Self-Evaluation Report

2005-2010

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Marine Board Mission Statement: *The Marine 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.*

- The **Marine Board Members** are national organisations involved in marine scientific research, including both research funding organisations (e.g. research councils, ministries) and research performing organisations (e.g. major national marine research institutes). In 2010, the Marine Board represents **31 organisations from 19 different countries** in Europe. The Board meets in full plenary twice each year.
- Marine Board operations are overseen by its **Executive Committee (ExCom)** composed of a Chair and six vice-Chairs and the Executive Scientific Secretary.
- The strategic and operational decisions and activities proposed by the Marine Board and ExCom are implemented by the **Marine Board Secretariat**. The Secretariat is composed of five full-time staff members, including three Science Officers, one Administrator and the Executive Scientific Secretary who is head of the Secretariat and a member of the Executive Committee.
- In 2007, the Marine Board moved its **Secretariat** from ESF headquarters in Strasbourg to the **InnovOcean site in Ostend (Belgium)**, offered and supported through an in-kind contribution from the Flemish Government.

Chapter 2. Marine Board Activities

- Since 2005, the Marine Board has delivered a nearly **eight-fold increase in its activities and outputs**; in addition, the Marine Board Membership has increased by 24% and the Secretariat staff has increased from three to five full-time employees.
- The **Marine Board core activities are based on different instruments** which have resulted (since 2005) in the publication of 8 Position Papers, 2 Vision Documents, the release of 8 Statements, the organisation of 2 Marine Board Open Fora and the facilitation of 2 Marine Board Panels.
- The Marine Board was instrumental in organising the last three **EurOCEAN Conferences**: Galway (2004), Aberdeen (2007) and Ostend (2010) and in developing and securing the impact of the associated EurOCEAN Declarations on the (marine science) policy-making processes.
- The wide range of Marine Board outputs (e.g. Strategic Position Papers, Vision Documents, Statements etc.) and strategic activities have contributed strongly to the design of **European and national marine science and policy agendas**, the development of the **European Strategy for Marine and Maritime Research** (September 2008) and the creation of the **Marine component in the European Research Area** (ERA).

Marine Board – Overview

Marine Board Mission Statement:

The Marine 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.

Marine Board Objectives and Underpinning Approaches

The Marine Board facilitates enhanced cooperation between national organisations involved in marine science (both research institutes and research funding agencies), European stakeholder networks and wider marine and maritime communities, towards the development of common positions on the research priorities and strategies for marine science in Europe.

As an independent non-governmental advisory body, the Marine Board develops insight and foresight, recognising opportunities and trends, presenting compelling and persuasive arguments that shape the future of marine research in Europe. The Marine Board provides the essential components for transferring knowledge for leadership in marine research. Adopting a strategic role, the Board serves its Member Organisations by providing a forum within which marine research policy advice to national agencies and governments and to the European institutions and agencies is developed, with the objective of promoting the establishment of the European *Marine* Research Area.

The Marine Board operates via four principle approaches which underpin the Board's main objective of bridging the gap between science and policy (see Figure 1).

Figure 1. Marine Board underpinning approaches

- ***Forum*** – bringing together European marine research stakeholders to share knowledge, to identify common priorities and approaches, to develop common positions and perspectives, and to collaborate;
- ***Synergy*** – fostering European added value to national programmes, facilitating access and shared use of national marine research facilities, and promoting synergy among international programmes and organisations;
- ***Strategy*** – identifying disciplinary and inter-disciplinary marine scientific issues of strategic importance for Europe, initiating analysis and studies, and providing high-level recommendations for European and national programme managers, research funders and policy makers as well as the scientific community;
- ***Voice*** – expressing a collective vision of marine research priorities towards a European strategy for marine research, in order to meet future science and societal challenges and opportunities.

Marine Board Governance

Marine Board Members

The Marine Board is a pan-European partnership of national organisations involved in marine scientific research, including both research funding organisations (e.g. research councils, ministries) and research performing organisations (e.g. major national marine research institutes). In 2010, the Marine Board represents 31 organisations from 19 different countries in Europe (a list of Marine Board Members and Delegates is provided in Annex 1).

Marine Board Delegates (directors or senior executive officers of the Marine Board Member Organisations) meet at Plenary Meetings twice a year to share knowledge, to define common priorities and to agree on activities and outputs which will drive or impact upon European and national marine research and policy agendas. The European Commission's DG Maritime Affairs and Fisheries (DG MARE) and DG Research (DG RTD) have seats as permanent Observers at the Marine Board Plenary Meetings. The Marine Board activities and the operation of its Secretariat are funded mainly through annual contributions from Marine Board Member Organisations and Marine Board external contracts (also see Finances section on page 42).

Marine Board Delegates at the Autumn 2010 Plenary Meeting in Ostend, October 2010

Executive Committee

Marine Board operations are overseen by its Executive Committee (ExCom) composed of a Chair and six vice-Chairs (elected by the Marine Board Members) and the Executive Scientific Secretary. The ExCom meets approximately four times per year to follow-up on the implementation of the actions agreed by the Board at Plenary Meetings, make operational and financial decisions, and provide strategic guidance to the Board.

Secretariat

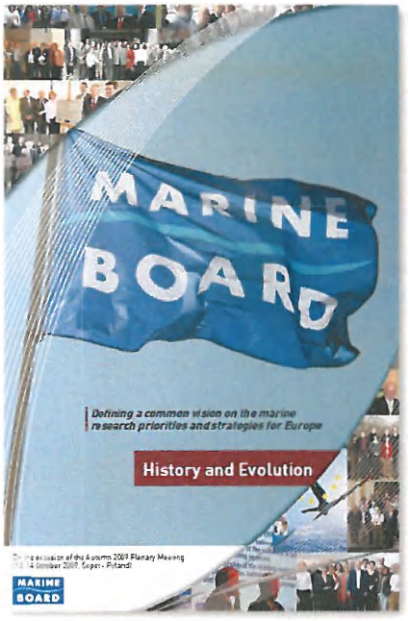
The strategic and operational decisions and activities proposed by the Marine Board and ExCom are implemented by the Secretariat. The Secretariat is composed of five full-time staff members, including three Science Officers, one Administrator and the Executive Scientific Secretary who is head of the Secretariat and a member of the Executive Committee. The Secretariat works to support day-to-day operations of the Marine Board, advance Marine Board objectives and promote the Board's activities and outputs.

The Secretariat is located in Ostend, Belgium, hosted by the Flanders Marine Institute (VLIZ), with support from the Government of Flanders. The European Science Foundation (ESF) provides the legal entity to the Marine Board Secretariat; this includes operational service support on financial, contractual and legal matters. In return, the Marine Board pays overheads to the ESF.

Marine Board Secretariat team in its offices at the InnoOcean site, Ostend, from left: Maud Evrard, Jan-Bart Calewaert, Dina Eparkhina, Aurélien Carbonnière and Niall McDonough

Short Marine Board History

By the early 1990s, leading members of the marine research community in Europe had identified a need to create a platform to promote enhanced cooperation in marine science at a European level. Building on the momentum of the European Committee for Ocean and Polar Sciences (ECOPS) 1994 conference, *The Grand Challenges*, the Marine Board was established by its Member Organisations (with support from the European Commission FP MAST programme) in 1995 as part of the European Marine and Polar Sciences Board (EMaPS). It was decided that a joint secretariat would be hosted at the ESF headquarters in Strasbourg to support EMaPS activities. On the basis of an independent 1998 review, EMaPS was dissolved in 1999 and the Marine Board and Polar Board were retained independently.



Marine Board History and Evolution Brochure, October 2009

Since 1999, the Marine Board has evolved into a dynamic, innovative and creative organisation drawing on its membership and the wider marine science community to advance the European marine research and policy agenda and to promote the importance of science and technology in sustainable ocean development and governance. The creation of Expert Working Groups, the publication of Strategic Position Papers, the facilitation of major marine science conferences (e.g. EurOCEAN Conferences, 1998, 2000, 2004, 2007 and 2010) and the publication of the Galway (2004), Aberdeen (2007) and Ostend (2010) Declarations have all contributed to the development and implementation of a European Strategy for Marine and Maritim e Research (adopted by the European Commission in September 2008). In addition, Marine Board's *Navigating the Future* foresight series (2001, 2003, 2006, 2011) provides a broad perspective on the challenges and opportunities facing marine science and technology and the societal issues that need to be addressed.

In 2007, the Marine Board moved its Secretariat from ESF headquarters in Strasbourg to the InnovOcean site in Ostend (Belgium), offered and supported through an *in-kind* contribution from the Flemish Government.

Core Activities and Instruments

"In my views, the Marine Board is instrumental in gathering the marine science community together, thus contributing to the coherence of the marine research perspective in Europe. The Marine Board is an important player, also for identifying the research agenda and contributing, with others, to implement this agenda. The views expressed by the Marine Board, in a concerted manner with other actors, are useful to shape research orientations and strategies."

Pierre Mathy (Head of Unit, Directorate I – Environment, EC DG Research)

The Marine Board has developed different instruments to address critical issues in the marine research landscape within an appropriate time frame (and with the appropriate level of perspective in time and space). These instruments allow the Board to be reactive and/or pro-active according to the emerging research and policy needs, challenges and opportunities. Some instruments are directed at issues which require an immediate or short-term response, for example in the framework of policy advice to on-going developments (e.g. Statements, Workshop/Conference reports and Vision Documents) while other instruments allow more in-depth foresight analyses to drive marine research and policy developments and influence the design of national and EU policy agendas (e.g. through Working Groups and Position Papers).

Table 2. Core Marine Board Instruments

Marine Board Instrument	Objectives	Duration	Output
Working Group	Perform a science policy foresight exercise on marine research areas or topics of European dimension which are of strategic importance for marine sciences but which are currently not addressed properly or are lacking visibility, and provide high-level research and policy recommendations.	~ 18 months	**Position Paper** (*circa* 80 pages)
Vision Group	Develop a vision and high-level recommendations to clarify the science community perspectives and guide policy on strategic topics of importance where policy is being developed or will be developed in the near future.	~ 6 months	**Vision Document** (*circa* 12 pages)
Statement	Elaborate targeted responses to policy developments, public consultations or to express a Marine Board position on an urgent issue.	~ 1 month	**Statement** (*circa* 2 pages)
Forum	Create a platform for interactions between marine and maritime stakeholders on key scientific areas and research priorities which are of common interest to a wide range of stakeholders.	Biennial, 1 day event	**Proceedings** (*circa* 40 pages), **Statement**
Panel	Provide support and advise on longer term marine science and technology operational issues.	Open-end	**Communications**, **Statements**

Marine Board Position Papers

> *"The Marine Board plays a crucial role in the long-term planning of marine science in Europe, notably with regard to the framework programme of the EC."*
>
> Gerold Wefer (Director, Centre for Marine Environmental Sciences, MARUM, Germany)

Marine Board Position Papers aim to provide clear strategic recommendations for science managers, policy makers and for the scientific community itself, to influence marine research policy and programming as well as broader maritime policy at both national and European levels. Marine Board Position Papers provide an overview of (i) the state of the art of the particular research area, (ii) the research and policy requirements for further development, and (iii) the future research agenda and high-level policy recommendations. To date (October 2010), the Marine Board has published 15 Position Papers (see Annex 2).

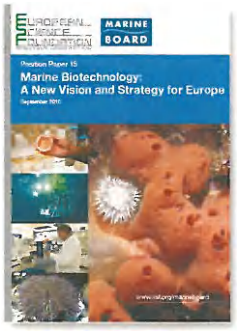
Marine Board Position Papers are derived from the work of specially convened Working Groups of European and international experts (up to 15 persons), identified by the Marine Board Member Organisations (and where necessary external contacts) as leaders in their respective fields. Working Groups are the primary science foresight and priority setting instrument of the Board. Ongoing Marine Board Working Groups 2010 are listed in Annex 3.

