Agenda item 1

Latest institutional Education and Training Program Developments
Latest Institutional Education and Training Program Developments

Mitrasen Bhikajee & Claudia Delgado
IOC – Intergovernmental Oceanographic Commission

- established in 1960

- goals:
  “... to promote international cooperation and to coordinate programmes in marine research, services, observation systems, hazard mitigation and capacity development in order to learn more and to better manage the nature and resources of the ocean and coastal areas”

Warren Wooster
First Exec Sec IOC
IOC

- body within UNESCO
- Headquarters in Paris, France
- Field Offices
  - Colombia, Brazil, Thailand, Kenya, Denmark, Belgium, Australia
- 144 Member States
IOC Sections & Programmes

- **Ocean Sciences:**
  - addressing **scientific uncertainties** for the management of the marine environment and climate change
    - WCRP
    - IOCCP
    - OOPC
    - HAB
    - GLOBEC
    - ICAM

- **Ocean Observations and Services:**
  - Developing **operational capabilities** for the management and sustainable development of the open oceans and coastal seas
    - GOOS
    - JCOMM

- **International Oceanographic Data and Information Exchange – IODE** (includes OceanTeacher CB Programme and OBIS)

- **Tsunami Coordination Unit:**
  - works with Member States and other UN agencies and NGOs, to build sustainable **tsunami early warning systems.**

- **Capacity Development:**
  - empowering developing countries to sustainably use their coastal and marine resources
Intergovernmental Oceanographic Commission

- Intergovernmental body:
  Decisions and policy decided by Governing Body of 144 members
IOC Assembly approved a 3 phase Self-driven strategy to:

• Strengthen research organisations
• Raise awareness of decision-makers & communities
• Enrol civil society in good governance
Phase 1 – Strengthening Institutes to change & grow by:

- Empowering networks of directors with Leadership skills
- Supporting networks of scientists with Proposal-writing skills
- Building scientific teams to collaborate on funded projects
- Training in Decision Support Systems
Phase 2 – Raising awareness through Decision Support Systems that:

- Use existing data & operational products where possible
- Create openings for research & education
- Deliver visible local benefits based on science
Phase 3 – Enrolling communities for good governance by:

- Wide dissemination of the pivotal role of science in creating safe lives, sustainable livelihoods and for healthy ocean & coasts.
- Partnerships needed in social sciences, management, public information & legal matters.
A new approach

- Long term perspective in human capacity building
- Empowering member states to create their own human capacity
- In line with UNESCO’s Priority Africa and Gender Priority
IOC-I, 1961: **requirement** for a structure **to co-ordinate international oceanographic data exchange**

Working Group on Exchange of Oceanographic Data established:

- the facilitating of exchange of oceanographic data, the standardization of forms for reporting and coding data, the encouragement of the preparation of data catalogues, and the assistance of development of national oceanographic data centres

**IODE Structure**

**IODE established in 1961:**

‘to enhance marine research, exploitation and development by facilitating the exchange of oceanographic data and information between participating Member States and by meeting the needs of users for data and information products’
IODE and Capacity Development

• Capacity development has been a cornerstone of the IODE since the programme’s start in 1961

• The objective is to assist Member States to acquire the necessary capacity to manage marine data and information and become partners in the IODE network

• Capacity development activities teach the principles of data and information management and also promote the use of "standards" amongst all IODE centres and thus achieve interoperability amongst centres.

• 1961 – 1997: IODE capacity building programme was based upon four types of activities:
  i. expert missions to Member States to advise on the establishment of national oceanographic data centres (NODCs)
  ii. organization of group training courses
  iii. support for internships in established national oceanographic data centres
  iv. provision of equipment

GAP!!!
• NO formal academic degrees or even curricula in oceanographic data management and library management
• Data managers start as either (ocean) researchers or IT specialist
• Data and information managers still need to acquire the knowledge, expertise and experience on the job

1997: IODE Resource Kit (CD Rom based: marine and data management material, software, training manuals, etc)

2001: OceanTeacher
Comprehensive self-training and resource tool – web-based – for newly established NODCs, and to assist managers and staff members to acquire the skills to set up new IODE centres
ODIN is based upon four elements:
- providing equipment
- providing training
- providing seed funding for operational activities for newly created data centres and marine libraries
- work in a regional context, addressing common as well as national goals

Benefits of the ODINs:
Participating countries identify national priorities and develop work plans that aim to address them

**Added value**
- Sharing of expertise
- Sharing of data
- Sharing of information

ODIN regional networks
- **ODINAFRICA**: ODINCARSA: Latin America and Caribbean
- **ODINCINDIO**: Central Indian Ocean
- **ODINWESTPAC**: Western Pacific region
- **ODINBlackSea**: Black Sea region
- **ODINECET**: European Countries in Economic Transition
- **ODIN-PIMRIS**: Small Island Pacific States
IODE’s Capacity Building tool: OceanTeacher

• A training resource/tool to support IODE capacity development activities

• Provides training tools for Oceanographic Data and Information management

• Comprehensive resource tool for newly established NODCs

• Underpins the education and training requirements of the ODINs

• Audience:
  − Data and information managers
  − NODC staff (newly established and established centres)
  − Marine library staff (newly established and established libraries)
  − University students and researchers who need training in data and information management
  − Staff of facilities working in related disciplines who need familiarization with oceanographic data management techniques

Welcome to the OceanTeacher OpenCourseWare site.

