



“Implementing Rio+20: Integrated Planning for Sustainable Coastal Area Management in the Caribbean Region”

17-18 March 2014

Port of Spain, Trinidad and Tobago

United Nations
Educational, Scientific and
Cultural Organization

• Intergovernmental
Oceanographic
Commission

Organisation
des Nations Unies
pour l'éducation
la science et la culture

• Commission
océanographique
intergouvernementale

Organización
de las Naciones Unidas
para la Educación
la Ciencia y la Cultura

• Comisión
Oceanográfica
Intergubernamental

Организация
Объединенных Наций по
вопросам образования
науки и культуры

• Межправительственная
океанографическая
комиссия

Dr. Cesar TORO
UNESCO IOC
IOCARIBE



ICAM

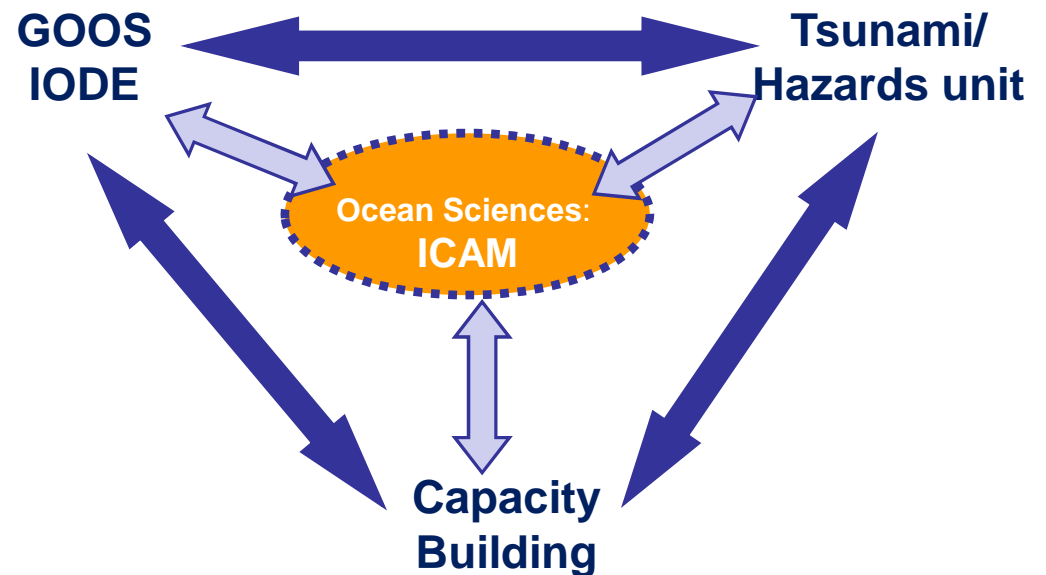
Integrated Coastal Area Management
Gestion Intégrée des Aires Côtières
Gestión Integrada de Áreas Costeras

IOC – ICAM Programme



Established in 1997 by the 19th session of the IOC Assembly with the objectives to:

1. Assist IOC Member States in their efforts to build marine scientific and technological capabilities in the field of ICM.
2. Ensure that scientific requirements are integrated into national and regional ICM programmes and plans



