

**INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION  
(of UNESCO)**

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and Information Exchange (IODE-XIX)  
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**OCEAN DATA AND INFORMATION NETWORK  
FOR THE CARIBBEAN AND SOUTH AMERICA  
REGIONS (ODINCARSA): Report of Activities  
2005-2006 and Proposed Work Plan 2007-2008**  
(By Rodney Martínez Güingla, ODINCARSA Regional Coordinator)

**EXECUTIVE SUMMARY**

*ODINCARSA 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 sought to develop a cooperation network for managing and exchanging oceanographic data and information within these regions. ODINCARSA is a network which is integrated by 19 IOC Member States: Argentina, Bahamas, Barbados, Belize, Brazil, Colombia, Chile, Cuba, Dominica, Ecuador, Haiti, Jamaica, Mexico, Nicaragua, Panama, Peru, Saint Lucia, Trinidad and Tobago and Venezuela.*

*After, 5 years of activity and limited resources, ODINCARSA has achieved several milestones which can be summarized as follows.*

- *To put the Ocean Data and Information Management as a relevant issue at National level in most of 60% of Member countries mostly allocated in South America.*
- *To establish and keep active a huge regional network integrated by more than 60 National Institutions with 237 experts from different sectors related to Ocean and Marine activities.*
- *To contribute on improving the provision of ocean data and information products and services to different users by sharing of expertise, knowledge transference and capacity building.*
- *To become a useful partner/platform for other IOC programs and Organizations such as GOOS, GCOS, IAMSLIC, IAI, CPPS, JCOMM, ASFA and ICAM.*

*However, important challenges remain in the region. The level of implementation of ODINCARSA in the Caribbean region is quite modest, and it will require, partnership, national involvement and additional funding.*

*It is highly recommended the interaction with different IOC Programs and other relevant organizations in order to achieve the proposed Action Plan for the Caribbean region.*

*The next phase of ODINCARSA in Latin America should have two main outcomes:*

- 1) *The consolidation of a regional network on Marine information that provides permanent and valuable services to a wide community and*
- 2) *The provision of data and information services to the Operational Oceanography, Coastal Management and Disaster Reduction Programs in the regions.*

## **1. PROGRESS REPORT 2005-2007**

### **1.1. THE GOAL OF ODINCARSA**

To strengthen Ocean Data and Marine Information Management capacity in the Caribbean and Latin America for the purpose of contributing to Ocean Sciences, Operational Oceanography development and Integrated Coastal management activities at the regional level

### **1.2. OBJECTIVES**

- Activate a cooperative network on Ocean Data and Marine Information Management in Latin America and the Caribbean regions.
- Assess the current and potential state of development of national data centers in Latin America and the Caribbean regions.
- Create the means for mutual capacity building in Latin America and the Caribbean.
- Assist in the search for funding to implement the necessary elements to strengthen the current data and information management capacity in the region.

### **1.3 SUMMARY OF ODINCARSA MEMBER COUNTRIES ACTIVITIES**

#### **1. Training workshops on Ocean Data Management in Ecuador**

The Oceanographic Institute of the Ecuadorian Navy (INOCAR) planned for 2006, three training workshops on Ocean data management. The first of them was held from April 17<sup>th</sup> to 21<sup>st</sup>, 2006. The trainees were from INOCAR and National Fisheries Institute. These workshops were based on the Ocean teacher curriculum, which was provided previously by other ODINCARSA training workshops. The upcoming activities will be held during July and September 2006.

#### **2. Training Seminars on Ocean Data management in Peru**

During the last conference in the National Ocean Data Center from Peru, held on October 19<sup>th</sup> 2005 in the Navigation and Hydrography Direction, a training course was proposed. During 2006, several training activities on Ocean Data management have been carried on using the IODE/IOC Ocean Teacher Program. These training workshops have been the continuation at national level of the regional training provided by ODINCARSA. The national workshops were addressed to Institutions from Lima and Callao, including: Callao National University, Marine Institute of Peru, Geophysical Institute of Peru, National Meteorological and hydrological Service, Agricultural National University La Molina, National University Mayor de San Marcos and National University Jose Faustino Sanchez Carrion. A total of 81 professionals have been trained during this first semester.

#### **3. Ocean data management is included in the University curricula in Colombia**

The Faculty of Physical Oceanography of the Naval Cadets Academy “Almirante Padilla-ENAP” of Cartagena, Colombia, included in the Academic program, since this year a complete course on ocean data management. The training course is supported by Ocean teacher Program of IODE/IOC. This successful implementation at National level is one of the achievements of ODINCARSA.

#### **4. National Ocean Data Center from Brazil, launch new web site**

On July 12th sponsored by the Brazilian Navy (Marinha do Brasil - MB - [www.mar.mil.br](http://www.mar.mil.br)) realized on Directorate of Hydrography and Navigation (Diretoria de Hidrografia e Navegação - DHN - [www.mar.mil.br/dhn](http://www.mar.mil.br/dhn)) site and promoted by the Navy Hydrographic Center (Centro de Hidrografia da Marinha - CHM - [www.mar.mil.br/dhn/chm](http://www.mar.mil.br/dhn/chm)) occurred the 1st Marine Meteorology and Oceanography Workshop which aimed to promote the synergy among all major Marine Meteorological and Oceanographic Brazilian institutions.

With presentations focused on METOC state-of-the-art major topics the workshop had massive presence of the ocean related community represented by military and civilian governmental authorities, METOC scientists, private companies and students. Simultaneously occurred a panel presentation of private companies acting on Brazil and the CHM related activities held on Brazilians waters on Meteorology, Oceanography, Hydrography and Navigation.

As CHM department and ODINCARSA/IODE member the Brazilian National Oceanographic Data Center (Banco Nacional de Dados Oceanográficos – BNDO - [www.mar.mil.br/dhn/bndo](http://www.mar.mil.br/dhn/bndo)) panel summarized for the community all responsibilities and activities as IODE member and environmental database. Also, were presented all planned actions for 2006/2008 biennial strongly stressing the goal of fulfill the IODE/ODINCARSA benchmarks and recommendations for all BNDO data set. More information and the presentations realized can be obtained on the Workshop website [www.mar.mil.br/dhn/chm/workshop.htm](http://www.mar.mil.br/dhn/chm/workshop.htm)

#### **5. Second training phase on ocean data management started in Peru.**

Direction of Hydrography and Navigation of Peru, continued training activities on ocean data and marine information inside and outside from the institution. This training is within the institutional policy to strengthen the National Oceanographic data Center. As result of the ocean data management dissemination, Peru has now a relevant group of expert who will contribute in the consolidation of national mechanisms for data exchange and management at national level.

