



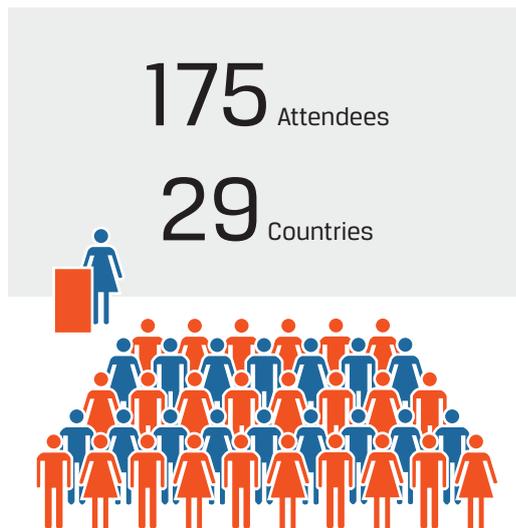
Annual Activities 2015



The year in numbers

Analogue

JPI Oceans First Conference



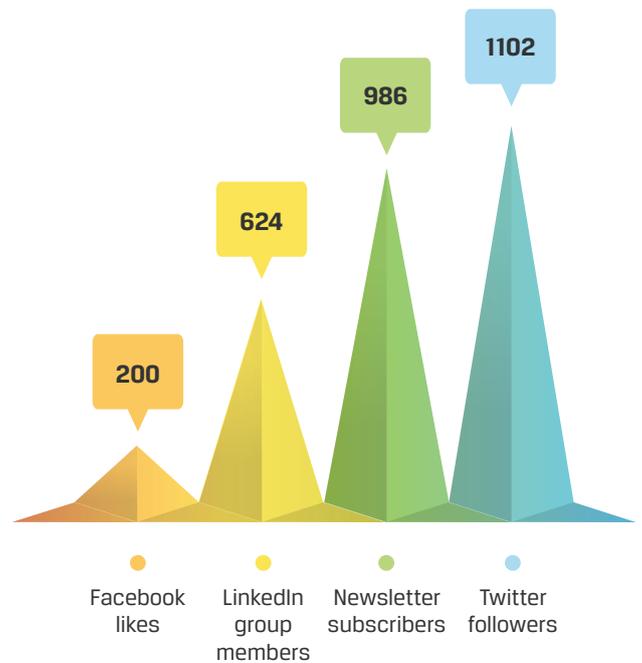
Strategic Research and Innovation Agenda



931
SRIAs handed out

Digital

2015 Outreach numbers



Unique Website Visitors

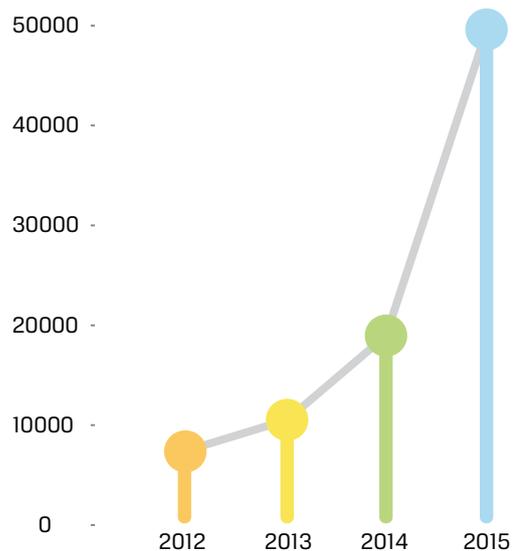


Table of Contents

Annual Activities

	Preface	7
1	Our Activities	9
	Member Countries Agree on Strategic Research and Innovation Agenda	10
	Ecological Aspects of Microplastics	11
	Ecological Aspects of Deep Sea Mining	14
	Multi-use of Infrastructure for Monitoring in the North Sea	16
	Intercalibration for the EU Water Framework Directive	17
	Munitions in the Sea	18
	CSA Oceans Project Activities	19
	CSA Oceans 2	21
	ERA-NET COFUND on Marine Technologies	21
2	Our Network	22
	Events and Conferences	23
	Meeting Commissioner for Maritime Affairs Karmenu Vella	26
	JPI Chairs Release Statement at Lund Revisited Conference	27
3	International Cooperation	28
	Marine Litter and Deep-sea Mining at G7 Science Ministers Meeting	29
	International guests at JPI Oceans Management Board Meeting	30
4	Communication & Outreach	31
	First JPI Oceans & Final CSA Oceans Conference	32
	Publications & Outreach Materials	33
5	Our governance	35
	Towards a Legal Entity for JPI Oceans	36
	Croatia Joins JPI Oceans as a New Member	36
	Election New Executive Committee	37
	Strategic Advisory Board News	38
	In Memoriam Jørn Aksel Krog	38
	Annexes	39
	Annex I: Website - Social Media Statistics	39
	Annex II: JPI Oceans presentations at external events	40
	Annex III: Management Board	42
	Annex IV: Strategic Advisory Board	43
	Annex V: Secretariat	44

