Marine Board Response to the ERA Framework Public Consultation:

Areas of untapped potential for the development of the European Research Area (ERA)

Marine Science and Technology represents a key area for ERA progress

The EU aims to deliver a fully functioning ERA by 2014, yet concedes that there is still much work to do. With a major financial crisis threatening Europe, it is clear that research and innovation are central to the solution, as reflected in the **Europe 2020 Strategy** and the **Innovation Union**. A strong European research base is essential for achieving the scale of research collaboration and investment required to overcome the current economic crisis and to continue to address critical societal challenges. The Marine Board fully supports the efforts of the European Commission to drive forward the delivery of the European Research Area, recognizes the urgency of the challenge, and will continue to contribute to the achievement of this important goal.

An ERA for Marine Science and Technology

In the current challenging economic situation, seas and oceans, with their vast resources, can contribute significantly to sustainable growth in Europe in critical areas such as energy, food, transport and health. However, Europe's seas and oceans are also changing rapidly through a combination of human and natural pressures. More than ever, we need excellent science to address the enormous opportunities and significant threats presented by the seas and oceans.

Since the inception of the ERA concept in 2000, the Marine Board has made the achievement of the ***ERA for marine science and technology*** one of its core goals. Research focused on the seas and oceans is particularly in need of a coordinated European approach because:

- Accessing marine environments for research is difficult and costly;
- Ocean science relies on major research infrastructures, not always accessible to all European researchers;
- The shared nature of Europe's marine waters mean that their protection, sustainable use and management is a shared responsibility;
- The oceanographic and biological processes at sea have scales and interactions that require a joint approach to research;
- The European marine research community is traditionally well-organized at European level with research collaboration, knowledge sharing and researcher mobility being common practice for European marine researchers.

On the 12-13th of October 2010, more than 400 delegates gathered at the EurOCEAN 2010 Conference in Ostend, Belgium, and unanimously approved the Ostend Declaration which stated that "**the Seas and Oceans are one of the Grand Challenges for the 21st Century**". The Declaration (in Annex) set out critical achievements, challenges, opportunities and needs for research focused on seas and oceans, targeting sustainable use of marine goods and services. The Declaration highlighted the following key priorities, which are central to delivering an ERA for marine science and technology:

Ostend Declaration Priority	Detail	Corresponding ERA Objective
Joint Programming	Support for the new JPI on Healthy and Productive Seas and Oceans ("JPI Oceans)	Closer cooperation and coordination of Member/Associated State research investments Cross cutting governance
European Ocean Observing System (EOOS)	Support for the development of a truly integrated, sustainably funded EOOS to deliver comprehensive, open access and quality controlled marine environmental data, providing marine knowledge for research, industry and policy support (e.g. Marine Strategy Framework Directive)	Coordination of world class research infrastructures (in the area of ocean observations)
Research to Knowledge	Establishment of mechanisms to enhance the translation, use and impact of knowledge generated through research	Knowledge sharing, access, exchange and translation
Innovation	Enhanced support for innovation and commercialization of marine/maritime products, processes, services and concepts..	Meeting the Innovation Union and Europe 2020 objectives
Training and Career Development	Improve training and mobility opportunities for marine researchers and technologists and ensure stable and attractive career pathways.	A single and open labour market for researchers
International Cooperation	EU level mechanism to strategically enhance international cooperation in marine science and technology	Global research cooperation

The Ostend Declaration reflects many years of European cooperation in marine science, a core requirement of a successful ERA. The EU Framework Programme has played a critical role in supporting the first steps towards the ERA, providing the glue and impetus for Member States to share resources, infrastructures and data and to collaborate on multidisciplinary research projects and programmes. An opportunity exists for the new Horizon 2020 programme, currently in planning, to build on the achievements of FP7, to support further ERA structuring initiatives, and to introduce new and innovative instruments for better coordination and governance of marine and maritime research in Europe.

Delivering the ERA will require the full commitment of the EU Member/Associated States and the breaking down of national barriers to create a single market for research in Europe. The use of structural funds to support the building and operation of key marine research infrastructures and the achievement of a fully integrated European Ocean Observing System (EOOS) is a key opportunity and one area where Member/Associated State support will be essential. Also, as recognized by the Ostend Declaration, the newly emerging Joint Programming Initiative on "Healthy and Productive Seas and Oceans" could be a major consolidating force for marine science in the years to come and deserves support.