#### **6. National Ocean data Management Training course in Ecuador**

The Oceanographic Institute of the Ecuadorian Navy (INOCAR), developed during 2006, two training workshops on Ocean Data management. The first was held from 17-21 April 2006 with participants of INOCAR and National Fisheries Institute. The second workshop was held from 21-25<sup>th</sup> august 2006 with the participation of studentds of the Polytechnical University of Littoral. Workshops were based on Ocean Teacher and foloowing the methodology of ODINCARSA training courses.

#### **7. Oceanographic Activities in Brazil**

From the 7th to 9th of November on Rio Grande – RS - Brazil - with the audience of all major Universities acting on the Brazilian waters, and supported by Rio Grande University Foundation (FURG), CNPq/MCT, MME, CPRM, UFF and SECIRM/MB the 37TH Annual Geology and Geophysics Program (PGGM) Meeting. The BNDO took part presenting not only all possible synergy issues between PGGM and BNDO but also introducing the IODE/ODIN/ODINCARSA network to stimulate the audience to visit and participate of IODE, ODINCARSA websites and projects.

In addition, promotion activities were carried on, highlighting four major areas: data, services, partnerships and news; was launch on NOV 1st the newest redesign BNDO webpage ([www.mar.mil.br/dhn/bndo](http://www.mar.mil.br/dhn/bndo) ). Providing access to links, services and data of Oceanographic, Meteorological, Numerical and Remote Sensing centers the new webpages is the result of second stage of the web focused policy of Directorate of Hydrography and Navigation and Navy Hydrographic Center to provide in a near future an Hydrography Portal Service to Brazilian Coast Marine data improving and approaching substantially Brazilian contribution to the IODE network.

#### **8. Participation of the Hydrographic and Oceanographic Service of the Chilean Navy (SHOA) in Ocean Docs**

During November 2005, the *2nd ODINCARSA Training Course on Marine Information Management* was held in the IODE Project Office in Oostende, Belgium. Twelve participants from 8 Latin-American countries started the Latin-American Digital Repository of Electronic Publications in Marine Science, **Ocean Docs**.

In this context, the Hydrographic and Oceanographic Service of the Chilean Navy, (SHOA), through its Library, is participating in this project in order to disseminate its scientific publications, research results and the scientific work carried out by SHOA's professionals.

Thanks to its participation, SHOA hopes to contribute to the dissemination of Latin-American marine sciences activities, contributing to the Ocean Docs repository its free of access publications and the scientific information produced by the National Oceanographic Committee. A significant contribution to the repository will be the research generated by Project CIMAR, a series of oceanographic expeditions which have greatly increased the research along isolated areas such as internal waters from Seno Reloncavi to Cabo de Hornos and Chilean remote occupations of Easter Island and Salas y Gomez and Juan Fernández archipelago

#### **Marine information Management in Chile**

The National Group on Marine information Management of Chile (GIM), and dependant of the National Oceanographic Committee, is composed by Information Experts from IFOP, Catholic University of Valparaiso, and Hydrographic and Oceanographic Service of the Chilean Navy (SHOA). It was created in 1993 with the mission to assess to the Committee in all related to Marine information management.

This year, two of their members, Miss Patricia Muñoz (IFOP) and Mrs. Alexandra Smith (SHOA), have participated with the MIM team of ODINCARSA, in the start of the Latin American Repository, called **Ocean Docs**. The project was presented to several institutions and has been supported by them.

At the same time the MIM Group is working in the implementation of a web site that delivers information about libraries and information resources in Chile such as access on line to catalogues, directories of experts, data bases, repositories, links of interest, and international initiatives such as IAMSLIC, IAMSLIC-Latino, ODINCARSA, ASFA, OceanDoc.

#### **9. Maritime General Direction of Colombia conclude Pilot study on marine data quality control procedures in the Colombian Pacific**

During the last CPPS meeting, held in August 2006, the first version of toolbox for quality control and automatic validation of ocean data (salinity and temperature)

acquired from a CTD. This system was developed by the Operational Oceanography Research Group of CCCP with the support of the Physical Engineering Program of Cauca University. The tool was developed using Matlab and run on Linux considering all the IODE guidelines and standards.

On December 2006, the first results of this pilot project were presented.

#### **1.4. INTERNATIONAL TRAINING ACTIVITIES (IODE PROJECT OFFICE, OSTEND, BELGIUM)**

##### **1. Third ODINCARSA training course in Ocean Data Management**

The workshop was held at the IOC Project Office for IODE in Oostende, Belgium ([www.iode.org/projectoffice](http://www.iode.org/projectoffice)), from November 7th-18th, 2005. Internally, the meeting was hosted by Dr. Vladymyrov, with the assistance of the Flanders Marine Institute (VLIZ) [www.vliz.be](http://www.vliz.be) and financial support from the Government of Flanders.

The course had the contribution of several speakers that were invited, among them, we had: Dr. Marc Goovaerts: Introduction to Marine Information Management; Dr. Genady Korotaev: Special Purpose [Data] Collections – Type of Collections You May Need or May Be Requested; Dr. Edward Vanden Berghe: Introduction to Biological Diversity Data Concepts.

The Third ODINCARSA training course in Data management was concluded successfully with the participation of 14 students from: Argentina, Barbados, Brazil, Colombia, Cuba, Chile, Dominica, Dominican Republic, Ecuador, Panama, Peru, St. Lucia, Venezuela and 3 students from Morocco. The students followed the Ocean Teacher's curriculum and are ready to start at a distance self-training which will be complementary to this course. Therefore, they will be able to apply this knowledge on benefit of their National Data Centers.

Participants also discussed the possible projects and activities for ODINCARSA in their 2006-2007 period. Some of the outcomes of this discussion were: The data Inventory of the Caribbean islands, Regional data bases. High resolution climatology and Data products.

##### **2. Second ODINCARSA training course in Marine Information Management**

The Second ODINCARSA Training Course in Marine Information Management was held in the IODE Project Office in Oostende, Belgium. Twelve participants from 8 countries attended the Training Course. They came from: Argentina, Chile, Colombia, Cuba, Ecuador, Mexico, Trinidad & Tobago, Uruguay and Venezuela. Resource people included Mrs Catalina Lopez, Mr. Marc Goaverts, Mr. Jan Haspeslagh, Mr. Michel Loots, Mr. Paul Nieuwenhuysen and Mr. Rodney Martinez. The course included theoretical lectures on Information Management, some planning issues on Marine information component of ODINCARSA, and the report of activities of the Regional IAMSLIC Latin American Group. One of the main outcomes of the training was the agreement of the group to start drafting the Project for the ODINCARSA Marine Sciences Digital Repository. The group designated coordination and technical commissions in order to implement the pilot phase of the project during the year 2006. Another regional issue was the strategic approach to hasten the constitution of the regional IAMSLIC Group for the Caribbean.

