality of life.

The long-term regional mechanism envisaged as being needed to deliver the information described is seen as consisting of a network of data and information gatherers and analyzers that would provide access to their data and information through a central portal where adequate metadata would be located.

The main key components of the System are:

- A network of agencies that are willing to provide information
- A platform that allows access to this information
- A mechanism for maintaining and engaging the network and the platform,
- A mechanism for coordinating the preparation of the agreed indicators for the IGOs
- A means of delivering those indicators to the IGOs and obtaining feedback - namely the CLME regional governance component.

The Regional Ecosystem Monitoring Framework (REMP) will consider:

- A pilot set of Ecosystem Status Indicators (ESI) (e.g. process, stress reduction and ecosystem status indicators) of the state of the marine ecosystem, its goods and services and its governance processes to support senior decision making;
- Identification of a policy cycle-based mechanism to monitor the status and long-term trends for the full range of topics encompassed by the CLME;
- Plan for gradual development and/or implementation of the REMP (e.g. to carry the implementation process through at least a complete cycle in the time frame of the first phase of the Full Project);
- Identify potential intergovernmental organizations –IGOs as appropriate agency/institution to uptake the long-term coordination role for the REMP after the CLME project is over.
- Comprehensive description on reporting responsibilities at local, national, sub-regional and regional levels
- A prototype Regional Ecosystem Monitoring Programme (REMP).

Even if significant steps in data and information sharing were achieved in the Region, especially by UNESCO IOC, obtaining agreement from various agencies to provide their information is a long term challenge that would require considerable cultivation and effort at building a network. Among the important factors to reach data and information sharing agreements are the establishment of a demand for the information and its usefulness not just to decision- makers but also to other users throughout the region, including providers.

Agreements could be developed within the UNESCO IOC data policy (i.e. free and open exchange) as one of the possible existing mechanisms.

Also, it is recommended the establishment of “national data and information coordination committees.” This Committee should be composed of representatives of all relevant Ministries as well as of other stakeholders or it could be one of the responsibilities of the National Intersectoral Committees (NICs).

Considering that managing the ecosystem information is a complex task it is recommended to focus in developing a 3x3xn-layers matrix focusing on the elements defined by the TDA. The matrix is composed by the following elements:

Table 1.

Process/ Current/ Environmental Indicators			
Ecosystems / Issues	Reef (and associated) Fisheries Ecosystems	Large Pelagic Fisheries	Continental Shelf Fisheries
Unsustainable Fisheries			
Pollution			
Habitat Depredation & Community Modification			

Suggested layers including at least three focus areas:

(i) Food safety and security, and employment for small scale fisheries;

(ii) Marine Protected Areas - use conflicts - Marine Spatial Policies; and,
(iii) Valuation of Marine Ecosystems goods and service.

It is necessary to prioritize among the issues, and identify those that will have, in the short term, the most impact to decision makers. Also, there is a need of refining the focus of some of those areas. For example, valuation of marine ecosystems goods and services is somewhat too broad. In this case, questions like:

- What impacts would a reduction of fishing have on marine ecosystems goods and services?
- Could the level of threat in a region or type of fisheries (for example reef fisheries) to food security due to pollution or climate change be mapped?

It is recommended developing a system that is ready to receive a broad range of information, and establish a metadata mapping system, with a few concrete examples to demonstrate its functionality.

Contacting all interested organizations is not realistically achievable in the time frame available. Thus, it is recommended to:

- Identify the top 15 organizations able to provide data to populate the 9 elements of the 3x3 matrix (Table 1).
- Approach it from an organizational point of view (meta and specific information for a few pilot projects may allow a quick demonstration that will effectively represent the project. Each element of the matrix has other layers (social, economic, etc.)
- Target "boxes" in matrix which will generate a policy response.
- Consider global indicators i.e. Transboundary Waters Assessment Programme – TWAP Include gap and TDA Analysis
- Regional awareness: Include Monitoring projects that are involved into ongoing Policy cycles: (ERFEN CPPS- Pacific - Fisheries management objective /Science based information)
- Carry out a close consultation with stakeholders for defining their needs within what is available and achievable under the project time frame and limitations.

