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Intergovernmental
Oceanographic
Commission

Workshop Report No. 240

Ocean Biogeographic Information System (OBIS) Infrastructure coordination meeting

INCOIS, Hyderabad, India
2–4 March 2011

UNESCO

Intergovernmental Oceanographic Commission

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Figure 1: Participants in the meeting

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The Intergovernmental Oceanographic Commission (IOC) of UNESCO celebrates its 50th anniversary in 2010. Since taking the lead in coordinating the International Indian Ocean Expedition in 1960, the IOC has worked to promote marine research, protection of the ocean, and international cooperation. Today the Commission is also developing marine services and capacity building, and is instrumental in monitoring the ocean through the Global Ocean Observing System (GOOS) and developing marine-hazards warning systems in vulnerable regions. Recognized as the UN focal point and mechanism for global cooperation in the study of the ocean, a key climate driver, IOC is a key player in the study of climate change. Through promoting international cooperation, the IOC assists Member States in their decisions towards improved management, sustainable development, and protection of the marine environment.

1. INTRODUCTION

In response to IOC Circular Letter 2333 ([ESTABLISHMENT OF A MULTISOURCE TRUST FUND FOR THE SUPPORT OF THE OCEAN BIOGEOGRAPHIC INFORMATION SYSTEM \(OBIS\)](#) (16/02/10)), requesting IOC Member States to contribute to assist in the maintenance and further development of the Ocean Biogeographic Information System, several organizations expressed their willingness to assist with support in kind:

- Rutgers University, New Brunswick, New Jersey, USA, expressed their willingness to host the OBIS Project Office, following conditions as spelled out in document IOC/INF-1193;
- The Indian Government offered to host a special data centre for OBIS at the Indian National Centre for Ocean Information Services (INCOIS), Hyderabad, India;
- The Flanders Marine Institute, Oostende, Belgium, offered to assist with various data management and IT-related tasks;
- The Marine Geospatial Ecology Laboratory (MGEL) of Duke University, Durham, North Carolina, USA, offered to continue assisting in the development of the OBIS IT infrastructure, and with data analysis and visualization;
- The Centre for Marine Biodiversity of the University Simon Bolivar (USB), Caracas, Venezuela, offered to continue assisting in the development of the OBIS IT infrastructure, and with statistical analysis of OBIS data.

More information on the precise nature of the offers for assistance in kind is part of Annex III, the text of the wrap-up presentation. This meeting, kindly hosted by INCOIS, was needed to coordinate these different offers for support in kind, and to discuss how to share the workload between the different institutes.

The list of participants to the meeting is attached as Annex I. MGEL and USB were not present at the meeting, but were able to provide input to the meeting through Dr Vanden Berghe. Apart from Rutgers University, INCOIS, VLIZ and IODE, several participants from India represented institutes that house OBIS-related activities.

The first part of the meeting was dedicated to a series of presentations, offering all participants an opportunity to inform the meeting on their OBIS-relevant activities. The second part of the meeting was devoted to discussions on how to organize the collaboration, and how to share the workload between the institutes that offered to assist OBIS. The agenda of the meeting is attached as Annex II.

2. CONTRIBUTION OF INDIA

It was noted that the Indian Government will play an active role in OBIS on two levels. The Indian Ocean Regional OBIS Node (IndOBIS) will be hosted by the Centre for Marine Living Resources and Ecology (CMLRE) based in Kochi. Through INCOIS, the Indian Government will also contribute to the international activities of OBIS.

3. OBIS DEVELOPMENT CONSORTIUM

In order to coordinate the collaboration, it was suggested to create a list of activities in which OBIS is engaged, and try and match these activities with the expertise and the offers for support of the institutes. In Annex III, a preliminary list of activities, categorized in five broad groups, is listed. For some of these activities, a further specification is given, listing concrete 'tasks'. These tasks were seen as the basic unit to share the development; they should be a single, well-defined activity, which can be either temporary (e.g. the development of a new tool) or continuous (e.g. the maintenance of a server). The description of a task will contain the person responsible and the team carrying out the work; an implementation plan with deliverables and deadlines; prerequisites. The description of a task should be made available to the OBIS community (through the Steering Group) before implementation starts. The lead institution will make a formal commitment towards the completion of the task, as described below.

The group of five institutes will be referred to as the '**OBIS Development Consortium**'. Each of the institutes will be invited to sign a Memorandum of Understanding with IOC. Descriptions of the tasks to which the institute has committed itself will be appended as annexes to this MOU.

It was stressed that membership of the OBIS Development Consortium is open; any institute that is willing to make a firm commitment to the development of the OBIS infrastructure is welcome to join the Consortium. Such commitment should be communicated with IOC through a letter to the IOC Executive Secretary.

In order to start the development process, a technical workshop needs to be organized as soon as possible. During this workshop, representatives of Rutgers, MGEL and USB will present the existing infrastructure and suggest further development. VLIZ, INCOIS and possibly others should attend and suggest further developments; they will also be expected to take on some commitments.

Some of the highest priorities for technical developments in OBIS are, from highest to less high:

- Moving OBIS servers out of the Amazon cloud, and on servers that are owned by partners of the OBIS consortium.
- Installing mirror servers, and procedures to keep separate OBIS installations in sync
- Automating, as far as possible, data acquisition and data quality control

Institutes that are member of the OBIS Development Consortium should be member of the IODE Steering Group for OBIS. Presently, this is not the case for USB and INCOIS. It was also suggested that staff members of institutes forming the Development Consortium might want to contact their National IOC representatives about participation in the proposed Group of Experts for OBIS.

It was stressed that the mandate of the Development Consortium is to implement, not to decide on the direction of the development – the latter is the mandate of the Steering Group.

ANNEX I

AGENDA OF THE MEETING

02 March 2011

- 1430 – 1435 hrs Welcome remarks by Dr. S.S.C. Shenoi, Director, INCOIS
- 1430 – 1435 hrs Opening remarks by Dr. Shailesh Nayak, Secretary, Ministry of Earth Sciences (MoES), Govt. of India
- 1445 – 1500 hrs Opening remarks by Mr. Peter Pissierssens, Head, IOC Project Office for IODE, Oostende, Belgium
- 1500 – 1800 hrs
- Presentation on OBIS/IODE by Mr. Peter Pissierssens, Head, IOC Project Office for IODE, Oostende, Belgium
- Presentation on OBIS by Dr. Edward Vanden Berghe, OBIS Executive Director, Rutgers University, USA
- Presentation by Mr. Francisco Hernandez, Head, Data Centre and EurOBIS Node Host, VLIZ, Belgium
- Presentation by Mr. E. Pattabhi Rama Rao, Head, Data and information Management Group (DMG), INCOIS
- 1900 – 2100 hrs Dinner hosted by Director, INCOIS

03 March 2011

- 0930 – 1030 hrs Presentation by Dr. V. Sanjeevan, Director, Centre for Marine Living Resources and Ecology (CMLRE), Kochi, India
- Presentation by Dr. Baban Ingole, Scientist-F, National Institute of Oceanography (NIO), Goa, India
- 1030-1100 hrs Tea Break
- 1100 – 1300 hrs Presentation by National Institute of Ocean Technology (NIOT), Chennai, India
- Presentation by National Centre for Antarctic and Ocean Research (NCAOR), Goa, India
- Presentation by Project Directorate, Integrated Coastal Marine Area Management (ICMAM), MoES, Chennai, India
- 1300-1400 hrs Lunch Break
- 1400 – 1530 hrs Visit to INCOIS Labs
- 1530-1600 hrs Tea Break
- 1600 – 1730 hrs Discussions and formulation of the project document

04 March 2011

1000 – 1300 hrs	Discussions and formulation of the project document
1300 – 1400 hrs	Lunch Break
1400 – 1730 hrs	Tour to city

