



United Nations
Educational, Scientific and
Cultural Organization



The Intergovernmental
Oceanographic Commission
(IOC of UNESCO)

International Oceanographic
Data & Information Exchange (IODE)



IOC Project Office for IODE
Ostend, Belgium



International
Oceanographic
Data and Information
Exchange

The Intergovernmental Oceanographic Commission (IOC) of UNESCO

What is the IOC?

The IOC of UNESCO is the United Nations' focal point for Ocean Sciences and Ocean Services. Established in 1960 the purpose of the IOC is to promote international cooperation and to coordinate programmes in research, services and capacity-building, in order to learn more about the nature and resources of the ocean and coastal areas and to apply that knowledge for the improvement of management, sustainable development, the protection of the marine environment, and the decision-making processes of its 135 Member States.

Why do we need international cooperation in ocean programmes?

In understanding the ocean, we are protecting lives and the life-support system of our entire planet. The ocean is our global responsibility. Its shared waters circulate freely between countries and hemispheres regardless of political boundaries. To ensure its future health, equitable access to information and operational oceanographic services to address regional, national and global problems must be made available to all.

Do some countries benefit more than others?

An essential part of all IOC activities is ensuring that developing countries can participate effectively, and on an equal basis, in marine issues. The intrinsic nature of the IOC's programmes is to increase the capacity and capability of all countries to participate in these advances and bring about socio-economic benefits that contribute to the larger internationally agreed UN Millennium Goal of reducing poverty.



How can the IOC's ocean programmes help my country?

Since its creation the IOC's programmes have targeted specific issues and developed solutions to challenges in areas such as weather, climate and climate change, ocean health and fisheries, disaster warning and mitigation, capacity building and data availability and exchange. These are the issues that impact societies and industries in areas including agriculture and aquaculture, resources, energy, shipping and navigation, and tourism, which represent an essential source of livelihood, employment and foreign exchange earnings for many nations.

Exactly how do such programmes operate?

Understanding and forecasting marine conditions require worldwide sustained observations and monitoring of the oceans and coastal areas. To accomplish this, the IOC brings together the international and intergovernmental scientific community to form strategic partnerships in order to exchange 'know how' and 'know why'.

With this information, the IOC assists governments to address their individual and collective ocean and coastal problems. Sound scientific data and information are the basis for better-informed decisions for the improved management and protection of oceans and coasts. Scientists, policy makers, industry and the general public benefit from the resulting unbiased data and information.

IOC programmes and projects are all founded on the ethic that the oceans are a resource in need of our stewardship and are not just simply a commodity. The sustainable management of the marine and coastal environment, its resources, and building the capacities of developing countries rely on our developing and nurturing this ethic together.

The International Oceanographic Data and Information Exchange (IODE) Programme

With the advance of oceanography from a science dealing mostly with local processes to one that is also studying ocean basin and global processes, researchers depend critically on the availability of an international exchange system to provide data and information from all available sources. Additionally, scientists studying local processes benefit substantially from access to data collected by other Member States in their area of interest. The economic benefit of obtaining data by exchange as opposed to collecting it oneself is huge.

The IOC's International Oceanographic Data and Information Exchange (IODE) was established in 1961 (i) to facilitate and promote the exchange of oceanographic data and information; (ii) to develop standards, formats and methods for the global exchange of oceanographic data and information; (iii) to assist Member States to acquire the necessary capacity to manage oceanographic data and information and become partners in the IODE network. The IODE system forms a worldwide service-oriented network consisting of Designated National Agencies (DNAs), National Oceanographic Data Centres (NODCs), and the ICSU World Data Centres – Oceanography (WDCs).

The IODE network now counts 65 oceanographic data and information centres. This network collects, controls the quality of, archives millions of ocean observations, and makes these available to Member States. As a global programme, IODE gives attention to all ocean related data including physical oceanography, chemical, biological, etc.

IODE closely collaborates with, and services the needs of the other IOC and related programmes such as Ocean Science, Global Ocean Observing System and the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM).