One major issue for an effective IMS is language. Careful consideration should be given to this aspect of the IMS design and development. Particularly, when developing the meta data. It is recommended to start with English, bearing in mind that the system should serve also Spanish speaking Stakeholders.

The Regional Ecosystem Monitoring Framework (REMP) development will be phased to match the Institutional capacity and the levels of funding available in the region.

Considering that the development of a complete and sustainable REMP to track the ecological integrity and sustainability of marine resources in the Wider Caribbean will require years to build, it is recommended that a plan for gradual development should be examined that focuses on the critical transboundary issues. REMP development will be phased to match the institutional capacity and the levels of funding available in the region. The REMP should be capable of producing consistent, comparable results and support the decision making process at the national, sub-regional and regional levels.

The preliminary programme will focus on priority transboundary pollutants and key ecosystems and fisheries under threat. An integral part of the REMP design will be a regional awareness and capacity building programme, targeting participating monitoring and advisory bodies.

An Integral part of the REMP design will be a regional awareness and capacity building programme targeting monitoring and advisory bodies. A consultative process should be developed and it should be participatory and inclusive as possible. The Caribbean Sea Commission consultation to be considered as a starting point.

While implementing the REMP in the pilot mode, it is necessary to provide a prototype demonstration for IGO´s feedback before the SAP.

The CLME needs to position itself into other government / intergovernmental initiatives (i.e. OEA Governance conference Caribbean Sea Commission).

The full meeting discussions have been summarised in a synoptic chart that is included as Annex III to this Report.

3. MANAGEMENT STRUCTURE

IOC of UNESCO will hire a Consultant who will coordinate the implementation of the CLME Project component that will establish an Information Management System (IMS) and develop a Regional Environmental Monitoring Programme (REMP). Also, a technical expert will be hired, and he/she will be responsible for developing the IMS. The Incumbent should have experience with the development of information systems for environmental management. Knowledge of web based systems and GIS.

The Coordinator/ Consultant is expected to initiate its work next March at the UNESCO IOC Regional Office for IOCARIBE located in Cartagena, Colombia. Main Terms of Reference include:

(i) Develop an overall plan for the development of the REMP and IMS.
(ii) Design and implement the Regional Ecosystem Monitoring Framework (REMP)
(iii) Develop an information Management System (IMS)

Complete Terms of Reference for the Consultant are included in Annex IV to this Report.

4. CLME REGIONAL GOVERNANCE COMPONENT

Robin Mahon from the Centre for Resources Management and Environmental Studies CERMES of the University of West Indies of Barbados gave a presentation on the Caribbean Sea Commission Expert Consultation and the Emerging Governance Regime in the Wider Caribbean. He referred to the multilevel policy cycle based governance framework of the CLME project and its relevance for developing a governance approach for the region.

He emphasized that one of the roles of the regional governance component is to put marine resource issues on the agendas of regional intergovernmental organisations and to work with them to determine what information they would require in an IMS and a REMP to support their decision-

making. He briefly explained the CLME project components and the main science-policy interface characteristics.

The main points of his presentation were:

- Ocean governance is essential in the Wider Caribbean Region
- Ecosystems and resources are transboundary
- The merging regional ocean governance regime is a network including a diversity of institutions
- The Caribbean Sea Commission can provide regional ocean governance policy harmonisation and coordination
- The next step is establishing the Secretariat of the Caribbean Sea Commission
- This will facilitate development of integrated regional ocean policy - EBM to address sustainable development

5. CLOSURE

The CLME Information and Management System (IMS) & Regional Environmental Programme (REMP) Meeting was closed on December 14, 2011 at 6:00 pm .