ANNEX II

LIST OF PARTICIPANTS

INCOIS (India)

Dr. S.S.C. Shenoi
Director
Indian National Centre for Ocean
Information Services (INCOIS)
Ministry of Earth Sciences
Ocean Valley, P.B. No:21
IDA Jeedimetla (PO)
Hyderabad-500055, INDIA
E-mail: shenoi@incois.gov.in

Mr E. Pattabhi Rama Rao
Head, Data and information Management
Group (DMG)
Indian National Centre for Ocean
Information Services (INCOIS)
Ministry of Earth Sciences
Ocean Valley, P.B. No:21
IDA Jeedimetla (PO)
Hyderabad-500055, INDIA
Email: pattabhi@incois.gov.in

Mr. T.V.S. Udaya Bhaskar
Scientist-D, Data Management Group
Indian National Centre for Ocean
Information Services (INCOIS)
Ministry of Earth Sciences
Ocean Valley, P.B. No:21
IDA Jeedimetla (PO)
Hyderabad-500055, INDIA
E-mail: uday@incois.gov.in

Mr. Venkat Shesu
Scientist-B, Data Management Group
(DMG)
Indian National Centre for Ocean
Information Services (INCOIS)
Ministry of Earth Sciences
Ocean Valley, P.B. No:21
IDA Jeedimetla (PO)
Hyderabad-500055, INDIA
E-mail: venkat@incois.gov.in

Mr. B.V. Satyanarayana
Head, Computational Facilities and Web-
based Services Group (CWG)
Indian National Centre for Ocean
Information Services (INCOIS)
Ministry of Earth Sciences
Ocean Valley, P.B. No:21
IDA Jeedimetla (PO)
Hyderabad-500055, India

Mr. N. Kiran Kumar
Scientist-B, Computational Facilities and
Web-based Services Group (CWG)
Indian National Centre for Ocean
Information Services (INCOIS)
Ministry of Earth Sciences
Ocean Valley, P.B. No:21
IDA Jeedimetla (PO)
Hyderabad-500055, India
E-mail: kirankumar@incois.gov.in

NIO (India)

Dr. Baban Ingole
Scientist-F
National Institute of Oceanography (NIO)
Dona-Paula
Goa, India
E-mail: baban.ingole@gmail.com

Dr. Mohideen Wafar
Retd. Scientist from NIO
Member, IO-CoML
Goa, India
E-mail: mwafar@gmail.com

CMLRE (India)

Dr. N. Saravanane
Scientist-D
Centre for Marine Living Resources and
Ecology (CMLRE)
Ministry of Earth Sciences
C-Block, 6th Floor, Kendriya Bhawan
CSEZ P.O., P.B. NO 5415, Kochi-682037,
India
E-mail: n_saravanane@yahoo.com

PD-ICMAM (India)

Dr. S. Sundara Moorthy
Scientist-F
Project Directorate-Integrated Coastal
Marine Area Management (PD-ICMAM)
Ministry of Earth Sciences
NIOT Campus, Vellacherry-Tambaram
Road, Pallikaranai Village
Chennai-601302, India
E-mail: sundar@icmam.gov.in

NIOT (India)

Dr. R. Kirubakaran
Group Head
Marine Bio Technology
National Institute of Ocean Technology
(NIOT),
Ministry of Earth Sciences
Vellacherry-Tambaram Road, Pallikaranai
Village
Chennai-601302, India
E-mail: kiruba@niot.res.in

VLIZ (Belgium)

Mr. Francisco Hernandez
Flanders Marine Institute (VLIZ)
Wandelaarkaai 7
8400 Oostende
BELGIUM
E-mail: tjess@vliz.be

IODE Secretariat

Mr. Peter Pissierssens
Head, IOC Project Office for IODE,
Intergovernmental Oceanographic
Commission of UNESCO (IOC)
Wandelaarkaai 7/61,
8400 Oostende,
BELGIUM
E-mail: p.pissierssens@unesco.org

Dr. Edward Vanden Berghe
Ocean Biogeographic Information System
Rutgers University Institute of Marine and
Coastal Sciences
71, Dudley Road,
New Brunswick, New Jersey 08901
UNITED STATES
E-mail: evberghe@iobis.org

ANNEX III

TEXT OF THE SLIDES USED DURING THE WRAP-UP DISCUSSIONS

OBIS Resources

- Funding for Project Officer and Data Manager at Rutgers for 2011
- A bit of funding will spill over in 2012
- Resources available through IODE
- A home for the Project Office
- In a university – possible student projects
- ‘Offers in Kind’
- Formal: INCOIS, MGEL, USB, VLIZ
- Informal through discussions in Oostende
- Pending project proposals

Available

- Rutgers
- Host of international OBIS Secretariat
- Duke/MGEL
- Mapping and Visualisation team of CoML
- Thematic centre (Tetrapoda, Tracking data)
- University Simon Bolivar
- CoML Synthesis
- Regional centre (Caribbean)
- VLIZ
- Regional Centre (Europe)
- WoRMS
- INCOIS
- Physical oceanography
- IT infrastructure

Possible contributions

- Rutgers
- Hosting project office, including office space and facilities, and 1 FTE (1/2 FTE=data manager)
- Networking with international organisations, and international data providers
- Final data integration and QC
- Further development of data structures, data exchange formats, information products
- MGEL
- Systems administration: Amazon, Ubuntu
- Web site development: GeoServer, OpenLayers
- Data analysis: GIS, remote sensing
- Data visualisations
- (in the framework of GOBI) international networking
- Networking with US organisations such as NOAA and Navy
- Thematic centre (Tetrapoda, Tracking data)
- USB
- Systems administration: Drupal, Ubuntu
- Data analysis: r, remote sensing
- Regional Networking

- Spanish translation of the web site; dealing with Spanish feedback
- Regional centre (Caribbean)
- Indian organisations (led by INCOIS)
- Hosting and maintenance of data centre (including backup and archival) – either as the Public Web-site or Mirror Site
- Invest in hardware, software, manpower that are necessary for hosting and maintenance of the data center
- Partner with other organizations of OBIS community in data management, development of tools for automatic data assimilation, integration and QC and Analysis
- Provide expertise in designing appropriate data products and visualization
- Networking with IOGOOS, SIBER, ISA in promoting OBIS
- Any other requirements related to the automation of procedure or development of new tools for generation of data products or QC tools in future
- Vlaams Instituut voor de Zee
- Development and maintenance of the OBIS data system
- Development and maintenance of the OBIS website
- Development and maintenance of the OBIS data interfaces to other networks(CBIFC, EOSO, DP, Seadatanet, EMODNET,...)
- Better integration of the WORMS-OBIS datasystems
- Long-term hosting, regular updates essential for security and performance of these systems
- High speed internet connection (1 GBit)
- Professional support by IT-staff, data managers and biologist

Categories of activities

- Infrastructure
- Data management
- Usage
- Applications, use cases
- Networking of the non-IT kind
- Governance

Activities: Infrastructure

- Host database, GeoServer and website, system management, backups, usage reporting
- Now Duke, iOBIS; future also VLIZ, INCOIS and others
- See below: how to split up this abstract 'concept' in several well-defined tasks, with time line and responsibilities
- Host and maintain DiGIR and IPT web services for data transport to GBIF; other web services towards ODP and others
- Now iOBIS; future VLIZ and others
- Web site development
- Now Duke, Simon B; future all
- Additional expertise with web developments, tools for data analysis and visualisation
- Now Duke; future Duke, INCOIS, VLIZ, ScarMarbin

