

# Editorial

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The Rome Declaration was adopted at the EurOCEAN 2014 Conference, Rome, on 8 October 2014. Starting with the EurOCEAN meeting at Galway in 2004, it was the fourth in a series of high-level statements issued following extensive discussion and consultation amongst the wide community of marine scientists and associated stakeholders.

EurOCEAN conferences are major European marine science policy conferences that have and continue to provide a forum for the marine and maritime research community and associated stakeholders to interface with European and Member State policymakers and strategic planners, to consider, discuss and respond to new marine science and technology developments, challenges and opportunities. The 2014 meeting in Rome included 340 scientists, policymakers and other experts representing 143 organizations from 31 countries.

The distinctive feature that characterizes EurOCEAN conferences is the focus on bringing the stakeholders together to speak with one, integrated voice towards policy. The EurOCEAN Declarations have been unique instruments that have served to raise decisionmakers' awareness of the marine research priorities and propose concrete actions. These statements have proven to be critical drivers of research and policy developments in Europe since they were first launched in 2004.

For marine biologists the Rome Declaration, reprinted in its entirety below, represented a new landmark in these interdisciplinary statements. Here we saw a genuine desire, rather than lip service, for all sides of the marine community to come together and work towards solving common issues that are at the centre of the marine sciences and can only be addressed by sharing ideas and integrating research programmes that aim to help solve those problems that are at the very top of the global agenda. Perhaps one of the most important points was the shared recognition that education *at all levels* was the most urgent need of all. As marine biologists we should embrace these ideas and take our place in the vanguard of this new and exciting mission.

## ROME DECLARATION

*Setting a vision for seas and ocean science:*

### **Delivering impact, global leadership and sustainable blue growth for Europe**

Europe is emerging from the worst financial crisis in recent history. Rebuilding our economies demands that we identify sustainable opportunities for jobs and economic growth. The ocean is a source of food, water, energy and raw materials, a medium for tourism, transport and commerce, and can provide solutions to many European and global policy

challenges. But the ocean is neither inexhaustible nor immune to damage. In the context of rapid global change and human population growth, it is imperative to achieve human well-being by combining economic benefit with environmental protection. This presents a highly complex challenge. Collaborative and cross-disciplinary European research is the key to providing the knowledge and tools that we need to achieve ecosystem-based management and protection of valuable marine resources and services.

#### **The four Rome Declaration Goals**

##### **1. Valuing the ocean**

Promoting a wider awareness and understanding of the importance of the seas and ocean in the everyday lives of European citizens.

##### **2. Capitalizing on European leadership**

Building on our strengths to reinforce Europe's position as a global leader in marine science and technology.

##### **3. Advancing ocean knowledge**

Building a greater knowledge base through ocean observation and fundamental and applied research.

##### **4. Breaking barriers**

Addressing the complex challenges of blue growth and ocean sustainability by combining expertise and drawing from a range of scientific disciplines and stakeholders.

## **Connecting science, policy and people**

Since the launch of the European Research Area in 2000, substantial progress has been made in integrating European marine science. This progress is based on a simple premise: that we can achieve greater impact if we work together, transcending national barriers to scientific cooperation. EU policy developments have significantly advanced an integrated approach to managing maritime space and resources. The EU Integrated Maritime Policy, its environmental pillar, the Marine Strategy Framework Directive, the Maritime Spatial Planning Directive, and reformed Common Fisheries Policy, have provided a powerful basis for Member State cooperation in addressing shared maritime challenges and responsibilities. Furthermore, the Blue Growth Strategy has set in context the contribution that science can make to develop a sustainable European maritime economy.

A recent policy statement by the new European Commission President<sup>1</sup> highlights the need to focus on the key challenges ahead for our economies and societies, '*be it with regard to the digital age, the race for innovation and skills, the scarcity of natural resources, the safety of our food, the cost of energy, the impact of climate change, the ageing of*

<sup>1</sup> *A New Start for Europe: My Agenda for Jobs, Growth, Fairness and Democratic Change*. Political Guidelines for the Next European Commission, Jean-Claude Juncker, Strasbourg, 15 July 2014 ([http://ec.europa.eu/about/juncker-commission/docs/pg\\_en.pdf](http://ec.europa.eu/about/juncker-commission/docs/pg_en.pdf)).