Marine Board Position Papers published from 2005 to 2010 (also available for download on www.esf.org/marineboard/publications) are outlined below, starting with the most recent.

Marine Biotechnology: A New Vision and Strategy for Europe - Marine Board Position Paper 15, September 2010

Objectives and Policy Context

Marine Board Position Paper 15 provides an updated view of Marine Biotechnology to policy makers at European and national levels and to EU and national scientific and administrative officers involved in activities in support of marine research and the interacting fields of health, food, environment and energy. The Position Paper gives a renewed impetus to this field of research which is of strategic importance for Europe while its opportunities remain largely underexploited. The report has been produced by the members of the Marine Board Working Group on Marine Biotechnology (WG BIOTECH).



Impacts

The Position Paper will inform the design of national and European research programmes on (marine) biotechnology and provides a basis for further development of the field in the form of a coherent Strategy to realise the full potential of European Marine Biotechnology by 2020. During her speech at EurOCEAN 2010, Maive Rute (Director of Directorate E - Biotechnologies, Agriculture, Food, European Commission DG RTD) stated that the recommendations from the Marine Board Position Paper 15 will inform the new comprehensive goal-oriented vision and action plan that the European Commission is preparing to build a sustainable and innovative bio-economy by 2020 (EC Communication foreseen mid-2011).

Caption: Marine Board Position Paper 15 was formally launched and handed over to Maive Rute (Director of Directorate E - Biotechnologies, Agriculture, Food, EC DG Research and Innovation) at the EurOCEAN 2010 conference in Ostend, Belgium. Pictured (from left): Adriana Ianora (Stazione Zoologica A. Dohrn, Italy / WG Member), Catherine Boyen (CNRS, France / WG Member) and Maive Rute (Director, EC DG RTD).

Other Marine Board activities in the field of Marine Biotechnology include:

- ***Marine Biotechnology: Future Challenges*** (20-25/06/2010, Acquafredda di Maratea, Italy): This Conference, jointly organised with ESF and COST (Programme Committee selected and facilitated by the Marine Board), brought together high-level international scientists and early-stage researchers to discuss the strategic development of marine biotechnology in Europe. The event improved the linkages between major research groups active in this area. Also, its outputs have been taken up in the Marine Board's Position Paper 15.
- **EC Collaborative Working Group on Marine Biotechnology**: Marine Board was invited as an Observer to provide scientific and policy recommendations to this group whose objective is to investigate collaboration mechanisms for Marine Biotechnology in Europe and provide policy recommendations for their implementation.

Science Dimensions of an Ecosystem Approach to Management of Biotic Ocean Resources - Marine Board Position Paper 14, April 2010

Objectives and Policy Context

The Ecosystem Approach to Management (EAM) represents a multi-scale and multi-disciplinary challenge. The Marine Board Working Group SEAMBOR established jointly with the International Council for Exploration of the Sea (ICES) and the European Fisheries and Aquaculture Research Organisation (EFARO) addressed the research gaps between the natural, social and economic sciences to effectively implement the EAM and to achieve Good Environmental Status (GES) of all European Seas as required by the EC Marine Strategy Framework Directive (MSFD).

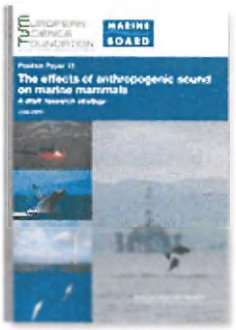
Impacts

Position Paper 14 was launched at the European Maritime Day Stakeholder Conference 2010. The Position Paper has informed the on-going development and implementation of the MSFD (e.g. European Commission topical Working Groups on GES descriptors) and the design of ecosystem approach-based projects at the national and European levels.

Caption: Official launch of the Position Paper 14 SEAMBOR at the European Maritime Day Stakeholder Conference in Gijon (19/05/2010). Pictured, from left: Andrew Kenny (Cefas, UK / WG Member), A.Doscat (IFREMER, France / EFARO), Aurélien Carbonnière (Marine Board), Adi Kellermann (ICES), Ana-Teresa Caetano (EC DG RTD) and Niall McDonough (Marine Board)

The Effects of Anthropogenic Sound of Marine Mammals - Marine Board Position Paper 13, June 2008

Objectives and Policy Context



Marine mammals, which occupy the highest level of the food chain in marine ecosystems, rely heavily on sound for communication and social organisation. At the same time, scientific and military applications (e.g. seabed mapping, naval sonar) and many ocean-based economic activities (e.g. oil exploitation, fisheries) increasingly produce underwater sound that can interfere with marine mammal functions. Both marine mammals and many human sea-based activities are at risk because of a lack of information about the effects of anthropogenic sound on marine mammals. This Position Paper discusses new ways to address this complex problem and suggests a framework to assess and identify priority research topics to reduce current levels of uncertainty. It was developed on the basis of two international workshops, organised by the Marine Board.

Impacts

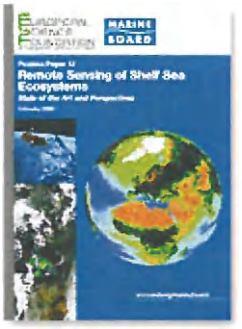
Position Paper 13 was used by the European Commission DG RTD (information received from Pascal Le Grand, Policy Officer, EC DG Environment) in the development of the FP7 cross-cutting call 'Oceans of Tomorrow' in relation to the Quantification of Climate Change Impacts on Economic Sectors in the Arctic (Call: FP7-OCEAN-2010). One of the successful projects (ACCESS) has a full work package dedicated to this issue in the highly sensitive Arctic region. In addition, another FP7 project, HERMIONE, also tackled the issue of the impact of underwater noise in its first Science Policy Panel meeting indicating that new activities have been initiated in this area at EU level.

Marine Board Position Paper 13 also informed underwater acoustics studies performed by the British and Dutch navies. It has informed on-going implementation of the Maritime Strategy Framework Directive (e.g. EC Working Groups on the descriptors of the Good Environmental Status) and is used by both marine and maritime research communities to design underwater noise risk assessment frameworks.

Caption: Upon request from *Public Service Review: Science and Technology Publication* (UK), Marine Board invited one the key experts on marine acoustics to write an article on the findings and recommendations of Position Paper 13. Article by Prof. Rune Godø (Institute of Marine Research, Norway) was published in 2009 issue 4.

Remote Sensing of Shelf Sea Ecosystems - Marine Board Position Paper 12, February 2008

Objectives and Policy Context



About 50% of the European territory consists of the waters of shelf and semi-enclosed seas. To monitor these seas properly, it is essential to complement conventional *in situ* analysis methods with data obtained using remote sensing technology. However, because of key characteristics of shelf seas ecosystems (e.g. the heterogeneity of water content, the diversity of inputs, etc.), it is much harder to derive confident measurements of their properties through satellite remote sensing methods than is achieved over the deep ocean. This Position Paper summarises the current capabilities of satellite remote sensing methodologies, identifies their weaknesses and presents a structured set of recommendations to maximise their effectiveness in monitoring shelf sea ecosystems.

Impacts

The context for the study is the increasingly urgent requirement for regular monitoring of shelf sea ecosystems in order to meet international treaty obligations and to support and inform the development of European policies governing environmental status in coastal waters. Position Paper 12 supported EuroGOOS strategic activities and informed the design of national and European research programs on remote sensing operational oceanography.

Caption: Launch of the Position Paper 12 (15/05/2008, Ostend). Pictured, from left: Lars Horn (Marine Board Chair), Kevin Ruddick (MUMM, Belgium / WG Member) and Alan Edwards (EC DG RTD)

Marine Board Vision Documents

Marine Board Vision Documents are short (about 12 pages) publications, rich in figures and images, which aim to deliver a clear message and high-level recommendations on topics deserving urgent attention. Vision Documents target European and national decision makers in order to impact on policy making and implementation processes in support of marine science priorities. Vision Documents are prepared by Marine Board Vision Groups, which bring together experts identified by the Board as leading experts in the topic at hand.

Marine Board Vision Documents 2005-2010 (available for download on www.esf.org/marineboard/publications) are outlined below, starting with the most recent.

Marine Renewable Energy – Research Challenges and Opportunities for a New Energy Era in Europe - Marine Board Vision Document 2, October 2010

Objectives and Policy Context

In December 2008, the European Parliament and the Council reached an agreement on a package that will help transform Europe into a low-carbon economy and increase its energy security. The EU is committed by 2020 to reducing its overall emissions to at least 20% below 1990 levels and to increasing the share of renewable in energy use to 20%. The proportion of these targets which can be delivered by marine renewable energy by 2020 was estimated at circa 5% for offshore wind energy and circa 2 to 3 % for other Marine Renewable Energies.

Impacts

Marine Board Vision Document 2 was launched as a side event of EurOCEAN 2010. The subsequent media coverage was broad including reports on websites of *Newsweek* and *Le Monde* (both websites tend to be influential amongst policy makers at the national and international levels).

Caption: Lars Horn (Marine Board Chair) presents the Vision Document on Marine Renewable Energy to Manuela Soares (Director, Environment Directorate, DG Research) (12/10/2010, Ostend). © VLIZ

European Marine Observations and Data Network, EMODNET - Marine Board – EuroGOOS Vision Document September 2008

"In developing our new initiative ... it is extremely useful to receive the considered opinion of knowledgeable and articulate stakeholders such as yourselves."

Extract from the letter to the Marine Board from Fokion Fotiadis (Director General, EC DG for Maritime Affairs and Fisheries), 12/11/2008

Objectives and Policy Context

Further to the Aberdeen Declaration (June 2007) support for a European Marine Observation and Data Network (EMODNET) initiative, a joint Marine Board-EuroGOOS Vision Group was established to prepare a Document emphasising the critical importance of finding an appropriate balance between *in situ* data collection, data management and processing, and public access and dissemination. The Document provided recommendations on what an integrated inter-operable marine monitoring and observation system might look like in the next five to ten years, in support to the Integrated Maritime Policy for Europe.

Impacts

Launched at a dedicated session with Joe Borg, Commissioner for Maritime Affairs and Fisheries, during the French EU Presidency Event BioMarine 2008, the Vision Document created an immediate resonance in the marine research community. It profiled EMODNET as "an end-to-end, integrated and inter-operable network of systems of European marine observations and data communications, management and delivery systems, supported by a comprehensive user-oriented toolkit to enable implementation of the Integrated Maritime Policy for Europe", and identified a number of distinct actions deemed as necessary to build and sustain an effective EMODNET. This Vision Document was used as sounding board for the development of Preparatory Actions for EMODNET as launched by DG MARE in 2008.

Caption: Joe Borg (EU Commissioner for Maritime Affairs and Fisheries) receives the Vision Document on EMODNET from Lars Horn (Marine Board Chair) at the French EU Presidency Event BioMarine 2008 (24/10/2008, Marseille). © European Commission

Participants at the 2nd Marine Board Forum Towards a European Network of Marine Observatories for Monitoring and Research (16/09/2010, Brussels)

1st Marine Board Forum Marine Data Challenges: from Observation to Information (15 May 2008, Ostend, Belgium)

The 1st Marine Board Forum took place at the newly inaugurated Marine Board facilities in Ostend. The topic of the Forum found a resonance among the scientific community and policy officers and was considered very timely, especially with regard to the development of the European Marine Observation Data Network (EMODNET) initiative. Eighty-eight representatives of some forty-nine marine and maritime organisations took part in the Forum, including representatives from oil, gas and shipping industries (Total, Shell and Waterborne TP), the European Commission (DGs RTD, MARE and ENV), inter-governmental organisations (e.g. IOC, ICES), and major pan-European marine research networks and national research performing and research funding organisations. The 1st Forum inputs and discussions were published as Proceedings in 2009 (see picture above).