Activities: Data Management

- Capture data from data providers
- Nodes

- Integrate data in local database
- Nodes
- Standardize and quality control the data (step 1)
- Nodes
- Generate metadata (step 1)
- Nodes, iOBIS
- Synchronise data with iOBIS
- Now iOBIS; future Nodes
- Capture data from Nodes
- iOBIS
- Integrate data in central database
- iOBIS
- Standardize and quality control the data (step 2)
- iOBIS
- Generate metadata (step 2)
- iOBIS, GCMD
- Synchronise data with GBIF, EOL (others?)
- Now iOBIS, GBIF; future Nodes
- Tools for data assimilation, integration and QC
- Tools for data synchronization
- Now iOBIS, too much ad-hoc
- Future VLIZ, INCOIS
- Needs description of the data flow to clarify terminology
- Needs splitting in ‘tasks’

Activities: Usage/Applications

- Generate species distribution maps
- Now Aquamaps, KU; future ??
- Link species distributions to environmental data
- Now iOBIS; future INCOIS, WDC
- Tools for data products generation
- Now iOBIS; future INCOIS, all
- Data products generation
- Now iOBIS; future all, Nodes

Activities: Networking

- Networking with local data providers and users
- Nodes
- Networking with regional data initiatives (SeaDataNet, LifeWatch, IOGOOS, SIBER)
- Nodes, INCOIS, VLIZ
- Networking with global data initiatives (GBIF, EOL, Barcode of Life); networking with international organisations (FAO, CBD)
- iOBIS; assisted by others where appropriate (eg ISA through INCOIS)

Activities: Governance

- Participation to SG-OBIS
- Now Nodes, iOBIS; future also INCOIS
- Participation to GE-OBIS
- individual experts; need for Duke and Simon Bolivar to get included

- Participation to IODE assembly
- VLIZ, INCOIS; iOBIS ex-officio

Infrastructure

- Host database, GeoServer and website, system management, backups, usage reporting
- Now Duke, iOBIS; future also VLIZ, INCOIS and others
- See below: how to split up this abstract 'concept' in several well-defined tasks, with time line and responsibilities
- Host and maintain DiGIR and IPT web services for data transport to GBIF; other web services towards ODP and others
- Now iOBIS; future VLIZ and others
- Web site development
- Now Duke, Simon B; future all
- Additional expertise with web developments, tools for data analysis and visualisation
- Now Duke; future Duke, INCOIS, VLIZ, ScarMarbin

Possible tasks

- Host database, GeoServer and website, system management, backups, usage reporting
- Archive; WDC is deep archive
- Task: develop procedures; what is archived when?
- Task: implement procedures; develop scripts to automate
- Host database, GeoServer and web site
- Task: set up servers, install operating system, develop back-up procedures; develop sysadmin plan
- Choice of Operating System, specifications of machines
- Sys admin plan: users, authentication...
- Prerequisites: commitment for uptime and life time
- Deadline
- Who will do the work, oversee, sign off
- Task: install Apache, Tomcat, Geoserver, php... Configure software; develop web admin plan (logging, log file admin)
- Task: install Postgres, PostGIS; configure; develop db admin plan...
- ...

What is a 'task'

- A well-defined activity, either temporary or permanent (continuous)
- Needs someone in charge, a set of people to implement
- Needs a plan and an implementation
- Needs a deadline and clear deliverables
- Prerequisites have to be acknowledged and spelled out
- Needs an (institutional) commitment
- Needs to be visible within the OBIS community from the planning phase

Way forward

- Establishment of tasks/task teams?
 - This meeting:
- Establishment of the process to create tasks & task teams
- Deal with some urgent tasks
 - Has to be open and transparent
- Technical workshop
 - Rutgers, Duke and USB: present existing infrastructure and suggest further development
 - VLIZ, INCOIS and others: attend and suggest further developments; commitment of resources
- Scientific workshop
 - Identify scientific questions that can be addressed with OBIS data.

IOC Workshop Reports

The Scientific Workshops of the Intergovernmental Oceanographic Commission are sometimes jointly sponsored with other intergovernmental or non-governmental bodies. In most cases, IOC assures responsibility for printing, and copies may be requested from:

Intergovernmental Oceanographic Commission – UNESCO
1, rue Miollis, 75732 Paris Cedex 15, France