### **3. First ODINCARSA Advanced Course in Ocean Data Management**

The workshop was held at the IOC Project Office for IODE in Oostende, Belgium from November 21th -26th, 2005.

The course had the participation of representatives from Argentina, Brazil, Colombia, Ecuador, Mozambique and Peru. The aim of the course was to provide participants with knowledge and skills in the following areas:

- The importance of marine data in general, and particularly within participants' national and regional environments
- How to set up an oceanographic data center within the IODE System
- The infrastructure requirements, including hardware and software tools
- How to manipulate and analyze the principal types and formats of marine data
- How to produce ocean data products and to disseminate these products, both over the Internet and by traditional methods.

### **4. ODINCARSA experts attended to Remote Sensing and Training course in IODE Project Office in Oostende.**

Experts from Brazil, Ecuador, Barbados and Chile attended on behalf of ODINCARSA to the International Training Course on Remote Sensing and GIS organized by the IODE project Office in Oostende on September 2006. During this workshop participants were trained on the use and application of a diversity of satellite information and its further processing through GIS in order to have information and management products in the coastal zone.

### **5. ODINCARSA experts attended to Jamboree II in IODE Project Office in Oostende.**

Experts from Brazil and Peru attended on behalf of ODINCARSA to the second Jamboree II meeting, organized by JCOMM and the IODE which was held in October 2006. In this time, participants took the opportunity to handle waves forecast and circulation models and data assimilation as well.

### **6. ODINCARSA experts attended to Remote Sensing and Training course in IODE Project Office in Oostende.**

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## **1.5. MARINE INFORMATION PRODUCTS, SERVICES AND ACTIVITIES**

### **1. Latin American Group on Marine Information meets in virtual forum**

At the end of March 2005, the Latin American Group in Marine Information Management established for the first time a virtual forum. 11 experts from Mexico, Colombia, Peru, Ecuador and Argentina participated in this discussion.

This first successful experience was the beginning of another several further forums where the Agenda for the group was discussed. The main issues discussed were.

- a. The Regional Marine Libraries Catalogue development, which is progressing thanks to contributions of most of the Members of Latin American group who are also part of ODINCARSA.
- b. The technical implications and alternatives for an Interlibrary Loan Exchange System were discussed. ARIEL, Win Isis, Prospero and Adobe were some of the options analyzed.
- c. Discussion about the installation of scanners provided by ODINCARSA was done during these sessions.

### **2. Progress of the Digital Repository of ODINCARSA**

After the last training workshop on Marine information management. The ODINCARSA MIM group designated to Mrs. Catalina Lopez (Mexico) and Miss Patricia Muñoz (Chile) as coordinators of the ODIPUBCARSA project. Terms of reference of reviewers were established and a close work with Dr. Marc Goaverts (Belgium) was done in order to start feeding the system.

The repository is being developed with the active participation of the following ODINCARSA Member countries: Argentina, Colombia, Cuba, Chile, Ecuador, México, Uruguay Trinidad y Tobago y Venezuela. From these countries Argentina, Chile, Mexico and Uruguay have created their collections. The coordinator team of the project was granted by IAMSLIC with 1000 USD.

The repository is available on: <http://doclib.uhasselt.be/carsa/>. The progress of the project was reported in the IAMSLIC Conference 2006 and the Dublin Core Annual conference held in October 2006 in Colima, Mexico.

### **3. Library exchange in Latin America is enhanced**

In according to the information disseminated by Mr. Steve Watkins (USA) and active member of IAMSLIC, Latin America has enhanced the inter library cooperation. The reported information indicates: "The most significant shift may be seen in the Latin American region, where the first full year of availability of the Latin American Union List of Serials and a sustained effort by the Latin American Regional Group to promote regional resource sharing have proven highly successful. In 2004/05, 31.5% of all borrowing requests were submitted by Latin American libraries, while only 3.8% of all requests were received by libraries in Latin America. In stark contrast, the numbers for 2005/06 show that the number of borrowing requests received by Latin American libraries has quadrupled to 15.7% of the total, while the number of requests submitted by Latin American libraries has risen modestly to 38.6% of the total. Even more significantly, while only 5.8% of borrowing requests from Latin American libraries in 2004/05 were submitted to other libraries in the Latin American region, in 2005/06 30.7% of such requests were submitted to sister libraries within the region".

#### **4. The Latin American Regional Union List of Serial**

( <http://library.csUMB.edu/iamslic/latinoamericano/unionlist> )

The Latin American Regional Group launched the First Regional Union List – The Latin American Regional Union List of Serial: where you can find more than 8,350 holding records from 17 libraries from 9 Latin American countries (Argentina, Chile, Colombia, Cuba, Ecuador, Mexico, Panama, Peru and Venezuela).

This action was possible with the great participation and enthusiastic support of 17 members of the Latin American Regional Group and the great help and volunteer collaboration of Steve Watkins (USA) and German Ramirez (Mexico) with the developing of a database, transfer the information and set up the holdings in the Union List of Serial home at the following web site:

<http://library.csUMB.edu/iamslic/latinoamericano/unionlist>

It is a very useful tool for the marine information management to know the publications of the Latin American Libraries and Documentation Centers.

#### **5. Support of ODINCARSA to Latin American Document delivery project**

With the support of IAMS LIC, EPCOR/IAI and ODINCARSA/ IOC during 2005, 6 institutions were benefited with scanners and ARIEL licenses. 5 scanners and one ARIEL license were distributed between 6 Institutions from 5 countries: Panama, Venezuela, Ecuador, Cuba and Colombia.

Actually the institutions are working with some software to digitalize the scientific documents and sharing their holding, through the Union List of the Latin-American Regional Group.

#### **6. Latin American Group Coordinator ends a fruitful period 2002-2006**

The Latin American group was born during the XXVIII IAMS LIC Conference on 2002, when by first time several Latin American delegates met together to discuss a minimal regional agenda for interlibrary cooperation. The group requested to ODINCARSA to coordinate the necessary actions to constitute the group. The group elected to Mrs. Clara Ramirez (Mexico), as Coordinator of the group, then the Latin American Group was approved by IAMS LIC. The main achievements of the coordinator were: the consolidation of the group since its start, joining more than 41 members from 12 Latin American countries, to motivate the joint work to offer information services through the web: <http://ola.icmyl.unam.mx/larg/>, the Latin American Union List of serials with more than 8350 holdings from 17 libraries, the funding from another sources to implement the Regional Document Delivery system, the regional directory of librarians and institutions and the outstanding representation of the region during the International IAMS LIC conferences.