A cornerstone of the IODE programme is ensuring timely, free and unrestricted access to data as a prerequisite for the efficient acquisition, integration and use of ocean observations gathered by the countries of the world for a wide variety of purposes including the prediction of weather and climate, the operational forecasting of the marine environment, the preservation of life, the mitigation of human-induced changes in the marine and coastal environment, as well as for the advancement of scientific understanding that makes this possible.

Another major and long-term commitment of the IODE programme is the long-term accessibility and archival of oceanographic data, meta-data and information to safeguard present and future holdings against loss or degradation. This is achieved mainly through collaboration with the ICSU network of World Data Centres.

Assisting Member States to build national capacity

The IODE Programme has a long tradition of assistance to IOC Member States towards the development and maintenance of national oceanographic data management fa-



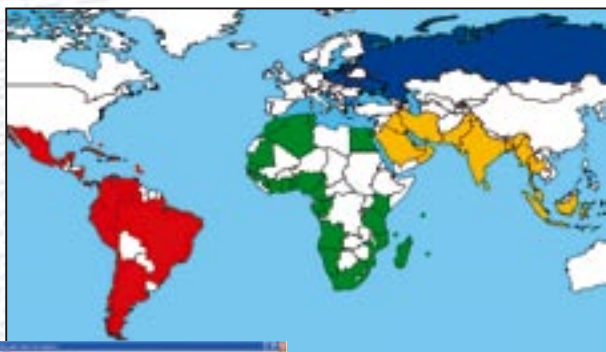
Countries with NODCs or DNAs

cilities. The IODE capacity building strategy focuses on the development of regional networks: the ODIN (Ocean Data and Information Network) projects. These projects aim at:

- providing assistance with the development of National Oceanographic Data (and Information) Centres and establish their networking;
- providing training opportunities in marine data & information management applying standard formats and methodologies as defined by IODE;
- assisting with the development and maintenance of national and regional metadata, information and data holding databases;
- assisting with the development and dissemination of marine data and information products responding to the needs of a wide variety of user groups.

ODIN products and services target a wide range of users including policy makers, resource managers, researchers, educational institutions, NGOs and private companies.

To assist with the training activities of ODIN project as well as to provide a tool for continuous professional development for established data and information centres, IODE has developed OceanTeacher. OceanTeacher can be used by data/information managers, ocean researchers and University students. The system includes a comprehensive "digital library" as well as "course modules". OceanTeacher is available through the Internet and on DVD.



The IOC Project Office for IODE

The IODE programme must meet the new challenges related to ocean data and information management. The IODE community must lead the way in coordinating access to marine data and information to support the broad needs of the scientists, policy makers, marine resources managers, commercial sector and the general public. The IODE Programme and IODE Data Centres now gives attention to all ocean related data including physical, chemical, and biological oceanographic data, and to operational data streams in addition to delayed mode data.

Ocean libraries (marine information centres) have to address the changes in the world of scientific publishing, the need to better expose and share local expertise and assisting users in discovering information on the world wide web.

To achieve these objectives the IODE Project Office will be a:

- **TRAINING CENTRE:** be a global training centre for ocean data and information management ;
- **CONFERENCE CENTRE:** to provide a forum where ocean data and information experts and students can work and meet;
- **DATA AND INFORMATION PORTAL CENTRE:** to develop, host and maintain IODE's ocean data and information systems and related public awareness tools
- **FREE WEBSITE HOST** for developing countries who do not have the means to host their own web sites, databases and information bases
- **TECHNOLOGY TESTBED:** to provide a laboratory environment and test bed for new ocean data and information management technology.



The IOC Project Office for IODE

What activities do we undertake to achieve our objectives?

- Hosting of specialized short-term training courses and workshops in ocean data and information management, marine GIS and modeling.
- Further development, strengthening and maintaining IOC/IODE ocean data and information management training programs and training tools: e.g. OceanTeacher;
- Provision of an environment ('think tank') where ocean data and information experts and students can work, meet and discuss;
- Development, hosting and maintaining IOC/IODE's ocean information systems and related public awareness tools;
- Promotion of collaboration between all expert levels active in ocean data (and data product) and information management, including scientists, data managers and users.
- Creation of a laboratory environment for the development and beta testing of ocean data and information management technology.