*our population or the pain and poverty at Europe's external borders.'*

This Declaration is a statement of intent by Europe's marine scientific community for how we can work together in the next five years to undertake more integrated science; understanding stakeholder needs, underpinning policy needs, environmental sustainability, targeted societal impact and advancing European leadership in a global context. We call on Member and Associated States, the European Commission and Parliament, the European Investment Bank and the private sector to support us in promoting the following four high-level goals and associated actions:

### 1. Valuing the ocean

**Goal: Promoting a wider awareness and understanding of the importance of the seas and ocean in the everyday lives of European citizens.**

With the global population set to reach 9 billion people by 2050, we need new ways to provide food and energy and to ensure a safe and sustainable use of marine space. But many people have little awareness of the importance of the seas and ocean in their daily lives; the impact these have on human well-being; their role in global change; the importance of the maritime economy; the rich natural and cultural heritage; and the need to protect vital ocean resources. By achieving a transformation in appreciation and understanding of the ocean's role across society as a whole, we can create better conditions for investment and sustainable blue growth.

We call for:

- Sustained support for ocean literacy, best practice in science communication, citizen science initiatives and knowledge transfer to be embedded in marine research projects and programmes;
- A coordinated, cross-disciplinary and integrated programme on *Oceans and Human Health*, targeted at understanding and managing the risks and benefits to human physical and mental well-being from interactions with the seas;
- Further initiatives towards advanced and agreed methodologies for the evaluation and use of monetary and non-monetary (e.g. cultural, recreational, health promotion, etc.) value systems and indicators for marine ecosystem services and benefits;
- Recognition that regional seas diversity from the Atlantic Ocean and its links with the Arctic, to the Baltic Sea, North Sea, Black Sea and outermost areas, is a European asset to be valued to promote Blue Growth. The specificity and sensitivity of the Mediterranean Sea calls for particular attention which is acknowledged by the proposed Blue Growth Research and Innovation Initiative for the Mediterranean.

### 2. Capitalizing on European leadership

**Goal: Building on our strengths to reinforce Europe's position as a global leader in marine science and technology.**

Europe is a truly maritime continent with an ocean jurisdiction that includes the largest part of the world's exclusive economic zone (EEZ). We are world leaders in shipping and ship-building, dredging, subsea drilling and mining technologies, ocean energy technologies, coastal tourism and seafood production systems, and have significant potential in blue

biotechnology and ocean renewables. We are also developing and implementing advanced policies and practices for responsible management of our seas.

In the research domain, we are leaders in key fields in marine and maritime science and engineering. European nations own and operate the most advanced research fleet in the world and we are continually expanding our ocean observation capacities, a key goal of the EU Marine Knowledge 2020 initiative. Added to this, through EU Framework Programmes and coordinated national investments, Europe has built an unparalleled know-how in organizing research on an international scale. With European leadership and expertise comes an opportunity and responsibility to foster a global perspective, engage in international dialogue, and exercise influence for the sustainable management of global ocean resources and services. To maintain our leadership and competitive advantage will require advanced knowledge and innovation.

We call for:

- A detailed assessment of whether the current level of European investment in marine and maritime research is sufficient, given the high value and importance of the European maritime economy<sup>2</sup>;
- Support for the development of public–private partnerships in research and innovation, focusing on strategic technologies, including data sharing, to underpin growth and jobs in crucial sectors for a resilient knowledge-based European blue economy and society;
- Increased support for collaborative research with partner countries, overcoming barriers to joint funding and capacity building, taking account of the progress already made by the Transatlantic Ocean Research Alliance<sup>3</sup>;
- Further development of transparent mechanisms for the use of science in supporting evidence-based policymaking.

### 3. Advancing ocean knowledge

**Goal: Building a greater knowledge base through ocean observation and fundamental and applied research.**

Recent advances in our knowledge of the marine environment have served to illustrate the sheer complexity of the ocean, the enormous and changing diversity of marine life, and the interplay between ecological, biogeochemical, physical and social processes which regulate the ocean ecosystem. There remains a significant challenge to understand and quantify the role of the ocean in the Earth system and its influence on human populations on timescales from days to centuries, and on spatial scales from local to global. We urgently need to further map marine environments, to understand complex marine processes, to study the complex

<sup>2</sup> The combined annual EU research investment in marine and maritime research is currently estimated at €2 billion. The EU Blue Growth Strategy estimates the gross value added (GVA) of the European maritime economy at €500 billion per year. The Barcelona target commits the EU to increasing its research investment to 3% of GDP, one-third of which (i.e. 1%) should come from the public sector. In terms of the maritime economy, 1% would equate to a €5 billion annual investment, more than double the current level of investment.