After a very hard but fruitful period (2002-2006), the Coordinator of the Latin American group, Mrs. Clara Ramirez, conveyed its position to Mrs. Guillermina Cosulich (Argentina).

#### **7. The Regional Ocean Portal (PORTAL OCEÁNICO) [www.portaloceanico.net](http://www.portaloceanico.net)**

More than 50000 visitors have been in the Portal which has now, more than 3700 knowledge objects available in several categories.



The number of visits to the portal has increased, today we overpass more than **86.500** from the beginning of the project. We have more than **5123** contents and English and Portuguese contents have increased significantly during the last year. **80%** of visitors are from Latin America and the Caribbean, 17,7% are from USA, Canada and Europe, the rest are from Asia, Australia and Africa.

#### **8. ODINCARSA WEB SITE ([www.odincarsa.net](http://www.odincarsa.net))**

ODINCARSA web site was full changed. The work implied a complete update, of national coordinators, and technical contacts on ocean data management and information management. It was also included new sections where products and services were more visible. The web site is fully translated in English and Spanish. The changes and updates were informed to all the network, and is being promoted at national level.

#### **9. ODINCARSA DIRECTORY OF EXPERTS -CARSA DIR ([www.ioc.unesco.org/carsadir](http://www.ioc.unesco.org/carsadir))**

The regional Directory of Experts of Latin America and the Caribbean has been a successful contribution to Ocean Expert. There are more than 800 professionals records registered. This has been a good tool to promote to marine experts from the region to another continents, and facilitating contacts, coordination and involvement in International projects.

#### **10. ODINCARSA REGIONAL LIBRARIES CATALOGUE (<http://ola.icmyl.unam.mx/larg/>)**

The Latin American Group on Marine information Management. joins more than 41 members from 12 Latin American countries, to motivate the joint work to offer information services through the web: <http://ola.icmyl.unam.mx/larg/>, not the Latin American Union List of serials with more than 8350 holdings from 17 libraries, is a reality and available through their web site.

### **1.6. OCEAN DATA SERVICES, PRODUCTS AND ONGOING PROJECTS**

#### **1. Virtual meetings of ODINCARSA National Coordinators**

During 2005, two virtual meetings were achieved to review the progress of ODINCARSA activities. The first was held in Spanish with Latin American members and the second with Caribbean countries.

These meetings had the participation of Colombia, Ecuador, Peru, Mexico, Brazil, Chile, Barbados, Saint Lucia, Trinidad & Tobago and Jamaica.

Some of the main issues discussed in these meetings were the difficulties found during implementation of ODINCARSA Action Plan, the achievements of Latin American group on Marine Information management, the translation to Spanish of Ocean Teacher, the progress on the Regional Marine Metadata Catalogue and the need to adjust and refine the capability assessment in the Caribbean.

One of the main achievements during these virtual meetings was the commitment of representatives to transfer the provided training at National level and the NODC staff in each country.

## **2. Oceanographic institutions of the South East Pacific agreed to develop a regional ocean data base**

The Regional ODINCARSA Coordinator was invited to the Technical meeting organized by the Permanent Commission of the South Pacific, about information management within the ERFEN framework: Climate alert bulletin and the regional ocean data base from Regional research cruises. During the meeting, national delegates acknowledged the ODINCARSA implementation activities and agreed joint tasks as the establishment of a regional ocean data base with the technical support of IODE/ODINCARSA, into the Cooperation agreement between IOC and CPPS.

## **3. CPPS and ODINCARSA define actions to make operational a regional ocean data base .**

During the last Permanent Commission of the South Eastern Pacific, the joint project between ODINCARSA and CPPS regarding to the regional data base was proved. This joint project will allow to make operational a regional ocean data base starting with data from 9 regional cruises along the South Eastern Pacific region

# **1.7. LINKAGES WITH OTHER PROGRAMS AND NETWORKING**

## **1. ODINCARSA in III Forum of GOOS Regional Alliances**

Regional ODINCARSA Coordinator participated in the III Regional GOOS Forum. The meeting allowed establishing concrete actions within the GOOS regional alliances within Latin America and the Caribbean. Specific activities will be developed with the GOOS Regional Alliance for South Eastern Pacific, OCEATLAN in the Atlantic and IOCARIBE-GOOS in the Caribbean region. An important contact with representatives of LME (Large Marine Ecosystems) project was established.

## **2. ODINCARSA during the International Conference: The Humboldt Ecosystem**

The Regional ODINCARSA Coordinator, participated in the International Conference: The Humboldt Ecosystem. During the meeting the Oceanography of South Eastern Pacific was reviewed. ODINCARSA was promoted and it was possible to discuss with experts of Latin America, the future actions for 2007, and the priorities of the region.

## **3. ODINCARSA involved in the SPIN CAM Initiative**

From January 15-18<sup>th</sup> 2007, ODINCARSA Regional coordinator was invited for the Planning meeting for a regional project on Integrated Coastal Management with the participation of Colombia, Ecuador, Peru and Chile. This project will be submitted to the European Union and SPINCAM - Integrated Service Platforms and Information Networks for Ocean and Coastal Area Management. One of the components of the project will be related to Information systems. It is expected that ODINCARSA assume an important role to contribute with this regional initiative.

## 1.8. INSTITUTIONAL SUPPORT

In order to foster the Latin American Group on Marine Information Management , ODINCARSA supported the IAMSLIC Membership of the following libraries during 2007:

	<b>PAIS</b>	<b>Institución</b>	<b>Contacto</b>
1	Belize	University of Belize	Erwin Woodye, Jr.
2	Barbados	Coastal Zone management Unit	Lorna Irniss
3	Costa Rica	Centro de Investigación en Ciencias del Mar y Limnología	Gerardo Umaña Villalobos
4	El Salvador	Instituto de Ciencias del Mar (ICMARES)	Francisco Antonio Chicas Batres
5	Nicaragua	Facultad de Ciencias, Universidad Nacional Autónoma de Nicaragua, León	Rafael Espinoza
6	Honduras	Universidad Nacional Autónoma de Honduras	Nelly Rodríguez
7	Guatemala	Universidad Mariano Gálvez de Guatemala	Rosa I. Cardona Galindo de Rivera
8	Costa Rica	Universidad de Costa Rica	María Eugenia Briceño Meza
9	Cuba	Centro de Investigaciones Marinas	Yuriem Lezcano López
10	Cuba	Centro de Bioproductos Marinos (CEBIMAR)	Miguel Angel Fernández Haveroff
11	Cuba	Grupo de Trabajo Estatal Bahía de la Habana	Adriana Peñalver Brerayaiza
12	Perú	Instituto del Mar del Perú (IMARPE)	Margarita Portal Roldán de Ruiz

## 1.9 SUBMITTED PROJECT

A Project proposal was prepared and submitted on October 2006 to ICA (Instituto para la Conectividad de las Américas), unfortunately was not successful. The Proposal is included to this report as Annex II.

