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First ODINCARSA Planning Workshop for Caribbean Islands

Organized with the sponsorship of:
Coastal Zone Management Unit of Barbados

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Abstract

The First ODINCARSA Planning Workshop for the Caribbean Islands was held in Christ Church, Barbados between 15 and 18 December 2003, co-sponsored by the Coastal Zone Management Unit of Barbados. The workshop was attended by participants from eight countries in the Caribbean. The meeting reviewed the ocean data and information management capacity available in this region, identified needs and capacity building requirements, and prepared a comprehensive work plan and timetable to develop a regional cooperative network for the management of oceanographic data and marine information on the basis of the experience of the ODINCARSA project in South America.

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1. INTRODUCTION AND OBJECTIVES

The First ODINCARSA Planning Workshop for Caribbean Islands was held in Christ Church, Barbados from 15-18 December 2003. The venue of the meeting was the Casuarina Hotel, in Christ Church, Barbados and kindly sponsored by the Coastal Zone Management Unit (CZMU) of Barbados.

The general objectives of this workshop were:

- Determine the Data Management (DM) and Marine Information Management (MIM) needs of Caribbean countries;
- Identify the most suitable ODINCARSA contact points for each island state;
- Establish a realistic and effective ODINCARSA work plan for the Caribbean region.
- Promote IOC programmes and projects such as IODE, GOOS, ICAM and ODINCARSA in the Caribbean region;
- Introduce the OceanTeacher system to the Caribbean Islands;
- Designate an ODINCARSA coordinator for the Caribbean region who will keep close contact with the ODINCARSA Regional Coordinator.

2. PARTICIPANTS

Participants attending the meeting were from Antigua & Barbuda, Barbados, Cuba, Dominica, Jamaica, Saint Lucia, Trinidad & Tobago, and Venezuela. Lectures were provided by invited experts from Chile, Ecuador, OECS (Organization of Eastern Caribbean Islands) and IOC. The list of participants and lecturers is provided as Annex I.

3. WORK SHOP PROGRAMME

3.1 OPENING CEREMONY

The welcoming speech was given by Dr. Leo Brewster, Director of the CZMU. In his speech he emphasized the importance of Data and Information management in different projects which are being developed in the Caribbean region, and the need to link these with ICAM and GOOS activities in the Caribbean region. A full copy of the speech is included as Annex II.

3.2 GOOS PRESENTATION

This item of the Agenda was presented by Ms. Lorna Irniss in her capacity as IOCARIBE Vice Chair. She mentioned the historical development of IOCARIBE GOOS. She mentioned:

- 1999 / IOCARIBE Users and GOOS capacity Building Workshop (Costa Rica, Report No. 84).
- 1999 / 6th IOCARIBE Regional Meeting when IOCARIBE-GOOS was approved.
- The *ad hoc* TEMPORARY ADVISORY GROUP was established.
- Four meetings of the ad hoc Advisory Group were held:
    - 1999…Caracas, Venezuela GOOS Report No 88
    - 2000…Havana, Cuba GOOS Report No 93
    - 2001…Miami, United States GOOS Report No 105
    - 2002…Veracruz, Mexico GOOS Report No 117
- 2002 / 7th IOCARIBE Regional Meeting

Since the Veracruz meeting :

- *Strategic Plan approved* by the IOC/EC, and by the Intergovernmental GOOS Steering Committee.
- *Status of a GOOS Regional Alliance* conferred by I-GOOS
- *Strategic Plan has been printed* in English (GOOS Report No 115).
- *Inventory of IOCARIBE resources completed*
- *Steering Committee* Finalized by 1 March 2003 and with the First meeting May 2003.

A Strategic Plan for IOCARIBE-GOOS was approved. A Steering Committee was established that will be tasked with:

- Promoting the implementation of GOOS-COOP within IOCARIBE states.
- Providing guidance for national GOOS-COOP programmes to address regional priorities.
- Developing regional centres for data exchange and management (jointly with ODINCARSA).
- Development of regional scale analyses, models, and forecasts.
- Contributing to and extracting regional data from COOP activities in the region.

Potential demonstration projects include:

- Development of a Regional Circulation Model.
- Bridging the Scales between Coastal and Offshore Observing Systems and Models.
- Pollution.
- Coastal Erosion.
- Ecosystems, Fisheries and Aquaculture.
- Capacity Building in Remote Sensing

CAPACITY BUILDING:

- Must be a priority and It is also one of the greatest challenges to the implementation process to enable member states to contribute to and benefit from GOOS.
- To build the capacity of the "suppliers"…and the capacity of the users.
- Capacity building activities must be tailor-made to the specific needs of every country.

3.3 ODINCARSA PRESENTATION

Mr. Rodney Martínez introduced ODINCARSA project and explained that it was set up primarily as a mechanism for assessing the current and potential state of development of national data centers and to create the means for mutual capacity-building in South America and the Caribbean. It further seeks to develop a cooperation network for managing and exchanging oceanographic data and information within these regions. ODINCARSA is a network currently composed of eighteen IOC Member States: Argentina, Bahamas, Barbados, Belize, Brazil, Colombia, Chile, Cuba, Dominica, Ecuador, Jamaica, Mexico, Nicaragua, Panama, Peru, Saint Lucia, Trinidad and Tobago and Venezuela.

Since the beginning of the project in October 2001, much has been achieved: a planning workshop where main needs of the region were identified and a work plan prepared; the first training workshop on Data Management (Guayaquil, Ecuador, May 2002), the first training workshop on Marine Information Management (Mazatlan, Mexico, October 2002); the second training course for regional trainers on data management (Cartagena, Colombia, October 2003), and a Planning workshop for Caribbean islands held in Barbados (December 2003).

ODINCARSA has provided through the different workshops the necessary skills to strengthen, at national and regional level, the interaction between the National Oceanographic Data Centres, Marine Information Centres and Libraries. In addition relevant institutions and contact persons who can help to consolidate ODINCARSA as a cooperative network have been identified.

ODINCARSA has promoted and supported the development of specialized groups in the region to strengthen expert and resource networking to share the existing capabilities between the Member States. One of these groups is the Latin American IAMSLIC Group which is working with ODINCARSA on Marine Information Management issues. It groups more than 27 libraries in the region. Other working groups have been working on regional products and services such as the Regional Directory of Experts (part of the global OceanExpert: http://www.oceanexpert.net), the regional Ocean Portal (PortalOceanico http://www.portaloceanico.net), the Regional Libraries Catalogue, and the recently formed working group for the translation of OceanTeacher into Spanish.

ODINCARSA has successfully completed its pilot phase (2001-2003). It has provided training and technology transfer in the region and it has compiled key information about the current status of ocean data and information management capabilities, and identified relevant institutions and contact personsin the South American and Caribbean regions. All these elements can now lead to the implementation of the operational phase of the project which should be of a cross-cutting nature linking with other important IOC programmes such as GOOS, JCOMM and ICAM.

3.4 IODE PRESENTATION

Mr. Peter Pissierssens, Head of Ocean Services of IOC, gave a presentation on IODE and explained that IODE was established in 1961 ‘to enhance marine research, exploitation and development by facilitating the exchange of oceanographic data and information between participating Member States and by meeting the needs of users for data and information products’.

IODE is now a network of nearly 70 data centres including three World Data Centres Oceanography, 64 National Oceanographic Data Centres (NODCs) (and Designated National Agencies) and 10 Responsible National Oceanographic Data Centres (RNODCs)

The programme is guided by three Groups of Experts: (i) JCOMM/IODE Expert Team on Data Management Practices (formerly IODE GE-TADE); (ii) IODE Group of Experts on Marine Information Management (GE-MIM); and (iii) IODE Group of Experts of Biological and Chemical Data Management and Exchange Practices (GE-BCDMEP).

IODE implements projects at the regional as well as global scale. Global projects include ASFA, GTSPP, GODAR, GOSUD, OceanExpert, MEDI, marineXML, Ocean Portal, Regional Ocean Portals, OIT, and OceanTeacher. Regional projects focus on capacity building. IODE’s approach to capacity building has changed substantially in the past decade: initially focusing on national/regional workshops, training courses and internships only, IODE now approaches capacity building in a regional context through the development of networks. This new approach has been called ‘ODIN’ which stands for Ocean Data and Information Networks. This new approach has been implemented in Africa (ODINAFRICA) and the Caribbean and South American regions (ODINCARSA)..

In order to use a standard training system for all capacity building activities IODE also developed a comprehensive ‘encyclopedia’ and teaching system called OceanTeacher.

Mr Pissierssens then compared the IODE programme in past and present/future:

IODE yesterday:

- Centralized data centre architecture (1 per country) ;
- Delayed mode operation (weeks-year);
- Physical oceanography data (T,S,…);
- QC, data archival and retrieval.

IODE today-tomorrow

- Decentralized model;
- More attention to chemical, biological data, coastal data;
- Closer to real-time (serving GOOS needs);
- E2EDM;
- Products and service oriented.

Capacity Building: new deal

- Before: occasional training courses, internships;
- Now: ODIN strategy:
  - Linking training, equipment, operational support;
  - Regional context;
  - Product and service oriented;
  - Multi-stakeholder approach.

3.5 OECS PRESENTATION

Mr. Dermot Saltibus introduced this item on behalf of the OECS (Organization of Eastern Caribbean States):

Origin & Evolution

- Following the collapse of the West Indies Federation :
  - The West Indies Associated States Council of Ministers (WISA) in 1966 and,
  - The Eastern Caribbean Common Market (ECCM) in 1968
  - With Independence there was a need for a more formal arrangement
- OECS - Came into being on 18 June 1981:
  - Signing of the Treaty of Basseterre
  - In honour of the capital city of St. Kitts and Nevis
  - Seven member States and 2 Associate Members:

    -Anguilla, (Associate Member)
    -Antigua and Barbuda
    -British Virgin Islands (Associate Member)
    -Commonwealth of Dominica
    -Grenada
    -Montserrat
    -Saint Kitts and Nevis
    -Saint Lucia and
    -St. Vincent and the Grenadines

The OECS Mission is “to be a major institution contributing to the sustainable development of the OECS Member States by assisting them to maximise the benefits from their collective space, by facilitating their intelligent integration with the global economy; by

contributing to policy and program formulation and execution in bilateral and multilateral co-operation".