<sup>3</sup> Galway Statement on Atlantic Ocean Cooperation. Launching a European Union–Canada–United States of America Research Alliance (<http://ec.europa.eu/research/iscp/index.cfm?lg=en&pg=transatlantic-alliance>).

interactions between the ocean, seafloor and sub-seafloor, land, ice and atmosphere, to predict and prepare for future changes and cumulative impacts resulting from human and natural pressures. Moreover, actions are needed to address the rapidly growing opportunities and challenges in advanced ocean measurement technology and effective management of increasing volumes and diversity of information and physical, chemical and biological data from marine observing systems that are fit for purpose including being capable of informing assessments of good environmental status.

We call for:

- The inclusion of marine and maritime research topics across the full range of societal challenges in Horizon 2020 and across multiple thematic levels in national and regional research programmes;
- A significant further investment in collaborative cross-disciplinary research and technology development, designed to address complex challenges towards sustainably managing our ocean resources, identifying scenarios of change and associated adaptive strategies, and achieving Good Environmental Status in European regional seas;
- Better alignment and more effective use of a diverse range of funding and coordination mechanisms (including ESFRI, EU investment and structural funds), for the construction and long-term operation of key marine research infrastructures and facilities, addressing identified gaps.
- A fully operational EMODnet, ensuring collected data are well managed and freely available, to support science, industry and policy, aligned with further development of the European Ocean Observing System (EOOS), integrated at the global level (including GOOS, GEO, Copernicus).

#### 4. Breaking barriers

**Goal: Addressing the complex challenges of blue growth and ocean sustainability by combining expertise and drawing from a range of scientific disciplines and stakeholders.**

By charting an ambitious course and continuing to break down barriers (disciplinary, practical, cultural, financial, legal and political), the European seas and ocean research community can set a standard for the broader European research community. We already have a strong track record in working together, but we aim to go further by transforming the way we do training and research; focusing on impact, engaging with stakeholders, creating a platform for sustainability, and boosting jobs. Innovation in the provision of undergraduate and postgraduate training and enhancing skill sets and career pathways for marine professionals will

be essential, in line with the EC Communication on Innovation in the Blue Economy.

We call for:

- Education and training to encompass and foster cross-disciplinary training, the ability to work across science–policy interfaces, team-based approaches, entrepreneurship and the broad range of specialist technical and ICT skills needed to underpin modern marine science;
- Improved support, incentives and recognition from higher education and research institutions, funding agencies, and professional bodies, for established researchers to undertake cross-disciplinary research and to engage with stakeholders and society;
- Europe to be the most attractive place for top talent by offering an internationally competitive environment, innovative career pathways across sectors, mobility and blue jobs.

#### THE EUROCEAN 2014 LEGACY: A VISION FOR SEAS AND OCEAN SCIENCE IN EUROPE

The European marine science and technology community can provide a crucial service to wider society, directly addressing the most pressing questions, including food, water and energy security, climate change and human well-being. Marine and maritime science can contribute towards advancing international sustainable development goals, supporting new jobs and growth, promoting resource efficiency including the circular economy, and achieving Good Environmental Status in European waters. A more detailed analysis of strategic research priorities in seas and oceans science is set out in the *Navigating the Future IV*<sup>4</sup> paper, a key reference for the next research programmes at EU, macro-regional and Member State level.

With this vision, the European marine science community calls for the augmented, coherent and targeted support of Member and Associated States, the European Commission and Parliament, the European Investment Bank and the private sector, to shape together the future agenda for seas and ocean research.

**More about the Rome declaration and the organizations and individuals involved in drafting it can be found at <http://eurocean2014.eu/declaration/>.**

Michael Thorndyke, Editor in Chief<sup>1</sup>

Fiona McGowan, Associate Editor<sup>2</sup>

<sup>1</sup>Royal Swedish Academy of Sciences & Göteborg University

<sup>2</sup>University of East London

<sup>4</sup>European Marine Board (2013). *Navigating the Future IV*. Position Paper 20 of the European Marine Board, Ostend, Belgium. ISBN: 9789082093100 ([www.marineboard.eu/images/publications/Navigating%20the%20Future%20IV-168.pdf](http://www.marineboard.eu/images/publications/Navigating%20the%20Future%20IV-168.pdf)).