ANNEX I
PROVISIONAL AGENDA

1. **OPENING & ADMINISTRATIVE ARRANGEMENTS**
2. **DEVELOPMENT OF THE INTEGRATED IMPLEMENTATION PLAN FOR REMP AND IMS**
3. **REGIONAL ECOSYSTEM MONITORING FRAMEWORK (REMP)**
4. **MANAGEMENT STRUCTURE**
5. **DESIGN AND DEVELOPMENT OF THE INFORMATION MANAGEMENT SYSTEM (IMS)**
6. **CLME REGIONAL GOVERNANCE COMPONENT**
7. **OTHER BUSINESS**
8. **CLOSURE**

ANNEX II
LIST OF PARTICIPANTS

Mr. Paul BOUDREAU
Senior Research Fellow
International Ocean Institute
Dalhouise University
6414 Coburg Road
P.O. Box 15000, Halifax, Nova Scotia
B3H 4R2, Canada
COINAtlantic
Halifax Canada
Tel: 1 902 494 6918
Fax; 1 902 494 1334
E-mail: paulboudreau@dal.ca

Mr. Patrick DEBELS
Regional Project Coordinator
CLME Project
Casa del Marqués de Valdehoyos
Calle De La Factoria No. 36-57
Cartagena, Colombia
Tel: 57 5 6640914
Fax. 57 5 6648882
E-mail: PatrickD@unops.org

Mr. John English KNOWLES
The Nature Conservancy
Conservation Information Manager
5089 Hwy, Suite 200
Vero Beach, Florida , USA
Tel : (772) 231 6876
Fax : (772) 231-5534
E-mail : jknowles@tnc.org

Mr. Robin MAHON
Professor of Marine Affairs and Director
Centre for Resource Management and
Environmental Studies CERMES
The University of West Indies
Cave Hill Campus
St. Michael BB 11000
Barbados
Tel: (246) 417 4570
Fax: (246) 424 4204
Barbados
E-mail: robin.mahon@cavehill.uwi.edu
mahon@caribsurf.com

Ms. Karen McDONALD-GAYLE
CLME Reef Biodiversity pilot project
UNEP CEP Consultant
United Nations
Environment Programme (UNEP)
Caribbean Environment Programme
(CEP)
14-20 Port Royal Street
Kingston - JAMAICA
Ph (876) 3811848
Fx (876) 9229292
E-mail : mcdgayle@gmail.com

Mr. John OGDEN
Emeritus Professor
Department of Integrative Biology
University of South Florida (USF)
190 18th Avenue North
St. Petersburg, FL 33704 USA
Home office: 727-894-5940

Cell: 727-641-4673
Email: jogden@marine.usf.edu

Mr. Ramon Nigel ROACH
Water Quality Analyst
Coastal Zone Management Unit
Bay Street, St. Michael
BARBADOS
Tel: (246) 228-5950
Fax: (246) 228-5956
E-mail: rroach@coastal.gov.bb

Mr. Miguel SILVA
Ministerio de Medio Ambiente y
Recursos Naturales
Asistente Tecnico Proyecto CLME
Avenida Luperón esquina Cayetano
Germosen,
El Pedregal
Santo Domingo, Republica Dominicana
Tel : (809) 567 4300
Fax :
Email :
costero.marino@ambiente.gob.do

Mr. Cesar TORO
Head UNESCO IOC Regional Office for
IOCARIBE
Casa del Marqués de Valdehoyos Calle
De la Factoria No. 36-57
Cartagena, Colombia
Tel: 57 5 6640955
Fax: 57 5 6640288
E-mail: c.toro@unesco.org

Ms. Martha Patricia VIDES CASADO
Investigador Adjunto Programa GEZ
INVEMAR
Cerro Punta Betin
Santa Marta Colombia
E-mail: mvides@invemar.org.co
pvides@gmail.com

Mr. Peter Pissierssens (skype)
IODE Programme Coordinator
IOC Project Office for IODE
Wandelaarkaai 7
8400 Oostende
BELGIUM
Tel: +32-59-34 01 58
Fax: + 32-59-34 01 52
E-mail: p.pissierssens@unesco.org