The Organisation's Objectives:

- To promote Co-operation among Member States and to defend their sovereignty, territorial integrity and independence;
- To assist the member States in the realisation of their obligations and responsibilities to the international community with due regard to the role of international law as a standard of conduct in their relationships;
- To establish and maintain wherever possible arrangements for joint overseas representation and common services;
- To promote economic integration among the member States;
- To pursue these through discussion of questions of common concern and by agreement on common action.

The Director General is Dr. Len Ishmael.

Divisions of the OECS:

- External Relations
- Functional Cooperation
- Corporate Services and
- Economic Affairs

Institutions in the OECS:

- Eastern Caribbean Telecommunication Authority (ECTEL)
- Directorate of Civil Aviation (DCA)
- Eastern Caribbean Central Bank (ECCB)
- Eastern Caribbean Supreme Court

Units in the OECS:

- Education and Human Resource Development (OERU)
- Export Development Unit
- Legal Unit
- Environmental & Sustainable Development Unit (formerly Natural Resources Management Unit)
- Pharmaceutical Procurement Services (PPS)
- Social Development Unit (SDU)
- OECS Sports Desk

Programme Areas include:

- General support development of environmentally related policy :
  - ❖ OECS Harmonise Fisheries Act
  - ❖ Development of Standards for fishing vessels
  - ❖ OECS Solid and Ship Generated Waste Management Project
  - ❖ St. George's Declaration - A set of environmental principles for sustainable development and management.
- Community participation in Beach and mangroves monitoring programmes.
- Training in EIA assessment and review.

The Organisation of Eastern Caribbean States (OECS) web site www.oecs.org

3.6 INTRODUCTION TO MARINE INFORMATION MANAGEMENT

Ms. Alexandra Smith gave a presentation on Marine Information Management:

THE ROLE OF AN INFORMATION CENTRE

- Information centers have a vital role in the scientific environment
- They coordinate information related activities
- They canalize information requirements
- They deliver the correct type of information to the entity or person requesting it in an opportune and timely manner
- Information is decisive to decision-making.

INFORMATION CENTRES: OUTLINE OF ACTIVITIES

- Have a basic collection: books, journals, encyclopedias, dictionaries, directories, reports, statistics, atlases, etc.
- Establish your priorities: line out a business plan and main objectives
- Outline your client base and their information requirements
- Establish basic services: lending, photocopying, document delivery, selective dissemination, information seeking
- Gain your authorities` support and a basic budget
- Have a basic equipment/hardware: PC, printer, scanner, and communications (e-mail, Internet delivery software, Ariel, Prospero)
- If possible, get hold of an ILMS (Integrated Library Management System), like INMAGIC (www.inmagic.com), Library Pro 2.2 or WINISIS (www.bireme.br) or others
- Procure to get your collection organized by means of a classifying and cataloguing system appropriate to your center
- Divulge your services through brochures, web page, conferences, etc.
- Get to know your peers, the marine information infrastructure in your area/country: other professionals, information centers, collections, services
- Establish contact with them in a formal or informal way
- Line out a cadastre/directory of libraries and information infrastructure in your area/country
- Join a Library Association (eg. IAMSLIC, participate in related activities
- Participate in joint ventures like Z39.50 Distributed Library from IAMSLIC
- Participate in publications exchange and donations initiatives

4. NATIONAL REPORTS

Participants made individual presentations based upon the questionnaires, which are attached in Annex III.

4.1 ANTIGUA AND BARBUDA

Issues: The main problem is human resources: Antigua and Barbuda has a tourism-based economy so there is not much interest for oceanography or data. There is a problem with duplication of effort, weak or dated legislation, lack of funds to efficiently carry out data collection programs; There is presently no national information centre that specifically deals with ocean information. The Fisheries Division has a collection of books and report, however this is not compiled, catalogued or available digitally.

Data collected: primarily fisheries (landings, catch effort)(on PC), water quality (on paper), beach profile (on PC), limited coral reefs (but in the past had no boat). The Office of

meteorological service has a single tide gauge, which collects a limited amount of oceanographic data (tidal range, sea surface temp.) This data is sent to a regional data centre in Trinidad, compiled and sent back to the met office. The Public Health department collects limited data on water quality of bathing beaches. The single government lab does all water analysis.

Needs: Antigua and Barbuda needs to become aware of the activities being undertaken by ODINCARSA. The country will first require a national coordination workshop to explain the need to manage data and to introduce relevant agencies to ODINCARSA. After that, training will be required in ocean data and information management. Much work needs to be done in organizing the available information.

Conclusion: there is limited data. Some equipment has been obtained through various projects, however the lack of manpower makes it difficult to collect comprehensive data: there are only 10 technicians on Fisheries Staff. These individuals have to collect data, compile and put on computer as well as analyze. Attempt have been made to prepare a data atlas but this was not done due to lack of time.

Question: What happens after the data were collected?
Answer: There seems to be a problem in terms of preparing products. This is due to the limited human resources and the multiple mandate of the department. The Fisheries Division is not only involved in the collection of a variety of data but is also responsible for licensing and registering of fishing vessels and fishermen, quality control issues as related to vending, processing and marketing of fish products, vessel patrols for foreign and local vessels, advising Development Control Authority on projects within the coastal areas, public education and outreach and a number of other tasks related to the marine and coastal environment. We need a strategy for the department. In St Lucia they did a strategic planning process on how to better serve audiences and so change the way toe do things. There is no coastal zone management plan but a national physical development plan.

4.2 BARBADOS

Barnados has a coastal zone management plan. The participants were not sure whether it includes a chapter on data management. Requirements include (i) a national data management plan; (ii) an audit on national activities (iii) a national coordination mechanism; (iv) a data policy; and (v) education for stakeholders, and Training for scientists in data management. ODINCARSA can help with creating linkages with other existing programs such as GLOSS, GOOS, Directory of Experts, etc.

The Coastal Zone Management Unit (CZMU) is the result of some previous studies. The CZMU manages bathymetric data, water quality data, beach erosion/accretion trends, sediment grain size analysis, environmental and oceanographic data. They have 2 tide gauges, 2 weather stations, 5 wave recorders (S4s) and they have been involved in some Climate Change adaptation projects. The have some information about coral reefs and biodiversity. There is a Marine laboratory, which is not governmental and some research on coastal processes. There are at least ten research cruises on reports, but there is not data in digital format. National resources are managed by Fisheries division, and some another institutions. In 1988, a training course was provided in data management and a feasibility study was achieved. They have some bibliographic data bases, Library pro software is used.

4.3 CUBA

Between 24 and 26 February, 2003, the First Workshop for Marine Information Management was held in Havana City, co-sponsored by the FAO Office in Cuba and the National Oceanographic Committee. All the institutions devoted to marine sciences in Cuba participated in this meeting, where the ODINCARSA Project was presented. OceanTeacher was

used as main teaching material. Cuba's ODINCARSA-MIM Group was established by the attending participants.

All Cuban Information centers are involved in the Portal Oceanico and they are also working as ASFA input centers with special attention to grey literature and Cuban publications. Metadata generation procedures have been developed in Project "Priority Actions to Consolidate Biodiversity Protection in the Sabana-Camaguey Ecosystem", sponsored by GEF and implemented by UNDP.

From 2001 up to the present, Cuba has carried out a whole series of tasks to put into practice the ODINCARSA Project in Cuba:

- In December 2001, a Round Table on Marine Data and Information was presented in the 5th Congress of Marine Sciences;
- Cuba participated in the 1st Workshop for Data Management held in Guayaquil, Ecuador;
- Cuba also participated in the 1st Workshop for Marine Information Management and the IAMSLIC Meeting in Mazatlan, México;
- Cuba attended the Meeting of Editors for the Portal Oceanico in Guayaquil, Ecuador;
- Cuba also participated in the Advanced Workshop for Data Management, carried out in Cartagena de Indias in 2003, where the specialist that attended the workshop was certified by the IOC as lecturer;
- Cuba is an ASFA partner;
- Cuba contributed 180 objects to the Portal Oceanico.:

The Cuban representative kindly offered to provide capacity building in their facilities to all Caribbean islands.

4.4 DOMINICA

Dominica has data collectors who collect fisheries information. In Dominica catch and effort data are collected with very limited parameters. They are in electronic format (trip interview program: TIP for OECS countries). Summary data reports are made. There is no immediate strategy to revamp the data collection system. Dominica now sees the advantage in teaching "ocean data management". No coastal zone management plan exists but is being considered now. A national coordination workshop is needed to explain the need to manage data. Decision makers have to be informed on the need to have a strategy:. Possibly countries from the region that have gone through a strategy exercise could be asked to give presentations to convince others to go the same way.

The Fisheries Division is responsible for the collection of information about ocean, coastal area and environmental monitoring. Most of the information is coastal and procedures exist to obtain information from ships, aquaculture, fish catch. There exists a data section in the Fisheries Division but there are problems with internet access and there is a shortage of staff. There is no "formal" library, but there is abundant material to be organized. The Maritime unit, Coast Guard and Port Authority have the potential to provide useful ocean data. Ocean sciences are being included in the curriculum of the Dominica State College. Dominica will be very happy to receive any support from ODINCARSA and IOC.

4.5 JAMAICA

Jamaica has a lot of data but the location is mostly unknown. There is a need to have a coordination meeting to find out what is where. Also, people need to be educated about the value of information. There is a need to standardize data, as well as for a national "clearing house" for

data and metadata. It was recognized that there may be expertise in other islands and this needs to be shared. It was also recommended to focus on the directory of experts.

There is a "coastal zone green paper" in Jamaica. The Fisheries Division, University of the West Indies and NEPA collect ocean data and data on coastal water quality. There is no central unit for this task. Jamaica participates in CARICOM and CPACC regional programs. An internet connection is available and satellite imagery is received. There is a shortage of staff, training and standard procedures. The web site of the Caribbean Coastal Data Center is www.ccdc.org.jm. Some ocean data, information and research papers are housed in the Discovery Bay Marine lab and University.

4.6 SAINT LUCIA

Although there is no comprehensive coastal zone management plan in Saint Lucia, the country is currently in the process of developing a coastal zone management policy with associated guidelines. Saint Lucia does not have an IODE center (NODC or DNA). Marine and oceanographic related information is, for the most part, currently housed at the Department of Fisheries.