## 1.10 INTERNATIONAL AWARENESS

There has been published and widely distributed **9 ODINCARSA Newsletters** that are available in <http://www.odincarsa.net> . These newsletters are available in Spanish and English. In the same way a brochure was prepared to promote ODINCARSA, and it has been widely distributed in all the meetings associated with ODINCARSA activities.

**1.11. ODINCARSA IN NUMBERS**

<b>Age of the project</b>	<b>5 years</b>
<b>Budget 2001-2006</b>	<b>132,600 USD</b>
<b>Budget 2005-2006 (UNESCO RB)</b>	<b>20,000 USD</b>
<b>Countries involved</b>	<b>19</b>
<b>National contacts involved</b>	<b>90</b>
<b>Trainees</b>	<b>147</b>
<b>Planning meetings</b>	<b>2</b>
<b>Resolutions Assembly-EC-IODE XVII</b>	<b>4</b>
<b>Institutions Involved</b>	<b>60</b>

ODINCARSA has an Implementation Plan which intends to accomplish the goals agreed at the start of the project. In spite of success and the positive outcomes of ODINCARSA, important activities are pending and request funding such as the implementation of the Action Plan for the Caribbean Region. It is expected to work in close coordination with GOOS and ICAM in order to maximize resources for the regional activities.

**1.12. COUNTRIES, INSTITUTIONS AND CONTACT POINTS OF ODINCARSA**

	<b>COUNTRY</b>	<b>INSTITUTIONS</b>	<b>CONTACTS</b>
1	<b>ARGENTINA</b>	1) SHN-CEADO 2) INIDEP 3) CADIC-CONICET 4) Museo Argentino Ciencias Naturales	1) Mr. Ariel Troisi. 2) Mr. Fabian Vetere. 3) Mrs. Guillermina Cosulich. 4) Mrs. Romy Díaz 5) Mrs. Graciela Nieves
2	<b>BAHAMAS</b>	1) Department of Meteorology	1) Mr. Godfrey Burnside.
3	<b>BARBADOS</b>	1) Coastal Zone Planning Unit	1) Lorna Irmiss 2) Ramon Roach
3	<b>BELIZE</b>	1) Fisheries Department Ministry of Agriculture, Fisheries and Cooperatives	1) Mrs. Beverly Wade
4	<b>BRASIL</b>	1) Centro de Hidrografia da Marinha Banco Nacional de Dados Oceanográficos 2) Fundacao Universidade Federal do Rio Grande (MMAIDANA)	1) Mrs. Janice Trotte. 2) Mr. Roberto Leandro. 3) Mr. Roberto Maisenhalder. 4) Mrs. Maria Solange
5	<b>CHILE</b>	1) SHOA-CENDO 2) Biblioteca Mayor Facultad Recursos Naturales Universidad Católica de Valparaíso	1) Mr. Ricardo Rojas. 2) Mrs. Alexandra Smith. 3) Miss Patricia Muñoz
6	<b>COLOMBIA</b>	1) CCO 2) CIOH 3) CCCP	1) Mr. Julián Reyna. 2) Mr. Efraín Rodríguez. 3) Miss Andrea Devis.

		4) INVEMAR	4) Mrs. Martha Arango.
7	<b>CUBA</b>	1) Instituto Oceanología 2) Acuario Nacional	1) Mrs. Julieta Gutiérrez. 2) Mrs. María Ginori.
8	<b>DOMINICA</b>	1) Fishery Division of Ministry of Agriculture	1) Mr. Sebastian Riviere. 2) Mrs. Crescentia Cuffi.
10	<b>ECUADOR</b>	1) INOCAR 2) INP	1) Mr. Luis Morales 2) Mr. Juan José Nieto. 3) Miss Katuska Briones. 4) Mrs. Leonor Vera. 5) Mrs. Dolores Marín
11	<b>JAMAICA</b>	1) Coastal Zone Management Branch National Environment and Planning Agency	1) Mr. Krishna Desai. 2) Mr. Karl Jerome 3) Mr. Sean Green
12	<b>MÉXICO</b>	1) Dirección General Adjunta de Oceanografía de la Secretaría de Marina-Armada de México. 2) UNAM-MAZATLÁN. 3) CICESE. 4) Biblioteca-CIIDIR-IPN,	1) Mrs. Clara Ramírez. 2) Mrs. Amelia Chávez. 3) Mr. German Ramírez 4) Mrs. Catalina López
13	<b>NICARAGUA</b>	1) INETER	1) Mr. Sergio Cordonero 2) Miss Patricia Cuarezma.
14	<b>PANAMÁ</b>	1) Universidad de Panamá. 2) Autoridad del canal de Panamá	1) Mrs. Gloria Batista. 2) Mr. Luis Miguel González. 3) Mr. Miguel Toriz. 4) Mr. Rolando Cochez-
15	<b>PERÚ</b>	1) DHN	1) Mrs. Myrian Tamayo 2) Mrs. Sara Purca
16	<b>ST. LUCIA</b>	1) Department of Fisheries	1) Mrs. Susan Scott. 2) Miss Patricia Hubert
17	<b>TRINIDAD Y TOBAGO</b>	1) Institute of Marine Affairs.	1) Susanna Sandiford
18	<b>VENEZUELA</b>	1) DHN	1) Mr. José Enmanuel 2) Mr. José Alio
19	<b>HAITÍ</b>	1) HAITI Cooperation Commission	1) Prof. Ernst Wilson

### 1.13. CONCLUSIONS

After, 4 years of activity and limited resources, ODINCARSA has achieved several milestones which can be summarized as follows.

- To put the Ocean Data and Information Management as a relevant issue at National level in most of 60% of Member countries.
- To establish and keep active a huge regional network integrated by more than 60 National Institutions and 237 experts from different sectors related to Ocean and Marine activities.