Ms. Cristina Carollo (skype)
Harte Research Institute for Gulf of
Mexico Studies
Texas A & M
Corpus Christi (USA)
E-mail: cristina.carollo@tamucc.edu

ANNEX III
SUMMARY OF THE CLME IMS & REMP INCEPTION MEETING DISCUSSIONS

ANNEX IV

TERMS OF REFERENCE FOR THE CLME IMS-REMP CONSULTANT

The consultant will coordinate the implementation of the CLME Project component that will establish an Information Management System (IMS) and develop a Regional Environmental Monitoring Programme (REMP).

This will involve the following tasks and activities.

1. Develop an overall plan for the development of the REMP and IMS.

2. Design and implement the Regional Ecosystem Monitoring Framework (REMP) by:

    - Conducting a review of existing relevant regional monitoring programmes in the Wider Caribbean Region;
    - Assessing relevant information that should be an integral part of the REMP;
    - Interacting with the Governance Component to identify a pilot set of relevant Ecosystem Status Indicators (ESI) in collaboration with data and information partners;
    - Identifying an appropriate approach to developing a mechanism to monitor the status and long-term trends for the CLME;
    - Conducting an assessment in collaboration with the Governance Component to identify and ensure that a representative regional intergovernmental organization – IGOs (e.g. OSPESCA, ACS, etc.) could become an appropriate agency/institution to uptake the long-term coordination role for the REMP after the end of CLME project.
    - Implementing the REMP in pilot mode.
    - Identifying the most appropriate approach to developing an easy, accessible system to support decision-making processes at the sub-regional and regional level.

3. Develop an information Management System (IMS) by:

    - Identifying the appropriate data and information system for the CLME IMS;
    - Identifying sources of information and facilitating the creation of a regional meta-database required to support an ecosystem approach to fisheries (EAF/ EBM) in the Wider Caribbean Region (e.g. fisheries, environmental, biological, pollution and socio-economic data and information);
    - Developing an operational user-friendly platform for the gathering/delivery of GIS data and other relevant information;
    - Identifying potential CLME IMS users and organising a training programme on IMS importance, use and accessibility;
    - Developing draft agreements on information and data exchange with identified CLME partner organizations;
    - Developing an IMS testing protocol.
    - Communicating the output of the REMP and IMS to partners and countries