What facilities are available to obtain our goals?

Floor space: 1.100 m²



- 2 meeting/training rooms that can be united (24+24 persons)
- 1 small meeting room (15 persons)
- 1 large conference hall (150 persons)



- Broadband Internet connection (850 Mbs)
- Computer facilities (31 personal computers)
- Web/db servers (7 servers)

Planned Project Office activities

Per year

- 10 training events
- 20 hosted meetings
- 15 medium & long term expert visits


An overview of activities during the first year (April 2005 – March 2006):

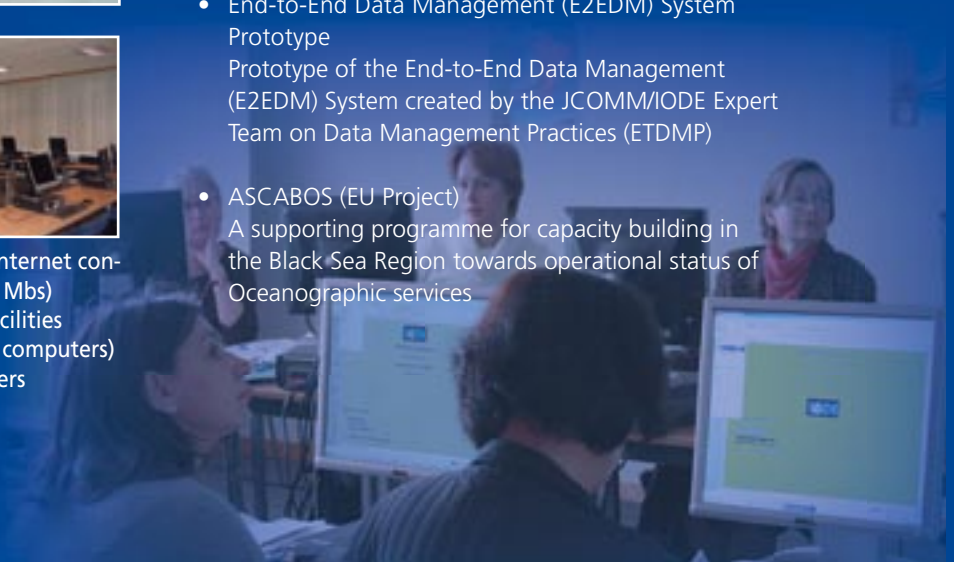
- 40 experts visited the Project Office
- 22 events were hosted by the Project Office
- 13 project meetings were organized.
- 139 students attended 13 different training events.
- 64 nationalities were represented among the students.

Some websites hosted at the Project Office

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|--------------|---|
| Odinafrica | http://www.odinafrica.org |
| OceanTeacher | http://www.oceanteacher.org |
| Ocean Expert | http://www.oceanexpert.org |
| Ocean Portal | http://www.oceanportal.org |

Some projects in which the IODE Project Office for IODE is participating in

- SIMORC (EU Project) 
SIMORC stands for a System of Industry Metocean data for the Offshore and Research Communities. IOC/IODE is a partner in this EU project through the IOC Project Office for IODE.
- SEADATANET (EU Project) 
A Pan-European Infrastructure for Ocean and Marine Data Management.
- End-to-End Data Management (E2EDM) System Prototype
Prototype of the End-to-End Data Management (E2EDM) System created by the JCOMM/IODE Expert Team on Data Management Practices (ETDMP)
- ASCABOS (EU Project)
A supporting programme for capacity building in the Black Sea Region towards operational status of Oceanographic services



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More information about the International Oceanographic Data and Information Exchange (IODE) programme

Web site: <http://www.iode.org>

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More information about the Intergovernmental Oceanographic Commission of UNESCO

Web-site: <http://ioc.unesco.org>

Where to find us

The IOC Project Office for IODE is housed in the premises of the former 'Vismijn', next to the VLIZ (Flemish Marine Institute).



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