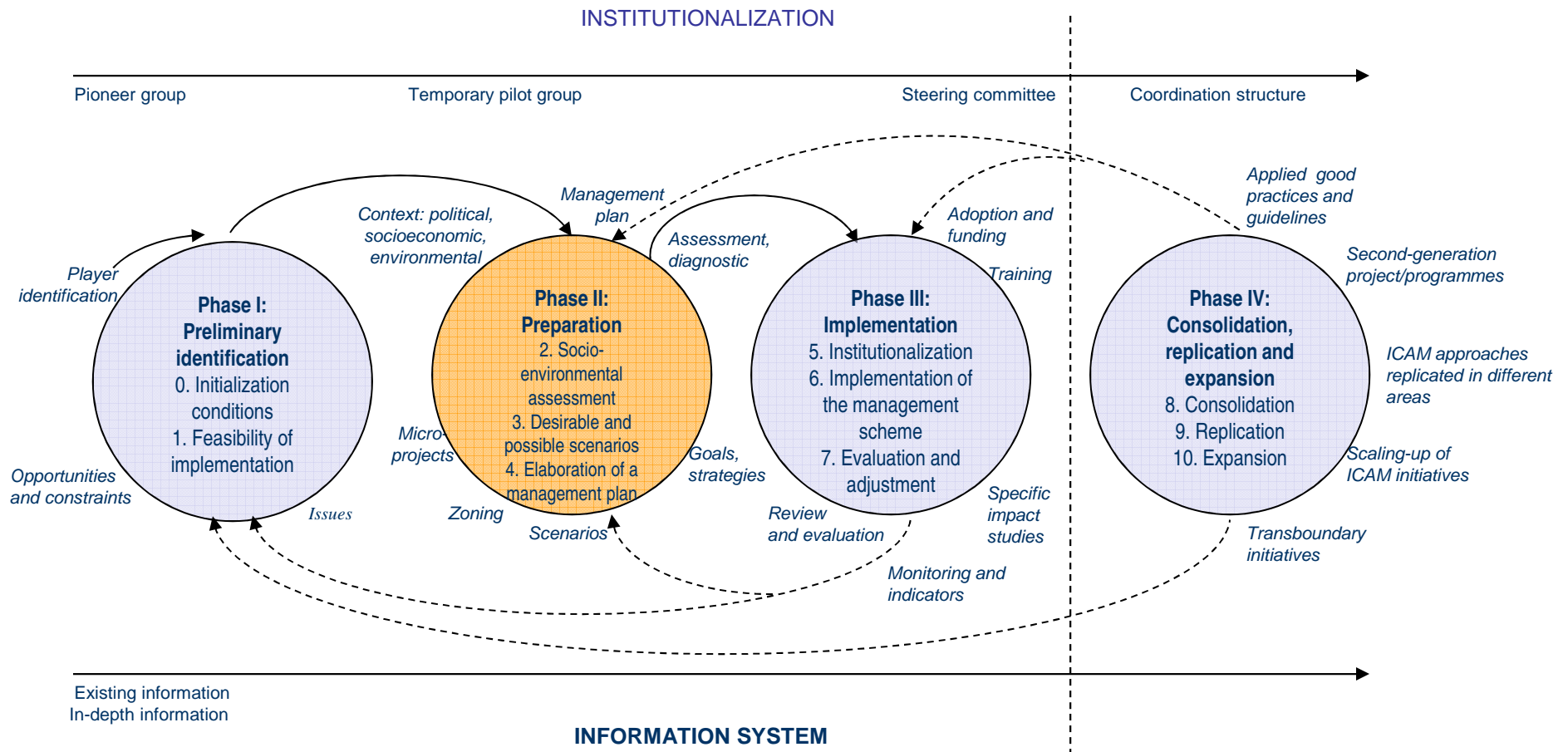
Building blocks of the programme...



- Developing **the ICAM process**, including from a scientific perspective,
- Defining **scientific requirements/inputs** in various phases of the coastal management cycle.
- Development of a set of **tools and guidelines** for addressing specific ICAM issues
- Bridging **natural and socio economic sciences**
- Coupled with **Training** component



Elements of the ICAM process



Programme objectives

- (i) Increase collective capacity to respond to change and challenges in coastal and marine environments through further development of science based management tools such as **Integrated Coastal Area Management, Marine Spatial Planning, and Large Marine Ecosystem Approach**;
- (ii) Build on IOC's and UNESCO's other coastal programmes in **developing Member States' capacity for the application of ecosystem-based management tools**; and
- (iii) Promote the integration of **climate change adaptation and coastal hazards preparedness** into the application of area-based management approaches.

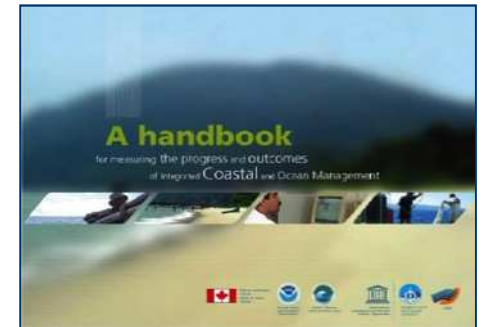


Guidelines and handbooks for building management and technical capacities



❖ *IOC Handbook on Integrated Coastal and Ocean Management indicators*

- Focus on both processes and outcomes
- Considers governance, socioeconomic and ecological dimensions
- Makes use of different approaches, methods and tools



Goals:

- Healthy and productive economy
- Healthy and productive environment
- Public health and safety
- Social cohesion
- Cultural integrity

Selection of indicators:

- Delineate boundaries
- Identify critical parameters that characterize the socio-economic environment
- Build goals and objectives through an integrating and engagement process
- Identify indicators measuring changes in the objectives
- Rank indicators that provide the greatest value to broad number of objectives

Guidelines and handbooks for building management and technical capacities



❖ *Marine Spatial Planning*

This guide is primarily intended for professionals responsible for the planning and management of marine areas and their resources. It is especially targeted to situations in which time, finances, information and other resources are limited

Planning our ocean step by step:

- Collecting and mapping information about human activities (Fisheries, recreational, transportation, offshore activities, cables, energy, defence, et al.)
- Connecting offshore activities with onshore communities
- Identification of current conflicts and compatibilities
- Projecting current trends in the spatial and temporal needs of existing human activities
- Development of a comprehensive Spatial Management Plan ensuring monitoring systems and reporting results.