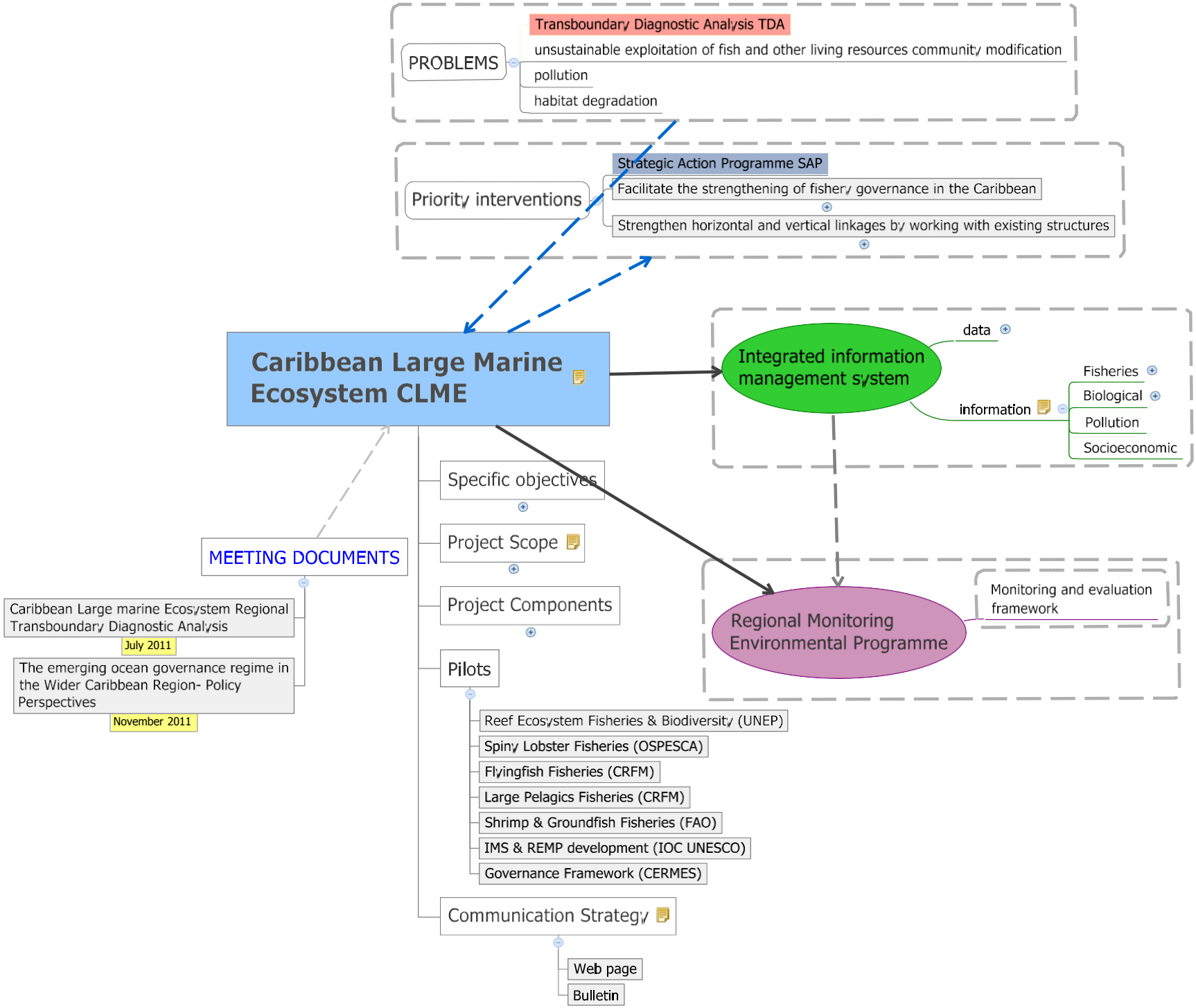
Duration: 18 months (October 2011 – March 2013 inclusive)

Location: UNESCO IOC Regional Office for IOCARIBE, Cartagena, Colombia

Qualifications: The consultant should have experience with the development of information systems for environmental management. Knowledge of web based systems and GIS will be an asset. Capabilities should include - good organizational skills; ability to work with a diversity of partners in a multinational setting. Experience with holding workshops and trainings sessions will be an asset.

ANNEX V
LIST OF ACRONYMS AND ABBREVIATIONS

CEP	Caribbean Environment Programme
CERMES	Centre for Resource Management and Environmental Studies
COINAtlantic	Coastal and Ocean Information Network Atlantic
CPPS	Comision Permanente del Pacifico Sur
EBM	Ecosystem Based Management
ERFEN	Estudio Regional del Fenomeno El Niño
ESI	Ecosystem Status Indicators
FAO	Food and Agricultural Organization
GEF	Global Environmental Facility
IGOs	Intergovernmental Organizations
IMS	Information and Management System
IOC	Intergovernmental Oceanographic Commission
IOCARIBE	IOC Sub-Commission for the Caribbean and Adjacent Regions
IODE	International Oceanographic Data Exchange
LME	Large Marine Ecosystem
NICs	National Intersectoral Committees
OAS	Organization of American States
REMP	Regional Environmental Management Programme
SAP	Strategic Action Programme
TDA	Transboundary Diagnostic Analysis
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational Scientific and Cultural Organization