Participants of the 1st Marine Board Forum (15/05/2008, Ostend) © Misjel Decleer

1st Marine Board Forum key-note speakers, form left: Kostas Nittis (MedGOOS), Hans Dahlin (EuroGOOS), Jean-François Minster (Total S.A.) and Alan Edwards (EC DG RTD) © Misjel Decleer

Starting with the fundamental premise that observational data should be readily available to those who need it, key recommendations from the 1st Marine Board Forum include:

- A call to develop a strategy that enables proper planning of marine observations;
- A drive to address the technological challenges, ensuring appropriate quality assurance at all levels; and
- A need to address the requirement for long-term sustainable funding for observation and data management, necessary to provide a reliable basis for end-users to invest in transforming observations into useful operational products.

The Forum recommendations informed the European Commission's development of its EMODNET proposal and Preparatory Action in 2008/9.

Marine Board Panels

Marine Board Panels are established on an open-end basis to address operational issues in areas where the panel members, and by extension their institutions, benefit from interacting with each other and with the Marine Board. Active Marine Board Panels include:

Marine Board Communications Panel (MBCP)

Established in 2002, this Panel assists its members (professional science communicators) in promoting and communicating marine science across Europe. The Panel meets regularly (facilitated by the Marine Board Secretariat) to exchange ideas on events, communication methods and best practice, and organise dedicated sessions at marine science conferences (e.g. European Geosciences Union Assembly, EuroScience Open Forum, etc). To date (October 2010), the MBCP counts 16 members from 11 countries.

Caption: Speakers at the Marine Board Communications Panel session at the European Geosciences Union (EGU) General Assembly 2009 (23/04/09, Vienna), from left: Kim Marshall-Brown (NOC, UK), John Joyce (MI, Ireland), Heike Langenberg (Nature Geoscience editor), Albert Gerdes (MARUM, Germany), Kjartan Maestad (IMR, Norway) and Jan Seys (VLIZ, Belgium)

Marine Board European Scientific Diving Panel (MB ESDP)

Established in 2008, this Panel aims at networking and exchanging knowledge and best practices in the field of scientific diving, and promoting it as a relevant research tool in support of research and management activities.

Main objectives and tasks of MB ESDP are to:

- Emphasise the best methods of observation and monitoring of the coastal environment, and facilitate the use of inter-comparison methods for the collected data;
- Initiate and develop synergies, and to fill in gaps with other scientific techniques through networks (e.g. Smithsonian Institute, European Research Vessel Operators, ERVO);
- Facilitate a pan-European framework that encourages sectoral best practice;
- Promote links with industry;
- Promote links with interdisciplinary research in the marine environment.

To date (October 2010), the ESDP counts nine members from eight countries.

Caption: Participants at the Marine Board-COST Workshop on Scientific Diving (27-28/09/2010, Brussels)

High-level Conferences

EurOCEAN Conference Series

EurOCEAN conferences are major European marine science policy conferences providing a forum for policy makers and strategic planners both at European and Member State level to interface with the marine research community and marine and maritime stakeholders. The Marine Board was instrumental in organising the last three EurOCEAN conferences: Galway (2004), Aberdeen (2007) and Ostend (2010), outlined below, starting with EurOCEAN 2010.

EurOCEAN 2010 and the Ostend Declaration

EurOCEAN 2010 (12-13 October 2010, Ostend) was jointly organised by the 2010 Belgian Presidency of the European Union, the European Commission and the Marine Board. It provided a unique opportunity for the European marine science community to consider, discuss and respond to new policy developments and achievements since EurOCEAN 2007 (see below), and to highlight new challenges and opportunities for marine research in the next decade. The EurOCEAN 2010 conference and Ostend Declaration (October 2010) came at a crucial time for the European marine science community to influence how marine science is supported in Europe in the coming decade.

At the two-day event, high-level speakers presented the state-of-the-art of major marine and maritime research and technology, outlining their proposals for Europe's "Blue Future". The Ostend Declaration, adopted at the EurOCEAN 2010 conference, is the outcome of a thorough preparatory process, an open on-line consultation organised prior to the event and active discussions during the conference which allowed a solid consensus to be reached amongst the broader marine and maritime science community, policy makers, stakeholders and the 430 participants present at the conference.

EurOCEAN 2010 was attended by 430 participants, representatives of the major stakeholder groups, including EU Commissioners for Maritime Affairs and Fisheries, and for Research Innovation and Science, national authorities, coordinators of EC projects, heads of pan-European marine research networks and directors of national marine research institutes and research councils and leading international marine scientists © VLIZ

EurOCEAN 2010 was attended and addressed by Máire Geoghegan-Quinn, EU Commissioner for Research, Innovation and Science, and Maria Damanaki, EU Commissioner for Maritime Affairs and Fisheries.

Consolidated Outcome and Impact

The overarching goal of the Ostend Declaration was to reinforce the importance of marine science in effective maritime policy making and the key role it will play in the path towards economic growth and recovery in Europe.

EurOCEAN 2010 opening address by Maria Damanaki (EU Commissioner for Maritime Affairs and Fisheries)

EurOCEAN 2010: Lars Horn (Marine Board Chair) presents the Ostend Declaration to Máire Geoghegan-Quinn (EU Commissioner for Research, Innovation and Science)

Poster series illustrating a selection of ten grand challenges and priorities for marine research in the next decade (identified at the Marine Board Navigating the Future IV Workshop) were presented at the EurOCEAN 2010 Pre-Event at the European Parliament and at the Conference

Forty-three organisations profiled themselves at the Marine Board-organised EurOCEAN 2010 Research Showcase, representing the diversity of stakeholders involved, from inter-governmental organisations, to pan-European networks and FP projects, and national research organisations

EurOCEAN 2007 and the Aberdeen Declaration

EurOCEAN 2007 (22 June 2007, Aberdeen, Scotland), took place during the final phase of a public consultation process on the EU Green Paper *Towards a Future for the Union: A European Vision for the Oceans and Seas*, and provided a unique opportunity for the European Marine and Maritime Science Communities to respond through the "Aberdeen Declaration".

Consolidated Outcome and Impact

The overarching goal of the Aberdeen Declaration was to embed marine science as a central pillar of a future Integrated Maritime Policy (IMP) for Europe and to call for a European Strategy for Marine and Maritime Research as an integral part the IMP. The Aberdeen Declaration was also instrumental in securing marine science and technology as a priority cross-cutting theme in the EU Framework Programme 7 (see also page 33).

Caption: EurOCEAN 2007. Pictured, from left: Joe Borg (EU Commissioner for Maritime Affairs and Fisheries) and Lars Horn (Marine Board Chair) © European Commission

EurOCEAN 2004 and the Galway Declaration

EurOCEAN 2004 (13 May 2004, Galway) was jointly organised by the European Commission, the 2004 Irish Presidency of the European Union and the Marine Board. Aside from presenting a wide range of Marine Science challenges and opportunities, it reviewed progress towards a European Research Area for marine science and technology and examined ways to achieve further integration in Europe (also see Ch.4).

Consolidated Outcome and Impact

The high-level messages from the EurOCEAN 2004 conference were communicated for the first time through a Conference Declaration, which became known as the "Galway Declaration". The overarching goal of the Galway Declaration was to ensure that critical areas in marine science were adequately supported in the 6th and 7th Framework Programmes.

Major Strategic European Events in Marine Science and Technology

In addition to the EurOCEAN series, and in a complementary manner, the Marine Board also co-organize and contribute to key high-level science policy conferences highlighted below.

Table 3. Marine Board Involvement in Major European High-level Events in Marine Science and Technology

Date	High-level Event	Comment and/or Marine Board Role
Jan. 2007	Seminar on Marine Sciences and Technologies (Brussels)	Marine Board is a co-organiser → Marine Science is being included as a "Priority Theme" in FP7
May 2007	German EU Presidency Conference *The Future Maritime Policy of the EU: A European Vision for Oceans and Seas* (Bremen)	Marine Board Members give invited presentations → Conference conclusions inform the organisation of the EurOCEAN 2007 (see p. 18)
Oct. 2007	Portuguese EU Presidency Conference *The Role o Marine Sciences in Ocean Sustainability and Global Change* (Lisbon)	Marine Board is co-organiser →EurOCEAN 2007 Aberdeen Declaration is transmitted at national levels to gain support from Member States
May 2008	EC European Maritime Day Stakeholder Conference (Brussels)	Marine Board vice-Chair Edward Hill gives an invited presentation →The Board highlights the relevance of this 1st EC Stakeholder Conference
Oct. 2008	French EU Presidency Conference *BioMarine 2008* (Marseille and Toulon)	Marine Board is at the Steering Committee and suggests speakers and sessions for the conference →Marine Board Chair Lars Horn expresses the marine science vision on the marine and maritime (industry) partnership
May 2009	EC European Maritime Day Stakeholder Conference (Rome)	Marine Board Chair Lars Horn presents marine science perspectives on the implementation of the Integrated Maritime Policy for the EU →All-embracing Stakeholder Platform (EC-driven) is officially launched
May 2010	Spanish EU Presidency Conference EUROMARES *"Marine and Maritime Research and Innovation as a Keystone for the Integrated Assessment and Sustainable Use of the European Seas* (Gijon)	Marine Board Chair Lars Horn presents Conference conclusions stressing the urgent actions necessary to implement the Maritime Strategy Framework Directive
May 2010	EC European Maritime Day Stakeholder Conference (Gijon)	Marine Board Members and Executive Scientific Secretary are invited speakers and / or session chairs, including, among others, a Round Table on the *Future Directions for the EU's Integrated Maritime Policy*, a Workshop on *Observation and Forecasing in the Ocean* and a Workshop on *Ocean Sustainability*

Marine Board Framework Programme Projects

The Marine Board participates in a number of EC Framework Programme projects, aiming to enhance interactions and collaborations among European marine science stakeholders, exchange knowledge and expertise, promote shared use of infrastructures and joint identification of priorities, and avoid duplication of efforts. Marine Board FP projects during 2005-2010 are outlined below, in chronological order.

Framework Programme 6 Projects (FP6)

MarinERA: Coordination of National and Regional Marine RTD Activities in Europe

Project type: EC FP6 ERA-NET (Coordinated Action)
Duration: 54 months (November 2004-April 2009)
Budget: € 3M
Consortium: 16 partners from 13 countries
Coordinator: Ifremer (France); Deputy Coordinator: Marine Board-ESF

MarinERA General Objectives

- Establish an integrated view on European Marine RTD Programmes and specialized infrastructures, to contribute towards the development of the marine element of the European Research Area (ERA), facilitating the creation of an internal market and quantifying the existing European marine research capacity;
- Facilitate the networking of Marine RTD Funding Agencies in the European Union, leading to a more cost-effective and efficient use of Partner State resources including scientific personnel, specialist infrastructures and planned investments;
- Progress the reciprocal opening of Partner State Marine RTD Programmes, which has been identified as a key objective of the ERA.

Role of the Marine Board

The Marine Board Secretariat acted as the project's secretariat undertaking management (e.g. establishment of project management and reporting structure) and operational tasks (eg. identification of Strategic Research Activities).

Outputs and Impacts

- Research funded by MarinERA: five collaborative research projects launched (actual costs estimated to € 8M);
- Interactive Platform: 11 other Marine and Environmental ERA-NETs;
- Meetings, workshops and fora: 40;
- Publications and dissemination: 10 Technical Reports, 3 Brochures, 1 Leaflet, 1 Poster, 69 Web announcements;
- Databases developed: 3 - (i) Database of over 900 competitively funded research projects; (ii) Database of marine infrastructure facilities; (iii) Database of Atlantic marine research centres;
- Dedicated portal: includes open access to the above 3 Databases.

MarinERA contributed to raising a collective awareness of the benefits of, and opportunities for, increased cooperation between national funding programmes and programme managers. To ensure that past achievements are integrated in future developments, the Marine Board participates in the FP7 ERA-NET SEAS-ERA (see below).

Caption page 31 above: Marine Board Publication *MarinERA Legacy* (April 2008) provided a critical assessment of the project's outputs and impacts.