The development of JPI Oceans will benefit significantly from the work and results of the FP7 SEAS-ERA project (2010-2014) which is supporting a range of coordination activities at seas basin and pan-European level which are of strategic importance for the European Research Area. The project brings together 20 major European Marine Research Funding organizations from 20 countries and the Marine Board.

Good governance and stewardship of the sea space and making a sustainable use of its resources represent a formidable endeavour that is at the heart of the **EU Integrated Maritime Policy,** including the **Marine Strategy Framework Directive** and the **European Strategy for Marine and Maritime Research**. Marine science and technology will contribute directly towards the objectives of the **Europe 2020** Strategy and the **Innovation Union**, providing a platform for jobs and economic growth in a range of marine and maritime sectors.

Horizon 2020, JPI Oceans, ESFRI and EOOS are just some key components of the complex framework which will form the backbone of the future ERA for marine science and technology. These programmes and initiatives must work in harmony. The Marine Board stands ready to continue its role as a coordinating, advisory and innovative force in this complex landscape. The Marine Board is committed to actively strive for better science, greater impact and more effective use of public research funding at European level, and to drive further progress towards the ERA for marine science and technology.

The Marine Board

The Marine Board is a partnership of major national marine science research and funding organisations which was established in 1995 to facilitate cooperation and coordination in marine science in Europe. According to its mission, the Board:

"provides a pan-European platform for its member organisations to develop common priorities, to advance marine research and to bridge the gap between science and policy in order to meet future marine science challenges and opportunities"

As of 2011, the Marine Board has 34 Member Organisations from 20 countries.

Further information and a full range of the Board's publications are available at: www.esf.org/marineboard

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 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 those impacts;
- 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 translate these messages to all sectors of society.

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

- Job creation through smart, sustainable and inclusive growth (Europe 2020);
- Implementation of the Integrated Maritime Policy for the European Union (2007), the European Research Area (EC Green Paper on ERA, 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 Galway (2004) and Aberdeen (2007) Declarations, evidenced in the adoption of the Integrated Maritime Policy for Europe (2007), its environmental pillar 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 EurOCEAN 2010 Conference identified priority marine and maritime research challenges and opportunities in areas such as food, global environmental change, energy, marine biotechnology, maritime 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 calls 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**
   Develop an integrating framework, combining the assets of European programmes with those of Member States, to address the Grand Challenge of the Seas and Oceans, including the identification and delivery of critical marine research infrastructures. The **Joint Programming Initiative on "Healthy and Productive Seas and Oceans"** has the appropriate scale of integration and should be actively supported by the European Commission and Member States.

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. ESFRI, EMODNET, GMES) and the engagement of end-users.

3. **Research to Knowledge**
   Establish appropriate mechanisms to keep under review current marine and maritime research programmes and projects with a view to enhancing their impact by (i) exploiting the results of this research; and (ii) identifying existing and emerging gaps. This should be supported by a **repository for the reports and findings of national and EU marine and maritime research projects, programmes and initiatives,** with capacity for archiving, translating, analysing, reporting and developing integrated knowledge products to facilitate policy development, decision making, management actions, innovation, education and public awareness.

To address effectively the Seas and Oceans Grand Challenge, it is essential to prioritise initiatives and programmes to enhance:

- **Innovation**
  Provide enhanced support for innovation and the commercialisation of new marine/maritime products, processes, services and concepts in support of the Innovation Union and the Europe 2020 Strategy;

  Promote actions to raise awareness within the marine scientific community of the innovation potential of marine science, and opportunities to make use of it in cooperation with ocean industries.

- **Training and Career Development**
  Establish appropriate training and mobility opportunities for marine researchers and technologists and provide stable and attractive career pathways to ensure the highly skilled workforce that will be needed to support expanding marine and maritime sectors;

- **International Cooperation**
  Establish at EU level a mechanism to strategically enhance international cooperation (i.e. between European consortia and third country partners) in science and technology, with support for networking initiatives, preparatory phase projects and concrete actions;

  Strengthen bilateral/multilateral cooperation with key funding organisations, intergovernmental bodies and marine/maritime science institutions outside Europe to overcome barriers to, and deliver workable solutions for, joint funding of relevant international research programmes and infrastructures.

The European marine and maritime science community is committed to playing its role, in partnership with industry and the public sector, to bridge the gap between science and innovation to support sustainable development.