CLME

Sources: DATA - INFORMATION

- CLME Information Management System & Regional Ecosystem Monitoring Programme
  - Cesar Toro
- Governance regime in the Wider Caribbean Region
  - Robin Mahon
- IODE Ocean Data Portal
  - Peter Pissierssens
- TNC- GIS data work across the region
  - John English Knowles
- COINAtlantic "Chain for Information Access"
  - Paul Boudreau
- Caribbean Marine Atlas Project (CMA)
  - Ramon Roach
- GAME – Quantitative Gap Analysis for the West Coast of Florida based on Experts' Opinions
  - Cristina Carollo
- Sistema de Información Ambiental Marina Colombia - SIAM
  - Martha Vides
- CLME: Sustainable Management of the Shared Living Marine Resources of the Caribbean Large Marine Ecosystem & Adjacent Regions
  - Patrick

Discussions on proposal

C: Paul stressed the point of having t.o focus on one or a few elements of the 3x3 matrix;
contacting all interested organizations is not realistically achievable in twelve months.

C: Necessary t.o poll - approach from an organizational point of view
(meta info and specific info for a few pilot projects) may allow a quick demonstration that will effectively represent the project.

Q: What information sources should be approached which will deliver the data most effectively and quickly?

C: Robin: Some issues of importance, as a possible focus for the matrix are:
- Evaluation of reef resources,
- Combination of tourism and fishing

C: A key issue is language: a good system in one language, versus a system in multiple languages which may not be as good.
C: atthe moment, dealing with multiple language issues may hamper progress.

C: Three issue areas to focus on:

Q: Example of questions addressed: What impacts would a reduction of fishing have on marine ecosystems goods and services.

Q: How would this data be mapped? placed on a map in terms of evaluating good and bad effects.

C: Evaluation of marine ecosystems goods and services is somewhat general, perhaps asking a more specific question would be more effective.

Q: Could have the level of threat in a region to food security due to pollution or climate change; t.o be mapped, for example.
Could be done for Reefs in a very visually vivid way.

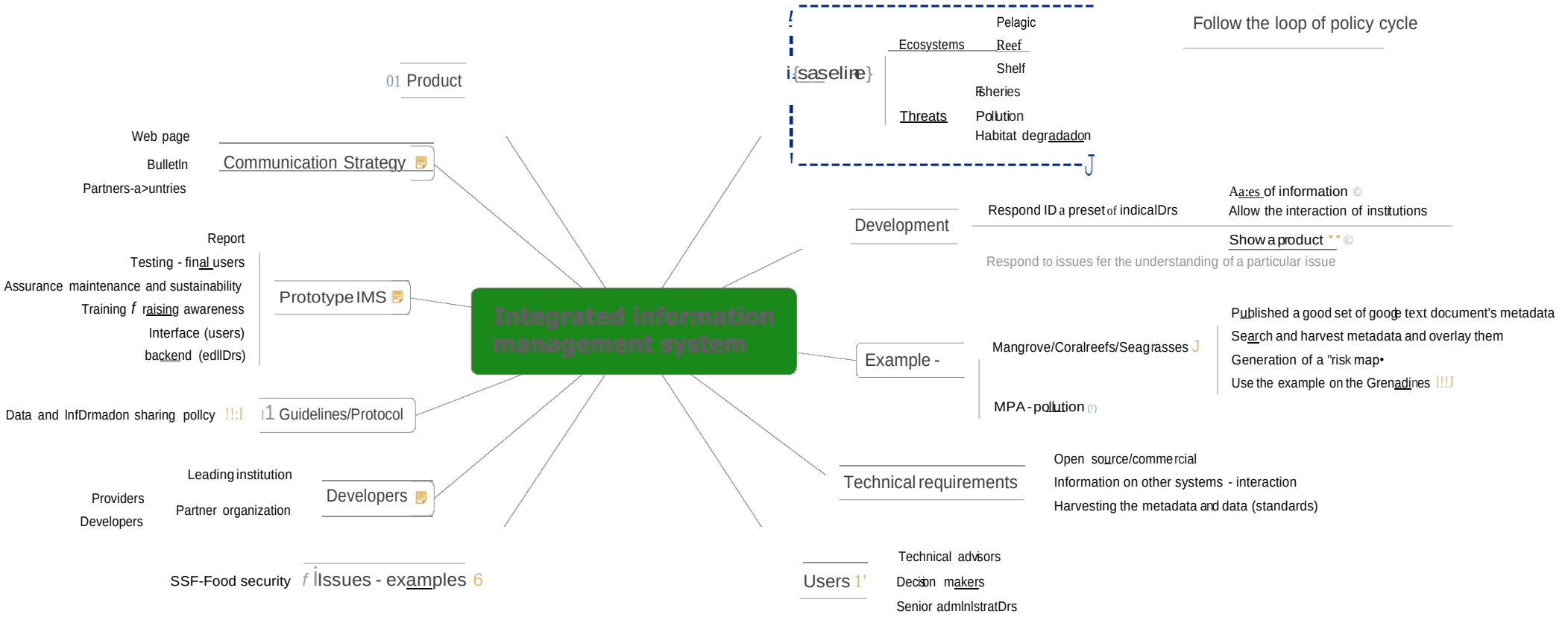
C: By the end of the CLME project, a strategic action plan is needed.