OceanTeacher is a comprehensive web-based training system that supports Classroom training (face-to-face), Blended training (combining classroom and distance learning), online tutoring and online self-learning. OceanTeacher has been developed as a training system for ocean data managers (working in ocean data centres), marine information managers (marine librarians) as well as for marine researchers who wish to acquire knowledge on data and/or information management. In addition OceanTeacher is being used for training in other related disciplines.

OceanTeacher has two main components: the OceanTeacher Digital Library (a collection of knowledge and resources) and the OceanTeacher OpenCourseWare - the site you are visiting now - (a collection of course outlines and courseware).

When the Digital Library and OpenCourseWare are used together for a training event this is called an OceanTeacher Classroom. The collection of all training instances constitutes the OceanTeacher Academy.

All OceanTeacher content is [Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License](http://creativecommons.org/licenses/by-nc-nd/3.0/).

If you wish to participate in training events you will need to [formally apply](http://www.oceanteacher.org) and, provided you are accepted for a course, you will also need to [register online](http://www.oceanteacher.org) (to create your online account). In order to start preparing for the course (pre-course assignments) you will need to [enrol](http://www.oceanteacher.org) for the course.

Classroom courses are organized either at the IOC Project Office for IODE (Oostende, Belgium) or other training facilities.

www.oceanteacher.org
OceanTeacher Components (binary structure)

- OceanTeacher is a comprehensive web-based training system that supports Classroom training (face-to-face), Blended training (combining classroom and distance learning), online tutoring and online self-learning.
- When the Digital Library and OpenCourseWare are used together for a training event this is called an OceanTeacher Classroom.
- The collection of all training instances constitutes the OceanTeacher Academy.

OceanTeacher Classroom

- Courses on oceanographic data and information management.
- Based upon Moodle software.
- Contains a collection of outlines, notes and links to miscellaneous documents in the Digital Library.
- Registration enables assistance by lecturers as well as communication with other students before, during and after the course.

OceanTeacher Digital Library

- Data and information management materials, including software (open source), quality control and analysis strategies, and reference documents.
OTA Pool of Courses
(as of December 2012):

Contents accessibility

OceanTeacher content is freely and openly available and access does not require registration.

• Access to contents available during and after your course
• OceanTeacher content is licensed under a Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License.

Registration and enrolling on OceanTeacher website

1. REGISTRATION

2. Course ENROLLMENT

Oceanographic Data Management

Courses
- First SeaDataNet 2 Training Session (2012)
- Fundamentals of Ocean Data Management (2012)
- Introduction to Ocean Data Management for Students of the Environment (Part 2) 2012 (University Accredited Course)
- Operational Oceanography: Synoptic Views of the Sea (2012)
- Regional and Operational Oceanography for Coastal Resources Management (2012)
- University Curriculum in Marine Data Management (2012) (University Accredited Course)
- University Curriculum in Marine Data Management (2011) (University Accredited Course)
- Ocean Data Products and Synthesis (2010)
- Establish IOOE Ocean Data Portal Data Provider
- Introduction to Marine GIS with SAGA
- Introduction to Metadata for Marine Data Managers
- MapServer Application for a Marine Atlas
- Marine Data Management “Roadmap” Exercises

Marine Information Management

Courses
- Data Curation for Information Managers and In-depth Digitization Practicum
- Digital Asset Management
- Disaster Planning and Recovery for Marine Librarians (2010)
- Disaster Planning and Recovery for Marine Librarians (2011)
- Grant Writing For Digital Projects 2012
- Grantwriting for Digital Projects
- Literature and Databases of the Marine Sciences
- Outreach and Communication Tools
- Preservation and Archiving of Digital Media
- Preservation of Books & Other Media
- Writing for Professional Publications

Interdisciplinary

Courses
- IOC Training Course and Certification on Identification of Harmful Marine Algae
- XIII Curso COI-ACEIO-IEO: Taxonomía de Fitoplancton Marino Nocivo
- Harmful Algal Bloom Programme - BEQUALM
- Developing Institutional Websites
- International Tsunami Information Center (ITIC) Training Programme Hawaii (ITP-HAW) 2011
- Marine Data Products for Websites
- Marine Information Products for Websites
- Marine Spatial Planning
- Tsunami Awareness - Strengthening Tsunami Warning and Emergency Response
IODE Project Office

- IODE Secretariat
- International Training Centre
- International Conference Centre
- Host for IOC/IODE data and information services (Data/information services hub)
- Expert Centre