Most of the oceanographic information housed at the Department of Fisheries (DOF) is limited to hard copies of reports prepared by research vessels passing through the waters of Saint Lucia. Marine electronic data collected by and stored at the DOF include fish landings, fisherman registration information, and fishing vessel license information. The participant from this country also suggested the following strategy for building data management capacity within Saint Lucia and other OECS islands:

- IOC should request OECS to act as a facilitator to enable national assessment of current data management systems within countries;
- Based on the finding of these assessments, IOC should address issues in the following areas:
  - Provide technical assistance to establish/strengthen relevant documentation centers;
  - Provide relevant equipment, software and support services;
  - Providing training to ensure sustainability of the initiative;
  - Where possible, provide access to relevant journals, research documents, etc.;
  - Assist in retrieving of existing data and information housed externally (repatriation).

- OECS should also be requested to facilitate the following:
  - Promotion of the importance of data collection and management for effective decision making
  - Development of relevant national policy to govern data management, including formal linkages among relevant agencies.

ODINCARSA could undertake capacity building and support to OECS. ODINCARSA could also function as a link between OECS and continental countries. Individual OECS countries that participated in this workshop should communicate with OECS to express their support to this approach. IOC should also send letter to OECS inviting collaboration in this regard, and offering support.

4.7 TRININIDAD & TOBAGO

The participant from Trinidad & Tobago identified the following challenges:

Institutional Challenges:

- Development of physical communication infrastructure;
- Hiring and training of personnel;

- Management of data from research programs;
- Data management;
- Ensuring institutional memory and continuity of operations in face of staff shortages

National Challenges

- Sectorial approach to coastal zone management – data and information held by many different government departments, agencies, universities and private sector companies;
- Lack of coordination in collection, archiving and dissemination of data;
- Lack of national policy to guide data and information management;
- Freedom of Information Act (1999) – emphasizes public right of access but systems not in place to support it;
- Need to educate potential users on the availability of data.

Regional Challenges

- Lack of a unified database format (standardization).
- Need to increase availability of information locator services eg. Local library catalogues, library collection development, special bibliographies, inter-library loan use, web-information searching…
- Better sharing of existing resources in face of scarce resources (networking towards this).

4.8 VENEZUELA

Venezuela has recently joined ODINCARSA. The National Focal point is the Navigation and Hydrography Direction which belongs to Venezuelan Navy and is also the NODC. They collect all hydrographic, oceanographic and navigation support data. At the national level they have several linkages with academic, technical and private institutions and they are the national representatives for some International Organizations.

The Venezuelan representative kindly offered the facilities in his center to host an international training workshop for Caribbean countries and requested to receive training from ODINCARSA for technical personnel of Venezuelan NODC.

Venezuela established its National Oceanographic Data Center in 1976 and substantial infrastructure has been established to support responsibilities of the NODC including staff, computers, data base technology, digital interface to input data and metadata.. However, support is requested for:

- better internet connection with an optical fiber connection;
- training on ocean data and marine information management;
- technology support (hardware, backup system)

5. DISCUSSIONS ON THE REQUIREMENTS OF CARIBBEAN COUNTRIES RELARED TO OCEAN DATA AND INFORMATION MANAGEMENT

The WORKSHOP discussed, on the basis of the previous presentations, regional needs and identified the most relevant ones in order to determine adequate actions to improve the current situation in the region and in each country related with ocean data and marine information management.

The group concluded that the following were priority needs in Caribbean Islands:

1) Identification/updating of IODE national coordinators and ODINCARSA contact points for the Caribbean region;
2) Ensure that CARICOM, CRFM, UNEP and OECS are aware of ODINCARSA and request that they act as leaders to promote the importance of data collection and management for effective decision making among Member Countries;
3) Need for greater awareness in Caribbean region about products and services of IOC/ODINCARSA such as the ***Portal Oceanico*** and the ***CARSA DIR***;
4) Need for greater awareness of linkages with GOOS, ICAM, and GLOSS;
5) Need to conduct national assessments of current data management systems, data inventories and user-needs through consultation and national coordination meetings;
6) Need for the development of relevant national policy to govern data management, including the establishment of formal linkages among relevant agencies, and standardization of data and information management procedures and exchange formats.
7) Need for technical assistance to establish/strengthen information/data centers;
8) Need for training in data and information management and metadata processing to ensure the sustainability of this initiative.;
9) Need for provision of necessary equipment, hardware, software including library cataloguing and library management, improved internet connection and support services;
10) Need to create or strengthen marine information centres/libraries and to facilitate access to relevant literature.;
11) Need to create mechanisms for sharing of information, expertise and experience where capabilities exist, such as coastal zone management plans, Remote Sensing and GIS;
12) Need for assistance in data repatriation.

6. DEVELOPMENT OF A WORK PLAN AND TIMETABLE FOR THE CARIBBEAN ISLANDS

The group discussed and agreed the following actions and responsibilities:

IDENTIFIED NEED	RECOMENDED ACTIONS	RESPONSIBLE	TIMING
1. Identification/updating of IODE national coordinators and ODINCARSA contact points for the Caribbean region	(1) IOCARIBE Secretariat to write a circular letter to all member states requesting these designations. (2) participants in this workshop must create awareness in their countries about ODINCARSA and its planned activities. (3) participants in this workshop must contact national focal points in each country providing enough information to assist in determining the most appropriate representative(s). (4) to request IODE regional coordinator for Caribbean to follow up .	(1) IOCARIBE Secretariat (2) National participants in this workshop (3) National participants in this workshop (4) IODE regional coordinator	January/2004
2. Ensure that CARICOM, CRFM, UNEP and OECS are aware of ODINCARSA and request that they act as leaders to promote the importance of data	(1) IOCARIBE Secretariat to send a formal letter to these organizations informing them about ODINCARSA initiatives in Caribbean region. (2) To contact the UNEP RCU, and inform about ODINCARSA planned	(1) IOCARIBE Secretariat (2) IOCARIBE Secretariat	January/2004

collection and management for effective decision making among Member Countries	activities.		
3. Need for greater awareness in Caribbean region about products and services of IOC/ODINCARSA such as the ***Portal Oceanico*** and the ***CARSA DIR***	To promote ODINCARSA at the national level using available awareness material, linkages to the web site, and a brief presentation which will be distributed to representatives to this meeting by Regional coordinator for further distribution.	ODINCARSA Regional Coordinator and National representatives	First quarter 2004
4. Need for great awareness of linkages with GOOS, ICAM, and GLOSS.	As above	Regional ODINCARSA Coordinator and National representatives	First quarter 2004
5. Need to conduct national assessments of current data management systems, data inventories and user-needs through consultation and national coordination meetings	(1) To design a questionnaire appropriate for the Caribbean (2) To distribute it to relevant agencies in each country.	IODE National Coordinators, IODE Regional Coordinator, participants in this workshop	(1)Design questionnaire (March 2004). (2)Process and deliver reports (July 2004).
6. Need for the development of relevant national policy to govern data management, including the establishment of formal linkages among relevant agencies, and standardization of data and information management procedures and exchange formats	(1) IOC will send through IOCARIBE the Data Exchange Policies to IOCARIBE National Focal points. (2) To recommend to IOC National address to find mechanisms to delegate the attendance to IOC assembly.	IOCARIBE Secretariat	January 2004
7. Need for technical assistance to establish/strengthen information/data centers	ODINCARSA will provide training in data and Information management and technical assistance.	ODINCARSA	Second half 2004-2005
8. Need for training in data and information management and metadata processing to ensure the sustainability of this initiative.;	ODINCARSA will provide training in data and Information management and technical assistance.	ODINCARSA	Second half 2004-2005
9. Need for provision of necessary equipment, hardware, software including library cataloguing and library management, improved internet connection and support services	ODINCARSA could assist in providing the equipment previously determined and required by Caribbean Member States	ODINCARSA	Second half 2004-2005

10. Need to create or strengthen marine information centres/libraries and to facilitate access to relevant literature.	(1) Assist Caribbean countries in the establishment of marine information centers or libraries by facilitating sharing of knowledge and expertise. (2) Caribbean countries must designate a Librarian or an adequate person which can receive the training and technical assistance. (3) ODINCARSA will sponsor memberships in IAMSLIC for Marine Libraries for Caribbean (2 years). (4) ODINCARSA will facilitate participation of Caribbean states in ASFA system.	ODINCARSA and National ODINCARSA coordinator	Second half 2004-2005
11. Need to create mechanisms for sharing of information, expertise and experience where capabilities exist, such as coastal zone management plans, Remote Sensing and GIS.	Assist Caribbean countries in the sharing of existing knowledge and expertise in the region	Regional ODINCARSA coordinator and Member States with the experts	2004-2006
12. Need for assistance in data repatriation	Member States will review past research cruise approvals against deposited reports and, where reports are missing, ask organizing institutions/World Data Centre to provide those reports (including electronic data where available).	National Focal points / WDC/ IOC	Ongoing

7. Designations of National Coordinators and Caribbean coordinators for ODINCARSA

The workshop designated Mrs. Donna Spencer as ODINCARSA Coordinator for the Caribbean Region. She will be liaise closely with the ODINCARSA Regional Coordinator. Jointly they will coordinate the implementation of the planned actions within the Caribbean Islands. Participants committed to ensure the official designation from each country as soon as possible, to start the working plan

8. CLOSURE

Mr. Rodney Martinez, on behalf of IOC/ODINCARSA, expressed his gratitude to the Barbados Government as the major sponsor of this meeting, and he expressed special thanks to Ms Lorna Irnnis for her great efforts in organizing all the details of this successful planning workshop. Ms Lorna Irniss, on behalf of the CZMU, also expressed her gratitude to IOC and ODINCARSA and stressed that the success of ODINCARSA inside the Caribbean region will depend on the active involvement of participants to this workshop and on the IODE and ODINCARSA National coordinators.