AMPERA: To Foster Prevention and Best Response to Accidental Marine Pollution

Project type: EC FP6 ERA-NET (Coordinated Action)
Duration: 48 months (April 2005-March 2009)
Budget: € 1.5M
Consortium: 10 partners from 8 countries
Coordinator: MEC (Ministry of Education, Spain)
Marine Board is a Work Package Leader

General Objectives

AMPERA-ERA-NET provided the forum for an EU perspective on Accidental Marine Pollution research. Among its objectives was to enable research to be planned strategically to address the needs for the entire Community, not just individual nations, and maximize the outputs from existing efforts.

Role of the Marine Board

The Marine Board Secretariat was responsible for the planning and organisation of Marine / Environmental ERA-NET Fora. Three Fora were organised during the project's duration to facilitate exchange of best practices, identify commonalities between the stakeholders and address regional approaches to government and research management of the European Seas.

Outputs and Impacts

- The Marine / Environmental ERA-NET Fora: a **platform for such projects as** BONUS, ECORD-Net, MarinERA and MariFish, which informed the preparation of the FP7 call for an overarching marine ERA-NET (SEAS-ERA, started in April 2010, see page 35);
- 1st Transnational Call: resulted in approval of six projects (total funding €2.5M).

FEUFAR: The Future of European Fisheries and Aquaculture research

Project type: EC FP6 Specific Support Action (SSA)
Duration: 20 months (January 2007-August 2008)
Budget: € 1M
Consortium: 7 partners from 6 counties and one pan-EU (Marine Board)
Coordinator: Institute for Marine Resources and Ecosystem Studies, IMARES (Netherlands)
Marine Board is a Task Leader

General Objectives

Define the research required in the medium term (10 years), to enable exploitation and farming of aquatic resources (finfish and shellfish) in the context of key challenges and risks for meeting sustainability requirement.

Role of the Marine Board

The Marine Board Secretariat acted as an interface between the fisheries and marine research communities.

Outputs and Impacts

The project focused on projecting the future needs for strategic fisheries and aquaculture research. It provided scenarios based on current trends and the requirement of sustainable production, and it addressed strategic issues of future policy and research.

On-Going FP7 Projects

EMAR²RES: Support Action to initiate cooperation between the Communities of European MARine and MARitime REsearch and Science

Project type: EC FP7 Coordinated Support Action
Duration: 28 months (November 2009-February 2012)
Budget: € 0.5M
Consortium: 5 pan-European partners
Coordinator: Community of European Shipyards Associations (CESA)
Marine Board is a Work Package Leader

EMAR²RES

General Objectives

EMAR²RES involves the European associations representing major waterborne R&D stakeholders and the Marine Board, as a key representative of the Marine Science Research Community. It will investigate and develop cooperation between the marine and maritime research communities with a focus on maritime transport. The project aims to deliver a framework for an efficient and streamlined cooperation towards sustainable maritime activities.

Role of the Marine Board

In this project, the Marine Board works to bridge the gap between marine and maritime science communities, via topical workshops on areas of common interest and implementation of a Policy Interface Panel.

Outputs and Impacts

- Identify areas of common interest (underwater noise, bio-mimics, etc);
- Report on a joint Vision for the Marine and Maritime Science and Research;
- Propose a concrete framework of cooperation;
- Inform EU policy (e.g. implementation of the Marine Strategy Framework Directive).

MARCOM+: Towards an Integrated Marine and Maritime Science Community

Project type: EC FP7 Coordinated Support Action
Duration: 24 months (January 2010-December 2011)
Budget: € 1M
Consortium: 10 partners
Coordinator: International Council for the Exploration of the Sea (ICES)
Marine Board is a Work Package Leader

General Objectives

MARCOM+ aims to support the marine and maritime science communities to test mechanisms for the establishment of a European marine science partnership that would contribute to developing interactions between partners (Member States, regional authorities, the research community, industry and other stakeholders).

Role of the Marine Board

Within this project, the Marine Board will facilitate a sustainable dialogue between these stakeholders through the organisation of a series of Marine and Maritime Science and Technology Partnership Open Fora. The Marine Board will also work to completion of an inventory of marine and maritime stakeholders and presentation of a report on potential structure for a durable marine and maritime cooperation.

Outputs and Impacts

- Establishment of a sustainable European Marine and Maritime Science and Technology Forum;
- Collaboration mechanisms for strengthening the cross-sectoral and interdisciplinary research and structuring the European Research Area;
- Integrated contribution to implementation of action points listed on the EC Blue Book on the Integrated Maritime Policy for the European Union.

CLAMER: Climate Change Impacts on the Marine Environment: Research Results And Public Perception

Project type: EC FP7 Coordinated Support Action
Duration: 18 months (April 2010-September 2011)
Budget: € 1M
Consortium: 17 partners from 10 countries
Coordinator: Royal Netherlands Institute for Sea Research (NIOZ)
Marine Board is a Work Package Leader

General Objectives

CLAMER will aim to raise the awareness of European citizens and society at large of the effects of climate change on the marine environment and associated socio-economic consequences. The project will draw attention to the gap between what is known through research and what policy makers and the public know and understand about the impacts of climate change on the oceans. This gap must be filled to ensure that appropriate and sustainable adaptation strategies are developed and implemented.

Role of the Marine Board

The Marine Board will work on the synthesis of scientific knowledge on climate change impacts on the marine environment from past and ongoing European research efforts.

Outputs and Impacts

- Assessment and summary of the state-of-the art knowledge and public perception of EU research on climate change impacts on the marine environment, including the socio-economic consequences;
- An international conference to promote and exploit EU research results related to climate change impacts on the marine environment and address public perception;
- Outreach events and activities to obtain wide and balanced information and participation from affected European countries and beyond.

The CLAMER project is expected to result in a better exploitation and dissemination of research results related to climate change impacts on the marine environment, increased public knowledge and perception of the climate impact on the marine environment.

SEAS-ERA: Towards Integrated European Marine Research Strategy and Programmes

Project type: EC FP7 ERA-NET
Duration: 48 months (April 2010-March 2014)
Budget: € 2M
Consortium: 21 partners from 18 countries
Coordinator: Spanish Ministry of Science and Innovation (MICINN)
Marine Board is a Work Package Leader

General Objectives

The vast majority of publicly funded research investment in Europe is made at national level. Building on progress made through a number of FP6 marine ERA-NETs (MarinERA, AmpERA and MariFISH), SEAS-ERA will foster further cooperation and integration between marine research funding agencies in Europe. SEAS-ERA will facilitate the establishment of a stable and durable structure for strengthening marine research across the European Sea Basins.

Role of the Marine Board

The Marine Board will conduct an inventory and analysis and prepare report on existing national and regional science and technology plans and strategic priorities. The Marine Board will also organise a series of pan-European Fora and topical regional workshops.

Outputs and Impacts

- Sustained process enabling the delivery of an integrated European marine and maritime research, technology and innovation strategy;
- Building cross-sectoral, multinational and interdisciplinary research partnerships;
- Development of scientific and technology capacity to strengthen the knowledge economy;
- Planning, investment and shared use of critical infrastructures on a Europe wide basis.

Marine Board Communication

The objectives of the Marine Board are supported via several communication tools:

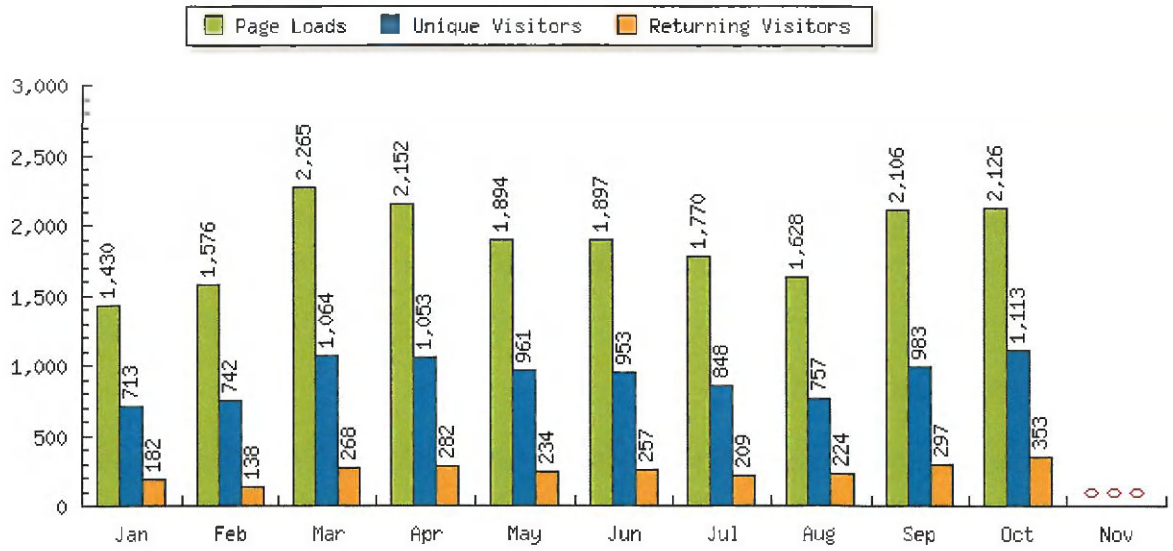
General information and profile

- **The Marine Board webpage** (www.esf.org/marineboard) is located on the ESF website. The Secretariat has editing rights on its content (also see Figure 4 below).
- **Marine Board news and announcements** are published on the Marine Board webpage of the ESF website http://www.esf.org/marineboard/news.
- **Marine Board Member websites** publish Marine Board profile and news.
- **Marine Board announcements** can be published electronically or in hard copies to be disseminated among stakeholders.
- **The Marine Board profiling leaflet** (picture on the top right) was last updated in May 2009. The leaflet has been widely disseminated to the Marine Board stakeholder mailing list and is presented at Marine Board exhibition booths.
- **A new Marine Board poster** was produced by the Secretariat in September 2010.
- **The Marine Board Annual Report** (2009 picture to the right) has been prepared and published by the Secretariat since 2007 to be widely disseminated among Marine Board Members, stakeholder groups and at exhibitions.

Dissemination

- **Marine Board publications webpage** features all the Marine Board publications since 2000 available for download, free of charge:
- www.esf.org/marineboard/publications
- **Marine Board publications booths** are regularly organised at relevant events by the Secretariat.
- **Postage** of hard copies of all new Marine Board publications to a selected list of stakeholders is arranged by the Secretariat.

Figure 4. Marine Board website statistics 2010 (as of October 2010)



The ESF Communication unit does not provide statistical information about the visits to ESF website. Therefore, to be able to monitor the interest in the Marine Board webpages which are hosted by the ESF website, in early October 2009, the Marine Board Secretariat inserted statistic codes from "Statcounter" (www.statcounter.com) into the Marine Board webpages. Information about the number of downloaded papers and documents is unfortunately not available to us.

	Page Loads	Unique Visitors	First Time Visitors	Returning Visitors
2010	18,844	9,187	6,743	2,444

Promotion of output and impact analysis

Promotion of Marine Board Publications

- Secretariat promotes Marine Board output via exhibitions, targeted postage and the website.
- The development of an appropriate communication strategy is an integral part of the Terms of Reference for all Marine Board activities since 2010.
- Marine Board Member Organisations play a critical role as promoters of the Marine Board output to their national stakeholders and governments.

Marine Board Publications Leaflet

The publications leaflet (picture above) was prepared and published by the Secretariat in September 2010. It lists all the Marine Board Position Papers and Vision Documents as of October 2010, highlights the most recent ones and announces forthcoming publications. The leaflet is targeted at national and European stakeholders as well as at anyone interested in marine S&T and science policy. It is to be widely disseminated by the Marine Board Members (nationally) and the by Secretariat.

Impact of the Marine Board Publications

is analysed by the Secretariat at specific meetings held twice yearly. An item on Marine Board dissemination and impact has been included in the agenda of Marine Board Plenary Meetings since 2010 (see also page 38).