Preface

Caron Montgomery, Chair JPI Oceans Management Board

Looking back at 2015 we have had a busy and at the same time very rewarding year. Throughout the last 12 months a lot of our activities have taken off or reached a new phase. The pilot action on deep-sea mining conducted its research cruise in the Pacific, four projects on microplastics research have been selected for funding and the second phase of the action on the intercalibration for the EU Water Framework Directive was started. In the meantime the operational plan for JPI Oceans activities came together with lead countries identified and a new action launched on the topic of munition in the sea. JPI Oceans is also stepping up its dialogue at international level. At the Autumn meeting of the Management Board we welcomed guests from the USA, Canada and New Zealand. The secretariats of BONUS and the JPI met to enhance the collaboration between the joint Baltic Sea research and development programme and JPI Oceans and we were further involved in the process of developing the Blue Med initiative. In addition, the Strategic Advisory Board has provided very useful advice during the current phase of JPI Oceans and contributed strongly to defining the advisory role needed in the new phase to ensure that JPI Oceans remains an efficient organization with the flexibility to adapt and learn from its past experience. In that regard I would specifically like to express my gratitude to the Chair, Professor Peter Herzig who I wish all the best in his new position as Vice-President of the Helmholtz Association of German Research Centers.

The year has been significant as well with important progress made towards the business plan and legal entity of JPI Oceans, the official launch of our Strategic Research and Innovation Agenda in Brussels and the organization of the first JPI Oceans conference. The latter was well received and reached 175 participants from 29 different countries.

2015 also marked the end of the first CSA Oceans project and the selection for funding of the CSA Oceans 2 project. In that regard we would like to specifically thank the European Commission for the good collaboration. We are looking forward to continue and further step up the activities with the CSA Oceans 2 project.

It was a pleasure to see as well that JPI Oceans is well recognized at political level. In June I had the honour to meet Commissioner for Maritime Affairs, Karmenu Vella. In addition JPI Oceans was acknowledged in the statement from the G7 Science Ministers meeting in Berlin. At the meeting the Science Minister further highlighted marine litter and deep-sea mining as high priorities for future research. Furthermore JPI Oceans representatives were invited to intervene in several events in the European Parliament and at the high level launch of the Blue Med Declaration by the Italian Minister Stefania Giannini and in the presence of European Commissioner Moedas.

JPI Oceans was also invited as a showcase at the session on the alignment of national research and innovation agendas at the high level "Lund Revisited" conference. The conference was a follow up of the event which took place in 2009 and concluded that European research must focus on the Grand Challenges of our time. The Chairs of all 10 JPIs produced a position statement on actions needed to spread the joint programming process and improve its leverage and long term effects. Finally, in addition to the work done in the different working groups, workshops and Management Board and StAB meetings our Management Board members have also represented JPI Oceans at various events throughout Europe and beyond as was the case at the end of the year for the "The Changing Ocean & its impact on Society" event at the COP21 in Paris.

We are looking forward to continue the work on the implementation of our JPI.

List of Acronyms

CSA Oceans- A Framework Programme 7 funded Coordination & Support Action to support JPI Oceans in its start-up phase