ANNEX 1

PARTICIPANTS LIST

I. NATIONAL REPRESENTATIVES

ANTIGUA & BARBUDA

Fisheries Division
Address. Perry Bay, St. John's
Antigua
Tel: 1-268-462-1372
Fax: 1-268-462-1372
Email: fisheries@candw.ag

BARBADOS

Lorna Inniss
Coastal Zone Management Unit
Bay Street, St. Michael
Barbados
Fax : (246) 228-5956
Tel: (246) 228-5950/1/2
Email: linniss@coastal.gov.bb
URL : http:// www.coastal.gov.bb

Ron GOODRIDGE
Coastal Zone Management Unit
Bay Street, St. Michael
Barbados
Fax : (246) 228-5956
Tel: (246) 228-5950/1/2
Email : coastal_planner@coastal.gov.bb
URL : http:// www.coastal.gov.bb

CUBA

Julieta GUTIERREZ
Instituto de Oceanología
Ave. 1ª #18406 ent. 184 y 186, Rpto Flores,
Playa, Ciudad de La Habana
Cuba
Fax : (537) 273- 9112
Tel: (537) 271-6008
Email: gjulieta@hotmail.com

DOMINICA

Riviere SEBASTIAN
Fisheries Division
Ministry of Agriculture and the Environment
New Roseau Fisheries Complex
Bayfront, Roseau
Commonwealth of Dominica
West Indies
Tel: 767 448 2401 ext 3391/2
Fax: 767 448 0140
Email: roseb@cwdom.dm

JAMAICA

Sean GREEN
National Environmental and Planning Agency
10 Caledonia Avenue
Kingston 10
Jamaica W.I.
Tel : (876) 754 7540 ext 2247
Fax : (876) 754 7594
Email : sgreen@nepa.gov.jm
URL : http://www.nepa.gov.jm (NEPA´s website) http ://www.ccdc.org.jm **(CCDC)**

SAINT LUCIA

Susanna SCOTT
Department of Fisheries
Ministry of Agriculture, Forestry and Fisheries
Point Seraphine,
Castries,
Saint Lucia
Fax : 758 452 3853
Tel: 758 468 4138
Email: deptfish@slumaffe.org
URL : http://www.slumaffe.org

TRINIDAD & TOBAGO

Dona SPENCER
Chief Information Officer
Institute of Marine Affairs, Hilltop Lane
Chaguaramas, P.O. Box 3160, Carenage
Trinidad and Tobago
Tel : 868 – 634 – 4291/4
Fax : 868 – 634 – 4433
Email : director@ima.gov.tt
dspencer@ima.gov.tt
URL : http ://www.ima.gov.tt

VENEZUELA

Oscar MENDOZA Maldonado
Centro Nacional de Datos Oceanográficos (CENDOC).
Dirección de Hidrografía y Navegación,
Caracas
Venezuela
Fax : 58 212 4831523
Tel : 58 212 4811640, 58 212 5556757
Email : lyosmen@yahoo.com
URL : http:// www.dhn.mil.ve

II. INVITED PERSONS

OECS

Dermot SALTIBUS (on behalf of Vasantha Chase, Head of Unit)
Environment and Sustainable Development Unit
Morne Fortune
P. O. Box 1383
Castries,
Saint Lucia
Tel : 758 452 1847/ 453 6208
Fax : 758 452 2194
Email: oecsnr@candw.lc
URL : http://www.oecsnrmu.org

Marine Information Expert

Ms. Alexandra SMITH
Chief Librarian
Hydrographic & Oceanographic Service of the Chilean Navy (SHOA)
Errazuriz 254, Playa Ancha,
Valparaiso
Tel: 56-32-266533
Fax: 56-32-266542
E-mail: biblioteca@shoa.cl
URL : http://www.shoa.cl

ODINCARSA

Rodney MARTÌNEZ GUINGLA
ODINCARSA Coordinator
Oceanógrafo
Head Oceanography and Climate Department
Instituto Oceanográfico de la Armada (INOCAR)
Regional ODINCARSA Coordinator
Guayaquil
P.O Box 5940
Tel: (593) 4 2481105
Fax (593)4 2485166
E- mail: cdmbac@inocar.mil.ec ;
guillito5@yahoo.es
URL: http:// www.odincarsa.net

IOC SECRETARIAT

Mr. Peter Pissierssens
Head, Ocean Services Section
Intergovernmental Oceanographic Commission (of UNESCO)
1, rue Miollis
75732 Paris Cedex 15
FRANCE
Tel : (33) (1) 45 68 40 46
Fax : (33)(1) 45 68 58 12
E-mail : p.pissierssens@unesco.org

ANNEX II

Welcome Address For Ocean Data Management and Planning Workshop in the Caribbean Region: Part of the Ocean Data and Information Networks in the Caribbean and South American Regions (ODINCARSA)

Held At Casuarina Beach Hotel, Dover, Christ Church, Barbados W.I.
15 -18 December 2003

By
Leo Brewster Ph.D. A. Inst. A.M. (Dip.)
Director, Coastal Zone Management Unit, Ministry of Housing, Lands, and Environment

Vice Chairman of the IOC Regional Sub-Commission, IOCARIBE, members of the Coordination Committee, presenters, delegates, invited guests, ladies and gentlemen. It gives me great pleasure to welcome you to Barbados to this workshop on Ocean Data Management and Planning for the Caribbean Region. It has been rather hectic these last two weeks as finalization for the workshop took place and I am glad to see so many of you in attendance.

The conference is being held in one of the leading environmentally friendly hotels on the island, to promote the idea that the environment is of critical importance to us all, and that information on coastal and ocean issues can be an asset in the effective development of coastal areas. Casuarina Beach Hotel exemplifies this and this is one of the reasons why it has consistently won environmental tourism awards over the last decade.

The concept of coastal and ocean data management has long been a concern within Barbados for several reasons not limited to the following:

- The quantity of oceanographic research that regularly take place in our waters by foreign research vessels;
- The variety of research that occurs in the littoral zone by graduate students and visiting professors on our reefs, island hydrology and marine geology.
- Ongoing research by government departments on the effects of potential developments along the coast and their potential impinging effects on the near shore and offshore environment.

Such activities are often inadequately followed up on, resulting in localised knowledge of research being pursued but inconsistent access to the data and information generated from the studies.

Since 1983 the Coastal Zone Management Unit (CZMU) has been at the forefront of some of this data collection principally focusing on the coastline and immediate near shore areas. Through a series of three coastal conservation projects jointly founded by the Inter-American Development Bank and the Government of Barbados the CZMU as part of its routine monitoring programme – has been able to collect varied quantities of data on the coast over the last twenty years. As with most organizations in their infancy, there has been teething problems regarding the Unit's capacity to effectively manage the high volume of information collected - especially in the post project phases. These have provided effective learning experiences for the Unit.

At present the CZMU is into its fourth coastal conservation project – the Coastal Investment Programme. This project has required the considerable use of numerical and physical modelling of the coastal locations in which the eight projects are to be implemented. As part of this

process, considerable global ocean data information has been required in order to effectively generate a numerical wave climate model for the island, which has been used as part of the construction design simulation for the project sites.

The CZMU has recognized that with the continued enhancement of its varied data used in the coastal conservation programme for this island, it has become necessary to effectively manage this information given its potential use for all aspects of coastal development. With this in mind the Government of Barbados has recently taken the decision to become more involved in some Intergovernmental Oceanographic Commission (IOC) programmes specifically the International Oceanographic Data and Information Exchange (IODE) programme.

Of principle interest to the Government's focal point agency is the access to methodologies for data collection and the capacity building in the management of the oceanographic data and information. Such activities were highlighted in the 1999 "Strategic Plan for the CZMU 2000 – 2010".

This workshop is therefore timely not only for Barbados but other regional participants who I know can well relate to the concern for (1) effective oceanographic data management, retrieval and applied distribution, (2) the necessity to actively apply documented information within a real world context and (3) the development of unique opportunities for developing and promoting closer relationships between Caribbean marine scientists.

I therefore hope that the workshop's deliberations are successful in establishing an effective network of regional scientists who will foster the interchange of marine data and information through

ANNEX III

Questionnaires

ANTIGUA & BARBUDA

OCEAN DATA MANAGEMENT

SECTION 1

1. Does your country have an IODE data center (NODC or DNA):	NO

Section 4

1.NATIONAL NETWORKING **As a national oceanographic data center, do you have close working relations with other data centers (eg meteorology, remote sensing,…) and if so, what are they:**	**(**The Fisheries Division does not specifically collect oceanographic data). The department can receive info from other departments upon request.
2. **As a As a national oceanographic data center do you have close working relations with national science centers and if so, what are they: relations with national science centers and if so, what are they:**	Antigua and Barbuda does not have a national Science center. However we do collaborate with other government departments (Environment Division…)
3. Is your data center the only center that manages oceanographic data or are there other centers that manage oceanographic data and if so, what are they (provide name, address, name of contact person, email):	Meteoroligical Office manages a limited amount of oceanographic data. Address: Office of Meteorological Services V. C. Bird International Airport Coolidge Antigua Director: Patrick Jeremiah Tel: 1-268-462-3229 Email: metoff@candw.ag
4. Does your country have a national oceanographic committee (a structure that coordinates oceanographic research and related activities at the national and interministerial level).	NO
6. If not then is there another mechanisms that coordinates ocean data management in your country?	NO

SECTION 5

POLICY **1. Does your data center manage data of the open ocean (outside EEZ):**	NO

3. Does your data center manage data collected within your country's EEZ:	Fisheries Data
4. If yes, then are these data made available nationally/internationally (strikethrough what is not applicable). What are the rules?	Fisheries Data submitted to FAO and is available to other government departments upon request.
5. Does your data center manage data collected in your coastal zone: **If yes, then are these data made available nationally/internationally (strikethrough what is not applicable). What are the rules?**	AS ABOVE
6. Does your data center charge for data?	NO
7. Does your data center charge for data products?	NO
8. Does your data center charge for services it provides?	NO

Section 6

REQUIREMENTS **1. What are the requirements of your data center that will make it perform better:** **Infrastructure requirements**:	Need to first develop a data center.
2. Staff requirements (including training)	The Department is understaffed.