Marine Board Operations

Improvement of Marine Board Operations

During the reporting period, the Marine Board has developed and/or improved its operational procedures in response to the request of its Members and its increasing role in the marine research landscape.

Marine Board Guidelines

In 2007, the Marine Board adopted the Marine Board Guidelines, which set out the Board's *modus operandi* and governance procedures, the rights and obligations of its Members and the Executive Committee and the role of the Secretariat. The Guidelines also include new procedures for ExCom elections, developed by the Secretariat and adopted by the Board in October 2009. The Marine Board Secretariat has been given a mandate to propose, where appropriate, updates to the Guidelines, which are submitted for approval at Marine Board Plenary Meetings.

Membership Expansion Strategy

The Marine Board Membership Strategy was adopted to meet the challenges of the constantly evolving European marine research landscape. The Membership Strategy was prepared by the Secretariat on request of the ExCom and adopted by the Marine Board in Spring 2010. The Marine Board membership strategy aims at (i) increasing the Marine Board geographical representativeness across Europe to strengthen its position as the platform providing Forum, Synergy, Strategy and Voice for marine sciences in Europe; and (ii) increasing the share of the direct contributions to the Marine Board budget to support the core activities of the Marine Board (as implemented by the Marine Board Secretariat).

As a result of the inventory of key national marine research performing and funding organisations in Europe which are still not represented at the Marine Board, targeted organisations were identified with the objective to pro-actively establish contact with them and investigate possibility of their joining the Marine Board. This action was implemented during summer-autumn 2010, and several positive responses have already been received. It is foreseen that any increase up to 40 Member Organisations would provide a desirable balance between the representativeness of the Marine Board as a major marine research platform in Europe and the responsiveness and flexibility of its operational structure.

Marine Board Communication and Impact Strategy

Recognising the crucial importance of effective communication to channel the strategic outputs of the Marine Board activities to targeted stakeholders (and in a right format), the Marine Board developed Communication and Impact Strategy. The Strategy, adopted in 2009, includes a comprehensive communication plan and tools and mechanisms for monitoring and measuring output and impact of Marine Board activities.

The Communication and Impact Strategy will be applied to all the activities of the Marine Board, from the preparation of new Working and Vision Groups, to impact assessment of Marine Board outputs (i.e. Position Papers and Vision Documents) and targeted dissemination techniques. The impact measuring of Position Papers for example, involves a Marine Board Science Officer monitoring the impact of the paper at European and national level for a period of between two and three years, post-publication. The tools used for this include direct consultation with relevant European Commission Officers, surveys of impact on national programmes and policies, dissemination and internet download statistics, citations and web searches. This will result in basic statistics on the impacts at national and European level on each Marine Board Position Paper published from 2010 onwards.

New Membership Contributions Scheme

The Marine Board *modus operandi* states that each Marine Board Member Organisation has a voting seat at Marine Board Plenary Meetings (*idem* General Assembly). However, until 2009 Membership Contributions were paid according to a country-representation (a country contribution was divided between the members of this country). This is why the Marine Board introduced, in June 2010, a new membership contribution scheme according to which a fixed rate is attributed to each Member Organisation based on the GDP of its country. In addition to proposing a straightforward and transparent contribution calculation procedure and a possibility to forecast cash income from the Member contributions, the new scheme will ensure that extra contributions will be received upon any new member joining (not always the case under the previous scheme). This has already been implemented for the latest new Marine Board Member from Finland (Finnish Environment Institute) whose application for membership was approved at the Autumn 2010 Plenary Meeting (14/10/10, Ostend). Under the old scheme, the Institute would not be required to pay any contribution as the funding agency of Finland (Academy of Finland) has already been represented on the Board.

The new contributions scheme will provide a solid basis for the Marine Board current and future Members, making it easier for them to secure provisions and budget for the Marine Board contributions. Furthermore, it will secure an increase in total income received through membership contributions as the membership expands.

Perspectives on Future Priorities and Strategies for the Marine Board

Marine Board – A Major Influence on the European Marine Science Landscape

The marine research landscape in Europe has developed rapidly since 2005 and the Marine Board has had to evolve in tandem with these developments, whilst maintaining its core ethos and strategy. Table 5 illustrates how the Board has played a strong role in both influencing and driving many of the critical steps towards developing the Integrated Maritime Policy for Europe and the European Strategy for Marine and Maritime Research. The Board, moreover, is now participating in some of the key implementation actions of the Marine and Maritime Research Strategy including the EMAR^{2}RES and MARCOM+ FP7 projects.

Table 5. Major developments in support of a European Research Area for Marine Science and Technology and the corresponding Marine Board role or contribution

Date	Milestones (2006-2010)	Comment and/or Marine Board Role
November 2006	Marine Board launches its *Navigating the Future III* high-level Position Paper	Major impact on marine Research Priorities in FP7.
January 2007	Marine Board co-organises a seminar on Marine Sciences and Technologies in Brussels	Results in Marine Science being included as a "Priority Theme" in FP7.
June 2007	European Commission launches an open consultation on its Green Paper: "Towards a future Maritime Policy for the European Union"	Marine Board respond with Position Paper 11 – *Response to the European Commission's Green Papers:* *(i) Towards a future Maritime Policy for the Union, and* (ii) *The European Research Area: New Perspectives* (November 2007).
June 2007	EurOCEAN 2007 Conference in Aberdeen and Adoption of the "Aberdeen Declaration"	Marine Board lead the Organising Committee and ExCom members lead the development of Aberdeen Declaration.
October 2007	Adoption by the European Council of the Integrated Maritime Policy for Europe	Strongly influenced by Aberdeen Declaration, the IMP includes the development of a European Strategy for Marine and Maritime Research as a priority Action (as specifically called for in Aberdeen Declaration).
July 2008	Marine Strategy Framework Directive comes into force	Marine Board asked to participate in some of the MSFD Working Groups.
September 2008	European Strategy for Marine and Maritime Research is adopted	Major deliverable of the Aberdeen Declaration.
June 2009	All-Embracing Platform for the Integrated Maritime Policy is established at European Maritime Day Stakeholder Conference in Rome	Marine Board invited to sit on the 10-member steering group for the platform.
November 2009	EMAR^{2}RES FP7 project gets underway	Marine Board a work package leader and sole

		marine partner with 4 maritime partners.
March 2010	MARCOM+ FP7 project gets underway	Delivered as a result of the Aberdeen+ Task Force activities coordinated by Marine Board in the aftermath of the EurOCEAN 2007.
October 2010	EurOCEAN 2010 and Adoption of the "Ostend Declaration"	Marine Board lead the development of the: • EurOCEAN 2010 Programme (including the Programme of the EurOCEAN 2010 information session in the European Parliament); • Ostend Declaration; and • EurOCEAN 2010 Research Showcase (Exhibition).

The common thread in the Board's activities in all of these areas is "partnership". The Board has contributed in collaboration with other key actors and stakeholders towards delivering the major milestones listed in Table 5. Given the complexity of this collaborative approach, it is sometimes difficult to directly measure the impact of the Board's involvement on these developments. However, the feedback that the Board Members and Secretariat receive from key actors, commending the Board's role in the above initiatives has been consistently positive. Throughout this report quotes from such actors in European marine and maritime science are included to illustrate this point.

Providing an Independent Scientific Advice

The impact and integrity of the Board's advice relies on its independence. While operating within the framework of ESF, the Board has always maintained an independent approach. It retains its own membership and receives specific annual contributions from its thirty-one members, twelve of which are not members of ESF (ESF launches the call for contributions and receives the payments on the Board's behalf). The success of the Board also relies on the commitment and interest of its Member Organisations and Delegates, which has always been at a very high level.

The Board does not normally make use of ESF instruments, relying instead on its own mechanisms for delivering foresight and strategy to advance marine science in Europe. Marine Board Instruments suit the Board's needs in that they are flexible, are funded through the voluntary participation of the members or their expert nominees, and can be delivered in a timely and efficient manner.

The relationship with ESF has provided the Board with a stable and supportive framework and legal entity to host the Board's Secretariat. The Board and its Secretariat have also collaborated on the activities of other ESF Committees and Boards, including for example, involvement in the Science Policy Briefing on Ocean Acidification (July 2009) and RESCUE Forward Look (both led by Life Earth and Environmental Sciences Committee), the FP7 CAREX project on Life in Extreme Environments (led by the European Space Sciences Committee, and which developed directly from the joint Marine Board - ESF publication on the topic published in May 2007), the Marine Board-ESF-COST 2010 Conference on Marine Biotechnology (see page 15) and the Marine Board-COST Workshop on Scientific Diving (September 2010).

The Marine Board has become a desired partner in various stakeholder collaborations and initiatives, currently being represented as Observer or member of Science Policy Panels on six pan-European initiatives (in addition to those outlined in this report), such as, among others, EC Collaborative Working Group on Marine Biotechnology, the All-embracing Stakeholder Platform, or the European

Council for Ocean Drilling Research; and several of FP projects. These collaborations allow the Board to promote joint identification of priorities and avoid duplication of efforts at the European level.

The independence of the Board should be maintained as a priority. This will be a crucial factor in the Board's considerations on its future given the ongoing progress towards the development of a new organisation arising from a possible merger of ESF and EUROHORCS.

Contributing to the ERA for Marine Science

European Research Area for Marine Science and Technology

By default, through its Forum, Synergy, Strategy and Voice approach, the Marine Board contributes to the ongoing development of the European Research Area (ERA) for Marine Science. The ERA, as currently defined by the 2007 Green Paper[1] is composed of *"all research and development activities, programmes and policies in Europe which involve a transnational perspective and which are designed and operated at all levels: regional, national and European. The aim is to give access to a Europe-wide open space for knowledge and technologies in which transnational synergies and complementarities are fully exploited"*.

The Marine Board provides a direct platform, in partnership with other key actors, for the development of an ERA for marine science. Most of the activities of the Board can be said, in one way or another, to contribute to the ERA but some deserve particular mention, including:

- Participation in the organisation of the EurOCEAN conference series and the development of three EurOCEAN Declarations (Galway in 2004, Aberdeen in 2007 and Ostend in 2010);
- The Board's *Navigating the Future* series of high-level Position Papers;
- The biennial Marine Board Forum;
- Marine Board Panels (Communications and Scientific Diving);
- Participation in ERA-NETs including MarinERA, AMPERA and SEAS-ERA.

The Marine Board will continually calibrate its activities against the high-level goal of achieving a European Research Area for marine science and technology.

Joint Programming

The Board is also closely tracking the progress on the development of the Joint Programming Initiative, *Healthy and Productive Seas and Oceans* (JPI 'Oceans'), which was jointly proposed by Norway, Belgium and Spain and approved by the European Council in May 2010. The JPI proposers have already indicated that the Marine Board can play an active role in the advisory structure for the JPI, feeding in the recommendations of its strategic activities to inform priority research themes. The Board's role in the SEAS-ERA project will also help to ensure that the JPI is developed in close synergy with SEAS-ERA.

[1] The European Research Area: New Perspectives, 2007 Green Paper. http://ec.europa.eu/research/era/docs/en/understanding-era-european-commission-eur22840-161-2007-en.pdf

The Marine Board has a key role to play in supporting and advising the development of the Joint Programming Initiative, Healthy and Productive Seas and Oceans, ensuring synergy and complementarity with the SEAS-ERA project.

Marine Research Infrastructures

The marine environment is highly variable and is costly and difficult to access. Developing trans-national cooperation in the use of marine research infrastructures (MRIs) is particularly important for marine/ocean science. Marine Board Position Paper 10, *European Ocean Research Fleets – Towards a common strategy and enhanced use*, which led directly to the development of the FP7 EUROFLEETS I3 project (in which the Marine Board is an Associate Partner), has ensured that significant progress is being made in the transnational coordination and cost-effective use of nationally operated research vessels and heavy equipment.

Moreover, the 2nd Marine Board Forum, *Towards an European Network of Marine Observatories for Monitoring and Research"*(16 September 2010 Brussels), resulted in a vision statement which called for actions to facilitate the better coordination of national observation capacities to provide stable and sustainably supported long-term datasets from the marine environment.