ExCom- Executive committee of JPI Oceans

IPlan- Implementation Plan

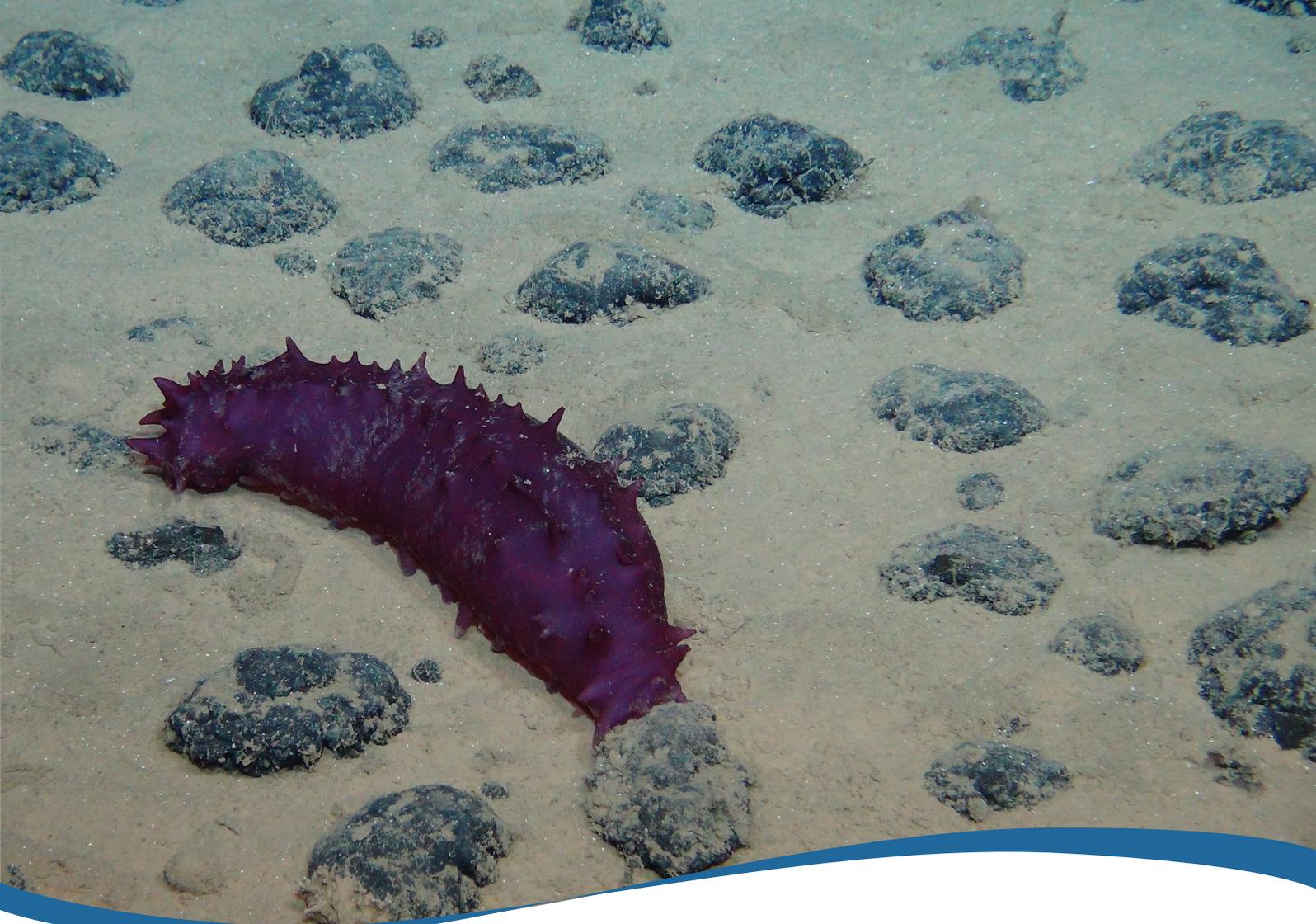
JPI- Joint Programming Initiative

JPI Oceans- Joint Programming Initiative for Healthy and Productive Seas and Oceans

MB- Management Board of JPI Oceans

SRIA- Strategic Research and Innovation Agenda

StAB- Strategic Advisory Board



CHAPTER 1

Our Activities

Member Countries Agree on Priorities in Strategic Research and Innovation Agenda



DIRECTOR GENERAL OF DG RESEARCH AND INNOVATION, EUROPEAN COMMISSION ROBERT-JAN SMITS, NORWEGIAN STATE SECRETARY DILEK AYHAN, CHAIR OF THE JPI OCEANS MANAGEMENT BOARD, CARON MONTGOMERY, BELGIAN STATE SECRETARY BART TOMMELEIN - PICTURE CREDIT: JPI OCEANS - SCORPIX

At the Management Board meeting of 20-21 April 2015 in Brussels the member countries of JPI Oceans agreed on a concise public version of the [Strategic Research and Innovation Agenda](#). The agenda was subsequently launched at the first JPI Oceans conference. It presents ten Strategic Areas (with the support of the FP7 CSA Oceans project), as priorities for marine and maritime research in Europe.