MARINE INFORMATION MANAGEMENT

Section 7

1. Does your institution have an Ocean Information Center (marine library) ? ***(If NO go to Section 9)***	Name: NO (we do have materials relating to fisheries and marine systems.)
13. What services does the information center provide: **interlibrary loan** **internet access for users** **public awareness** **access to bibliographic tools (eg. data bases, specify which)** **multimedia access**	N/A YES NO YES NO YES NO YES NO YES NO
14. What information products does the information center develop/maintain (eg. Newsletter, directory of institutions, directory of scientists, library holdings database,…)	N/A
15. Does the library maintain a catalogue of its holdings ?	N/A
16. If yes, is the catalog manual (card file) or electronic ?	N/A
17. Specify name of software used to compile catalogue:	N/A

18. Does the library have an Integrated Library management system (ILMS) ? i.e.: does the computerized system also manage other parts of library services (serials, acquisitions, etc.)	N/A
19. Computer equipment: **How many PCs does the library have ?** **for the management of the library** **available to users** **scanners** **other**	N/A
20. Library holdings: **number of monographs** **number of current journal payed subscriptions** **number of current journals received on exchange basis** **cartography** **audiovisuals (videos, DVDs, etc)**	N/A
21. Does the library have an electronic document transmission software, such as *Ariel* or *Prospero* ? Other ?	N/A
22. NATIONAL NETWORKING **Is your library part of a national network ?** **If yes, name network:**	N/A
23. Is your information center involved in any national, regional or international information/library association ? If yes, then provide details.	N/A

Section 9

REQUIREMENTS **1. What are the requirements of your information center that will make it perform better:** **e.g. Infrastructure requirements:**	We need to develop a resource center. To this we would require library software, and computer system. As well as space to set up a library.
2. Staff requirements (including training)	To set up center, we would require personnel trained in library science… cataloging, setting up of database etc.
4. What are the main reasons that your country does not have any national oceanographic data and/or information management capabilities?	Limited human, technical and financial resources. Also very limited oceanographic data is collected.
5. How could the IOC help?	Assist in training of personnel and sourcing of relevant equipment to aid in the collection.

BARBADOS

OCEAN DATA MANAGEMENT

SECTION 1

1. Does your country have an IODE data center (NODC or DNA): **If no:** **Does your country have another center that manages oceanographic data:**	NO NO

Section 4

1.NATIONAL NETWORKING **As a national oceanographic data center, do you have close working relations with other data centers (eg meteorology, remote sensing,…) and if so, what are they:**	NO
2. As a As a national oceanographic data center do you have close working relations with national science centers and if so, what are they: relations with national science centers and if so, what are they:	NO
3. Is your data center the only center that manages oceanographic data or are there other centers that manage oceanographic data and if so, what are they (provide name, address, name of contact person, email):	NO. BELLAIRS RESEARCH INSTITUTE PORTERS, ST. JAMES, BARBADOS CONTACT: BRUCE DOWNEY EMAIL: bellairs@sunbeach.net
4. Does your country have a national oceanographic committee (a structure that coordinates oceanographic research and related activities at the national and interministerial level).	NO.
5. If yes then provide details on its objectives, operation and contact address(es):	NOT APPLICABLE (N/A)
6. If not then is there another mechanisms that coordinates ocean data management in your country?	NO

SECTION 5

POLICY **1. Does your data center manage data of the open ocean (outside EEZ):**	NO.
2. If yes, then are these data made available nationally/internationally (strikethrough what is not applicable). What are the rules?	N/A
3. Does your data center manage data collected within your country's EEZ:	YES.

4. If yes, then are these data made available nationally/internationally (strikethrough what is not applicable). What are the rules?	Usually this data are collected by foreign research vessels, which request permission to conduct research. We request copies of data collected in both hard copy and digital formats, as well as copies of all reports produced.
5. Does your data center manage data collected in your coastal zone: **If yes, then are these data made available nationally/~~internationally~~ (strikethrough what is not applicable). What are the rules?**	Yes. Rules – Data should only be used for the particular project for which it is required. No part of the digital data may be reproduced of transmitted in any form or by any means, for any purpose, without the permission of the Director (CZMU). If the data are improved, updated or enhanced, we requested that copies of the modified data sets are forwarded to the CZMU.
6. Does your data center charge for data?	Yes, depending on the data; cost is usually incurred for photocopying..
7. Does your data center charge for data products?	Yes, e.g., maps from the Geographic Information System.
8. Does your data center charge for services it provides	No.

Section 6

REQUIREMENTS **1. What are the requirements of your data center that will make it perform better: Infrastructure requirements:**	Not possible to answer this question at present. A user needs and institutional strengthening assessment is required.
2. Staff requirements (including training)	Same as above.

MARINE INFORMATION MANAGEMENT

Section 7

1. Does your institution have an Ocean Information Center (marine library) ? ***(If NO go to Section 9)***	Name:
	Name of parent Institution: Coastal Zone Management Unit
2. Full mailing label of the Center:	Bay Street, St. Michael, Barbados.
3. Name of contact person in charge:	Leo Brewster
4. Tel.:	(246) 228-5955
5. Fax:	(246) 228-5956
6. E-mail:	lbrewster@coastal.gov.bb
7. Institution url http://	www.coastal.gov.bb

11. Number of staff in the center (library):	1
13. What services does the information center provide: **interlibrary loan** **internet access for users** **public awareness** **access to bibliographic tools (eg. data bases, specify which)** **multimedia access**	 **NO** **NO** **YES** **NO** **NO**
14. What information products does the information center develop/maintain (eg. Newsletter, directory of institutions, directory of scientists, library holdings database,…)	NEWSLETTER
15. Does the library maintain a catalogue of its holdings ?	YES
16. If yes, is the catalog manual (card file) or electronic ?	BOTH
17. Specify name of software used to compile catalogue:	WINISIS, LIBRARY PRO GOLD 2.2
18. Does the library have an Integrated Library management system (ILMS) ? i.e.: does the computerized system also manage other parts of library services (serials, acquisitions, etc.)	YES
19. Computer equipment: **How many PCs does the library have ?** **for the management of the library** **available to users** **scanners** **other**	 1 0 1
20. Library holdings: **number of monographs** **number of current journal payed subscriptions** **number of current journals received on exchange basis** **cartography** **audiovisuals (videos, DVDs, etc)**	 101 7 0 26 VIDEOS, 19 CDRMs
21. Does the library have an electronic document transmission software, such as *Ariel* or *Prospero* ? Other ?	NO
22. NATIONAL NETWORKING **Is your library part of a national network ?** **If yes, name network:**	NO
23. Is your information center involved in any national, regional or international information/library association ? If yes, then provide details.	NATIONAL LIBRARY ASSOCIATION OF BARBADOS

Section 8

24. Name other marine information centers (libraries) in your country	Name:BELLAIRS RESEARCH INSTITUTE Name of parent institution: McGILL UNIVERSITY, MONTREAL, CANADA

Section 9

REQUIREMENTS **1. What are the requirements of your information center that will make it perform better:** **e.g. Infrastructure requirements:**	Not possible to answer this question at present. A user needs and institutional strengthening assessment is required.
2. Staff requirements (including training)	Same as above.
5. How could the IOC help?	Assistance is required in the following areas: user needs survey, data management plan, NODC implementation plan, hardware, software, training.

CUBA

OCEAN DATA MANAGEMENT

SECTION 1

1. Does your country have an IODE data center (NODC or DNA): **If no:** **Does your country have another center that manages oceanographic data:**	No Yes
2.If yes: **Full mailing label of the Center:**	Instituto de Oceanología Ave. 1a #18406 ent. 184 y 186, Rpto Flores, Playa, Ciudad de La Habana, Cuba Grupo Empresarial GEOCUBA. Regla, Ciudad de La Habana, Cuba
3.Name of contact person:	Lic. Julieta Gutiérrez Hernández Lic. Camilo Mainegra
4.Tel:	(537) 271-6008 (537)97-0017/18 ext.131
5.Fax:	(537) 273- 9112 -
6.Email:	julieta@oceano.inf.cu, julieta@hotmail.com -

Section 2

If yes: **1.Name of IODE National Coordinator:**	Lic. Julieta Gutiérrez Hernández

Section 3

1.Tel:	(537) 271-6008
2.Fax:	(537) 273- 9112
3.Email:	julieta@oceano.inf.cu, julieta@hotmail.com
5.Date when the data center was established:	1980
Description of the data center: **6.Data center objectives:**	Processing and storaging the data results of the oceanographic, biologic and geologic measurements of the researches carried out by the centre. Data retrieval as requested.
7.Number of staff in the data center	3 \ 4
8. From where do you obtain data that are processed by your data center:	Scientific cruises.
9. What processing do you undertake on the data:	Primary processing and storage of data.
10. What data management software tools are used in your data centre	Access, Excel, Ocean Data View, SQL.
11. Do you provide services for users and if so, what are they:	Yes, mainly provide historical data sets
12. Who are your main users:	Researchers and decisionmakers
13. Do you develop data products and if so, what are they:	No / Tablas de mareas, Aviso a los navegantes, Derrotero de las costas de Cuba.
14. Does your data center have a 'business plan'. If yes then please provide copy of the most	No
16. Does your data center have internet access:	Yes
If yes: is it dial-up/ permanent connection	Dial-up
If yes: speed (in KB/sec)	56 KB/sec
17. What data types does your data center handle: (physical, chemical, biological)	Physical, chemical, biological, geological data

Section 4

1.NATIONAL NETWORKING **As a national oceanographic data center, do you have close working relations with other data centers (eg meteorology, remote sensing,…) and if so, what are they:**	Ministerio de Ciencia, Tecnología y Medio Ambiente, Ministerio de la Industria Pesquera, Universidad de La Habana, Centro de Ingeniería y Manejo Ambiental de Bahías y Costas
3. Is your data center the only center that manages oceanographic data or are there other centers that manage oceanographic data and if so, what are they (provide name, address, name of contact person, email):	(Please, see Annex 1)

4. Does your country have a national oceanographic committee (a structure that coordinates oceanographic research and related activities at the national and interministerial level).	Yes. National Oceanographic Committee.
5. If yes then provide details on its objectives, operation and contact address(es):	Objectives: The National Oceanographic Committee of Cuba is a consulting, advising, and coordinating body in Marine Science, sponsored and directed by Ministry of Science, Technology and Environment, and by the Cuban Commission of UNESCO. The National Oceanographic Committee contributes to coordinate the efforts of the national scientific community related to Marine Science, with the purpose of integrating it to the prioriticed programmes jfor the social and economic development of the country. The NOC is also the body in charge of representing Cuba before the related international organisations and institutions and, as such, it should serve for promotion development and coordination of the realtions with them as well as, for the establishment or participation in technical-material assistance or research programmes. Contact: Guillermo García Montero Address: Acuario Nacional de Cuba Ave. 1ra esq. 60 Miramar, Playa, Ciudad de La Habana E-mail: ggarcía@ama.cu
6. If not then is there another mechanisms that coordinates ocean data management in your country?	No

SECTION 5

POLICY **1. Does your data center manage data of the open ocean (outside EEZ):**	Yes
2. If yes, then are these data made available nationally/internationally (strikethrough what is not applicable). What are the rules?	Data collected through collaboration with foreign institutions are available internationally. Data collected by the Instituto de Oceanología are available nationally through collaboration agreement among research institutions.
3. Does your data center manage data collected within your country's EEZ:	Yes
4. If yes, then are these data made available nationally/~~internationally~~ (strikethrough what is not applicable). What are the rules?	Data are made available through collaboration agreement among research institutions.