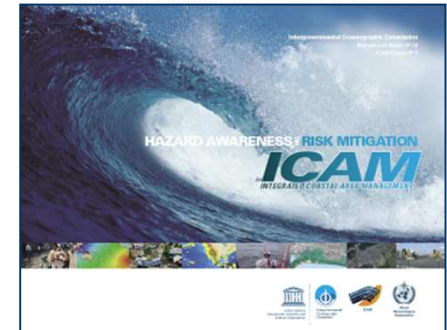
IOC

Guidelines and handbooks for building management and technical capacities



❖ *Guidelines for the mitigation of coastal hazards*

These guidelines aim to assist policy makers and managers in the reduction of the risks to coastal communities, their infrastructure and service-providing ecosystems from tsunamis, storm surges and other coastal hazards within the phased framework of ICAM



How to mitigate coastal hazards?

- Identification and quantification of hazards by using numerical models to assist assesmentnt.
- Determining scales of vulnerability and appraising the dimensions of a comunity's vulnerability.
- Identification of deficiencies in preparedness.
- Assessing the risk and enhancing awareness and preparedness.
- Socio-economic risk mitigation.

Enhance the establishment of a shared socio-economic information system to compile data on demography, distribution and valuation of uses, distribution and valuation of habitats supporting human well-being, valuation of water uses among others..



