Perspectives for enhancing co-ordination and support of Europe´s Ocean Observing System

Report on Half-Day Conference

October 24th 2017

INTERNATIONAL CENTER FOR CULTURE AND HIGHER EDUCATION FOR SCIENTIFIC RESEARCH OF CNR
Via Ceselle, Ancapri
Island of Capri, Italy

Background

With the establishment of the European Ocean Observing System (EOOS) as a coordinating framework for better alignment and integration of Europe´s ocean observing capacity, and the results from its recent stakeholder consultation, it is appropriate to reflect on the role EurOcean Members, complementary initiatives such as those of the European Research Vessel Operators (ERVO) and other public and private stakeholders can play in developing and supporting an EOOS action plan. In order to reach its goals, EOOS requires the support of all relevant actors including those with experience in the strategic development and implementation of trans-regional and trans-national access to large infrastructure and in the integration of marine environmental parameters from several programme and projects. For example there are open questions concerning the use of Research Vessels for data acquisition, but also as fundamental tools to support the installation, verification and maintenance of fixed observational system; the assembling of ocean variables from coastal/deep sea to underpin environmental assessments and the geographical scope of the EOOS action plan.

Objectives

The objectives of this half day event, organised by EurOcean and its member the Italian National Research Council (CNR), was to share information on recent developments and plans for ocean observations in Europe and to discuss existing regional and European-wide ocean observation and supporting initiatives. The discussion addressed the principal EOOS key drivers (research, technology, societal and environmental) to gain a better understanding on the status and gaps in the European observing capacity at different geographical scales. Moreover, it was an occasion to learn from the experience of participants in relation to existing efforts in the coordination and streamlining of usage of marine research infrastructure and marine data collection. Finally the workshop aimed to clarify potential roles for EurOcean, its members and related initiatives in relation to EOOS.

The full agenda, including the invited speakers, are listed in Annex 1, while video recordings of all presentations can be accessed here. A summary of the presentations is provided below.

Presentations

The event was opened by Giuseppe Magnifico, Deputy Director of the Office for Planning at CNR Central Administration, responsible for the management, development and promotion of CNR Marine Large Scale Facilities and CNR´s alternate-representative to EurOcean. Giuseppe welcomed EurOcean Member representatives, speakers and guests and outlined the objectives for the day. Slawomir Sagan, EurOcean President, welcomed all guests. Moreover, he outlined how discussions of EOOS date back to 2007 and underlined the relevance of the event in providing insights on the current status of EOOS developments. Ned Dwyer, EurOcean´s Executive Director, then thanked CNR for hosting the event and reiterated that the main question for the day was to understand better how EOOS can improve and support co-ordination of ocean observations in Europe. Furthermore it was an opportunity to reflect on how EurOcean, its members and participants´ organisations could contribute to achieving the EOOS objectives.

Full video presentation

Ocean Observations and European Research Infrastructure, *Agnès Robin, Research Infrastructures Unit, European Commission, DG Research & Innovation*

Agnès described how the landscape of European Research Infrastructures (RIs) is constantly evolving, including those contributing to ocean observations. New pan-European RIs such as Euro Argo-ERIC and EMSO-ERIC have been recently established; other ones are in the pipeline such as EMBRC-ERIC. Networks of national facilities have developed strategies towards more integrated services, open access and increased interoperability. These are for example research vessels (EUROFLEETS), coastal observatories (JERICO) and marine data centres (SEADATANET). Excellence in addressing the needs of the research community, both from academia and from industry, is a pre-requisite. But these infrastructures play a key role in addressing the needs of other communities and the European Commission is supporting their integration, efforts towards sustainability and synergies with European initiatives such as COPERNICUS, EMODNET and monitoring requirements (MSFD) in addition to global initiatives such as GEO/GEOSS.

Full video presentation

European Marine Board role in EOOS and ensuring an end-to-end ecosystem-based approach to observations, *Ferdinando Boero, co-chair European Marine Board*

Ferdinando introduced the European Marine Board (EMB) saying that it represents the voice of the scientists towards the decision makers. EOOS as a community-driven coordinating framework is attempting to join up the disparate efforts in relation to ocean observations and fill the key gaps.

He then went on to describe how oceanographic observing systems have evolved in recent decades, with the development of new technologies that allow a much improved representation of the oceanic domain. The observations are very advanced in terms of physics, chemistry and biogeochemistry, but they need parallel improvements in the way the patterns of biodiversity distribution and the processes of ecosystem functioning are described and understood. The EMB has recently set up a Working Group to deliver recommendations on how to strengthen Europe's biological ocean observing capacity.