5. Does your data center manage data collected in your coastal zone: If yes, then are these data made available nationally/internationally (strikethrough what is not applicable). What are the rules?	Yes. Not available.
6. Does your data center charge for data?	No
7. Does your data center charge for data products?	No
8. Does your data center charge for services it provides?	No

Section 6

REQUIREMENTS **1. What are the requirements of your data center that will make it perform better: Infrastructure requirements:**	Funding and equipment for networking to allow the flow of information to insure the Environmental Monitoring of the Coastal Zone.
2. Staff requirements (including training)	Training for the Data Centre staff, researchers and decisionmakers. Processing, quality control and dissemination of data products. Exchange of specialists to deliver conferences, receive specific training and to process in situ and remote data.

MARINE INFORMATION MANAGEMENT

Section 7

1. Does your institution have an Ocean Information Center (marine library) ? *(If NO go to Section 9)*	Name: Departamento de Información Científico-Técnica.
	Name of parent Institution: Instituto de Oceanología
2. Full mailing label of the Center:	Departamento de Información Científico-Técnica. Instituto de Oceanología Ave. 1a #18406 ent. 184 y 186, Rpto Flores, Playa, Ciudad de La Habana, Cuba
3. Name of contact person in charge:	Julieta Gutiérrez Hernández
4. Tel.:	(537) 271-6008
5. Fax:	(537) 272- 9112
6. E-mail:	julieta@oceano.inf.cu, julieta@hotmail.com

9. Date when the center was established:	January 28, 1965.
10. Information center objectives:	Provide information support for research and decisionmaking as regards coastal and marine zone state
11. Number of staff in the center (library):	4
12. Educational background of person in charge (degrees):	Licenciatura en Información Científico-Técnica y Bibliotecología.
13. What services does the information center provide: **interlibrary loan** **internet access for users** **public awareness** **access to bibliographic tools (eg. data bases, specify which)** **multimedia access**	 YES NO (National) YES NO YES NO YES NO Aquatic Science and Fisheries Abstracts YES NO
14. What information products does the information center develop/maintain (eg. Newsletter, directory of institutions, directory of scientists, library holdings database,…)	Library holdings database, directory of scientists.
15. Does the library maintain a catalogue of its holdings ?	Yes.
16. If yes, is the catalog manual (card file) or electronic ?	Both.
17. Specify name of software used to compile catalogue:	MICROISIS
18. Does the library have an Integrated Library management system (ILMS) ? i.e.: does the computerized system also manage other parts of library services (serials, acquisitions, etc.)	No.
19. Computer equipment: **How many PCs does the library have ?** **for the management of the library** **available to users** **scanners** **other**	 1 2 1
20. Library holdings: **number of monographs** **number of current journal payed subscriptions** **number of current journals received on exchange basis** **cartography** **audiovisuals (videos, DVDs, etc)**	 4572 tit. 0 250 tit. 0 30
21. Does the library have an electronic document transmission software, such as *Ariel* or *Prospero* ? Other ?	No.

22. NATIONAL NETWORKING **Is your library part of a national network ?** **If yes, name network:**	Yes.
23. Is your information center involved in any national, regional or international information/library association ? If yes, then provide details.	Yes. IAMSLIC, paid by ODINCARSA.

Section 8

24. Name other marine information centers (libraries) in your country	Name: Acuario Nacional de Cuba Name of parent institution: CITMA
	Name: Centro de Investigaciones Marinas Name of parent institution: Universidad de La Habana
	Name: Centro de Investigaciones Pesqueras Name of parent institution: Ministerio de la Industria Pesquera
	Name: Centro de Investigaciones de Ecosistemas Costeros Name of parent institution: Ministerio de Ciencia, Tecnología y Medio Ambiente

DOMINICA

OCEAN DATA MANAGEMENT

SECTION 1

1. Does your country have an IODE data center (NODC or DNA): **If no:** **Does your country have another center that manages oceanographic data:**	No No

Section 4

6. If not then is there another mechanisms that coordinates ocean data management in your country?	The Fisheries Division of the Ministry of Agriculture and the Environment collects catch and effort data.

SECTION 5

POLICY **1. Does your data center manage data of the open ocean (outside EEZ):**	No. Lack of financial resource is seen as a key reason why data is not collect. Local fishing vessel does not utilize the space outside of EEZ, due to small size of boats, engines and gear used.
3. Does your data center manage data collected within your country's EEZ:	Yes.
4. If yes, then are these data made available nationally/internationally (strikethrough what is not applicable). What are the rules?	Yes, but upon a formal request to the Fisheries Division.
5. Does your data center manage data collected in your coastal zone: **If yes, then are these data made available nationally/internationally (strikethrough what is not applicable). What are the rules?**	Yes. Data is often used during the preparation of project, at meeting/consultations/workshops with fishermen and various stakeholders. Data is also utilized by CARIOCM FISHERIES UNIT, FAO e.g. Rule in Question 4 apply.
6. Does your data center charge for data?	No.
7. Does your data center charge for data products?	No.
8. Does your data center charge for services it provides?	No.

Section 6

REQUIREMENTS **1. What are the requirements of your data center that will make it perform better:** **Infrastructure requirements:**	Computers (at least 2) Internet access Multimedia access Staff No need for office space to house center
2. Staff requirements (including training)	Data collectors (at least 6) Training in Length Frequency and Biological Data Collection

MARINE INFORMATION MANAGEMENT

Section 8

24. Name other marine information centers (libraries) in your country	Name: Maritime Unit Name of parent institution: Ministry of Finance and Planning (A newly established unit, deals with ship registration).

Section 9

REQUIREMENTS **1. What are the requirements of your information center that will make it perform better:** **e.g. Infrastructure requirements:**	Need for staff At least one research vessel (None exist) At least 2 computers, internet access Library or documentation center
2. Staff requirements (including training)	At least six staff members Training in biological and LFD
4. What are the main reasons that your country does not have any national oceanographic data and/or information management capabilities?	Financial reason sighted as key.
5. How could the IOC help?	Recommending/securing scholarships for individuals to pursue training in the field of data collection; as indicated in appropriate text above.

HAITÍ

OCEAN DATA MANAGEMENT

SECTION 1

1. Does your country have an IODE data center (NODC or DNA): **If no:** **Does your country have another center that manages oceanographic data:**	No, The Ministry of Environment manages oceanographic data In Haiti
3.Name of contact person:	Helliot AMILCAR
4.Tel:	(509) 245 9309
6.Email:	helliotamilcar@yahoo.fr amilcarhelliot@yahoo.fr

Section 4

1.NATIONAL NETWORKING **As a national oceanographic data center, do you have close working relations with other data centers (eg meteorology, remote sensing,…) and if so, what are they:**	Yes, National meteorological Center Teledetection and Geographic information System Unit Service Maritime et de Navigation Haïtien
2. As a As a national oceanographic data center do you have close working relations with national science centers and if so, what are they: relations with national science centers and if so, what are they:	Yes, Université QUISQEYA, Faculté des Sciences Faculté d'Agronomie et de Médecine Vétérinaire
3. Is your data center the only center that manages oceanographic data or are there other centers that manage oceanographic data and if so, what are they (provide name, address, name of contact person, email):	No, National Meteorological Center; Ronald SEMELFORT, Ministère de l'Agriculture, Damien Service Maritime et de Navigation Haïtien ; Renan JEAN LOUIS, Blvd La Saline.

4. Does your country have a national oceanographic committee (a structure that coordinates oceanographic research and related activities at the national and interministerial level).	Not yet
6. If not then is there another mechanisms that coordinates ocean data management in your country?	Représentation de l'UNESCO en Haïti Ministère de l'Environnement

SECTION 5

POLICY **1. Does your data center manage data of the open ocean (outside EEZ):**	No
5. Does your data center manage data collected in your coastal zone: **If yes, then are these data made available nationally/internationally (strikethrough what is not applicable). What are the rules?**	Yes The data are available nationally
6. Does your data center charge for data?	No

MARINE INFORMATION MANAGEMENT

Section 7

1. Does your institution have an Ocean Information Center (marine library) ? ***(If NO go to Section 9)***	Name: Coastal Zone management Unit
	Name of parent Institution: Ministry of Environment
2. Full mailing label of the Center:	GZC
3. Name of contact person in charge:	Helliot AMILCAR
4. Tel.:	(509) 245-9309
5. Fax:	___
6. E-mail:	helliotamilcar@yahoo.fr amilcarhelliot@yahoo.fr
7. Institution url http://	_____
8. Library url http://	_____
9. Date when the center was established:	September 1998
10. Information center objectives:	Collect and produce marine and coastal information
11. Number of staff in the center (library):	5
12. Educational background of person in charge (degrees):	PhD of Geology