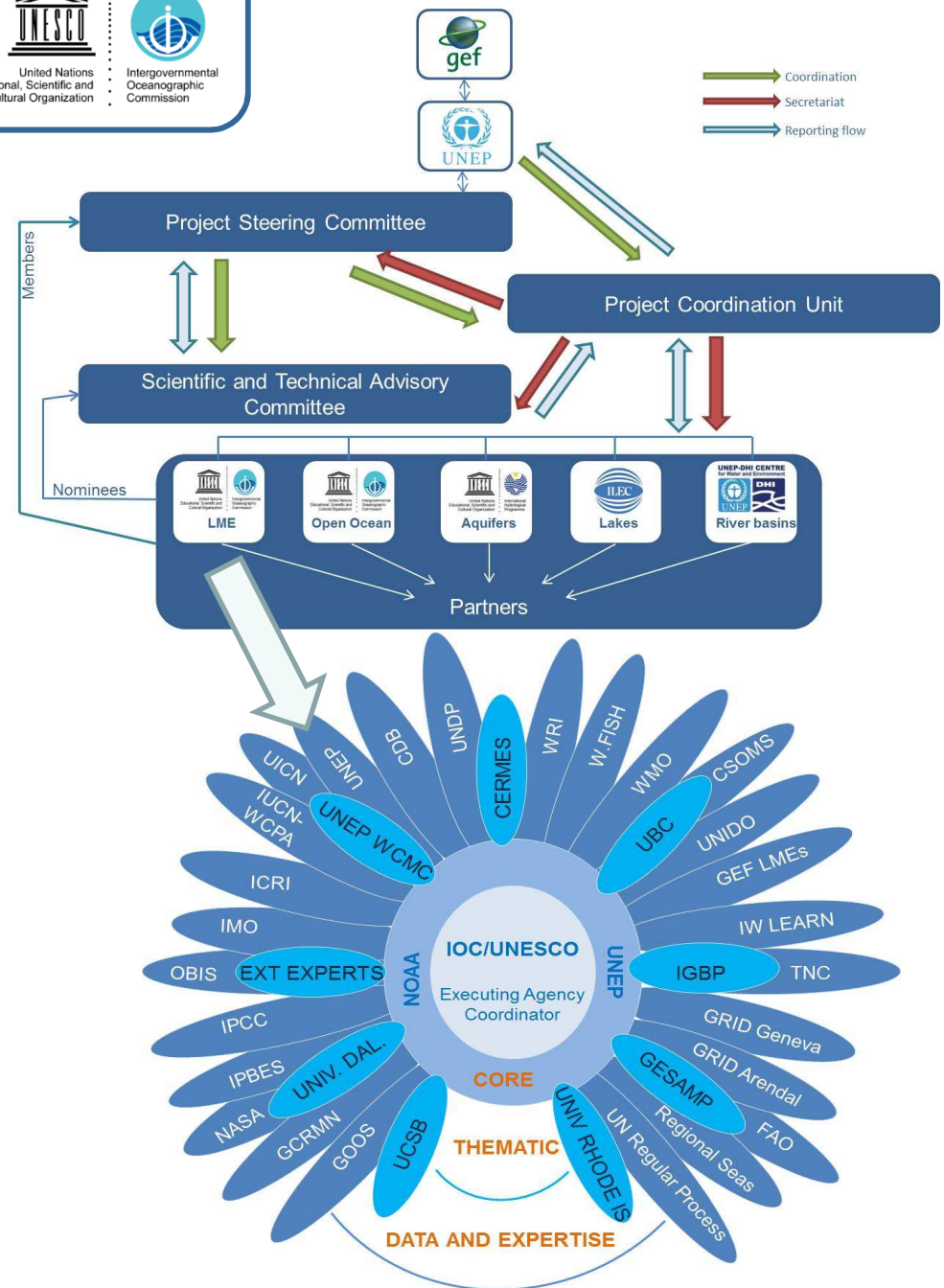
GEF funded project

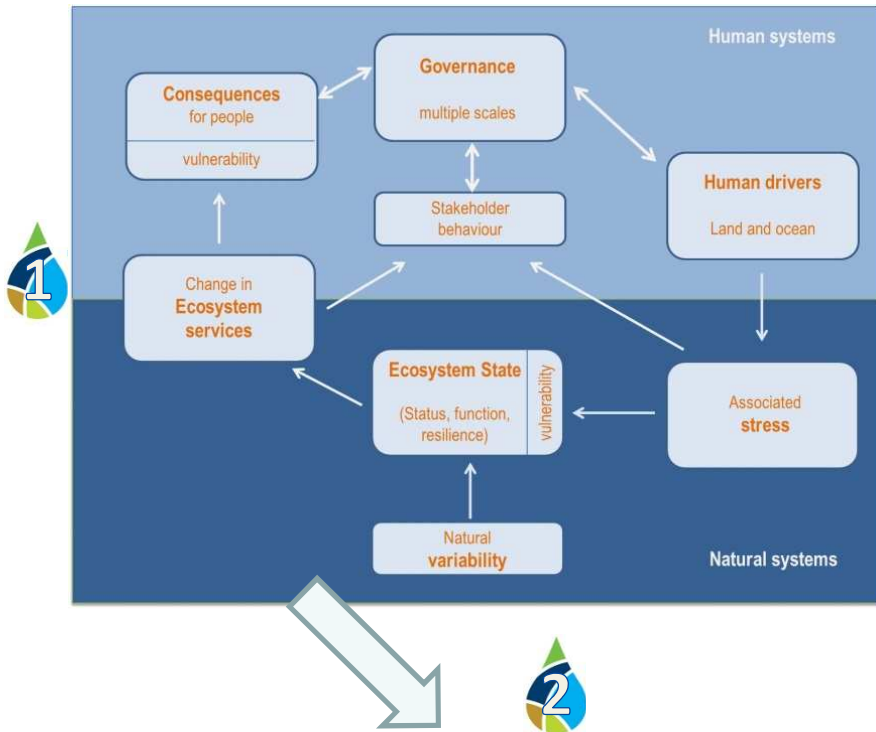
Implementation: April 2013 to March 2015

Objectives:

1. A global baseline assessment of the **status and changing condition of transboundary water systems resulting from human and natural causes**, which will allow the GEF, policy makers and international organizations to set science-based priorities for financial resource allocation and

2. The **institutional arrangements for conducting periodic future assessments of transboundary water systems** to allow the GEF and others to track the results of their interventions.





Data



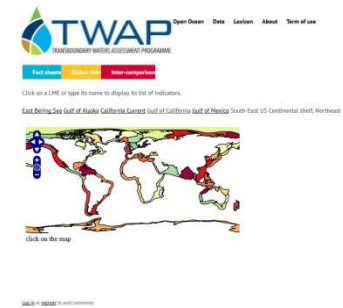
Indicators



Reports



Web



Productivity	Fisheries	Pollution and Health	Socio-economics	Governance
--------------	-----------	----------------------	-----------------	------------

1. Chlorophyll a
2. Primary productivity
3. Sea surface temperature

1. Annual catch
2. Catch value
3. Marine trophic index
4. Fishing in balance index
5. Stock status
6. Catch from bottom impacting gear
7. Fishing effort

1. Nutrients (N,P,Si)
2. Coastal Eutrophication Potential
3. POPs in plastic pellets
4. Plastic debris density
5. Change in MPA coverage
6. Reefs at Risk Index
7. Mangrove extent
8. Coral reef extent
9. Cumulative human impacts
10. Delta Vulnerability index

1. % GDP fisheries
2. %GDP international tourism
3. Population within 10m coastal elevation
4. Human development Index
5. Deaths caused by climate related natural disasters

1. Governance architecture

Networking with:

- i. ICZM / MSP Networks
- ii. Coastal/Marine atlases and its communities
- iii. International, National, Regional and Local Authorities producing socio-economic data.
- iv. Integration of results from the research community

Facilitates:

- Share data and information
- Exchange experiences and good practices
- Lessons learnt
- New ideas!