No.	Title	Languages	No.	Title	Languages	No.	Title	Languages
1	CCOP-IOC, 1974, Metallogenesis, Hydrocarbons and Tectonic Patterns in Eastern Asia (Report of the IDOE Workshop on); Bangkok, Thailand, 24-29 September 1973	E (out of stock)		5-9 June 1978 (UNESCO reports in marine sciences, No. 5, published by the Division of Marine Sciences, UNESCO)		40	24-29 September 1985. IOC Workshop on the Technical Aspects of Tsunami Analysis, Prediction and Communications; Sidney, B.C., Canada, 29-31 July 1985.	E
2	CICAR Ichthyoplankton Workshop, Mexico City, 16-27 July 1974 (UNESCO Technical Paper in Marine Sciences, No. 20).	E (out of stock) S (out of stock)	20	Second CCOP-IOC Workshop on IDOE Studies of East Asia Tectonics and Resources; Bandung, Indonesia, 17-21 October 1978	E	40	First International Tsunami Workshop on Tsunami Analysis, Prediction and Communications, Submitted Papers; Sidney, B.C., Canada, 29 July-1 August 1985.	E
3	Report of the IOC/GFCM/ICSEM International Workshop on Marine Pollution in the Mediterranean; Monte Carlo, 9-14 September 1974.	E, F E (out of stock)	21	Second IDOE Symposium on Turbulence in the Ocean; Liège, Belgium, 7-13 May 1979.	E, F, S, R	41	First Workshop of Participants in the Joint FAO/IOC/WHO/IAEA/UNEP Project on Monitoring of Pollution in the Marine Environment of the West and Central African Region (WACAF/2); Dakar, Senegal, 28 October-1 November 1985.	E
4	Report of the Workshop on the Phenomenon known as 'El Niño'; Guayaquil, Ecuador, 4-12 December 1974.	E (out of stock) S (out of stock)	22	Third IOC/WMO Workshop on Marine Pollution Monitoring; New Delhi, 11-15 February 1980.	E, F, S, R			
5	IDOE International Workshop on Marine Geology and Geophysics of the Caribbean Region and its Resources; Kingston, Jamaica, 17-22 February 1975	E (out of stock) S	23	WESTPAC Workshop on the Marine Geology and Geophysics of the North-West Pacific; Tokyo, 27-31 March 1980.	E, R	43	IOC Workshop on the Results of MEDALPEX and Future Oceanographic Programmes in the Western Mediterranean; Venice, Italy, 23-25 October 1985.	E
6	Report of the CCOP/SOPAC-IOC IDOE International Workshop on Geology, Mineral Resources and Geophysics of the South Pacific; Suva, Fiji, 1-6 September 1975.	E	24	Workshop on the Inter-calibration of Sampling Procedures of the IOC/WMO/UNEP Pilot Project on Monitoring Background Levels of Selected Pollutants in Open-Ocean Waters; Bermuda, 11-26 January 1980.	E (out of stock)	44	IOC-FAO Workshop on Recruitment in Tropical Coastal Demersal Communities; Ciudad del Carmen, Campeche, Mexico, 21-25 April 1986.	E (out of stock) S
7	Report of the Scientific Workshop to Initiate Planning for a Co-operative Investigation in the North and Central Western Indian Ocean, organized within the IDOE under the sponsorship of IOC/FAO (IOFC)/UNESCO/ EAC; Nairobi, Kenya, 25 March-2 April 1976.	E, F, S, R	25	IOC Workshop on Coastal Area Management in the Caribbean Region; Mexico City, 24 September- 5 October 1979.	E, S	44	Recruitment in Tropical Coastal Demersal Communities, Submitted Papers; Ciudad del Carmen, Campeche, Mexico, 21-25 April 1986.	E
8	Joint IOC/FAO (IPFC)/UNEP International Workshop on Marine Pollution in East Asian Waters; Penang, 7-13 April 1976	E (out of stock)	26	CCOP/SOPAC-IOC Second International Workshop on Geology, Mineral Resources and Geophysics of the South Pacific; Noumea, New Caledonia, 9-15 October 1980.	E	45	IOCARIBE Workshop on Physical Oceanography and Climate; Cartagena, Colombia, 19-22 August 1986.	E
9	IOC/CMG/SCOR Second International Workshop on Marine Geoscience; Mauritius 9-13 August 1976.	E, F, S, R	27	FAO/IOC Workshop on the effects of environmental variation on the survival of larval pelagic fishes. Lima, 20 April-5 May 1980.	E	46	Reunión de Trabajo para Desarrollo del Programa "Ciencia Oceánica en Relación a los Recursos No Vivos en la Región del Atlántico Sud-occidental"; Porto Alegre, Brasil, 7-11 de abril de 1986.	S
10	IOC/WMO Second Workshop on Marine Pollution (Petroleum) Monitoring; Monaco, 14-18 June 1976	E, F E (out of stock)	28	WESTPAC Workshop on Marine Biological Methodology; Tokyo, 9-14 February 1981.	E	47	IOC Symposium on Marine Science in the Western Pacific: The Indo-Pacific Convergence; Townsville, 1-6 December 1966	E
11	Report of the IOC/FAO/UNEP International Workshop on Marine Pollution in the Caribbean and Adjacent Regions; Port of Spain, Trinidad, 13-17 December 1976.	E, S (out of stock)	29	International Workshop on Marine Pollution in the South-West Atlantic; Montevideo, 10-14 November 1980.	E (out of stock) S	48	IOCARIBE Mini-Symposium for the Regional Development of the IOC-UN (OETB) Programme on 'Ocean Science in Relation to Non-Living Resources (OSNLR)'; Havana, Cuba, 4-7 December 1986.	E, S
11 Suppl.	Collected contributions of invited lecturers and authors to the IOC/FAO/UNEP International Workshop on Marine Pollution in the Caribbean and Adjacent Regions; Port of Spain, Trinidad, 13-17 December 1976	E (out of stock), S	30	Third International Workshop on Marine Geoscience; Heidelberg, 19-24 July 1982.	E, F, S	49	AGU-IOC-WMO-CPPS Chapman Conference: An International Symposium on 'El Niño'; Guayaquil, Ecuador, 27-31 October 1986.	E
12	Report of the IOCARIBE Interdisciplinary Workshop on Scientific Programmes in Support of Fisheries Projects; Fort-de-France, Martinique, 28 November-2 December 1977.	E, F, S	31	UNU/IOC/UNESCO Workshop on International Co-operation in the Development of Marine Science, and the Transfer of Technology in the context of the New Ocean Regime; Paris, France, 27 September-1 October 1982.	E, F, S	50	CCALR-IOC Scientific Seminar on Antarctic Ocean Variability and its Influence on Marine Living Resources, particularly Krill (organized in collaboration with SCAR and SCOR); Paris, France, 2-6 June 1987.	E
13	Report of the IOCARIBE Workshop on Environmental Geology of the Caribbean Coastal Area; Port of Spain, Trinidad, 16-18 January 1978.	E, S	32	Papers submitted to the UNU/IOC/ UNESCO Workshop on International Co-operation in the Development of Marine Science, and the Transfer of Technology in the Context of the New Ocean Regime; Paris, France, 27 September-1 October 1982.	E	51	CCOP/SOPAC-IOC Workshop on Coastal Processes in the South Pacific Island Nations; Lae, Papua-New Guinea, 1-8 October 1987.	E
14	IOC/FAO/WHO/UNEP International Workshop on Marine Pollution in the Gulf of Guinea and Adjacent Areas; Abidjan, Côte d'Ivoire, 2-9 May 1978	E, F	33	Workshop on the IREP Component of the IOC Programme on Ocean Science in Relation to Living Resources (OSLR); Halifax, 26-30 September 1983.	E	52	SCOR-IOC-UNESCO Symposium on Vertical Motion in the Equatorial Upper Ocean and its Effects upon Living Resources and the Atmosphere; Paris, France, 6-10 May 1985.	E
15	CPPS/FAO/IOC/UNEP International Workshop on Marine Pollution in the South-East Pacific; Santiago de Chile, 6-10 November 1978.	E (out of stock)	34	IOC Workshop on Regional Co-operation in Marine Science in the Central Eastern Atlantic (Western Africa); Tenerife, 12-17 December, 1983.	E, F, S	53	IOC Workshop on the Biological Effects of Pollutants; Oslo, 11-29 August 1986.	E
16	Workshop on the Western Pacific, Tokyo, 19-20 February 1979.	E, F, R	35	CCOP/SOPAC-IOC-UNU Workshop on Basic Geo-scientific Marine Research Required for Assessment of Minerals and Hydrocarbons in the South Pacific; Suva, Fiji, 3-7 October 1983.	E	54	Workshop on Sea-Level Measurements in Hostile Conditions; Bidston, UK, 28-31 March 1988.	E
17	Joint IOC/WMO Workshop on Oceanographic Products and the IGOS Data Processing and Services System (IDPSS); Moscow, 9-11 April 1979.	E	36	IOC/FAO Workshop on the Improved Uses of Research Vessels; Lisbon, Portugal, 28 May-2 June 1984.	E	55	IBCCA Workshop on Data Sources and Compilation, Boulder, Colorado, 18-19 July 1988.	E
17 suppl.	Papers submitted to the Joint IOC/WMO Seminar on Oceanographic Products and the IGOS Data Processing and Services System; Moscow, 2-6 April 1979.	E	36	Papers submitted to the IOC/FAO Workshop on the Improved Uses of Research Vessels; Lisbon, 28 May-2 June 1984	E	56	IOC-FAO Workshop on Recruitment of Penaeid Prawns in the Indo-West Pacific Region (PREP); Cleveland, Australia, 24-30 July 1988.	E
18	IOC/UNESCO Workshop on Syllabus for Training Marine Technicians; Miami, U.S.A., 22-26 May 1978 (UNESCO reports in marine sciences, No. 4 published by the Division of Marine Sciences, UNESCO)	E (out of stock), F, S (out of stock), R	37	IOC/UNESCO Workshop on Regional Co-operation in Marine Science in the Central Indian Ocean and Adjacent Seas and Gulfs; Colombo, 8-13 July 1985.	E	57	IOC Workshop on International Co-operation in the Study of Red Tides and Ocean Blooms; Takamatsu, Japan, 16-17 November 1987.	E
19	IOC Workshop on Marine Science Syllabus for Secondary Schools; Llantwit Major, Wales, U.K.,	E (out of stock), S, R, Ar	38	IOC/ROPME/UNEP Symposium on Fate and Fluxes of Oil Pollutants in the Kuwait Action Plan Region; Basrah, Iraq, 8-12 January 1984.	E	58	International Workshop on the Technical Aspects of the Tsunami Warning System; Novosibirsk, USSR, 4-5 August 1989.	E
			39	CCOP (SOPAC)-IOC-IFREMER-ORSTOM Workshop on the Uses of Submersibles and Remotely Operated Vehicles in the South Pacific; Suva, Fiji,	E	58	Second International Workshop on the Technical Aspects of Tsunami Warning Systems. Tsunami Analysis, Preparedness,	E