- To contribute on improving the provision of ocean data and information products and services to different users by sharing of expertise, knowledge transference and Capacity Building.
- To become a useful partner/platform for other IOC programs and Organizations such as GOOS, GCOS, IAMSLIC, IAI, CPPS, JCOMM, ASFA and ICAM.

However, important challenges remain in the region. The success of ODINCARSA in the Caribbean region is quite modest, and it will require, partnership, national involvement and additional funding.

#### **1.14 RECOMMENDATIONS**

**It is highly recommended the interaction with different IOC Programs and other relevant organizations in order to achieve the initial Action Plan for the Caribbean.**

**The next phase of ODINCARSA in Latin America should have two main outcomes:**

- 1) The consolidation of a regional network on Marine information that provides permanent and valuable services to a wide community and**
- 2) The provision of data and information services to the Operational Oceanography, Coastal Management Programs and Disaster Reduction in the regions.**

## **2. WORK PLAN 2007-2008 AND BUDGET**

The Work Plan 2007-2008 and the estimated budget is included as Annex 1.



## Annex I

# Project: Ocean data and Information Network in Caribbean and South America (ODINCARSA)

Submitted by : Rodney Martinez Guingla (Reg. Coordinator)

## **1) Project current situation summary**

ODINCARSA Action Plan has been fairly accomplished in South America region. The network has become robust, consistent and this is reflected in the progress of each NODCs in ODINCARSA member countries. Data and Information services are in a permanent process of improvement. Liaison with GRAs and upcoming ICAM initiatives has been built and consolidated especially in Western South America in close coordination with other Governmental organizations. Along Latin America which includes some Caribbean Islands, Central America and South America, the achievements on marine information management has been conducted by the Latin American Group. This network has been able to provide new products and services that are continuously improving and increasing. The group is now working on the Latin America sub set of Ocean Docs Project and has fostered all the Marine Information in this sub region.

The main pendent issues of ODINCARSA are focused on the Caribbean Region, when the project has not started. Despite the efforts and contribution of several Member States and the training provided to experts from the islands, there is no any achievement in this sub region. During the last year important efforts were deployed to build a regional group on marine information management, but did not succeed. ODINCARSA has not been involved in several important initiatives in the Caribbean and the visibility of the project is limited.

Considering the potential opportunities around the region, is a priority for the next biennium to focus all the efforts in the Caribbean region, mainly devoting resources for the preparation of project proposals and get support to implement the Action Plan. It is highly recommended to increase the coordination and interaction between IOCARIBE and ODINCARSA in order to ensure the best way to get external funding in this region and complement the upcoming initiatives.

It is also important to remark that during the assessment phase in the Caribbean islands, it was determined the need to establish a Regional data and information center and avoid individual NODCs development.

## **2) Specific Objectives (2007-2008)**

- 2.1 To submit project proposals, joint partners and enhance networking in order to start the process for implementation of a Regional Data and Information center in the Caribbean Region.
- 2.2 To contribute with GRAs on the development of data and information products and services.
- 2.3 To contribute on the implementation of SPIN-CAM Project
- 2.4 To implement the first phase of Ocean Docs Project

## **3) Deliverables**

- No less of 5 Project Proposals, prepared and submitted to different agencies.
- Development of the main modules for data and information services in GRASP.
- Development of the Information System component of the SPIN-CAM Project.
- Regional Ocean Data Base for GRASP/GOOS countries.
- E-repository Ocean Docs on line.
- 15 IAMSLIC memberships for Caribbean and Latin America libraries
- 2 Digital ODINCARSA Newsletters in English and Spanish
- ODINCARSA web site updated.

## **4) PROPOSED BUDGET (2007-2008)**

	Requested	RP avail	Requested	RP avail	Required
	2007	2007	2008	2008	
<b>ODINCARSA</b>	<b>11,000</b>	<b>9,000</b>	<b>11,000</b>	<b>9,000</b>	<b>4,000</b>
<b>WP1: Institutional support</b>					
1.1 IAMSLIC memberships	250	250	250	250	0
<b>WP 2: Technical cooperation between Members</b>	0	0	0	0	0
<b>WP 3: Coordination with GOOS, JCOMM, IOCARIBE</b>					
3.1 Project proposals development (5)	2,000	2,000	2,000	2,000	0
3.2 Pilot Project		0	1,350	1,350	0
<b>WP 4: Development of products:</b>					
4.1 OCEAN DOCS Latin America	2,000	0	2,000	2,000	2,000
4.2 ICAM-Teacher Definition	600	600	0	0	0
4.3 Regional database (GRASP)	750	750	0	0	0
<b>WP 5: Capacity Building</b>	0	0	0	0	0
<b>WP 6: Awareness</b>					
6.1 two digital newsletters	700	700	700	700	0
6.2 brochures	500	500	500	0	500
<b>WP 7: Project Management</b>					
6.1 web site maintenance	1,200	1,200	1,200	1,200	0
6.2 project coordination	2,000	2,000	1,500	1,500	0
6.3 travel coordinator	1,000	1,000	1,500	0	1,500

## 5) TIME TABLE

	2007												2008											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
<b>ODINCARSA</b>																								
<b>WP1: Institutional support</b>																								
1.1 IAMS LIC memberships			■												■									
<b>WP 2: Technical cooperation between Members</b>	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>WP 3: Coordination with GOOS, JCOMM, IOCARIBE</b>																								
3.1 Project proposals development (5)		■	■	■	■	■							■	■	■	■	■							
3.2 Pilot Project								■	■	■	■	■									■	■	■	■
<b>WP 4: Development of products:</b>																								
4.1 OCEAN DOCS Latin America	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
4.2 ICAM-Teacher Definition										■	■	■	■	■	■	■	■							
4.3 Regional database (GRASP)			■	■	■	■	■																	
<b>WP 5: Capacity Building</b>																								
<b>WP 6: Awareness</b>																								
6.1 two digital newsletters						■					■									■				■
6.2 brochures			■																					
<b>WP 7: Project Management</b>																								
6.1 web site maintenance	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
6.2 project coordination	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
6.3 travel coordinator					■												■							

## **Annex II**

### **PROJECT PROPOSAL**

#### **“Implementation of a virtual Ocean data and Information network in the Caribbean”**

**Beneficiary countries: Bahamas, Barbados, Belize, Cuba, Dominica, Jamaica, Saint Lucia, Trinidad & Tobago**

#### **1. Problem and Justification**

The Project will address the need to build national capacity in ocean data and information management to address environmental issues like pollution, fisheries and coastal management, natural disaster mitigation as tsunami and storm surges in the Caribbean region by pooling national resources in the region and by establishing a regional network of data and information system using modern ICT technology.