The Research and Innovation Agenda was developed through an extensive stakeholder consultation which involved a series of workshops targeting different stakeholder groups, a questionnaire to the funding bodies of JPI Oceans' Member Countries, and an open web consultation. In collaboration with the Strategic Advisory Board, the Management Board of JPI Oceans identified ten strategic areas:

1. Exploring Deep Sea Resources
2. Technology and Sensor Developments
3. Science Support to Coastal and Maritime Planning and Management

4. Linking Oceans, Human Health and Wellbeing
5. Interdisciplinary Research for Good Environmental Status
6. Observing, Modelling and Predicting Oceans State and Processes
7. Climate Change Impact on Physical and Biological Ocean Processes
8. Effects of Ocean Acidification on Marine Ecosystems
9. Food Security and Safety Driving Innovation in a Changing World
10. Use of Marine Biological Resources through Development and Application of Biotechnology

New actions such as the recently launched action on "Munition in the Sea" will add to the four existing Pilot Actions which are already running. Apart from the actions listed, the JPI Oceans member countries are in the process of developing new actions in the different strategic areas listed above.

Ecological Aspects of Microplastics

The accumulation of plastic litter in the environment and especially the world oceans has become a growing concern ever since the rise in plastics production. Larger persistent plastics are in most cases not degradable but fragment over the course of time. Various studies have demonstrated the presence of micro-plastics in the ocean as well as the uptake of micro-plastics by various organisms in the sea. Thus, micro-plastics are entering marine food webs and could end up in human food as well.

However, the knowledge about the origin, size, range, abundance and spatial variability of microplastics in marine systems is still limited. The toxicological and ecological effects on marine organisms and ultimately on human health is also insufficiently studied. Hence, for the protection of marine habitats and the safety of marine resources and seafood the JPI Oceans Management Board decided that a transdisciplinary European research initiative was necessary.

Joint Call on microplastics

Ten member countries of JPI Oceans (Belgium, France, Germany, Ireland, Italy, The Netherlands, Norway, Portugal, Spain and Sweden) decided to allocate funds to a joint call on microplastics which was launched in January 2015. The call comprised three main themes:

- Validation and harmonisation of analytical methods (interlaboratory study)
- Identification and quantification of microplastics
- Eco-toxicological effects of microplastic – impact on marine organisms

Through the competitive call process, organised by Project Management Jülich (PtJ) in Germany, 21 joint proposals requested more than €26 million. Based on the evaluations by an expert panel, member countries selected four

proposals for funding from December 2015 for a three year period with a total budget of €7.7m.

The four projects will work towards harmonising methods for monitoring, extracting and analysing microplastic particles, improving the identification and quantification of microplastics, as well as further our understanding of the ecotoxicological effects of the microplastics on marine life:

BASEMAN - Defining the baselines and standards for microplastics analyses in European waters

WEATHER-MIC - How microplastic weathering changes its transport, fate and toxicity in the marine environment

EPHEMARE - Ecotoxicological effects of microplastics in marine ecosystems

PLASTOX - Direct and indirect ecotoxicological impacts of microplastics on marine organisms

BASEMAN

Coordination: Dr Gunnar Gertds, Alfred Wegener Institute – Helmholtz Centre for Polar and Marine Research, Germany

BASEMAN is an interdisciplinary and international collaborative research project that aims at harmonising analytical methods and developing standard operation protocols (SOP) for microplastics sampling and detection thus working towards reliable and comparable data on microplastic. BASEMAN deploys cutting-edge approaches to tackle the two major themes of the joint call: the validation and harmonisation of analytical methods" which is indispensable for the identification and quantification of microplastics. BASEMAN's project outcomes will equip policy makers with the tools and operational measures required to describe the abundance and distribution of microplastics in the environment. Such tools will permit evaluation of member state compliance with existing and future monitoring requirements and aid further harmonisation.