No.	Title	Languages	No.	Title	Languages	No.	Title	Languages
59	Observation and Instrumentation. Submitted Papers; Novosibirsk, USSR, 4-5 August 1989. IOC-UNEP Regional Workshop to Review Priorities for Marine Pollution Monitoring Research, Control and Abatement in the Wider Caribbean; San José, Costa Rica, 24-30 August 1989.	E, F, S	83	Meeting for the Organization of an International Conference on Coastal Change; Bordeaux, France, 30 September-2 October 1992. IOC Workshop on Donor Collaboration in the Development of Marine Scientific Research Capabilities in the Western Indian Ocean Region; Brussels, Belgium, 12-13 October 1992.	E	103	Liège, Belgium, 5-9 May 1994. IOC Workshop on GIS Applications in the Coastal Zone Management of Small Island Developing States; Barbados, 20-22 April 1994.	E
60	IOC Workshop to Define IOCARIBE-TRODERP proposals; Caracas, Venezuela, 12-16 September 1989.	E	84	Workshop on Atlantic Ocean Climate Variability; Moscow, Russian Federation, 13-17 July 1992.	E	104	Workshop on Integrated Coastal Management; Dartmouth, Canada, 19-20 September 1994.	E
61	Second IOC Workshop on the Biological Effects of Pollutants; Bermuda, 10 September-2 October 1988.	E	85	IOC Workshop on Coastal Oceanography in Relation to Integrated Coastal Zone Management; Kona, Hawaii, 1-5 June 1992.	E	105	BORDOMER 95: Conference on Coastal Change; Bordeaux, France, 6-10 February 1995.	E
62	Second Workshop of Participants in the Joint FAO-IOC-WHO-IAEA-UNEP Project on Monitoring of Pollution in the Marine Environment of the West and Central African Region; Accra, Ghana, 13-17 June 1988.	E	86	International Workshop on the Black Sea; Varna, Bulgaria, 30 September - 4 October 1991.	E	105 Suppl.	Conference on Coastal Change: Proceedings; Bordeaux, France, 6-10 February 1995.	E
63	IOC/WESTPAC Workshop on Co-operative Study of the Continental Shelf Circulation in the Western Pacific; Bangkok, Thailand, 31 October-3 November 1989.	E	87	Taller de trabajo sobre efectos biológicos del fenómeno «El Niño» en ecosistemas costeros del Pacífico Sudeste; Santa Cruz, Galápagos, Ecuador, 5-14 de octubre de 1989.	S only (summary in E, F, S)	106	IOC/WESTPAC Workshop on the Paleogeographic Map; Bali, Indonesia, 20-21 October 1994.	E
64	Second IOC-FAO Workshop on Recruitment of Penaeid Prawns in the Indo-West Pacific Region (PREP); Phuket, Thailand, 25-31 September 1989.	E	88	IOC-CEC-ICSU-ICES Regional Workshop for Member States of Eastern and Northern Europe (GODAR Project); Obninsk, Russia, 17-20 May 1993.	E	107	IOC-ICSU-NOAA Regional Workshop for Member States of the Indian Ocean - GODAR-III; Dona Paula, Goa, India, 6-9 December 1994.	E
65	Second IOC Workshop on Sardine/Anchovy Recruitment Project (SARP) in the Southwest Atlantic; Montevideo, Uruguay, 21-23 August 1989.	E	89	IOC-ICSEM Workshop on Ocean Sciences in Non-Living Resources; Perpignan, France, 15-20 October 1990.	E	108	UNESCO-IHP-IOC-IAEA Workshop on Sea-Level Rise and the Multidisciplinary Studies of Environmental Processes in the Caspian Sea Region; Paris, France, 9-12 May 1995.	E
66	IOC ad hoc Expert Consultation on Sardine/Anchovy Recruitment Programme; La Jolla, California, U.S.A., 1989.	E	90	IOC Seminar on Integrated Coastal Management; New Orleans, U.S.A., 17-18 July 1993.	E	108 Suppl.	UNESCO-IHP-IOC-IAEA Workshop on Sea-Level Rise and the Multidisciplinary Studies of Environmental Processes in the Caspian Sea Region; Submitted Papers; Paris, France, 9-12 May 1995.	E
67	Interdisciplinary Seminar on Research Problems in the IOCARIBE Region; Caracas, Venezuela, 28 November-1 December 1989.	E (out of stock)	91	Hydroblack'91 CTD Inter-calibration Workshop; Woods Hole, U.S.A., 1-10 December 1991.	E	109	First IOC-UNEP CEPOL Symposium; San José, Costa Rica, 14-15 April 1993.	E
68	International Workshop on Marine Acoustics; Beijing, China, 26-30 March 1990.	E	92	Réunion de travail IOCEA-OSNLR sur le Projet « Budgets sédimentaires le long de la côte occidentale d'Afrique » Abidjan, Côte d'Ivoire, 26-28 juin 1991.	E	110	IOC-ICSU-CEC regional Workshop for Member States of the Mediterranean - GODAR-IV (Global Oceanographic Data Archeology and Rescue Project) Foundation for International Studies, University of Malta, Valletta, Malta, 25-28 April 1995.	E
69	IOC-SCAR Workshop on Sea-Level Measurements in the Antarctica; Leningrad, USSR, 28-31 May 1990.	E	93	IOC-UNEP Workshop on Impacts of Sea-Level Rise due to Global Warming; Dhaka, Bangladesh, 16-19 November 1992.	E	111	Chapman Conference on the Circulation of the Intra-Americas Sea; La Parguera, Puerto Rico, 22-26 January 1995.	E
69 Suppl.	IOC-SCAR Workshop on Sea-Level Measurements in the Antarctica; Submitted Papers; Leningrad, USSR, 28-31 May 1990.	E	94	BMT-IOC-POLARMAR International Workshop on Training Requirements in the Field of Eutrophication in Semi-enclosed Seas and Harmful Algal Blooms, Bremerhaven, Germany, 29 September-3 October 1992.	E	112	IOC-IAEA-UNEP Group of Experts on Standards and Reference Materials (GESREM) Workshop; Miami, U.S.A., 7-8 December 1993.	E
70	IOC-SAREC-UNEP-FAO-IAEA-WHO Workshop on Regional Aspects of Marine Pollution; Mauritius, 29 October - 9 November 1990.	E	95	SAREC-IOC Workshop on Donor Collaboration in the Development of Marine Scientific Research Capabilities in the Western Indian Ocean Region; Brussels, Belgium, 23-25 November 1993.	E	113	IOC Regional Workshop on Marine Debris and Waste Management in the Gulf of Guinea; Lagos, Nigeria, 14-16 December 1994.	E