The Board also has a seat on the European Commission Marine Research Infrastructures Expert Working Group which is advising the Commission on future MRI needs and priorities, particularly with respect to those necessary infrastructures which do not appear on the ESFRI list.

The Marine Board will continue its active role in strategic initiatives dealing with marine research infrastructures and in ensuring coordination and cooperation in the use of marine research infrastructures at European level.

Marine Science Contribution to Societal Needs and Sustainable Economic Development

The Marine Board has a role to play in ensuring that marine science is responsive to delivering the needs of the Integrated Maritime Policy, and specifically, its environmental pillar, the Marine Strategy Framework Directive. Moreover, at all levels, there is an increasingly stronger impetus for the outputs of science to contribute to societal needs and economic development. The recent economic downturn has forced job creation and economic growth to the top of the political agenda in Europe, evidenced the delivery in 2010 of the Europe 2020 Strategy, which targets smart, sustainable and inclusive growth. The same downturn has resulted in a difficult environment for science at national level, with research budget cuts in many countries. It is now more important than ever to be able to justify the importance of science in addressing a better understanding, protection and sustainable interaction with the seas and oceans.

The Board has a role to play in providing recommendations, through its strategic advice, to ensure that the funding invested in marine science delivers added value and that the outputs of marine research can contribute as much as possible to societal needs, including the creation of commercial opportunities and new jobs in innovative maritime sectors. There is also a role for science leaders to work towards changing the mindset of the academic science community to deliver scientific outputs from funded research which may be readily transferred to a next user, whether that user is from science, industry, policy or the public at large.

The Marine Board ensures that the translation of research results into usable knowledge is at the heart of the priorities it recommends in its strategic Position Papers. This message was also embedded in the Ostend Declaration, adopted at the EurOCEAN 2010 Conference. The Board can also contribute to better interaction between science and policy and industry though its participation in the steering group for the All-Embracing Stakeholder Platform for the Integrated Maritime Policy.

The Marine Board must continue to bridge the gap between science and policy and ensure, through its influence and strategic activities, that priority marine research is designed and delivered in such a way as to facilitate translation of research results into knowledge which is usable for societal and economic development.

External Interactions

Interaction with other Regional / European / Global networks

The Marine Board provides its members with a platform for interacting with other European and international networks relevant to seas and oceans research and technology. It is important for the Board to continue its close contact with these networks and, where appropriate, participate in joint initiatives. Good examples of such collaborations include:

- The joint development and publication of the Vision Document on the EMODNET with EuroGOOS (2008);
- The tri-partite development and publication of Position Paper 14, *Science Dimensions of an Ecosystem Approach to Management of Biotic Ocean Resources* with ICES and EFARO (2010).

The Board holds an Observer seat on the ECORD Council and, through its involvement in the EMAR^{2}RES and MARCOM+ projects, collaborates directly with a range of European networks including ICES, CIESM, EFARO, EATIP, EuroGOOS and the Waterborne Technology Platform. The Marine Board was also invited as an Observer to provide scientific and policy recommendations to the EC Collaborative Working Group on Marine Biotechnology whose objective is to investigate collaboration mechanisms for Marine Biotechnology in Europe and provide policy recommendations for their implementation.

The Marine Board will continue to interact and collaborate with European and International networks and bodies to ensure synergy of activities and to keep the Board's members informed of European developments across marine and marine-related science.

International cooperation

In this context "international cooperation" refers to scientific collaboration between Europe and third countries (e.g. with southern Mediterranean countries for cooperation on the Mediterranean or with USA and Canada for cooperation on Atlantic issues). To date, the Board has not targeted international cooperation as a priority for its members or for European marine science and technology in general. However, it is clear that dealing effectively with global issues such as climate change, ocean acidification, biodiversity loss and reduction in polar ice will require scientific collaboration with non-European partners. While the Framework Programme offers the possibility of involving third countries in European research through its ICPC (International Cooperation

Partnership Country) calls, jointly developing and funding major international projects and programmes is not well established at European level.

Improving international cooperation in marine science is one of the key priorities of the Ostend Declaration. The Marine Board has a role to play in providing advice and foresight to facilitate the establishment of mechanisms and priority research goals for international cooperation in marine science and technology. It will be important for the Board to be proactive in this capacity.

The Marine Board will begin the process of developing links with key third country partners, including funding agencies and major marine science / oceanographic institutes, with a view to breaking down the barriers to, and building a platform for, international collaboration necessary to address indentified global marine science challenges.

Relationship with our Customers / End-Users

The strategic outputs of the Marine Board, including Position Papers, Vision Documents and Statements are intended to provide priority recommendations for action by a targeted end-user. In many cases to date, the principal end-user of Marine Board advice has been the European Commission. For this reason the Board has built an excellent reputation and relationship with the Commission, particularly with officers of DGs Research, MARE and Environment. This strong relationship is critical to the success of the Board and should be nurtured and maintained as a priority.

Given that the development of the ERA for marine science will require the coordination of national programmes and efforts, it will be necessary for the Board in future to improve its impact at national level. The Member Organisations can play a vital role in this process but it will be useful also, with the support of the Marine Board Delegates, to build up a network of key stakeholders in each member country which can be the target of the Marine Board dissemination and communication activities. This will enhance the impact of Marine Board advice.

Measuring Impact

It is important for the Marine Board Member Organisations to have an appreciation of the impact of the Board's activities and concrete outputs such as Position Papers and Vision Documents. An impact monitoring and reporting procedure, described on page 28 of this report, was developed by the Secretariat in 2009 and has been introduced since the beginning of 2010. The tools used for this include direct consultation with relevant European Commission Officers, surveys of impact on national programmes and policies, dissemination and internet download statistics, citations and web searches. This will result in basic statistics on the impacts at national and European level on each publication published from 2010 onwards.

Maintain a close link with the end-users of Marine Board advice and outputs, ensuring these are achieving maximum impact and implement procedures from 2010 to monitor and measure the impact of concrete outputs of the Marine Board activities.

A Stable Model for the Future

Providing an Optimum Service to our Members

For the Board to build on its success to date, it is imperative that its Member Organisations continue to value the role that the Board plays on their behalf. Membership of the Board provides the opportunity to:

- Receive regular updates on key developments in marine science and technology at European level;
- Participate directly (or nominate a selected expert to participate) in Marine Board Expert Working Groups;
- Propose and/or influence the selection of priority topics and themes as the focus of Marine Board instruments and activities;
- Interact and share knowledge and experience with other Board members at Plenary Meetings and other fora organised by the Board.

These are valuable benefits for the Marine Board Members which provide value for money given the relatively low membership contribution fees.

Since 2007, the Marine Board's Secretariat has maintained a stable complement of five full-time equivalent staff members. This comprises of the Executive Scientific Secretary who is Head of the Secretariat (and a member of the ESF Management Group), three Science Officers and one Administrator, who is funded and employed by VLIZ as part of the contribution *in-kind* from the Flanders Government. It is the opinion of the Executive Scientific Secretary that this is an appropriate level of staff to adequately support the activities of the growing number of Member Organisations. For example, two Science Officers would not be sufficient to cover the mix of core activities and external projects and interactions. The Board has agreed on the goal of retaining a five-member Secretariat in support of its activities, subject to available funding.

Maintain the level of staffing in the Marine Board Secretariat at the minimum level of five full-time equivalents, subject to available funding.

Membership Expansion and Financial Stability

In order to support the salary costs of the three Science Officer and Executive Secretary, it is necessary to augment the funding generated through Member contributions with funding drawn from participation in external contracts (usually Framework Programme projects). While it is very beneficial for the Board to be involved in FP projects which reflect the Board's objectives, this should be on the basis of strategic interest and not financial necessity. Hence, it is the goal of the Board and Secretariat to increase the proportion of the total funding received through core member organisation contributions and to reduce reliance on external funding. In the economic climate that prevails in 2010, this cannot be achieved by increasing the membership contribution levels of existing members. Therefore, the Board has embarked a proactive membership expansion strategy and implemented an improved member contribution scheme (see page 38).

At the Marine Board 2010 Autumn Plenary Meeting (14 October 2010, Ostend), the Board also agreed to criteria which will allow consortia of third-level institutions from individual countries

(minimum of three per country, with strong marine science research efforts) to apply for Marine Board membership. This will also allow for a further expansion in the Board's membership.

Continue to implement a proactive membership expansion strategy, attracting new members from Council of Europe countries not already represented on the Board and new third-level consortia members.

Concluding remarks

The seas and oceans are crucial for well-being of European citizens, providing critical environmental goods and services and economic opportunities across a broad range of maritime sectors. More than 50% of Europe's territory consists of seas and oceans, half of the global oxygen production is derived from ocean phytoplankton, and oceans are the main drivers of the Earth's climate. On top of that, many economic sectors rely on the seas for transport, extraction of living and non-living resources, energy-supply, tourism, etc. Only with a substantial amount of high-quality research and technology will Europe be able to cope with the growing pressures on the seas and oceans, and to take advantage of the opportunities they present in a sustainable way.

The Marine Board has a strong role to play as a facilitator of constructive dialogue with central decision makers such as the European Commission and Parliament, national research bodies, and the marine and maritime communities to drive and impact relevant policies and actions in Europe. Through its core goal of advancing European marine science and technology, the Board's activities, therefore, ensure that marine science of the highest quality is supported and positioned to deliver, not only a better fundamental understanding of the seas and oceans, but also genuine societal and economic benefits.

The breadth of activities, instruments and collaborations, coupled with the growth in membership, funding, staffing, and most importantly outputs and impact, all of which are detailed in this report, illustrate clearly the success of Marine Board and the progress that has been made since the last review in 2005. This is further supported by the statements which have been made by many key actors in the European marine science and science policy landscape which are presented as quotations throughout the report.

The Marine Board's independent position within ESF and dedicated support from its Members have been crucial for the Board's success. Given the ongoing developments towards the merger of ESF and EUROHORCS to create a new European Research Organisation, the Marine Board faces an uncertain future. It is not yet clear if there will be a place in the new organisation for the current Scientific Committees and Boards. The Marine Board, through its Executive Committee, will monitor closely the developments towards formation of a new European Research Organisation, and will consider future strategies to continue the Board's successful operation.

Central to these considerations, will be the need to retain the Board's independence, its flexible *modus operandi*, its experienced Secretariat and to develop a fully self-funding and stable financial model. With these elements in place, the Marine Board should continue to play a leading role in advancing marine science and technology in Europe and in bridging the gap between science and policy, enabling Europeans to benefit from a better knowledge, understanding and sustainable interaction with the seas and oceans.