C: We will need to prioritize among the issues t.o identify the issues which will deliver, in the short term, the most impact to decision makers.

Q: Robin: Not clear as t.o whether we will focus on a few areas,
or aggregate a broad amount of information t.o cover different areas.

C: Current goal for the system is to create a metadata mapping system,
with a few concrete examples to demonstrate functionality.
May identify through the metadata information on specific issues,
but don't necessarily need the IMS t.o bring all of the data t.ogether,
can be done outside of the IMS and displayed there.

C: Should deliver a product that is unique by bringing together existing information and using it a new and useful way;
would be an effective approach to convince decision makers.


Integrated information management system
01 Product
Communication Strategy
Web page
Bulletln
Partners-a>untries
Prototype IMS
Report
Testing - final users
Assurance maintenance and sustainability
Training f raising awareness
Interface (users)
backend (edllDrs)
Guidelines/Protocol
Data and lnfDrmadon sharing pollcy
Developers
Leading institution
Providers
Partner organization
Developers
Issues - examples 6
SSF-Food security
Users 1'
Technical advisors
Decision makers
Senior admlnlstratDrs
Technical requirements
Open source/commercial
Information on other systems - interaction
Harvesting the metadata and data (standards)
Example -
Mangrove/Coralreefs/Seagrasses J
Published a good set of google text document's metadata
Search and harvest metadata and overlay them
Generation of a "risk map•
Use the example on the Grenadines
MPA - pollution
Development
Respond ID a preset of indicalDrs
Aa:es of information
Allow the interaction of institutions
Show a product
Respond to issues fer the understanding of a particular issue
{saseline}
Ecosystems
Pelagic
Reef
Shelf
Fisheries
Threats
Pollution
Habitat degradadon
Follow the loop of policy cycle

Regional Ecosystem Monitoring Environmental Programme

Recomendations

- Contact IWLEARN as one of the sources - exam pies
- REM Is more a process than a product
- Look for other REM arround the world - evaluate If It can be adres.sed
- set indicators - track sustainability of the ecosystem
  - Process
    - Improte ocean governance CLME and in general
    - Governance assessment
  - Programme - Partner institutions
- Implement the REM in the pilot mode
- Reglonal awareness - capacity building
- Ecosystem Status Indicators
  - Check de TOA ecosystem review
  - select priority areas to produce policy relevant processes (feasible)
- Look at global indicators i.e. Transboundary Waters Assessment Programme - TWAP

Regional awareness

- Include Monitoring projects that are involved into ongoing Policy cycles
- Linkage wittl global process
- Include GAP and TOA Analysis

Comments

- Use the 3X3 matrix to identify relevant adequate indicators (process and status) for each cell at different levels
- Represent it as a policy cycle - responsibility
- It Is part of the SAP
- Include a capacity bulldlng programme