OceanExpert
Directory of Marine & Freshwater Professionals

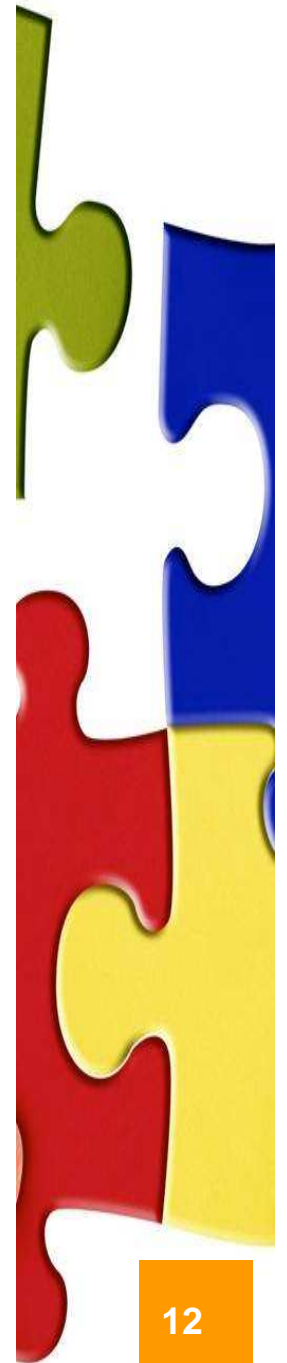


Cooperation with:

- Other national and regional initiatives in order to join efforts and find common opportunities.

e.g. Decision Support tools in Latin America, including common socio-economic aspects:

- i. Coastal atlases in the South-East Pacific (SPINCAM)
- ii. Coastal atlases in the Caribbean (CMA)
- iii. Coastal atlases in the Atlantic Coast



Capacity building



The capacity and partnership development through:

1. Twinning and learning exchanges, training the trainer.



OceanTeacher

A Training Resource for Data & Information Management Related to Oceanography & Marine Meteorology

1. Sectorial workshops to establish common protocols for data and information reporting, data management and data sharing, among others.



OceanDataPortal
Seamless access to ocean data



IODE

Ways of participation

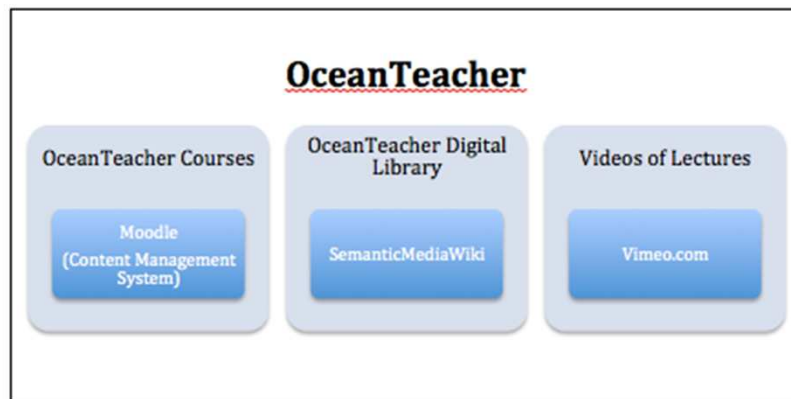


Coastal and Marine policies require an **active public participation**, users' needs are crucial for the success of its implementation:

- Users **needs and concerns** should be analysed in an integrated way.
- Involve **citizens and stakeholders** attending lessons learnt from other projects/regions.
- Facilitate transparency to improve **excellence in governance**.



OceanTeacher IODE's Capacity Development Tool



- OT Learning Platform consists of:
 - OceanTeacher Courses
 - OceanTeacher Digital Library
 - Videos of Lectures
 - Contents freely and openly available
- Web-based training platform that supports:
 - Classroom training (face-to-face)
 - Blended training, online tutoring

Adding CTD and Argo data to ODV

CTD data
CTD instruments measure conductivity, temperature and pressure (depth) to a high accuracy and CTD data make an important contribution to the hydrography measurements in the ocean. CTDs typically consist of an array of sensors that measure the frequency or voltage response that represents changes in an ocean parameter.

CTD data collected by Sea-Bird instruments can be converted into and ASCII format called ODV which can be viewed with a text editor. The Ocean Swallower's Tool (OST), developed by the Alfred Wegener Institut as a tool to analyze and process table-organized data files, supports the ODV format.

- **IODC Guidelines for CTD data** describes the collection and handling of CTD data collected on oceanographic research vessels.
- **Method to add CTD data from Sea-Bird to Ocean Data View**
 - Extract Sea-Bird CTD data to spreadsheet format
 - Add CTD data from Sea-Bird to ODV

Lecturer:
Lisa Raymond
Research Library Electronic Manager
WHOI Data Library & Archive

What are metadata?

• **What are Metadata?**
• A metadata record is a file of information, usually presented as an XML document, which captures the basic characteristics of a data or information resource. It represents the *who, what, when, where, why* and how of the resource

Data Curation for Information Managers and in-Depth Digitization
OceanTeacher Academy, IOC Project Office for IODE

netCDF data

netCDF (Network Common Data Form) is a set of software libraries and self-describing data formats that support the creation, access, and sharing of array-oriented scientific data. It is a de facto standard for describing oceanographic data and is used by Argo, World Sea Surface Temperature (SST), and other oceanographic data sets.