71	IOC-FAO Workshop on the Identification of Penaeid Prawn Larvae and Postlarvae; Cleveland, Australia, 23-28 September 1990.	E	96	IOC-UNEP-WMO-SAREC Planning Workshop on an Integrated Approach to Coastal Erosion, Sea Level Changes and their Impacts; Zanzibar, United Republic of Tanzania, 17-21 January 1994.	E	114	International Workshop on Integrated Coastal Zone Management (ICZM) Karachi, Pakistan, 10-14 October 1994.	E
72	IOC/WESTPAC Scientific Steering Group Meeting on Co-Operative Study of the Continental Shelf Circulation in the Western Pacific; Kuala Lumpur, Malaysia, 9-11 October 1990.	E	96 Suppl.	IOC-UNEP-WMO-SAREC Planning Workshop on an Integrated Approach to Coastal Erosion, Sea Level Changes and their Impacts; Submitted Papers 1. Coastal Erosion; Zanzibar, United Republic of Tanzania 17-21 January 1994.	E	115	IOC/GLOSS-IAPSO Workshop on Sea Level Variability and Southern Ocean Dynamics; Bordeaux, France, 31 January 1995.	E
73	Expert Consultation for the IOC Programme on Coastal Ocean Advanced Science and Technology Study; Liège, Belgium, 11-13 May 1991.	E	97	IOC-UNEP-WMO-SAREC Planning Workshop on an Integrated Approach to Coastal Erosion, Sea Level Changes and their Impacts; Submitted Papers 2. Sea Level; Zanzibar, United Republic of Tanzania 17-21 January 1994.	E	116	IOC/WESTPAC International Scientific Symposium on Sustainability of Marine Environment; Review of the WESTPAC Programme, with Particular Reference to ICAM, Bali, Indonesia, 22-26 November 1994.	E
74	IOC-UNEP Review Meeting on Oceanographic Processes of Transport and Distribution of Pollutants in the Sea; Zagreb, Yugoslavia, 15-18 May 1989.	E	97 Suppl.	IOC-UNEP-WMO-SAREC Planning Workshop on an Integrated Approach to Coastal Erosion, Sea Level Changes and their Impacts; Submitted Papers 1. Coastal Erosion; Zanzibar, United Republic of Tanzania 17-21 January 1994.	E	117	Joint IOC-CIDA-Sida (SAREC) Workshop on the Benefits of Improved Relationships between International Development Agencies, the IOC and other Multilateral Inter-governmental Organizations in the Delivery of Ocean, Marine Affairs and Fisheries Programmes; Sidney B.C., Canada, 26-28 September 1995.	E
75	IOC-SCOR Workshop on Global Ocean Ecosystem Dynamics; Solomons, Maryland, U.S.A., 29 April-2 May 1991.	E	98	IOC Workshop on Small Island Oceanography in Relation to Sustainable Economic Development and Coastal Area Management of Small Island Developing States; Fort-de-France, Martinique, 8-10 November, 1993.	E	118	IOC-UNEP-NOAA-Sea Grant Fourth Caribbean Marine Debris Workshop; La Romana, Santo Domingo, 21-24 August 1995.	E
76	IOC/WESTPAC Scientific Symposium on Marine Science and Management of Marine Areas of the Western Pacific; Penang, Malaysia, 2-6 December 1991.	E	99	IOC-UNEP-WMO-SAREC Planning Workshop on an Integrated Approach to Coastal Erosion, Sea Level Changes and their Impacts; Submitted Papers 2. Sea Level; Zanzibar, United Republic of Tanzania 17-21 January 1994.	E	119	IOC Workshop on Ocean Colour Data Requirements and Utilization; Sydney B.C., Canada, 21-22 September 1995.	E
77	IOC-SAREC-KMFRI Regional Workshop on Causes and Consequences of Sea-Level Changes on the Western Indian Ocean Coasts and Islands; Mombasa, Kenya, 24-28 June 1991.	E	100	IOC-SOA-NOAA Regional Workshop for Member States of the Western Pacific - GODAR-II (Global Oceanographic Data Archeology and Rescue Project); Tianjin, China, 8-11 March 1994.	E	120	International Training Workshop on Integrated Coastal Management; Tampa, Florida, U.S.A., 15-17 July 1995.	E
78	IOC-CEC-ICES-WMO-ICSU Ocean Climate Data Workshop Goddard Space Flight Center; Greenbelt, Maryland, U.S.A., 18-21 February 1992.	E	101	IOC Regional Science Planning Workshop on Harmful Algal Blooms; Montevideo, Uruguay, 15-17 June 1994.	E	121	Atelier régional IOC-CERESCOR sur la gestion intégrée des zones littorales (ICAM), Conakry, Guinée, 18-22 décembre 1995.	F
79	IOC/WESTPAC Workshop on River Inputs of Nutrients to the Marine Environment in the WESTPAC Region; Penang, Malaysia, 26-29 November 1991.	E	102	First IOC Workshop on Coastal Ocean Advanced Science and Technology Study (COASTS);	E	122	IOC-EU-BSH-NOAA-(WDC-A) International Workshop on Oceanographic Biological and Chemical Data Management; Hamburg, Germany, 20-23 May 1996.	E
80	IOC-SCOR Workshop on Programme Development for Harmful Algae Blooms; Newport, U.S.A., 2-3 November 1991.	E			E	123	Second IOC Regional Science Planning Workshop on Harmful Algal Blooms in South America; Mar del Plata, Argentina, 30 October-1 November 1995.	E, S
81	Joint IAPSO-IOC Workshop on Sea Level Measurements and Quality Control; Paris, France, 12-13 October 1992.	E			E	124	GLOBEC-IOC-SAHFOS-MBA Workshop on the Analysis of Time Series with Particular Reference to the Continuous Plankton Recorder Survey; Plymouth, U.K., 4-7 May 1993.	E
82	BORDOMER 92: International Convention on Rational Use of Coastal Zones. A Preparatory	E			E	125	Atelier sous-régional de la COI sur les ressources marines vivantes du Golfe de Guinée; Cotonou, Bénin, 1-4 juillet 1996.	E

