
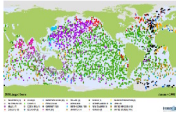
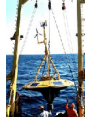
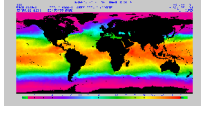




Towards an integrated European Ocean Observing System

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Ostend Declaration

The European marine and maritime research community stands ready to provide knowledge, services and support to the European Union and its Member and Associated States, recognising that

"The Seas and Oceans are one of the Grand Challenges for the 21st Century".

In doing so, we acknowledge:

- the critical role of the oceans in the earth's and climate systems;
- the importance of coasts, seas and oceans and their ecosystems to our health and well-being;
- the increasing impacts of global environmental change on the marine environment and the significant socio-economic consequences of this impact;
- the ongoing need for basic research to address major gaps in our fundamental knowledge of coasts, seas and oceans;
- the enormous opportunities for innovation, sustained wealth and job creation in new and existing maritime sectors such as aquaculture, renewable energy, marine biotechnology and maritime transport; and
- the need to transmit these messages to all sectors of society.

Furthermore, we acknowledge the crucial role of marine and maritime science and technology in providing knowledge and understanding of the seas and oceans and their biodiversity in creating new opportunities and technologies which will support and progress

- sustainable development, innovation and entrepreneurship (Strategic 2020);
- implementation of the Integrated Maritime Policy for the European Union (2007), the European Research Area (EC Green Paper on R&D, 2007) and other policies such as the Common Fisheries Policy;
- Good Environmental Status in our marine waters by 2020 (Marine Strategy Framework Directive); and
- related grand challenges including food, energy and health, as identified in the Lund Declaration (2009).

The marine and maritime research community recognises that significant progress has been made in response to the Callway (2002) and Agenda 2002. By building on the vision of the Integrated Maritime Policy, the European Research Area (EC Green Paper on R&D, 2007) and the Marine Strategy Framework Directive (2008) and the European Strategy for Marine and Maritime Research (2008), and commits to building future progress within this comprehensive policy framework.

Addressing the Seas and Oceans Grand Challenge

The EuroOceans 2010 Conference identified priority marine and maritime research challenges and opportunities in areas such as track, global environmental change, marine science, biotechnology, marine transport and marine spatial planning, including seabed mapping. The Conference delivered an unequivocal message on the societal and economic benefits Europe derives from the seas and oceans and of the crucial role that research and technology must play in addressing the Seas and Oceans Grand Challenge.

The European marine science and technology community, building on existing achievements and initiatives, is ready to address this challenge in partnership with industry and the public sector, and call upon the European Union and its Member and Associated States to facilitate this response by delivering the following proactive and integrating actions:

1. **Joint Programming**
 building an effective framework, combining the assets of European programmes with those of Member States, to

2. European Ocean Observing System

Support the development of a truly integrated and sustainably funded "European Ocean Observing System" to (i) re-establish Europe's global leading role in marine science and technology (ii) respond to societal needs by supporting major policy initiatives such as the **Integrated Maritime Policy** and the **Marine Strategy Framework Directive**; and (iii) support European contributions to global observing systems. This could be achieved through better coordination of national capabilities with appropriate new investments, in coordination with relevant initiatives (e.g. ESFR, EMODNET, GMES) and the engagement of end-users.

and maritime research projects, programmes and initiatives, with capacity for creating, transferring, integrating, exploiting and developing in general knowledge products to facilitate policy development, decision making, management systems, innovation, education and public awareness.

Drivers of EOOS

✓ **Europe's leading role** in marine and maritime science and technology



✓ **Integrated Maritime Policy** (EMODNET)

✓ **Marine Strategy Framework Directive** (marine environmental assessments)

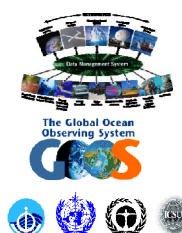


✓ **GEO-GEOS** and the EU contribution **GMES**

✓ Rio- Agenda 21: **GOOS** – UNESCO

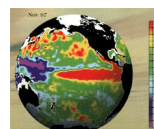
✓ **UNFCCC** – GCOS

✓ **CBD** - GOBI



Major driver: supporting blue economy (users pull)

- ✓ Maritime transport
- ✓ Offshore operations (constructions, drilling, ..)
- ✓ Fisheries & aquaculture
- ✓ Tourism & coastal economy
- ✓ Ocean renewable energy

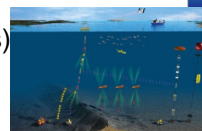
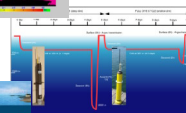
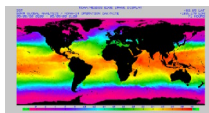


- ✓ Health of marine environment (pollution, biodiversity)
- ✓ Protection from natural hazards (tsunami, HABs)
- ✓ Mitigation of climate change effects (e.g. sea level rise)



Observing systems are now available (*technology push*)

- ✓ Remote sensing
- ✓ Drifting-profiling floats
- ✓ Fixed observatories (time-series stations)
- ✓ Ships of opportunity
- ✓ Gliders
- ✓ Research vessels
- ✓ Coastal networks (tide gauge..)



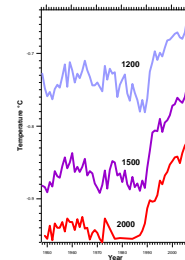
What do we have today in Europe ?

- National systems (partially coordinated by EuroGOOS)
 - Variety of technologies and funding schemes; main synergies at regional level
- Research infrastructure investments (FP, ESFRI)
 - EuroARGO, EMSO,
 - EuroSITES, JERICO, SEADATANET, ...
 - ICOS - Carbocean
- EMODNET & GMES MCS: integrators (and major users)
 - Not yet funding the in-situ component



What is missing ? (gaps)

- Spatial gaps
 - horizontal – SE European seas;
 - vertical – deep sea is under-sampled;
- Temporal gaps
 - few complete time series;
- Parameter gaps
 - biochemical; sensors are now available;
- Long term commitments
 - more than 70% based on research funding;
- Integrated monitoring strategy at European level
 - Reduce overlaps; maximize synergies and benefits



Proposed way ahead

- Launch a concerted flagship initiative: **EOOS**
 - With specific Strategy, Implementation Plan, Budget
- Building upon and combining all available resources
 - National and European
 - Research, Operational, Structural
 - Public and Private
 - Existing and New investments
- Engaging all stakeholders (EU, MS, Regions, Industry)
 - EMODNET (DG Mare)
 - GMES (DG Enter)
 - ESFRI, FP7-8, JPI-Oceans (DG Res)
 - EuroGOOS, EUMETNET, ..., MB-ESF, ..., EU-OEA, ...
- In partnership with international – global initiatives
 - GEO, IOOS-OOI, IMOS, ..., ICES, UNEP, OSPAR, ...