So far, efforts to strengthen national ocean data and information management capacity building have been limited to strengthening national capabilities (through provision of training and equipment) but without the pooling of resources and data/information in a regional framework. The ultimate goal of the project will be the establishment of a distributed data/information management and dissemination system.

The proposal is under the thematic pillar e-enablers and under this “innovative implementation, use and appropriation of ICTs in order to enhance the information society in this region” and we then add pooling of human resources and sharing of data and information for the preservation of the environment, human life and property.

#### **2. Objectives**

##### **General Objective:**

To build national capacity in ocean data and information management to address environmental issues and natural disaster mitigation in the Caribbean Islands by pooling national resources in the region and by establishing a regional network of data and information systems using modern ICT technology.

##### **Specific Objectives:**

- (i) The establishment of designated national agencies or national oceanographic data and information centers in Caribbean islands.
- (ii) The networking of the established data centers into a distributed data management and dissemination system.
- (iii) The networking of the established information centers into a regional e-repository system.
- (iv) Training of local staff in all relevant aspects of (i)-(iii) above.

- (v) Use of the developed services by national user groups.

### 3. Methodology

The path to a National Oceanographic Data Center for countries in the Caribbean Sub region of ODINCARSA<sup>1</sup> will not be an easy one. Neither will the eventual establishment of a centralized or distributed Regional Ocean Data and Information Center be merely an exercise in straightforward policy implementation. Both will require commitment on the part of those agencies which will be responsible for the design and implementation of the Ocean Data and Information Centers (ODC) data management program, international funding agencies which will enable the ODCs to be effectively established once their need is demonstrated, as well as the governments of those regional countries in which the NODCs will be located in terms of long term funding and future growth of the data centers. However, determined planning and implementation exercises in conjunction with administrative will and public buy-in should enable both of these goals to be mutually beneficial to both the local clients of the NODCs as well as to the wider Caribbean region.

#### Phase 1: Technical Committees

Initially, organizations within the Sub region which hope to become or to establish separate National Ocean Data and Information Centers (NODCs) should bring together interested staff to form local NODC Technical Committees in their respective countries. Each group would be made up of persons within the organizations who currently deal with data collection, data management (technical staff), as well as staff who deal with information management (library and administrative staff). These technical committees would be responsible for the planning aspects of the fledgling NODCs and for the initial stakeholder consultations.

A planning meeting will be held at the start of the project.

The first order of business of each technical committee should be to decide whether or not an NODC can provide a useful service to their particular community. This may not be the case where only a small amount of oceanographic data is currently collected in the country and the dissemination of this information does not appear to be required by the general public. It may also be the case that entities (engineering firms, marine research institutions) requiring data or information not currently collected by agencies in the country may already be accessing the information from a reliable source (online database, foreign research institution) and thus would not require the services of an NODC. Thus, the overall benefit of establishing an NODC should be determined by each committee from the outset.

One or two persons from each of the local technical committees (preferably data collectors or managers) should then be chosen to form a regional, technician level, steering committee responsible for the identification of local and regional roadblocks to NODC formation in terms of the technical, infrastructural and training requirements of each country. This committee could meet once or twice a year, and

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<sup>1</sup> Ocean Data and Information Network in the Caribbean and South America -IOC/UNESCO [www.odincarsa.net](http://www.odincarsa.net)

would report to the IOCARIBE<sup>2</sup> steering committee(s) which would then report to the IOC.

**Action 1: Establish local NODC technical committees**

**Action 2: Choose members for regional NODC steering committee**

Phase 2: Establishing Goals of the NODCs

Each local NODC technical committee should then determine the goals and objectives they wish their NODCs to achieve. These goals must be locally relevant (i.e. be based on the expected demand for products and services within the country) and not based on information demands from international agencies. The focus of a new data center must be data management, not the filling of data gaps or determining data collection practices. The overall goal of the NODC should include the provision of oceanographic data products and services to educational institutions, commercial entities and the general public. The objectives meanwhile should include such services as archiving, quality control, statistical compilation and timely product/information distribution.

At this stage the technical committee should identify potential clients for oceanographic data and products, as well as potential sources of the oceanographic data to be managed. Clients could include other government departments, fisher folk organizations, universities and research institutions, tourism organizations, waterway management entities, surfers, etc. These clients may also be the sources of data the NODC will manage; in which case they may become the partners of the NODC with regard to data collection, data storage and financial support for the provision of oceanographic data products and services. The future development of the NODC in order to better serve the user community should also be discussed.

**Action 3: Formulation of NODC mandate at the local level and identification of possible local customers for oceanographic data and marine information**

Phase 3 : Assessing the Client Base

Next, informal consultations should be held between the local NODC technical committees and their prospective customers and partners. The consultations could be conducted in stages (grass roots organizations, other NGOs, research institutions, commercial entities, etc) in order to tailor the message specifically to the different stakeholders. However, the focus of each of the consultations would be the same, i.e.

- To identify potential clients for products and services which could be provided by the NODC including data storage and management
- To identify any additional products or services which could be provided by the NODC but which had not been identified by the technical committee
- To identify different kinds of products or services which could be provided in conjunction with other departments (e.g. a meteorological office)
- To get an idea of the type of workload the NODC should expect, given the types and timelines of the products which would need to be provided to the user community

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<sup>2</sup> Intergovernmental Oceanographic Commission Secretariat in the Caribbean Region



Either during or after the consultations linkages should be made with potential partners, and those interested should be invited to supply members to sit on an NODC partnership committee. The ranks of this committee would be made up of members from the NODC technical committee, technical and administrative representatives from partner organizations and user groups, and most importantly a professional data manager. This professional data manager could operate on a consultative basis from a distance if necessary. The future function of the partnership committee would be to identify and solve problems related to aspects of data management, protocols for data exchange between the partners and the NODC, protocols for data distribution, as well as any other technical or operational issues impeding the proper function of the NODC. The committee would also be responsible for finding synergies with other organizations which could provide technical, financial and/or training support, or could ultimately host the NODC with minimal changes to their existing infrastructures (e.g. research institutes, statistical departments, etc).