No.	Title	Languages	No.	Title	Languages	No.	Title	Languages
126	IOC-UNEP-PERSGA-ACOPS-IUCN Workshop on Oceanographic Input to Integrated Coastal Zone Management in the Red Sea and Gulf of Aden, Jeddah, Saudi Arabia, 8 October 1995.	E		Workshop on Atmospheric Inputs of Pollutants to the Marine Environment Qingdao, China, 24-26 June 1998		187	Geological and Biological Processes at deep-sea European Margins and Oceanic Basins, Bologna, Italy, 2-6 February 2003	E
127	IOC Regional Workshop for Member States of the Caribbean and South America GODAR-V (Global Oceanographic Data Archeology and Rescue Project); Cartagena de Indias, Colombia, 8-11 October 1996.	E	154	IOC-Sida-Flanders-SFRI Workshop on Ocean Data Management in the IOCINCWIO Region (ODINEA project) Capetown, South Africa, 30 November-11 December 1998.	E	188	Proceedings of 'The Ocean Colour Data' Symposium, Brussels, Belgium, 25-27 November 2002	E
128	Atelier IOC-Banque Mondiale-Sida/SAREC-ONE sur la Gestion Intégrée des Zones Côtières ; Nosy Bé, Madagascar, 14-18 octobre 1996.	E	155	Science of the Mediterranean Sea and its applications UNESCO, Paris 29-31 July 1997	E	189	Workshop for the Formulation of a Draft Project on Integrated Coastal Management (ICM) in Latin America and the Caribbean (LAC), Cartagena, Colombia, 23-25 October 2003	E F (electronic copy only)
129	Gas and Fluids in Marine Sediments, Amsterdam, the Netherlands; 27-29 January 1997.	E	156	IOC-LUC-KMFRI Workshop on RECOSCIX-WIO in the Year 2000 and Beyond, Mombasa, Kenya, 12-16 April 1999	E		Taller de Formulación de un Anteproyecto de Manejo Costero Integrado (MCI) en América Latina y el Caribe (ALC), Cartagena, Colombia, 23-25 de Octubre de 2003	
130	Atelier régional de la COI sur l'océanographie côtière et la gestion de la zone côtière ;Moroni, RFI des Comores, 16-19 décembre 1996.	E	157	'98 IOC-KMI International Workshop on Integrated Coastal Management (ICM), Seoul, Republic of Korea 16-18 April 1998	E	190	First ODINCARSA Planning Workshop for Caribbean Islands, Christchurch, Barbados, 15-18 December 2003	E (electronic copy only)
131	GOOS Coastal Module Planning Workshop; Miami, USA, 24-28 February 1997	E	158	The IOCARIBE Users and the Global Ocean Observing System (GOOS) Capacity Building Workshop, San José, Costa Rica, 22-24 April 1999	E	191	North Atlantic and Labrador Sea Margin Architecture and Sedimentary Processes — International Conference and Twelfth Post-cruise Meeting of the Training-through-research Programme, Copenhagen, Denmark, 29-31 January 2004	E (under preparation)
132	Third IOC-FANSA Workshop; Punta-Arenas, Chile, 28-30 July 1997	S/E	159	Oceanic Fronts and Related Phenomena (Konstantin Fedorov Memorial Symposium) — Proceedings, Pushkin, Russian Federation, 18-22 May 1998	E	192	Regional Workshop on Coral Reefs Monitoring and Management in the ROPME Sea Area, Iran I.R., 14-17 December 2003	E (under preparation)
133	Joint IOC-CIESM Training Workshop on Sea-level Observations and Analysis for the Countries of the Mediterranean and Black Seas; Birkenhead, U.K., 16-27 June 1997.	E	160	Under preparation		193	Workshop on New Technical Developments in Sea and Land Level Observing Systems, Paris, France, 14-16 October 2003	E (electronic copy only)
134	IOC/WESTPAC-CCOP Workshop on Paleogeographic Mapping (Holocene Optimum); Shanghai, China, 27-29 May 1997	E	161	Under preparation		194	IOC/ROPME Planning Meeting for the Ocean Data and Information Network for the Central Indian Ocean Region	(under preparation)
135	Regional Workshop on Integrated Coastal Zone Management; Chabahar, Iran; February 1996.	E	162	Workshop report on the Transports and Linkages of the Intra-american Sea (IAS), Cozumel, Mexico, 1-5 November 1997	E	195	Workshop on Indicators of Stress in the Marine Benthos, Torregrande-Oristano, Italy, 8-9 October 2004	E
136	IOC Regional Workshop for Member States of Western Africa (GODAR-VI); Accra, Ghana, 22-25 April 1997.	E	163	Under preparation		196	International Coordination Meeting for the Development of a Tsunami Warning and Mitigation System for the Indian Ocean within a Global Framework, Paris, France, 3-8 March 2005	E
137	GOOS Planning Workshop for Living Marine Resources, Dartmouth, USA; 1-5 March 1996.	E	164	IOC-Sida-Flanders-MCM Third Workshop on Ocean Data Management in the IOCINCWIO Region (ODINEA Project), Cape Town, South Africa, 29 November - 11 December 1999	E	197	Geosphere-Biosphere Coupling Processes: The TTR Interdisciplinary Approach Towards Studies of the European and North African Margins; International Conference and Post-cruise Meeting of the Training-Through-Research Programme, Morocco, 2-5 February 2005	E
138	Gestión de Sistemas Oceanográficos del Pacífico Oriental; Concepción, Chile, 9-16 de abril de 1996.	S	165	An African Conference on Sustainable Integrated Management; Proceedings of the Workshops, An Integrated Approach, (PACSIKOM), Maputo, Mozambique, 18-25 July 1998	E, F	198	Second International Coordination Meeting for the Development of a Tsunami Warning and Mitigation System for the Indian Ocean, Grand Baie, Mauritius, 14-16 April 2005	E
139	Sistemas Oceanográficos del Atlántico Sudoccidental, Taller, TEMA;Furg, Rio Grande, Brasil, 3-11 de noviembre de 1997	S	166	IOC-SOA International Workshop on Coastal Megacities: Challenges of Growing Urbanization of the World's Coastal Areas; Hangzhou, P. R. China, 27-30 September 1999	E	199	International Conference for the Establishment of a Tsunami and Coastal Hazards Warning System for the Caribbean and Adjacent Regions, Mexico, 1-3 June 2005	E
140	IOC Workshop on GOOS Capacity Building for the Mediterranean Region; Valletta, Malta, 26-29 November 1997.	E	167	IOC-Flanders First ODINAFRICA-II Planning Workshop, Dakar, Senegal, 2-4 May 2000	E	200	Lagoons and Coastal Wetlands in the Global Change Context: Impacts and Management Issues — Proceedings of the International Conference, Venice, 26-28 April 2004 (ICAM Dossier N° 3)	E
141	IOC/WESTPAC Workshop on Co-operative Study in the Gulf of Thailand: A Science Plan; Bangkok, Thailand, 25-28 February 1997.	E	168	Geological Processes on European Continental Margins; International Conference and Eight Post-cruise Meeting of the Training-Through-Research Programme, Granada, Spain, 31 January - 3 February 2000	E	201	Geological processes on deep-water European margins - International Conference and 15th Anniversary Post-cruise Meeting of the Training-Through-Research Programme, Moscow/Zvenigorod, Russian Federation, 29 January-4 February 2006	E
142	Pelagic Biogeography ICoPB II. Proceedings of the 2nd International Conference. Final Report of SCOR/IOC Working Group 93; Noordwijkerhout, The Netherlands, 9-14 July 1995.	E	169	International Conference on the International Oceanographic Data & Information Exchange in the Western Pacific (IODE-WESTPAC) 1999, ICIWP '99, Langkawi, Malaysia, 1-4 November 1999	E (electronic copy only)	202	Proceedings of 'Ocean Biodiversity Informatics': an international conference on marine biodiversity data management Hamburg, Germany, 29 November-1 December 2004	E
143	Geosphere-biosphere coupling: Carbonate Mud Mounds and Cold Water Reefs; Gent, Belgium, 7-11 February 1998.	E	170	IOCARIBE-GODAR-I Cartagena, Colombia, February 2000	under preparation	203	IOC-Flanders Planning Workshop for the formulation of a regional Pilot Project on Integrated Coastal Area Management in Latin America, Cartagena de Indias, Colombia, 16-18 January 2007	E (electronic copy only)
144	IOC-SOPAC Workshop Report on Pacific Regional Global Ocean Observing Systems; Suva, Fiji, 13-17 February 1998.	E	171	Ocean Circulation Science derived from the Atlantic, Indian and Arctic Sea Level Networks, Toulouse, France, 10-11 May 1999 (Under preparation)	E	204	Geo-marine Research along European Continental Margins, International Conference and Post-cruise Meeting of the Training-through-research Programme, Bremen, Germany, 29 January-1 February 2007	E
145	IOC-Black Sea Regional Committee Workshop: 'Black Sea Fluxes' Istanbul, Turkey, 10-12 June 1997.	E	172	The Benefits of the Implementation of the GOOS in the Mediterranean Region, Rabat, Morocco, 1-3 November 1999	E, F	205	IODE/ICAM Workshop on the development of the Caribbean marine atlas (CMA), United Nations House, Bridgetown, Barbados, 8-10 October 2007	E (electronic copy only)
146	Taller Internacional sobre Formacion de Capacidades para el Manejo de las Costas y los Océanos en le Gran Caribe. La Habana, - Cuba, 7-10 de Julio de 1998 / International Workshop on Management Capacity-Building for Coasts and Oceans in the Wider Caribbean, Havana, Cuba, 7-10 July 1998	S/E	173	IOC-SOPAC Regional Workshop on Coastal Global Ocean Observing System (GOOS) for the Pacific Region, Apia, Samoa, 16-17 August 2000	E	206	IODE/JCOMM Forum on Oceanographic Data Management and Exchange Standards, Ostend, Belgium, 21-25 January 2008	(Under preparation)
147	IOC-SOA International Training Workshop on the Integration of Marine Sciences into the Process of Integrated Coastal Management, Dalian, China, 19-24 May 1997.	E	174	Geological Processes on Deep-water European Margins, Moscow-Mozhenka, 28 Jan.-2 Feb. 2001	E	207	SCOR/IODE Workshop on Data Publishing, Ostend, Belgium, 17-18 June 2008	(Under preparation)
148	IOC/WESTPAC International Scientific Symposium - Role of Ocean Sciences for Sustainable Development Okinawa, Japan, 2-7 February 1998.	E	175	MedGLOSS Workshop and Coordination Meeting for the Pilot Monitoring Network System of Systematic Sea Level Measurements in the Mediterranean and Black Seas, Haifa, Israel, 15-17 May 2000 (Under preparation)	E	208	JCOMM Technical Workshop on Wave Measurements from Buoy, New York, USA, 2-3 October 2008 (IOC-WMO publication)	(Under preparation)
149	Workshops on Marine Debris & Waste Management in the Gulf of Guinea, 1995-97.	E	176	Abstracts of Presentations at Workshops during the 7 th session of the IOC Group of Experts on the Global Sea Level Observing System (GLOSS), Honolulu, USA, 23-27 April 2001 (Under preparation)	E			
150	First IOCARIBE-ANCA Workshop Havana, Cuba, 29 June-1 July 1998.	E	177	Geosphere/Biosphere/Hydrosphere Coupling Process, Fluid Escape Structures and Tectonics at Continental Margins and Ocean Ridges, International Conference & Tenth Post-cruise Meeting of the Training-through-Research Programme, Aveiro, Portugal, 30 January-2 February 2002 (Under preparation)	E			
151	Taller Pluridisciplinario TEMA sobre Redes del Gran Caribe en Gestión Integrada de Areas Costeras Cartagena de Indias, Colombia, 7-12 de septiembre de 1998.	S	178	Under preparation				
152	Workshop on Data for Sustainable Integrated Coastal Management (SICOM) Maputo, Mozambique, 18-22 July 1998	E	179	Under preparation				
153	IOC/WESTPAC-Sida (SAREC)	E	180	Abstracts of Presentations at Workshops during the 7 th session of the IOC Group of Experts on the Global Sea Level Observing System (GLOSS), Honolulu, USA, 23-27 April 2001 (Under preparation)	E			
			181	Under preparation				
			182	Under preparation				
			183	Under preparation				
			184	Under preparation				
			185	Under preparation				
			186	Under preparation				
			186	Under preparation				