- 2005-2012: 1238 students from 120 countries
- Approx. 15 events/year

- Support from Flanders Government (FUST)
- Close cooperation with Flanders Marine Institute (VLIZ)
Agenda item 5

Standardisation procedures put in place to improve in the provision of Capacity Building
Standardisation procedures

- Difficult to have an overall standard procedure
- Subject specific
- Ensure compatibility in measurement and analysis methods
- Ensure global assimilation of data
Since 2011, more standardised procedures were put in place in order to improve the provision of Capacity Building within the OTA:

• Courses taught in Oostende can be taught anywhere else in the world using OTA platform resources [complete courses are available online, including videos];

• A more standardised application process was implemented since 2011, including a detailed application form;

• Only one student is accepted for full sponsorship/per country; other students from the same country attending a training course should be co-sponsored only;

• Endorsement from national/MS representatives is absolutely mandatory for full and co-sponsored participants;

• Yearly survey to Member States in order to assess training needs and decide on the OTA calendar for the following year;

• Accreditation process:
  – One course is accredited by the University of Gent (University Curriculum in Marine Data Management), part of a Master of Science (MSc) degree.
Agenda item 6
Experiences in dealing with funding agencies
Experiences in dealing with funding agencies

- Apart from regular budget
- Some built into programmes, e.g. HABs, Tsunami
- Other rely on self-funding participation
- New interest from some member states for funding CD activities in selected regions
Funding

- **FUST**: Flanders Funds-in-trust for the support of UNESCO’s activities in the field of Science

- 2008 submission for funding

- Period funded: **2009-2013**

- 2013: need new submission to FUST for another period of funding:
  - Have more **accredited courses**
  - Work more online (b-learning), but still need to keep F2F training
  - Will need more **collaboration with local/regional organisations** [eg further explore collaboration with UGent, UHasselt, … others?]
  - More focus on **Marine biodiversity Data Management: OBIS**
  - Use Oostende as a ‘hub’, broadcasting to other training centres: **OT GlobalClassroom**
OceanTeacher Academy Objectives (funded 2009 – 2013)

The Training Academy will contribute to:

- Building **high quality and up-to-date expertise in oceanographic data and information management and exchange** in new national oceanographic data centres (NODCs) and related facilities;

- Keeping staff in existing national oceanographic data centres (NODCs), marine information centres and related facilities **up-to-date with the latest methodological and technical developments (continuous professional development)**;

- Creating **awareness for the importance of oceanographic data management and marine information management with university students** (marine environmental studies) to ensure that they will **contribute quality data to data centres** during their future career;

- Creating **awareness for the importance of oceanographic data management with experts in oceanography and related disciplines.**
IODE Project Office
(Oostende, Belgium):

• 2005-12: **1238 students from ~120 countries**
• ~ 15 events/year

• Training Courses:
  – > 50 000 USD/course
  – ~ 3000 USD/student
  – ~ 15 sponsored students/course
Since 2011 an effort is being made towards increasing the contribution from the MS towards their own capacity building, as a way to demonstrate their own interest and effort.

Applicants are invited to find own (organisation) resources to partially fund their attendance to a course.

Figure: Number of fully sponsored (OTA), co-sponsored participants (OTA). When a participant is selected for co-sponsorship, his/her host institution is invited to pay for one of the costs components (e.g.: flights or accommodation and/or living costs. Some participants from developed countries pay a course fee, which contributes to cover the costs of participants from less developed countries.
Agenda item 8

2013 Capacity Building work Program: exchange of information and analysis
**First Semester:**

8 - 12 April: **Development and Management of e-Repositories**  
13 - 17 May: **Digital Asset Management**  
27 - 31 May: **Fundamentals of Ocean Data Management**

**Second Semester:**

September: **Operational Oceanography: Synoptic Views of the Sea**  
September/November: **Marine Information Management** (specific subject TBD)  
November: **Environmental Imagery and Satellite Data Management** (TBD)  
September/November: **Interdisciplinary course** (specific subject TBD)
IODE Capacity Building/OceanTeacher future:

Aims

- Become a course provider on ocean data and information management fields worldwide;
- Have a regular cycle of standardized courses, relevant for all regions;
- Include OTA courses in partnering training programmes (other ocean-related organisations, Universities, projects);
- Establish an evaluation process for the course participants, i.e., not only providing attendance certificates;
- Establish new partnerships (reinforce already existing + expand);
- Course(s) accreditation;
- Create a network of Regional Training Centres: “Centres of Excellence” e.g. Hyderabad, Mombasa, Argentina, China…
- Greater emphasis on biological data and marine biodiversity (OBIS);
- Multi-language – courses currently in English only

New developments and technologies

- Distance learning/Blended learning;
- More interactive training (e.g. [online] pre course assignments, tests and quizzes, etc.);
- Further explore online tools: ‘broadcast’ to and/or from other training centres;

OTA distance learning next challenge:
OT GlobalClassroom