The Marine Strategy Framework Directive (MSFD), with the definition of Good Environmental Status, adopted biodiversity and ecosystem functioning as the main pillars of a more holistic approach to marine science. The challenge and the opportunity for Observing Systems, thus, is to develop new technologies and concepts in order to expand coverage to bio-ecological variables, in accordance with the MSFD and then move to assessing impacts on the marine ecosystem as a whole.

Full video presentation

The role of EuroGOOS in co-ordinating Europe´s Ocean Observations, *Glenn Nolan, Secretary General, EuroGOOS*

Glenn gave an overview of the membership, regional systems and objectives of EuroGOOS. He went on to describe how EOOS is a coordinating framework designed to align and integrate Europe´s comprehensive, yet disparate observing capacity, promote a systematic and collaborative approach to collecting information on the state and variability of our seas, and underpin sustainable management of the marine environment. In late 2016, EOOS carried out a broad stakeholder consultation, to which there were over 115 responses from 30 countries and Glenn presented the key results. The consultation showed that there was overwhelming support for improved coordination, with a strong focus on data acquisition, a need to widen the number and quality of variables observed and that the EOOS governance structure should be flexible focussing on partnering and complementarity with other initiatives. In terms of short term actions, these should focus on characterising the existing landscape, foster links across observing and data initiatives and deliver a business case.

Glenn highlighted the wide range of EOOS relevant stakeholders under the headings of observations, processing and modelling and services and outlined how EOOS is already aligning itself with current activities, and he furthermore underlined the concerns around and the need for long-term, sustainable observing system.

EOOS events planned for 2018 include an EOOS Forum on March 8th and a conference in November in Brussels.

Full video presentation

EMSO-ERIC: The Organization of a New Multidisciplinary Networking Infrastructure
Juanjo Dañobeitia, Director General, EMSO-ERIC

Juanjo described how the European Multidisciplinary Seafloor and Water-column Observatory (EMSO-ERIC) is a strategic distributed infrastructure of seafloor and water column observatories, whose principal scientific objective is the long-term observation in real time of fundamental environmental processes related to the interaction between the geosphere, biosphere and hydrosphere. The 11 observatory facilities, including cabled and stand-alone, which make up the EMSO infrastructure are located in key sites spanning European waters all the way from the North Atlantic through the Mediterranean, to the Black Sea. The EMSO-ERIC provides unprecedented open access for users to a large scale, technologically advanced new system for multidisciplinary and interdisciplinary research on deep ocean processes including marine ecosystems, climate change and marine geohazards. With EMSO, national and regional decision-makers and policy makers for the first time have access to standardized, high-quality information they can count on to develop better regional intervention plans and policies.

Juanjo underlined the need to enhance the collaboration across the existing environmental ERICs and pointed out the EMSOs ongoing international cooperation efforts. He also highlighted the need of EMSO and other ERICs to establish links with Research Vessel operators, as not only are vessels vital in the servicing of fixed point observatories but they can assist sensor calibration and understanding of ocean dynamics as they make measurements when moving from one node to another.

Full video presentation

Supporting the coordination of Europe´s Ocean Observing System, *Ned Dwyer, Eurocean*

Ned, referencing the EOOS event held in the European Parliament in 2016, outlined how Europe has the resources and capacities to make comprehensive ocean observations for the benefit of society, but that there are gaps and the need for enhanced cooperation and partnerships between initiatives and organisations. EurOcean supports marine observations through its involvements in European projects such as EUROFLEETS and INTAROS as well as providing services to the European Research Vessel Operators (ERVO) group and Ocean Facilities Exchange Group (OFEG). Referring to the EOOS consultation document on the need for improved coordination of observing infrastructures systems and initiatives, he highlighted EurOcean´s Research Infrastructures Database which contains information on over 900 marine research infrastructures including ocean and coastal observatories. Concerning the need to map and characterise the existing European ocean observing landscape EurOcean´s Marine Knowledge Gate can assist as it has harvested and catalogued over 6000 marine research projects funded at European and national level and in some cases it lists the key results or Knowledge Outputs from those projects, thereby supporting knowledge transfer initiatives. EurOcean has collaborated over the years with the EMB and is ready to enhance its support to progress the EOOS objectives and activities.