Annex 1. Marine Board Governance

Marine Board Member Organisations and Delegates

BELGIUM

- **Fonds National de la Recherche Scientifique (FNRS)**
  National Fund for Scientific Research
  Jean-Marie Beckers

- **Fonds voor Wetenschappelijk Onderzoek - Vlaanderen (FWO)**
  Fund for Scientific Research - Flanders
  Jan Mees

CYPRUS

- **Ωκεανογραφικού Κέντρου Κύπρου**
  Cyprus Oceanography Center
  Georgios Georgiou

DENMARK

- **Det Frie Forskningsråd | Natur og Univers (FNU)**
  The Council for Independent Research | Natural Sciences
  Kirsten Christoffersen

ESTONIA

- **Eesti Teaduste Akadeemia**
  Estonian Academy of Sciences
  Tarmo Soomere

FINLAND

- **Suomen Akatemia**
  Academy of Finland
  Kyösti Lempa

- **Suomen Ympäristökeskus**
  Finnish Environment Institute
  Markku Viitasalo

FRANCE

- **Centre National de la Recherche Scientifique (CNRS)**
  National Centre for Scientific Research
  Jean-Marie Flaud

- **Institut Français de Recherche pour l'Exploitation de la Mer (Ifremer)**
  French Research Institute for Exploitation of the Sea
  Antoine Dosdat

GERMANY

- **Deutsche Forschungsgemeinschaft (DFG)**
  German Research Foundation

- **Hermann-von-Helmholtz-Gemeinschaft deutscher Forschungszentren (HGF)**
  Association of National Research Centres
  Karin Lochte
  Bodo von Bodungen

- **Leibniz-Institut für Meereswissenschaften an der Universität Kiel (IFM-GEOMAR)**
  Leibniz Institute of Marines Sciences
  Peter Herzig

GREECE

- **Ελληνικό Κέντρο Θαλάσσιων Ερευνών**
  Hellenic Centre for Marine Research (HCMR)
  Kostas Nittis

IRELAND

- **Foras na Mara**
  Marine Institute
  Geoffrey O'Sullivan

ITALY

- **Consiglio Nazionale delle Ricerche (CNR)**
  National Research Council
  Guiseppe Cavarretta

- **Istituto Nazionale diOceanografia e di Geofisica Sperimentale (OGS)**
  National Institute of Oceanography and Experimental Geophysics
  Alessandro Crise

NETHERLANDS

- **Koninklijke Nederlandse Akademie van Wetenschappen (KNAW)**
  Royal Netherlands Academy of Arts and Sciences
  Carlo Heip

- **Nederlandse Organisatie voor Wetenschappelijk Onderzoek (NWO)**
  Netherlands Organisation for Scientific Research
  Josef F. Stuefer

NORWAY

- **Havforskningsinstituttet**
  Institute of Marine Research
  Tore Nepstad; Alternate: Erlend Moksness

- **Norges Forskningsradet**
  The Research Council of Norway
  Lars Horn

- **Universitetet I Bergen (UiB)**
  University of Bergen
  Peter Haugan

POLAND

- **Instytut Oceanologii Polskiej Akademii Nauk (IO-PAN)**
  Institute of Oceanology of the Polish Academy of Sciences
  Slawomir Sagan

PORTUGAL

- **Centro de Investigação Marinha e Ambiental (CIMAR)**
  Centre of Marine and Environmental Research
  Joao Coimbra

- **Fundação para a Ciência e a Tecnologia (FCT)**
  Science and Tecnology Foundation
  Mario Ruivo; Alternate: Ricardo Santos

ROMANIA

- **Institutul National de Cercetare - Dezvoltare Marina "Grigore Antipa"**
  National Institute for Marine Research and Development "Grigore Antipa"
  Vasile Patrascu

SPAIN

- **Consejo Superiorde Investigaciones Cientificas (CSIC)**
  Council for Scientific Research
  Beatriz Morales-Nin

- **Instituto Espanolde Oceanografia (IEO)**
  Spanish Institute of Oceanography
  Demetrio de Armas

SWEDEN

- **Havsmiljöinstitutet**
  Swedish Institute for the Marine Environment
  Michael Thorndyke

TURKEY

- **Türkiye Bilimsel ve Teknik Arastirma Kurumu (TÜBITAK)**
  The Scientific and Technological Research Council of Turkey
  Colpan Polat-Beken

UNITED KINGDOM

- **Natural Environment Research Council (NERC)**
  Mike Webb; Alternate: Jacky Wood

- **National Oceanography Centre (NOC)**
  Edward Hill

MARINE BOARD OBSERVERS

- **European Commission DG Research and Innovation**
- **European Commission DG Maritime Affairs and Fisheries**

Marine Board Executive Committee Members

Chair:
Lars Horn Research Council of Norway (RCN), Norway

Vice-Chairs:
Antoine Dosdat French Research Institute for Exploitation of the Sea (IFREMER), France
Edward Hill National Oceanography Centre (NOC), UK
Jan Mees Fund for Scientific Research-Flandres (FWO), Belgium
Beatriz Morales-Nin Council for Scientific Research (CSIC), Spain
Geoffrey O'Sullivan Marine Institute, Ireland
Colpan Polat-Beken Scientific and Technological Research Council of Turkey (TÜBITAK), Turkey

Marine Board Executive Scientific Secretary:
Niall McDonough Marine Board-ESF

Marine Board Secretariat

Head of the Secretariat:
Dr Niall McDonough (Marine Board Executive Scientific Secretary)

Administrator:
Ms Dina Eparkhina

Science Officers:
Mr Jan-Bart Calewaert
Mr Aurélien Carbonnière
Ms Maud Evrard

Annex 2. Full List of Marine Board Publications

Marine Board Position Papers:

- Querellou J. *et al.* **Marine Biotechnology: A Vision and New Strategy for Europe. Marine Board Position Paper 15**. McDonough N., Calewaert J-B. (Eds.). Marine Board-ESF, Ostend, Belgium. 2010. ISBN 978-2-918428-26-8, 94pp.
  Contributing authors: Torger Borresen, Catherine Boyen,Alan Dobson, Manfred Hofle, Adrianna Ianora, Marcel Jaspars, Anake Kijjoa, Jan Olafsen, Joel Querellou, George Rigos, Rene Wijffels. Special contributions: Chantal Compere, Michel Magot, Jeanine Olsen, Philippe Potin, Filip Volckaert.

- Rice J. *et al.* **Science Dimensions of an Ecosystem Approach to Management of Biotic Ocean Resources, SEAMBOR. Marine Board Position Paper 14**. McDonough N., Carbonnière A. (Eds). Marine Board-ESF, Ostend, Belgium. 2010. ISBN 978-2-918428-10-7, 90pp.
  Contributing authors: Maria de Fátima Borges, Anthony Grehan, Andrew Kenny, Harald Loeng, Francesc Maynou, Jake Rice, Ricardo Serrão Santos, Hein Rune, Skjoldal, Olivier Thébaud, Vassiliki Vassilopoulou, Filip Volckaert.
  External contributions: Olivier Curtil, Harold Levrel

- Boyd I. *et al.* **The Effects of Anthropogenic Sounds on Marine Mammals. Marine Board Position Paper 13**. Connolly N., Calewaert J-B. (Eds). Marine Board-ESF, Ostend, Belgium. 2008. ISBN 2-912049-85-7, 94pp.
  Coordinating authors: Ian Boyd, Bob Brownell, Doug Cato, Chris Clark, Dan Costa, Peter Evans, Iason Gedamke, Roger Gentry, Bob Gisiner, Jonathan Gordon, Paul Jepson, Patrick Miller, Luke Rendell, Mark Tasker, Peter Tyack, Erin Vos, Hal Whitehead, Doug Wartzok, Walter Zimmer

- Robinson I.S. *et al.* **Remote Sensing of Shelf Sea Ecosystems. Marine Board Position Paper 12**. Connolly N., Walter N., Calewaert J-B. (Eds). Marine Board-ESF, Strasbourg, France. 2008. ISBN 2-912049-77-6, 62pp.
  Contributing authors: David Antoine, Miroslaw Darecki, Patrick Gorringe,Lasse Pettersson, Ian S. Robinson, Kevin Ruddick, Rosalia Santoleri, Herbert Siegel, Patrick Vincent, Marcel R. Wernand, Guy Westbrook, Giuseppe Zibordi.

- Connolly N. *et al* (Eds). **Marine Board Responses to the European Commission's Green Papers:**
- **(i) Towards a future Maritime Policy for the Union: A European vision for the oceans and seas and (ii) The European Research Area: New Perspectives EC's Green Papers on: Maritime Policy, and the ERA. Marine Board Position Paper 11**. Marine Board-ESF, Strasbourg, France. 2007. ISBN 2-912049-73-3, 46pp.
  Developed from existing Marine Board-ESF publications and discussions with Marine Board Delegates and Executive Commitee.

- Binot J. *et al.* **European Ocean Research Fleets – Towards a Common Strategy and Enhanced Use. Marine Board Position Paper 10**. Connolly N., Carbonnière A. (Eds). Marine Board-ESF, Strasbourg, France. 2007. ISBN 2-912049-62-8, 62pp.
  Contributing authors: Jacques Binot, Juanjo Dañobeita, Thomas Muller, Per Wilhelm Nieuwejaar, Marieke J. Rietveld, Paul Stone. Special contributions: Massimiliano di Bitteto, John Breslin, Klaus von Broeckel, Joao Coimbra, Dimitris Georgopoulos, Mick Gillooly, Hannu Gronvall, Jan Piechura, Frans Veenstra.

- Philippart C.J.M. *et al.* **Impacts of Climate Change on the European Marine and Coastal Environment – Ecosystems Approach. Marine Board Position Paper 9**. Connolly N., Walter N. (Eds). Marine Board-ESF, Strasbourg, France. 2007. ISBN 2-912049-63-6, 84pp.
  Contributing authors: Ricardo Anadón, Roberto Danovaro, Joachim W. Dippner, Kenneth F. Drinkwater, Stephen J. Hawkins, Geoffrey O'Sullivan, Temel Oguz, Catharina J.M. Philippart, Philip C. Reid.

- Minster J-F., Connolly N. *et al* (Eds). **Navigating the Future III. Marine Board Position Paper 8**. Marine Board-ESF, Strasbourg, France. 2006. ISBN 2-912049-59-8, 69pp.

Contributing editors: Aurélien Carbonnière, Niamh Connolly, Jan de Leeuw, Maud Evrard, Jan Mees, Jean-François Minster, Kostas Nittis, Geoffrey O'Sullivan, Nicolas Walter.

- Prandle D. *et al.* **Modelling in Coastal and Shelf Seas – European Challenges. Marine Board Position Paper 7**. Connolly N., Walter N. (Eds). Marine Board-ESF, Strasbourg, France. 2005. 30pp.
  Contributing authors: João Gomes Ferreira, Wolfgang Fennel, Michael Hartnett, Peter Herman, Michiel Knaapen, Hans Los, Morten Pejrup, Thomas Pohlmann, David Prandle, Roger Proctor, Yann-Hervé de Roeck, Karline Soetaert, Takvor Soukissian, Tapani Stipa, Georg Umgiesser, Waldemar Walczowski.

- Mantoura F., Boissonnas J., d'Ozouville L., Connolly N. **Navigating the Future II - Summary of Integrating Marine Science in Europe. Marine Board Position Paper 6**. Minster J-F. *et al* (Eds). Marine Board-ESF, Strasbourg, France. 2003. 24pp.
  Editors: John Marks, Jean-François Minster, Mario Ruivo, Silvana Vallerga; Other Contributors: Avan Antia, Laura Castellucci, Juanjo Dañobeitia, Jens Degett, Bob Dickson, Graham Edgar, Paul Galvin, David Griffith, Gwyn Griffiths, Harlyn Halvorson, Carlo Heip, Jean-Pierre Henriet, Catherine Jeandel, Frank Lamy, Jacques Legrand, Han Lindeboom, Karin Lochte, Jens Meincke, Geoffrey O'Sullivan, Nadia Pinardi, Gérard Riou, Douglas Wallace, Gerold Wefer, John Woods.

- Mantoura F., Boissonnas J., d'Ozouville L., Connolly N. **Integrating Marine Science in Europe. Marine Board Position Paper 5**. Minster J-F. *et al* (Eds). Marine Board-ESF, Strasbourg, France. 2002. 148pp.
  Editors: John Marks, Jean-François Minster, Mario Ruivo, Silvana Vallerga; Other Contributors: Avan Antia, Laura Castellucci, Juanjo Dañobeitia, Jens Degett, Bob Dickson, Graham Edgar, Paul Galvin, David Griffith, Gwyn Griffiths, Harlyn Halvorson, Carlo Heip, Jean-Pierre Henriet, Catherine Jeandel, Frank Lamy, Jacques Legrand, Han Lindeboom, Karin Lochte, Jens Meincke, Geoffrey O'Sullivan, Nadia Pinardi, Gérard Riou, Douglas Wallace, Gerold Wefer, John Woods.