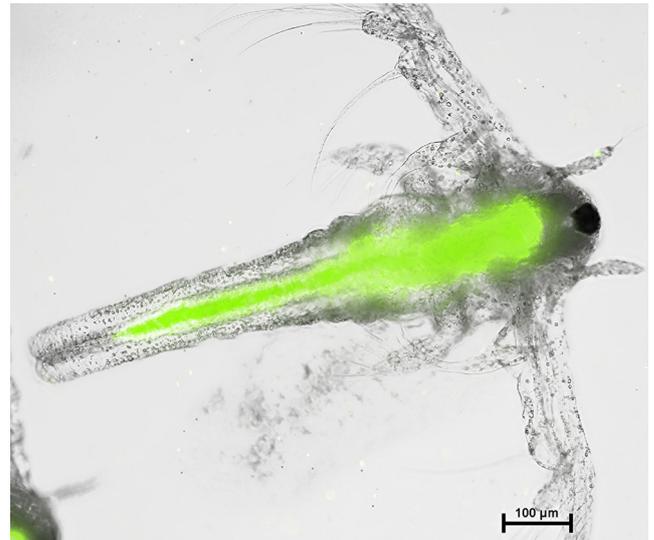
WEATHER-MIC

Project Coordinator: Dr Annika Jahnke, Helmholtz Centre for Environmental Research – UFZ Leipzig, Germany

The WEATHER-MIC project will develop novel tools to tackle the complex implications of weathering of microplastics in a holistic manner. The toolbox of analytical and (eco) toxicological methods, models, and new knowledge that WEATHER-MIC seeks to establish and validate in case studies for the Baltic Sea and Oslo Harbor will consist of:

- "fingerprinting" methods to track microplastic weathering,
- mechanisms of chemical release from microplastics,
- advanced particle imaging methods to investigate size distribution and morphological changes with weathering,
- improved understanding of ecological information on the biofilm that accumulates on microplastics and its trophic transfer,
- hydrodynamic models to account for changes in sedimentation and transport with microplastic fragmentation-aggregation,
- toxicity profiles for weathered microplastics.

The scientific products of WEATHER-MIC will provide a basis to integrate weathering of microplastics into risk assessments of marine plastic debris, considering both exposure and effects. The project has identified local stakeholders from its respective countries and will identify additional ones from the regulatory, educational, environmental and industry sectors. The communication with these stakeholders will involve education on the fact that the implications of complex microplastic weathering need to be approached by research and informed public policymaking, such as the development of proper tools. The tools developed in WEATHER-MIC will open avenues to improved guidelines for plastic handling, safeguards that can minimize the hazards of microplastic pollution, and public education that aims to reduce the levels of plastic litter in the marine environment of Europe and globally.



ARTEMIA NAUPLII AFTER INGESTION OF 1-5 μ M FLUORESCENT PLASTIC MICROPARTICLES (PHOTOGRAPHY A. BATEL, UNIVERSITY OF HEIDELBERG)

EPHEMARE

Project Coordinator: Prof. Ricardo Beiras, University of Vigo, Spain

EPHEMARE, targets (1) the uptake, tissue distribution, final fate and effects of microplastics in organisms representative of pelagic and benthic ecosystems, and (2) the potential role of microplastics as vectors of model persistent pollutants (PPs) that readily adsorb to their surfaces. The ecotoxicological work relies on an initial study on the equilibrium kinetics of PPs on microplastics conducted by a reference analytical laboratory at European level that will provide rigor and assure environmental relevance to the subsequent experimental setups. The European consortium includes experts in biological effects of marine pollutants at molecular, cellular, physiological and organismic levels, up to-date singular facilities for aquatic toxicity testing under strict QA/QC conditions, and some of the world leading teams in microplastics research.

The EPHEMARE multidisciplinary consortium will allow identification of operational biomarkers with potential for microplastics detection in the environment, as well as omics approaches to elucidate molecular pathways causing biological effects. The composition and capacities of the partnership allow in-depth studies on fundamental mechanisms underlying these effects across the main phyla of marine organisms from bacteria to fish covering

most of the trophic levels. In addition to experimental exposures, field validation studies will be performed in four areas representative of coastal ecosystems submitted to different degrees of anthropogenic pressure, thus linking the ecotoxicological findings from laboratory studies to the environmental scale. The communication and connection with private and public stakeholders is one of the priorities of EPHEMARE in order to facilitate public awareness, pre-normative research, and implementation of European Directives.