13. What services does the information center provide: **interlibrary loan** **internet access for users** **public awareness** **access to bibliographic tools (eg. data bases, specify which)** **multimedia access**	 YES NO YES NO YES NO YES NO YES NO
14. What information products does the information center develop/maintain (eg. Newsletter, directory of institutions, directory of scientists, library holdings database,…)	database
15. Does the library maintain a catalogue of its holdings ?	Yes
16. If yes, is the catalog manual (card file) or electronic ?	Manual
18. Does the library have an Integrated Library management system (ILMS) ? i.e.: does the computerized system also manage other parts of library services (serials, acquisitions, etc.)	No
19. Computer equipment: **How many PCs does the library have ?** **for the management of the library** **available to users** **scanners** **other**	2
21. Does the library have an electronic document transmission software, such as *Ariel* or *Prospero* ? Other ?	No
22. NATIONAL NETWORKING **Is your library part of a national network ?** **If yes, name network:**	No
23. Is your information center involved in any national, regional or international information/library association ? If yes, then provide details.	No

Section 9

REQUIREMENTS **1. What are the requirements of your information center that will make it perform better:** **e.g. Infrastructure requirements:**	 Documents (journals, books…) computer equipments (pc, printer, scanner, softwares…) audiovisuals Basic oceanographical and marine instruments
2. Staff requirements (including training)	training

JAMAICA

OCEAN DATA MANAGEMENT

SECTION 1

1. Does your country have an IODE data center (NODC or DNA):	NO
2.If yes: **Full mailing label of the Center**	Caribbean Coastal Data Center (CCDC) Center for Marine Science, University of the West Indies Mona, Kingston 7 Jamaica. W.I.
3.Name of contact person:	Dulcie Linton Data Manager
4.Tel:	(876) 927-1609
5.Fax:	(876) 977-1033
6.Email:	Dulcie.linton@uwimona.edu.jm
7.WEB SITE: **Then continue answering questions as from Section 3**	http://www.ccdc.org.jm

Section 3

5.Date when the data center was established:	1993
Description of the data center: **6.Data center objectives:**	The Caribbean Coastal Data Centre, in keeping with the mandate of the Centre for Marine Sciences, is committed to providing a first-rate, readily accessible data archiving facility, with important, accurate and reliable data on national and regional monitoring, research and other projects implemented within the coastal zone.
7.Number of staff in the data center	2
8. From where do you obtain data that are processed by your data center:	Mainly from 2 regional monitoring programmes- CARICOMP and CPACC, AGGRA, Reef Check, some oceanographic data from studies conducted by the University.
9. What processing do you undertake on the data:	Error- checking of data, design databases for storage and for querying the data and producing data summaries
10. What data management software tools are used in your data centre	Microsoft Access and Excel
11. Do you provide services for users and if so, what are they:	Outputting specifically requested data sets
12. Who are your main users:	Academics, researchers and students
13. Do you develop data products and if so, what are they:	No

14. Does your data center have a 'business plan'. If yes then please provide copy of the most	No
16. Does your data center have internet access:	Yes
If yes: is it dial-up/ permanent connection	Permanent
17. What data types does your data center handle: (physical, chemical, biological)	Biological , Physical and Physiochemical

SECTION 5

POLICY **1. Does your data center manage data of the open ocean (outside EEZ):**	No
3. Does your data center manage data collected within your country's EEZ:	Yes
4. If yes, then are these data made available ~~nationally~~/internationally (strikethrough what is not applicable). What are the rules?	For CARICOMP there is a 2- year time lag and appropriate acknowledgement must be given to CARICOMP
5. Does your data center manage data collected in your coastal zone: **If yes, then are these data made available ~~nationally~~/internationally (strikethrough what is not applicable). What are the rules?**	YES
6. Does your data center charge for data?	NO
7. Does your data center charge for data products?	If specifically requested e.g. specific databases
8. Does your data center charge for services it provides?	No

Section 6

REQUIREMENTS **1. What are the requirements of your data center that will make it perform better:** **Infrastructure requirements:**	Additional computer equipment including a server to establish an efficient website for dissemination of data to users
2. Staff requirements (including training)	Increase in the staff complement to cope with the increase load of processing and archiving additional data. Training in web database technology to assist in online dissemination of data and GIS and Statistical Methodologies.

SAINT LUCIA

OCEAN DATA MANAGEMENT

SECTION 1

1. Does your country have an IODE data center (NODC or DNA): **If no:** **Does your country have another center that manages oceanographic data:**	No, however, currently in the process of establishing a documentation center for the Department of Fisheries No
3.Name of contact person:	Susanna Scott
4.Tel:	758 468 4138
5.Fax:	758 452 3853
6.Email:	deptfish@slumaffe.org
7.WEB SITE: Then continue answering questions as from Section 3	www.slumaffe.org

Section 2

2.Full mailing label of the IODE Data Center:	Department of Fisheries, Ministry of Agriculture, Forestry and Fisheries Point Seraphine, Castries, Saint Lucia

Section 4

1.NATIONAL NETWORKING **As a national oceanographic data center, do you have close working relations with other data centers (eg meteorology, remote sensing,…) and if so, what are they:**	Yes, Meteorological Office
2. As a As a national oceanographic data center do you have close working relations with national science centers and if so, what are they: relations with national science centers and if so, what are they:	No, However, any research to be carried out in the waters of Saint Lucia must first be reviewed by the Chief Fisheries Officer, who may or may not grant permission for this research to be carried out.
3. Is your data center the only center that manages oceanographic data or are there other centers that manage oceanographic data and if so, what are they (provide name, address, name of contact person, email):	Yes, however, this data is limited to hard copies of reports prepared by research vessels passing through the waters of Saint Lucia. Electronic data includes fish landings, fisher registration information, and fishing vessel license information.
4. Does your country have a national oceanographic committee (a structure that coordinates oceanographic research and related activities at the national and interministerial level).	No, however, the Department of Fisheries is legally responsible for granting permission to conduct research in Saint Lucia waters. In considering requests for research, the Department of Fisheries may seek advice from other interested parties.

6. If not then is there another mechanisms that coordinates ocean data management in your country?	Yes, legal mandate of the Department of Fisheries

SECTION 5

POLICY **1. Does your data center manage data of the open ocean (outside EEZ):**	No
3. Does your data center manage data collected within your country's EEZ:	Yes
4. If yes, then are these data made available nationally/internationally (strikethrough what is not applicable). What are the rules?	No formal policies currently exist – decisions are made on a case-by-case basis when requested.
5. Does your data center manage data collected in your coastal zone: **If yes, then are these data made available nationally/internationally (strikethrough what is not applicable). What are the rules?**	Yes, as for 4
6. Does your data center charge for data?	As for 4
7. Does your data center charge for data products?	As for 4
8. Does your data center charge for services it provides?	As for 4

Section 6

REQUIREMENTS **1. What are the requirements of your data center that will make it perform better:** **Infrastructure requirements:**	Equipment such as computer equipment to facilitate the development of a computerized library management system.
2. Staff requirements (including training)	Library establishment and maintenance GIS General data management skills Officer dedicated to the documentation center

MARINE INFORMATION MANAGEMENT

Section 7

1. Does your institution have an Ocean Information Center (marine library) ? ***(If NO go to Section 9)***	Name: No In the process of establishing a documentation center for the Department of Fisheries
	Name of parent Institution: Ministry of Agriculture, Forestry and Fisheries

Section 9

REQUIREMENTS **1. What are the requirements of your information center that will make it perform better:** **e.g. Infrastructure requirements:**	See Section 6
2. Staff requirements (including training)	See Section 6
4. What are the main reasons that your country does not have any national oceanographic data and/or information management capabilities?	Insufficient funding and capacity
5. How could the IOC help?	Funding and technical assistance

TRINIDAD & TOBAGO

OCEAN DATA MANAGEMENT

SECTION 1

1. Does your country have an IODE data center (NODC or DNA):	Yes. DNA
2.If yes: **Full mailing label of the Center:**	Institute of Marine Affairs, Hilltop Lane Chaguaramas, P.O. Box 3160, Carenage Trinidad and Tobago
3.Name of contact person:	Donna Spencer, Chief Information Officer
4.Tel:	868 – 634 – 4291/4
5.Fax:	868 – 634 - 4433
6.Email:	director@ima.gov.tt cio@ima.gov.tt
7.WEB SITE: Then continue answering questions as from Section 3	http://www.ima.gov.tt

Section 2

If yes: **1.Name of IODE National Coordinator:**	Donna Spencer
2.Full mailing label of the IODE Data Center:	Institute of Marine Affairs, Hilltop Lane, Chaguaramas P.O. Box 3160, Carenage, Trinidad and Tobago

Section 3

1.Tel:	868 – 634 – 4291/4
2.Fax:	868 – 634 – 4433
3.Email:	director@ima.gov.tt cio@ima.gov.tt
4.URL :http://	http://www.ima.gov.tt

5.Date when the data center was established:	1987
Description of the data center: **6.Data center objectives:**	To collect and disseminate data and information pertaining to the marine and coastal environment; to respond to general needs for information and collaboration with all sectors.
7.Number of staff in the data center	Four (4)
8. From where do you obtain data that are processed by your data center:	Research programmes of IMA; collaborating agencies and government ministries; research cruise reports
9. What processing do you undertake on the data:	Minimal at present; some GIS; some image processing; some statistical analysis
11. Do you provide services for users and if so, what are they:	Information and data searches; provision of maps and selected data; processing and interpretation of Remote Sensing images; sale of existing data products
12. Who are your main users:	IMA researchers, government agencies, private sector, NGOs, CBOs, teachers and students
13. Do you develop data products and if so, what are they:	GIS maps, tidal calendars, posters, datasets to request
14. Does your data center have a 'business plan'. If yes then please provide copy of the most	No
15. Recent business plan: **.**	IMA currently awaiting Ministerial approval of its Strategic Plan 2003 – 2007. – includes plans for Data and Information.
16. Does your data center have internet access:	Yes
If yes: is it dial-up/ permanent connection	Permanent – Dedicated leased line
If yes: speed (in KB/sec)	64 K
17. What data types does your data center handle: (physical, chemical, biological)	Oceanographic, sediments, littoral, water quality, turtle tagging, limited remote sensing, GIS

Section 4

1.NATIONAL NETWORKING **As a national oceanographic data center, do you have close working relations with other data centers (eg meteorology, remote sensing,…) and if so, what are they:**	Meteorological Services, Hydrographic Unit, Central Statistical Office, Lands and Surveys Division - limited exchange of data upon request
2. As a As a national oceanographic data center do you have close working relations with national science centers and if so, what are they: relations with national science centers and if so, what are they:	No

3. Is your data center the only center that manages oceanographic data or are there other centers that manage oceanographic data and if so, what are they (provide name, address, name of contact person, email):	Yes. (However, the Ministry of Energy and Energy Industries receives data collected by energy (oil and natural gas) exploration companies.)
4. Does your country have a national oceanographic committee (a structure that coordinates oceanographic research and related activities at the national and interministerial level).	No.
6. If not then is there another mechanisms that coordinates ocean data management in your country?	No.