- **Download and install netCDF**, netCDF is a Java application that provides data and attributes from a wide range of netCDF data file connections (from netCDF 3.6.0 to netCDF 4.1.3)
- **Obtaining netCDF Operational Marine Data from Coriolis**
- **Importing netCDF Operational Marine Data into ODV**

10 Steps of Marine Spatial Planning

- Step 1: Defining Context and Authority
- Step 2: Obtaining Financial Support
- Step 3: Organizing Stakeholder Participation
- Step 4: Organizing the Process Through Preliminary
- Step 5: Analyzing Current Conditions
- Step 6: Analyzing Future Conditions
- Step 7: Developing the Spatial Plan
- Step 8: Implementing and Enhancing the Plan
- Step 9: Monitoring and Evaluating Performance
- Step 10: Adapting the Spatial Planning Process



Course Management System (Moodle)

Fundamentals of Ocean Data Management (2012-2013)

You are currently using guest access ([Login](#))

[Home](#) ► [FundOcDtaMgt2012-13](#)

1. Course Overview
2. Registrations and Pre-Course Reading
3. Integration of Marine Data Resources
4. PC Preparation
5. Preliminary and Introductory Presentations
6. Building a Regional Ocean Data Collection
7. Commonly Created Analysis Products in ODV
8. Exporting Marine Data or Products from ODV
9. Quality Control of Marine Data Collections Using ODV
10. Add Argo Data (from Coriolis) to an ODV Collection
11. Add (SeaBird) CTD Data to an ODV Collection
12. Introduction to Marine Metadata

Topic 1

Course Overview

This course provides an introduction to the steps required to obtain and utilize ocean