No.	Title	Languages	No.	Title	Languages
209	Collaboration between IOC and OBIS towards the Long-term Management Archival and Accessibility of Ocean Biogeographic Data, Ostend, Belgium, 24–26 November 2008	(Under preparation)	234	Southern and Indian Surface Ocean CO ₂ Atlas (SOCAT) Workshop, CSIRO Marine Laboratories, Hobart, Tasmania 16–18 June 2010	E (electronic copy only)
210	Ocean Carbon Observations from Ships of Opportunity and Repeat Hydrographic Sections (IOCCP Reports, 1), Paris, France, 13–15 January 2003	E (electronic copy only)	235	The Caribbean Marine Atlas (CMA) Review and Planning Workshop and Saint Lucia National Coastal Atlas Stakeholder Event, Bay Gardens Inn, Rodney Bay, Saint Lucia, 2–6 August 2010	E (electronic copy only)
211	Ocean Surface pCO ₂ Data Integration and Database Development (IOCCP Reports, 2), Tsukuba, Japan, 14–17 January 2004	E (electronic copy only)	236	First Session of the IODE Steering Group for the IODE OceanDataPortal (SG-ODP-I) 20–22 September 2010, Ostend, Belgium	E (electronic copy only)
212	International Ocean Carbon Stakeholders' Meeting, Paris, France, 6–7 December 2004	E (electronic copy only)	237.	In preparation	
213	International Repeat Hydrography and Carbon Workshop (IOCCP Reports, 4), Shonan Village, Japan, 14–16 November 2005	E (electronic copy only)	238.	In preparation	
214	Initial Atlantic Ocean Carbon Synthesis Meeting (IOCCP Reports, 5), Laugavatn, Iceland, 28–30 June 2008	E (electronic copy only)	239.	In preparation	
215	Surface Ocean Variability and Vulnerability Workshop (IOCCP Reports, 7), Paris, France, 11–14 April 2007	E (electronic copy only)	240.	Ocean Biogeographic Information System (OBIS) Infrastructure Meeting, INCOIS, Hyderabad, India, 2–4 March 2011.	E (electronic copy only)
216	Surface Ocean CO ₂ Atlas Project (SOCAT) 2nd Technical Meeting Report (IOCCP Reports, 9), Paris, France, 16–17 June 2008	E (electronic copy only)			
217	Changing Times: An International Ocean Biogeochemical Time-Series Workshop (IOCCP Reports, 11), La Jolla, California, USA, 5–7 November 2008	E (electronic copy only)			
218	Second Joint GOSUD/SAMOS Workshop, Seattle, Washington, USA, 10–12 June 2008	E (electronic copy only)			
219	International Conference on Marine Data management and Information Systems (IMDIS), Athens, Greece, 31 March–2 April 2008	E			
220	Geo-marine Research on the Mediterranean and European-Atlantic Margins, International Conference and TTR-17 Post-cruise Meeting of the Training-through-research Programme, Granada, Spain, 2–5 February 2009	E (electronic copy only)			
221	Surface Ocean CO ₂ Atlas Project Pacific Regional Workshop, Tsukuba, Japan, 18–20 March, 2009 (IOCCP Report Number 12)	E (electronic copy only)			
222	Surface Ocean CO ₂ Atlas Project Atlantic and Southern Oceans Regional Meeting, Norwich, UK, 25–26 June, 2009 (IOCCP Report Number 13)	E (electronic copy only)			
223	Advisory Workshop on enhancing forecasting capabilities for North Indian Ocean Storm Surges, Indian Institute of Technology (IT), New Delhi, India, 14–17 July 2009	E (electronic copy only)			
224	2009 International Nutrients Scale System (INSS) Workshop Report, Paris, France, 10–12 February 2009	E (electronic copy only)			
225	Reunión subregional de planificación de ODINCARSA (Red de Datos e Información Oceanográficas para las Regiones del Caribe y América del Sur)/ ODINCARSA (Ocean Data and Information Network for the Caribbean and South America region) Latin America sub-regional Planning Meeting, Universidad Autónoma de Baja California (UABC), Ensenada (México), 7–10 December 2009, 2010	E/S (electronic copy only)			
226	OBIS (Ocean Biogeographic Information System) Strategy and Work plan Meeting, IOC Project Office for IODE, Oostende, Belgium, 18–20 November 2009	E (electronic copy only)			
227	ODINAFRICA-IV Project Steering Committee, First Session, Ostend, Belgium, 20–22 January 2010	In preparation			
228	First IODE Workshop on Quality Control of Chemical Oceanographic Data Collections	E (electronic copy only)			
229	First IODE Workshop on Quality Control of Chemical Oceanographic Data Collections, IOC Project Office for IODE, Oostende, Belgium, 8–11 February 2010 (IOCCP Report Number 18)	E (electronic copy only)			
230	SCOR/IODE/MBL/WHOI Library Workshop on Data Publication, Paris, France, 2 April 2010	E (electronic copy only)			
231	First ODINAFRICA Coastal and Marine Atlases Planning Meeting, Ostend, Belgium, 12–14 October 2009	E (electronic copy only)			
232	Eleventh International Workshop on Wave Hindcasting and Forecasting and Second Coastal Hazard Symposium, Halifax, Canada, 18–23 October 2009	E (electronic copy only)			
233	2010 Meeting of the Joint IODE-JCOMM Steering Group on the Global Temperature-Salinity Profile Programme, Ostend, Belgium, 5–7 May 2010	E (electronic copy only)			

Intergovernmental Oceanographic Commission (IOC)

United Nations Educational, Scientific and Cultural Organization (UNESCO)

1, rue Miollis, 75732 Paris Cedex 15, France

Tel: +33 1 45 68 39 83

Fax: +33 1 45 68 58 12

<http://ioc.unesco.org>

IOC Project Office for IODE

Wandelaarkaai 7

8400 Oostende, Belgium

Tel: +32 59 34 21 34

Fax: + 32 59 34 01 52

<http://www.iode.org>