SECTION 5

POLICY **1. Does your data center manage data of the open ocean (outside EEZ):**	No.
3. Does your data center manage data collected within your country's EEZ:	Yes. Limited to data received from approved research cruises. Organizers of such are required to deposit both preliminary and final cruise reports to the GOTT. These are lodged at IMA and are accessible to members of the public.
4. If yes, then are these data made available nationally/internationally (strikethrough what is not applicable). What are the rules?	Nationally and regionally, as above.
5. Does your data center manage data collected in your coastal zone: **If yes, then are these data made available nationally/internationally (strikethrough what is not applicable). What are the rules?**	Yes. Made available nationally and regionally. Unless collected by IMA's Technical Advisory Services (consultants) and therefore confidential.
6. Does your data center charge for data?	Generally - the cost of retrieving and reproducing the data only.
7. Does your data center charge for data products?	Varies depending upon type of request. Cost to other agencies of government – minimal; cost determined by Technical Advisory Services for their clients depending upon processing.
8. Does your data center charge for services it provides?	Assistance and searches – no; photocopying – yes.

Section 6

REQUIREMENTS **1. What are the requirements of your data center that will make it perform better:** **Infrastructure requirements:**	Data management software to enable linking of databases and automation of function including ability to query. Development of comprehensive data and information policies, particularly in the light of the introduction of the Freedom of Information Act.

2. Staff requirements (including training)	Database Administrator – training in creation and management of databases

MARINE INFORMATION MANAGEMENT

Section 7

1. Does your institution have an Ocean Information Center (marine library) ? ***(If NO go to Section 9) Yes***	Name: Institute of Marine Affairs Library
	Name of parent Institution: Institute of Marine Affairs
2. Full mailing label of the Center:	Institute of Marine Affairs, Hilltop Lane, Chaguaramas P.O. Box 3160, Carenage, Trinidad and Tobago
3. Name of contact person in charge:	Michele Gobin, Librarian
4. Tel.:	868 – 634 – 4291/4
5. Fax:	868 – 634 – 4433
6. E-mail:	mgobin@ima.gov.tt
7. Institution url http://	http://www.ima.gov.tt
8. Library url http://	As above
9. Date when the center was established:	1983
10. Information center objectives:	To manage IMA's information resources for the benefit of its staff and to provide information and education services to a wider user-community locally, regionally and internationally; to promote and encourage widespread understanding and appreciation of the importance of Trinidad and Tobago's natural resources.
11. Number of staff in the center (library):	Library - Two (2); rest of Information Centre – five (5)
12. Educational background of person in charge (degrees):	BA., MLSc.
13. What services does the information center provide: **interlibrary loan** **internet access for users** **public awareness** **access to bibliographic tools (eg. data bases, specify which)** **multimedia access**	 YES NO YES NO (limited) YES NO YES NO - MINISIS software to MARIMA (main library database), THETIS (reprints), TOCMO (C'bean marine taxonomy) and CAROC (C'bean oceanography) Also – public education, community education, exhibition and development of learning resources, media, public relations, graphics and cartographic services YES NO

14. What information products does the information center develop/maintain (eg. Newsletter, directory of institutions, directory of scientists, library holdings database,…)	Quarterly newsletter, directory of researchers, library holdings database (MARIMA), reprints database (THETIS) ; depository for IMA research reports, technical and working documents; depository for IOC reports and documents; depository for approved research cruise reports.
15. Does the library maintain a catalogue of its holdings ?	Yes.
16. If yes, is the catalog manual (card file) or electronic ?	Electronic
17. Specify name of software used to compile catalogue:	MINISIS
18. Does the library have an Integrated Library management system (ILMS) ? i.e.: does the computerized system also manage other parts of library services (serials, acquisitions, etc.)	Yes. MINISIS - used for integrated management. Acquisitions process only partially managed using this system at present.
19. Computer equipment: **How many PCs does the library have ?** **for the management of the library** **available to users** **scanners** **other**	Three (3)) – two for management of Library; one for users.
20. Library holdings: **number of monographs** **number of current journal payed subscriptions** **number of current journals received on exchange basis** **cartography** **audiovisuals (videos, DVDs, etc)**	16,000 approximately. 41 current journal paid subscriptions 28 journals rec'd on exchange basis maps held by Information Technology Department approx. 70 videotapes; CDs, no DVDs
21. Does the library have an electronic document transmission software, such as *Ariel* or *Prospero* ? Other ?	No
22. NATIONAL NETWORKING **Is your library part of a national network ?** **If yes, name network:**	No. However, possible to access the National Library and Information System Authority (NALIS) database on-line.
23. Is your information center involved in any national, regional or international information/library association ? If yes, then provide details.	International Association of Marine Science Libraries and Information Centres (IAMSLIC)

Section 8

24. Name other marine information centers (libraries) in your country	Name: Fisheries Division Library Name of parent institution: Ministry of Agriculture, Land and Marine Resources

Section 9

REQUIREMENTS **1. What are the requirements of your information center that will make it perform better:** **e.g. Infrastructure requirements:**	Database management software. Additional workstations for Information Centre and Information Technology Department
2. Staff requirements (including training)	Database Administrator – training in database management

VENEZUELA

OCEAN DATA MANAGEMENT

SECTION 1

1. Does your country have an IODE data center (NODC or DNA):	Si, está en su etapa de inicio.
2.If yes: **Full mailing label of the Center:**	Centro Nacional de Datos Oceanográficos (CENDOC).
3.Name of contact person:	Oscar Mendoza Maldonado.
4.Tel:	58 212 4811640, 58 212 5556757
5.Fax:	58 212 4831523
6.Email:	lyosmen@yahoo.com
7.WEB SITE: **Then continue answering questions as from Section 3**	No

Section 3

5.Date when the data center was established:	1986
Description of the data center: **6.Data center objectives:**	Recabar, clasificar, controlar y difundir la información oceanográfica disponible del Mar Venezolano y costas adyacentes
7.Number of staff in the data center	07 personas
8. From where do you obtain data that are processed by your data center:	Buque Oceanográfico "PUNTA BRAVA" (BO-11) y y demás entes de investigación oceanográfica nacionales y extranjeros.
10. What data management software tools are used in your data centre	Oracle 8i
11. Do you provide services for users and if so, what are they:	Si
12. Who are your main users:	Armada
13. Do you develop data products and if so, what are they:	No
14. Does your data center have a 'business plan'. If yes then please provide copy of the most	No
15. Recent business plan:	No
16. Does your data center have internet access:	No

If yes: is it dial-up/ permanent connection	No
If yes: speed (in KB/sec)	No
17. What data types does your data center handle: (physical, chemical, biological)	Física, química, biológica, geológica, hidrográfica y meteorológica.

Section 4

1.NATIONAL NETWORKING **As a national oceanographic data center, do you have close working relations with other data centers (eg meteorology, remote sensing,…) and if so, what are they:**	No
2. As a As a national oceanographic data center do you have close working relations with national science centers and if so, what are they: relations with national science centers and if so, what are they:	Petróleos de Venezuela, Universidad de Oriente.
3. Is your data center the only center that manages oceanographic data or are there other centers that manage oceanographic data and if so, what are they (provide name, address, name of contact person, email):	Yes
4. Does your country have a national oceanographic committee (a structure that coordinates oceanographic research and related activities at the national and interministerial level).	Yes
5. If yes then provide details on its objectives, operation and contact address(es):	Comisión Nacional de Oceanología Contacto: Dr. Hernán Pérez Nieto pereznietoh@cantv.net
6. If not then is there another mechanisms that coordinates ocean data management in your country?	Hasta ahora no existen.

SECTION 5

5. Does your data center manage data collected in your coastal zone: **If yes, then are these data made available nationally/internationally (strikethrough what is not applicable). What are the rules?**	Se esta terminando el reglamento respectivo
6. Does your data center charge for data?	No
7. Does your data center charge for data products?	No
8. Does your data center charge for services it provides?	No

Section 6

REQUIREMENTS **1. What are the requirements of your data center that will make it perform better:** **Infrastructure requirements:**	Se requiere una inversión para la actualización del hardware, cambio de conexión de Internet a fibra óptica para poder ofrecer correctamente la información a los usuarios. Igualmente se requiere textos para la conformación de la biblioteca oceanográfica.
2. Staff requirements (including training)	Se requiere un especialista en manejo de base de datos oceanográfica, además de adiestramiento en: manejo de base de datos oceanográfica, curso en oracle para mejora de base de datos, así como otros cursos del área de geomatica.

MARINE INFORMATION MANAGEMENT

Section 9

REQUIREMENTS **1. What are the requirements of your information center that will make it perform better:** **e.g. Infrastructure requirements:**	El CENDOC Venezuela, se inicia desde 1986, pero debido a diversos factores no se había podido concretar su inicio como tal. Las razones son diversas, pero principalmente radica en que no existe personal profesional adiestrado en manejo de base de datos oceanográfica, de igual forma seria muy conveniente, la mejora del hardware existente.
2. Staff requirements (including training)	Se requiere personal especializado en el área oceanográfica, así como el adiestramiento en otras áreas relacionadas con el manejo de base de datos oceanográfica.
4. What are the main reasons that your country does not have any national oceanographic data and/or information management capabilities?	El CENDOC Venezuela se encuentra en su etapa inicial, motivado principalmente por la carencia de profesionales especialistas en el área, así como la carencia de equipos de hardware y equipos oceanográficos para investigación.
5. How could the IOC help?	El IOC podría colaborar con la formación de un profesional especialista en base de datos oceanográfica, adiestramiento en desarrollo de base de datos oceanográficas, así como el aporte de equipos oceanográficos y hardware para potenciar los ya existentes. Además existe la carencia para patrocinar la asistencia del personal del CENDOC a reuniones internacionales, relacionadas con el area, por ejemplo las reuniones del IODE, etc.

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