**Action 4: Consultations with prospective NODC customers and professional data manager**

*Phase 4 : Determine the Feasibility of an NODC*

After the informal stakeholder consultations each NODC technical committee and/or NODC partner committee should then make a determination as to the feasibility of an NODC in their respective countries. This would be based on factors such as:

- The volume of local customers who require oceanographic data or data products
- Can the agency which currently manages the nation's oceanographic data continue to provide basic data management and distribution functions (i.e. become a Designated National Agency (DNA) rather than an NODC)?
- Could the expected volume of data to be better managed by a non-local NODC?

Depending on the outcome of this assessment, the NODC technical committee can move onto the next phase, go about forming a DNA, or enter into negotiations with an existing NODC in the region for the management of existing and future oceanographic data. The feasibility assessment should be revisited on a yearly basis however, to determine if current conditions warrant the establishment of an NODC.

**Action 5: Evaluate NODC feasibility.**

*Phase 5: Advanced NODC Planning*

Once the basic feasibility of an NODC has been established by the concerned parties, the in-depth planning of the NODC should be the next step. The mission or goals of the NODC should be refined based on the results of the stakeholder consultations. In addition, the NODC technical and partnership committees should set short term milestones for the NODC in terms of easily producible data products and initial service delivery schedules. The stakeholder consultations should also allow the committees to determine the technical requirements for their NODCs with regard to staff compliment and qualifications, data management equipment and infrastructure, and data acquisition protocols. At this point, the local committees or the regional technical committee should seek the assistance of the IODE in finding the most cost and labor effective form the NODC should take given the local sociopolitical or

economic environment. If necessary, the goals and milestones described above could then be altered based on the input of the IODE.

Next, prospective partners and clients of the NODC should be asked to provide in writing agreements in principle with the implantation and operation of an NODC. This stakeholder buy-in would not be binding in any way, but would firmly establish the multi-sectoral need and desire for an NODC to be created. A draft NODC plan including a draft budget should then be prepared (with the help of regional and international specialists), and brought before local government along with the letters of agreement. Again at this stage the NODC committees should only be seeking agreement in principle from their respective governments, as financial backing is not yet required.

**Action 6: Detailed NODC planning and draft plan indicating requirements, products and user arrangements for the NODC.**

*Phase 6: Demonstration Projects*

If agreement in principle is given, the NODC committees should then go to IOC/ARIB with the mandate to secure funding for local and regional demonstration projects which will hopefully provide the capital investment necessary to put in place the data management infrastructure necessary for effective NODCs. However, this type of funding will only be effective in improving equipment and training at the institutional level, but cannot by itself improve a country's telecommunications infrastructure. The local or regional NODC committees should determine which projects the funding should be used to undertake bearing in mind that the projects must:

- Demonstrate how locally or regionally relevant data and information can be effectively managed and distributed by an NODC
- Deliver products requested by a partner or a group of partners of the NODC
- Establish the long-term importance of an NODC with regards to future oceanographic data management needs

It is also at this stage that NODCs should establish final data exchange protocols with their partners and ensure that these are institutionally linked (i.e. are not dependent on the presence or absence of certain individuals). Initial data reporting schedules and practices for services outside of the projects can also be instituted at this time.

Two pilot projects could be implemented to address in the most general and effective way the possible user requirements to be validated during the previous phases:

- Regional e-repository for Marine information.
- Distributed ocean data management and dissemination system.

**Action 7: Demonstration product planning and implementation**

Phase 7: Training Workshops

*After complete the assessment and feasibility phases, two training workshops will be held. One for e-repository management and other for the use of the dissemination system.*

Phase 8: NODC Implementation

After the product delivery stage of the demonstration projects, the local and regional committees should re-approach their governments or regional institutions with final plans for the sustained operation of NODCs. These should include detailed budgets, as well as possible sources of long-term regional or international funding. If continued government support is achieved, the NODCs can continue to deliver products and services without the need for prolonged start-up periods. The NODCs should then focus on their roles to service the community as well as streamlining their data exchange, management and delivery procedures.

**Action 9: Formal NODC implementation**Potential partners/Organizations

Since the Project goal is the implementation of national ocean data and information management platforms, some of the main beneficiaries will be the environmental, coastal management and natural disaster mitigation among other stakeholders. Then this project could have the partnership of UNEP, UN ISDR, WMO and National cooperation agencies as CIDA (Canada), GTZ (Germany) and Flanders Government.

**4. Results and dissemination**

The expected outputs of each phase of the project will be disseminated through ODINCARSA, and they will be available also in IOCARIBE web site. Regular reports of undertaken activities will be widely disseminated to beneficiaries. Regarding to the concrete products of the project, they will be promoted in international fora, regional meetings and disseminated with the assistance of the Partner National institutions in each island. The promotion of the pilot projects will be done also through IAMSLIC<sup>3</sup> network and distributed information system.

It is expected to have at least two regional meetings during the project and several virtual meetings or videoconferences to report the progress of the report and get the feedback of national counterparts.

During the project the contacts and end users of the pilot projects will be built, then it is expected to have a huge list of beneficiaries that can be provided of information and make decision based on it.

**5. Institution and personnel**

The Project will be managed from IOCARIBE Office in Cartagena, Colombia. This will facilitate the contact and efficient response of national institutions involved in the project.

The project staff will include:

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<sup>3</sup> International Association of Marine Sciences Libraries and Information Centers

- 1) Project manager (Full time) sited in Cartagena.
- 2) ODINCARSA Regional Coordinator (Partial time)
- 3) Technical consultant for e-Repository (Full time).
- 4) Technical consultant for Distributed Data and Dissemination system (Full time).

The Project manager will be an expert from the Caribbean Region with experience in Project management and expert on ocean data and information systems, with interpersonal skills and ability to work on multicultural and multilingual environments.

ODINCARSA Regional Coordinator will contribute to ensure the institutional links and commitments with the project and the systematization of the national institutions in formations. He will assist to project manager in planning and execution of training, coordination activities and promotion of the project and the expected outcomes. He will be the link between the Project manager and IOC Project Office of IODE<sup>4</sup>.

Technical consultants for e-repository and Distributed Data and Dissemination system will be experts in related fields with availability to travel to the Caribbean and predisposition to teach, train and interact with end beneficiaries. The developed systems will be mainly developed using “open sources” systems.

#### **6. Timetable and budget**

ACTION	TIMELINE																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Action 1: Establish local NODC technical committees																		
Action 2: Choose members for regional NODC steering committee																		
Action 3: Formulation of NODC mandate at the local level and identification of possible local customers for oceanographic data.																		
Action 4: Consultations with prospective NODC customers and professional data manager																		
Action 5: Evaluate NODC feasibility.																		
Action 6: Detailed NODC planning and draft plan indicating																		

<sup>4</sup> International Oceanographic Data Exchange