Round Table Discussions

The Round Table was chaired by Per Nieuwejaar, Director of the Research Vessel Department, Institute of Marine Research, Norway. The synthesis of the main outcomes of the discussion is available below.

- There is a wide range of different observing systems and a real need for innovation and a requirement "to put intelligence across this system", in terms of coherence, coordination and interoperability.

- Society is demanding answers in relation to ecosystem status, climate change, etc. and we need to respond in an intelligent way with relevant and comprehensive information.

- In order to build a business case in relation to convincing funding agencies to support long-term monitoring there is a need for a targeted communications strategy.

- Outreach to and education of the public on ocean maters and observations is important. This will help the public to ask the right questions of policy makers.

- Experience from the stakeholder process in the Baltic Sea region has shown that there is a need for enhanced cooperation between what we might call research driven environmental monitoring and maintenance monitoring, as many sectors heavily depend on operational ocean information. We need to make better use of both the public and privately collected observations.

- Building a business case for ocean observations is not just answering "does it make money?" The business case needs to address the societal relevance, the ability of the systems to answer scientific and non-scientific questions, its utility in improving our knowledge of the ocean and the ability to provide information to a wide range of customer and users.

- There is a need to develop structures or mechanisms which allow EU funded projects to truly collaborate. In the current model, each project has its own dedicated financial and personnel resources. Collaboration is on a goodwill basis. More flexible models are required.

- European Commission funding is supporting multi-partner projects demonstrating services based on use of ocean observations, including those available through the Copernicus programme for activities such as maritime security, monitoring of protected areas, jelly fish monitoring, tuna migrations, etc.

- As well as long-term monitoring, observations to increase knowledge of fundamental deep-sea ocean processes are required. We need to ensure that scientists are

encouraged to address these knowledge gaps whilst also responding to increasing stakeholder demands for real time information.

- EOOS is a bottom-up initiative, implemented primarily by nation states. European Commission funding is very useful to complement and support certain aspects, through projects. However key project outputs need to be given a long term home.

Wrap-Up

Slawomir Sagan gave a brief wrap-up, highlighting the main conclusions drawn from the presentations and discussion. He expressed the opinion that we could claim to be successful in our endeavours if the ocean observation system got the same level of attention, recognition and resourcing as the meteorological observation system has already achieved many years ago. Given the time-lags in terms of stressors on the ocean and being able to determine an impact, it is even more vital that our understanding is improved. He said an ongoing challenge is that of convincing decision makers of the importance of a sustainable ocean observing system. Closing the meeting, Slawomir thanked the invited speakers, participants and remote viewers for their active presence and valuable input.

Annex 1 – Agenda

Time	Programme
	Chair: *Giuseppe Magnifico* Office for Planning, Central Management for the Support to Scientific Network and Infrastructure – CNR, Italy
14:30 – 14:50	**Welcome and Scene Setting** *Slawomir Sagan, President Eurocean, IOPAN, Poland* *Ned Dwyer, Executive-Director, EurOcean*
14:50 – 15:10	**Ocean Observations and European Research Infrastructure** *Agnès Robin, Research Infrastructures Unit, European Commission, DG Research & Innovation (remote presentation)*
15:10 – 15:30	**European Marine Board role in EOOS and ensuring an end-to-end ecosystem-based approach to observations** *Ferdinando Boero, co-chair European Marine Board*
15:30 – 15:50	**Coffee Break**
15:50 – 16:10	**The role of EuroGOOS in co-ordinating Europe´s Ocean Observations** *Glenn Nolan, Secretary General, EuroGOOS ,Belgium*
16:10-16:30	**EMSO-ERIC: The Organization of a New Multidisciplinary Networking Infrastructure** *Juanjo Dañobeitia, Director General, EMSO-ERIC, CSIC, Spain*
16:30 – 16:50	**Observing the Ocean ….. and do not forget the seafloor: mapping, uses, impacts** *Fabio Trincardi, Director, Department of Earth System Science and Environmental Technologies, CNR, Italy (unable to attend)*
16-50 – 17:10	**Supporting the coordination of Europe´s Ocean Observing System** *Ned Dwyer, Executive-Director, EurOcean*
17:10 – 17:50	**Roundtable and Discussion with a focus on how EurOcean its members and partners can support and enhance Europe´s Ocean Observing Systems** *Moderator: Per Nieuwejaar, Director of Research Vessel Department, IMR, Norway*
17:50- 18:00	**Wrap-up and Close of Conference** *Slawomir Sagan, President EurOcean , IOPAN, Poland*