Calendar

◀ May 2013 ▶

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Events key

- Hide global events
- Hide course events

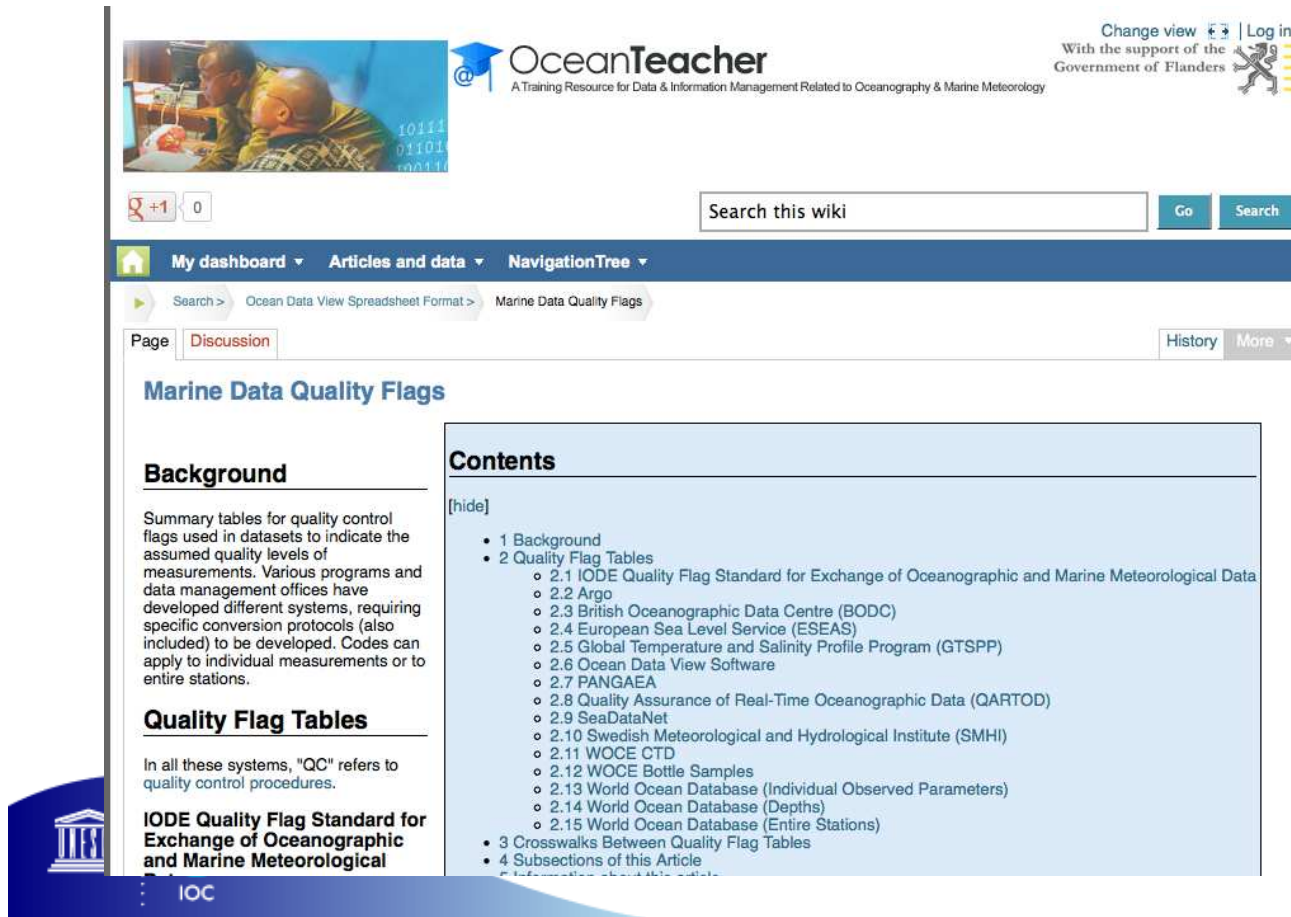
Navigation

[Home](#)



IOC

Digital Library (wiki)



The screenshot shows the OceanTeacher wiki interface. At the top, there is a navigation bar with "My dashboard", "Articles and data", and "NavigationTree". The current page is "Marine Data Quality Flags", with a breadcrumb trail: "Search > Ocean Data View Spreadsheet Format > Marine Data Quality Flags". The page has tabs for "Page" and "Discussion". The main content area is titled "Marine Data Quality Flags" and contains two columns: "Background" and "Contents".

Background

Summary tables for quality control flags used in datasets to indicate the assumed quality levels of measurements. Various programs and data management offices have developed different systems, requiring specific conversion protocols (also included) to be developed. Codes can apply to individual measurements or to entire stations.

Quality Flag Tables

In all these systems, "QC" refers to quality control procedures.

IODE Quality Flag Standard for Exchange of Oceanographic and Marine Meteorological

Contents

[hide]

- 1 Background
- 2 Quality Flag Tables
 - 2.1 IODE Quality Flag Standard for Exchange of Oceanographic and Marine Meteorological Data
 - 2.2 Argo
 - 2.3 British Oceanographic Data Centre (BODC)
 - 2.4 European Sea Level Service (ESEAS)
 - 2.5 Global Temperature and Salinity Profile Program (GTSP)
 - 2.6 Ocean Data View Software
 - 2.7 PANGAEA
 - 2.8 Quality Assurance of Real-Time Oceanographic Data (QARTOD)
 - 2.9 SeaDataNet
 - 2.10 Swedish Meteorological and Hydrological Institute (SMHI)
 - 2.11 WOCE CTD
 - 2.12 WOCE Bottle Samples
 - 2.13 World Ocean Database (Individual Observed Parameters)
 - 2.14 World Ocean Database (Depths)
 - 2.15 World Ocean Database (Entire Stations)
- 3 Crosswalks Between Quality Flag Tables
- 4 Subsections of this Article

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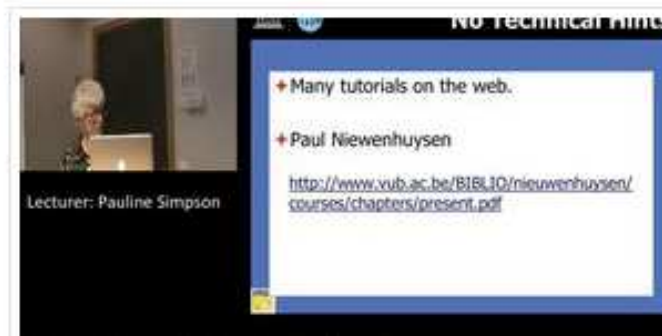
Lecture Video Recordings