- Halvorson H. *et al.* **Marine Biotechnology – A European Strategy for Marine Biotechnology. Marine Board Position Paper 4**. Mantoura F. (Ed). Marine Board-ESF, Strasbourg, France. 2001. ISBN 2-912049-29-6, 30pp.
  Contributing authors: Maria Alexis, Grant Burgess, Joao Coimbra, Yves le Gal, Maura Grealy, David Gutnick, Harlyn Halvorson, Manfred Höfle, Zuzana Smolenicka, Bernt Walther, Roman Wenne; Special consultant: Jan A. Olafsen.

- Boissonnas J., d'Ozouville L. *et al.* **Navigating the Future – Towards a Marine European Research Area. Marine Board Position Paper 3**. Marine Board-ESF, Strasbourg, France. 2001. 14pp.
  Core Drafting Group: J. Boissonnas, O.R. Godø, C. Jeandel, J.W. de Leeuw, K. Lochte, R.F.C. Mantoura, J. Marks, J.F. Minster, G. O'Sullivan, L. d'Ozouville, S. Vallerga, G. Wefer; Other contributors: H. Halvorson, C. Heip, B. B. Jørgensen.

- Boissonnas J., d'Ozouville L. *et al.* **Towards a European Marine Research Area. Marine Board Position Paper 2**. Marine Board-ESF, Strasbourg, France. 2000. 54pp.
  Core Drafting Group: J. Boissonnas, O.R. Godø, C. Jeandel, J.W. de Leeuw, K. Lochte, R.F.C. Mantoura, J. Marks, J.F. Minster, G. O'Sullivan, L. d'Ozouville, S. Vallerga, G. Wefer; Other contributors: H. Halvorson , C. Heip, B. B. Jørgensen.

- Heip C., Hummel H. **Establishing a Framework for the Implementation of Marine Biodiversity Research in Europe. Marine Board Position Paper 1**. Mantoura F. (Ed). Marine Board-ESF, Strasbourg, France. 2000. ISBN 2-912049-13-X, 50pp.

Marine Board Vision Documents:

- Le Boulluec M. *et al.* **Marine Renewable Energy – Research Challenges and Opportunities for a New Energy Era in Europe. Marine Board Vision Document 2**. McDonough N., Evrard M. (Eds). Marine Board-ESF, Ostend, Belgium. 2010. ISBN: 978-2-918428-27-5, 12pp.
  Contributing Authors: Augusto Barata da Rocha, Cibran Camba Rey, Marc Le Boulluec, John Dalen, Henry Jeffrey, Finn Gunnar Nielsen, Geoffrey O'Sullivan, Nathalie Rousseau, Eoin Sweeney, Judith Wolf.

- Dosdat A., Ryder P. *et al.* **Marine Board – EuroGOOS Vision Document on EMODNET, The European Marine Observation and Data Network. Marine Board Vision Document 1**. Ryder P., Connolly N., Evrard M. (Eds). Marine Board-ESF, Ostend, Belgium. 2008. 10pp.
  Contributing authors: Patrick Berthou, Taco de Bruin, Howard Cattle, Franciscus Colijn, Antoine Dosdat, Michael Gillooly, Johnny Johannessen, Juha Markku Leppanen, Giuseppe Manzella, Geoffrey O'Sullivan, Sylvie Pouliquen, Roger Proctor, Peter Ryder, Dick Schaap.

Marine Board Fora:

- Connolly N., Evrard M. (Eds). **1st Marine Board Forum Marine Data Challenges: from Observation to Information (15 May 2008, Ostend). Forum Proceedings**. Marine Board-ESF, Ostend, Belgium. 2008. ISBN 2-912049-97-0, 36pp.
  Forum rapporteurs: Erlend Moksness, Jacky Wood

Marine Board Annual Reports:

- McDonough N., Eparkhina D. **Marine Board Annual Activity Report 2010**. Marine Board-ESF, Ostend, Beglium. 2011. ISBN 9789079528110, 72pp.
- McDonough N., Eparkhina D., Calewaert J-B. **Marine Board Annual Activity Report 2009**. Marine Board-ESF, Ostend, Belgium. 2010. 50pp.
- Connolly N., Eparkhina D., Calewaert J-B. **Marine Board Annual Activity Report 2008**. Marine Board-ESF, Ostend, Belgium. 2009. 44pp.
- Connolly N. **Marine Board Annual Report 2007**. Eparkhina D., Evrard M., Calewaert J-B., Carbonnière A. (Eds). Marine Board-ESF, Ostend, Belgium. 2009. 28pp.

EurOCEAN Conference Reports:

- McDonough N., Calewaert J-B. (Eds). **EurOCEAN 2010 Conference Report and Ostend Declaration.** EurOCEAN 2010 – Grand challenges for marine research in the next decade. Thermae Palace, Ostend, Belgium, 12-13 October 2010. Belgian Science Policy Office (BELSPO), Brussels. VLIZ Special Publication 49 – Flanders Marine Institute (VLIZ). Ostend, Belgium. 2011. ISSN 1377-0950, 60pp.
  Conference rapporteurs: Florence Coroner, Jan-Stefan Fritz, Stephen Hall, Nina Hedlund, Jacky Wood.

- O'Sullivan G., Angell-Hansen K., Connolly N. (Eds). **EurOCEAN 2007 (22 June 2007, Aberdeen, Scotland). Conference Report and Aberdeen Declaration.** Marine Institute, Galway, Ireland. 2007. 18pp.
  Conference rapporteurs: Charlotte Jagot, Jacky Wood, Niall McDonough, Stephan Hall.

- Cieslikiewicz, W., Connolly, N., Ollier G., O'Sullivan G. (Eds). **Proceedings of the EurOCEAN 2004 European Conference on Marine Science and Ocean Technology (10-13 May 2004, Galway, Ireland)**. Luxemburg: Office for Official Publications of the European Communities. 2007. ISBN 92-894-7727-X, 420pp.

Marine Board Publications are available for download at www.esf.org/marineboard/publications

Annex 3. Members of Ongoing Marine Board Working Groups

Risk Assessment and Monitoring of Existing and Emerging Chemicals in the European Marine and Coastal Environment - WG POL

- Colin Janssen,Ghent University, Belgium – Chair
- Patrick Roose, Management Unit of the North Sea Matematical Modals and the Scheldt Estuary (MUMM), Belgium – co-Chair
- Joan Albaiges, National Research Council (CSIC), Spain
- Maria João Bebianno, University of Algarve, Portugal
- Kees Camphuysen, Royal Netherlands Institute for Sea Resarch (NIOZ), The Netherlands
- Margot Cronin, Marine Institute, Ireland
- Jan de Leeuw, Royal Netherlands Institute for Sea Resarch (NIOZ), The Netherlands
- Geir Wing Gabrielsen, Norwegian Polar Institute, Norway
- Tom Huchinson, Plymouth Marine Laboratory, UK
- Ketil Hylland, University of Oslo, Norway
- Bo Jansson, Stockholm University, Sweden
- Munro Bjørn Jenssen, Norwegian University of Science and Technology (NTNU), Norway
- Detlef Schulz-Bull, Baltic Sea Research Institute-Warnemuende,Germany
- Piotr Szefer, Medical Univerisity of Gdansk, Poland

Marine Microbial Biodiversity – WG MICROCEAN

- Frank Oliver Glöckner Max Planck Institute for Marine Microbiology, Germany - Chair
- Adriano Bordalo, CIIMAR and ICBAS – University of Porto, Portugal
- Josep Maria Gasol, Institute of Marine Sciences-CMIMA, CSIC, Spain
- Åke Hagström, Havsmiljöinstitutet, School of Pure and Applied Natural Sciences, Sweden
- Francisco Hernandez, Flanders Marine Data Center (VMDC), Belgium
- Mathias Labrenz, Leibniz Institute for Baltic Sea Research, Germany
- Fergal O'Gara, National University of Ireland Cork (UCC), Ireland
- Pitta, Paraskevi, Hellenic Centre for Marine Research, Greece
- Ruth-Anne Sandaa, University of Bergen, Norway
- Lucas J. Stal, Netherlands Institute of Ecology NIOO-KNAW, Netherlands
- Elena Stoica, National Institute for Marine Research and Development "Grigore Antipa", Romania
- Marta Varela Rozados, Spanish Institute of Oceanography (IEO), Spain

Marine Protected Areas – WG MPAs

- Esben Olsen, Institute of Marine Research, Norway - Chair
- Enrique Macpherson, National Research Council (CSIC), Spain
- Raquel Goñi, Spanish Oceanography Institute (IEO), Spain
- Dominique Pelletier, French Sea Research Institute for Exploitation of the Sea (Ifremer), France
- Marijn Rabaut, Ghent University, Belgium
- Stelios Katsanevakis, Hellenic Centre for Marine Research, Greece
- Tania Zaharia, National Institute for Marine Research and Development "Grigore Antipa", Romania
- Britas Klemens Eriksson, University of Groningen, The Netherlands
- Phil Weaver, National Oceanography Centre, UK
- Marta Chantal Ribeiro, University of Porto, Portugal

Annex 4. List of Acronyms

BONUS	FP6 ERA-NET for the Baltic Sea Science - Network of Funding Agencies
CAREX	Coordination Action for Research Activities on life in Extreme Environments (EC FP7 Coordinated Action)
CIESM	Mediterranean Science Commission
CLAMER	FP7 CSA Climate Change Impacts on the Marine Environment:
COST	European Cooperation in the field of Scientific and Technical Research
CSA	Coordination Support Action (EU FP Scheme)
CWG	Collaborative Working Group (EC Instrument)
DG MARE	DG Maritime Affairs and Fisheries (European Commission)
DG RTD	DG Research and Technological Development (European Commission)
DG	Directorate General (European Commission)
EATIP	European Aquaculture and Technology Innovation Platform
EC	European Commission
ECORD	European Consortium for Ocean Research Drilling
EFARO	European Fisheries and Aquaculture Research Organisations
EGU	European Geosciences Union
EMaPS	European Marine and Polar Science
EMAR²RES	FP7 CSA Cooperation between the Communities of European MARine and MARitime REsearch and Science
EMODNET	European Marine Observation and Data Network
ERA	European Research Area
ERA-NET	European Research Area Network (EC FP Scheme)
ERVO	European Research Vessel Operator
ESF	European Science Foundation
EU	European Union
EurOCEAN	European Conference series on Marine Science and Technology
EUROFLEETS	FP7 I3 Towards an Alliance of European Fleets
EuroGOOS	European Global Ocean Observing Systems
ExCom	Marine Board Executive Committee
FEUFAR	Future of European Fisheries and Aquaculture Research
FP	EU Framework Programme for Research and Technological Development
FTE	Full-time Equivalent
GDP	Gross Domestic Product
HERMIONE	FP7 IP Hotspot Ecosystem Research and Man's Impact ON European seas
ICES	International Council for the Exploration of the Sea
I3	Integrated Infrastructure Initiative (EU FP Scheme)
IMP	Integrated Maritime Policy
IP	Integrated Project (EU FP Scheme)
JPI	Joint Programming Initiative
MARCOM+	FP7 CSA Towards an Integrated Marine and Maritime Science Community
MarinERA	FP6 ERA-NET project Facilitating Cooperation between National Marine RTD Programmes in Europe
MBCP	Marine Board Communications Panel
MEECE	Marine Ecosystem Evolution in a Changing Environment
RTD	Research and Technological Development
SEAS-ERA	FP7 overarching marine ERA-NET
TP	Technology Platform
VG	Vision Group (Marine Board Instrument)
WG	Working Group (Marine Board Instrument)
WG BIOTECH	Marine Board Working Group Marine Biotechnology: A European Strategy for Marine Biotechnology
WG MICROCEAN	Marine Board Working Group Marine Microbial Biology
WG MPA	Marine Board Working Group Marine Protected Areas
WG POL	Marine Board Working Group Existing and Emerging Chemical Pollutants in the Marine Environment
WG SEAMBOR	Marine Board Working Group Science Dimensions of Ecosystem Approach to Management of Biotic Ocean Resources

MARINE BOARD

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