OTA - MIM - Preservation of Books and Ot...
10 months ago



First SeaDataNet Training Session, 2-6 Jul...
10 months ago



Storage and access through Vimeo.com

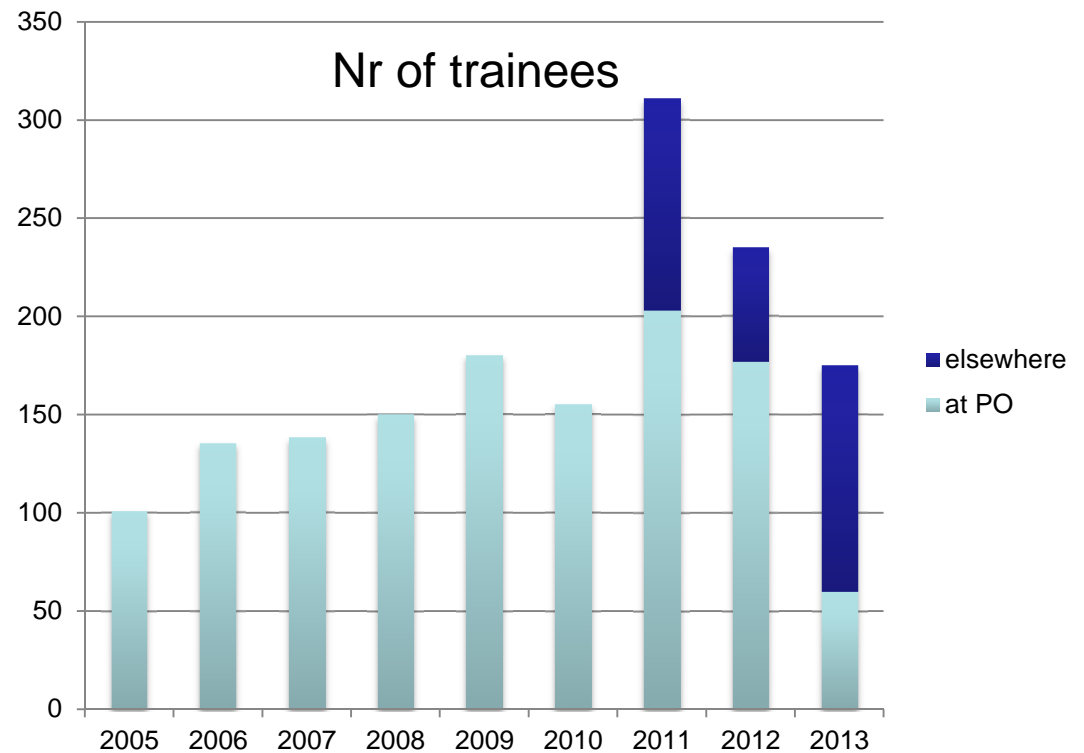
Training Centre Oostende

- Est. 2005
- IODE Secretariat
- International Training Centre
- International Conference Centre
- Host for IOC/IODE data and information services (Data/information hub)
- Expert Centre
- ~15 events/year
- Support from Flanders Government
- Close cooperation with Flanders Marine Institute (VLIZ)





- 2005-13:
 - ~1300 trainees on Ostend site
 - from ~120 countries
 - 6-8 courses/year
- Training Courses:
 - > 50 000 USD/course
 - ~ 3000 USD/student
 - ~ 15 sponsored students/course
 - Co-sponsoring



OceanTeacher Global Academy

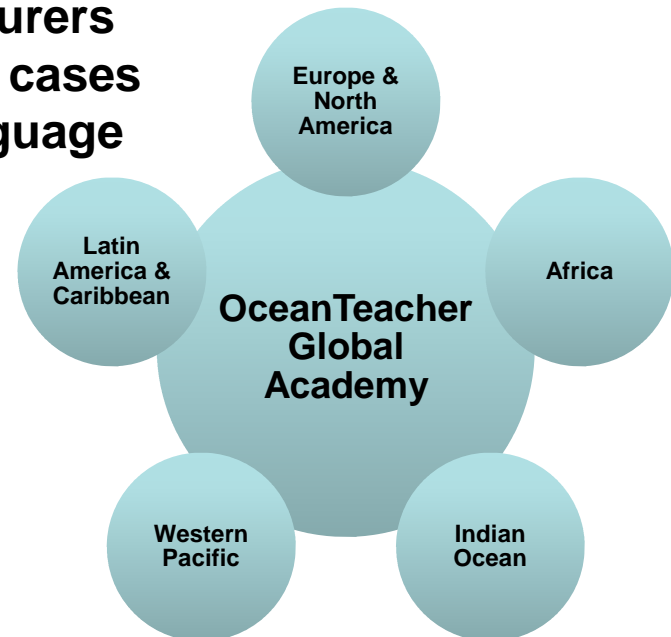


From centralized => worldwide training facility

Training courses related to IOC programmes, EU projects and relevant to Member States in the regions.

Regional Training Centres (RTCs)

Local lecturers
Local use cases
Local language





CARISCIENCES

- **CARISCIENCE** is a **UNESCO** affiliated network of Research Units/Departments in the Basic Sciences in the Caribbean which was officially launched in 1998 by the then Vice Chancellor of the University of the West Indies, the late Honorable Rex Nettleford. It is a non-governmental organization administered by researchers for researchers. Membership is open to any established Research Centre or Unit in the Caribbean.





CARISCIENCES

- Currently, its members are from Barbados, Guadeloupe, Guyana, Jamaica, Suriname and Trinidad and Tobago and embrace **all Universities in the region.**
- In its short period of existence we have established an impressive track record mounting over 40 Conferences/Workshops/ Symposia/Summer Schools and funding research, academic visits and training workshops.





¡Muchas gracias!
Merci beaucoup!
Thank you!
شُكْرًا
Спасибо
谢谢



<http://ioc.unesco.org>