PLASTOX

Project Coordinator: Dr Andy Booth, SINTEF Trondheim, Norway

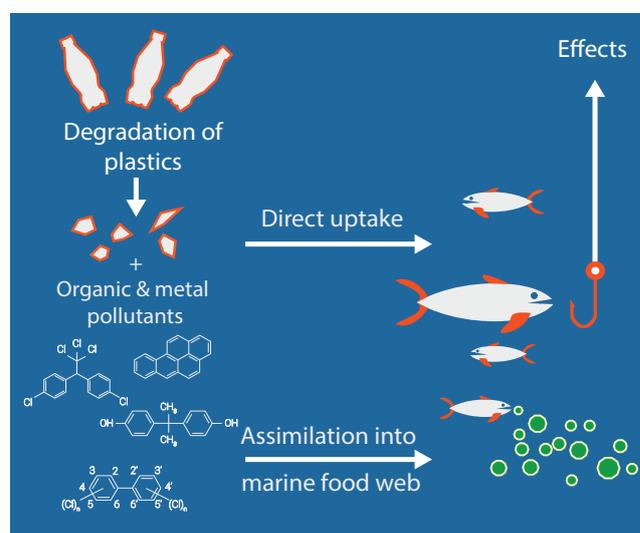
The PLASTOX project will investigate the ingestion, food-web transfer, and ecotoxicological impact of microplastics, together with persistent organic pollutants (POPs), metals and plastic additive chemicals associated with them, on key European marine species and ecosystems. It will also study the temporal dynamics of microplastics colonisation by microbial communities in the field and the influence of microbial biofilms on ingestion rates and POP toxicity. The influence of microplastics physicochemical properties (size, shape, surface area and composition) on these processes will be evaluated. PLASTOX will combine field-based observations, laboratory tests, mesocosm and manipulative field experiments to study the ecological effects of microplastics.

PLASTOX will bridge the current gap between laboratory assessment using commercially available feedstock microplastics and the additive-loaded and degrading microplastics which dominate the marine environment. Macro-sized plastic debris collected from the marine environment will be used to generate microplastics derived from real marine litter, providing a common reference material for all project partners.

Adsorption and desorption of organic and inorganic pollutants to microplastics will be investigated using a range of common POP and metal contaminants. Studies will highlight how adsorption/desorption behavior varies between different contaminants, identifying which physicochemical properties are most influential. Studies will employ optimised laboratory and long-term field experiments at different stations in a wide range

of European marine environments (Mediterranean, Adriatic, North, and Baltic Seas and the Atlantic) and in wastewater treatment plant effluents. As an innovative approach, compound-specific stable isotope analysis will be applied to understand the fate and transport of pollutants on microplastics. For microplastics extracted from radiometrically dated sediments, POP and metal determination will offer the first concentration estimates of the levels of pollutants gathered on microplastics over long time spans (10-30 years).

PLASTOX will investigate uptake through ingestion and other routes following controlled exposures. Microplastic accumulation in marine organism tissues, caused by transport across the gut and cell boundaries, will be studied and attempts made to quantify microplastics accumulation using state of the art analytical approaches. The acute and sublethal ecotoxicological effects of microplastics will be assessed on marine organisms from phyto- and zooplankton to (shell)fish and seabirds, representative of the full range of economically important marine living resources in the EU. Using data and competence generated in these studies, a more detailed understanding of the potential for microplastics transfer between trophic levels, and the subsequent impacts this may have, will be obtained. Finally, PLASTOX will culminate in a series of experiments bringing together the knowledge generated about microplastics and POPs/metals to study the combined fate and effects of these marine contaminants in food web studies. The knowledge generated will be summarized in a guidance document for development of future legislation and remedial efforts.



Ecological Aspects of Deep Sea Mining

Project Coordination: Dr Matthias Haeckel, GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany

Background

Global interest in the exploration and exploitation of deep-sea minerals is on the rise. Enabled by technological advances and driven by geopolitical, economic and scientific motivations, public and private alike are increasingly venturing to the edges of the continental shelves and into areas beyond national jurisdiction in search of new resources. However, deep-sea ecosystems and the potential effects of mining activities on them are poorly understood.

Therefore, 11 member countries of JPI Oceans decided to launch a joint research activity in the field in order to jointly analyse the long-term ecological consequences of deep-sea polymetallic nodule mining to inform the international

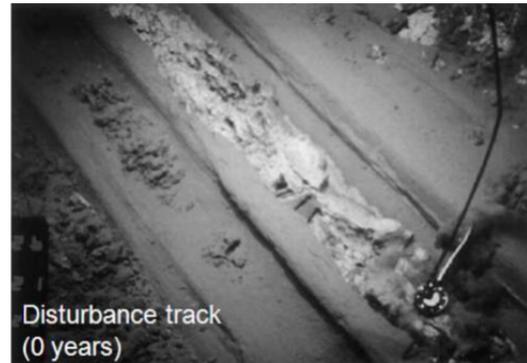
regulation of deep sea mining activities by:

- Predicting the ecological, biogeochemical and hydrodynamic consequences of a mining impact.
- Testing a range of modern rapid assessment methods and monitoring techniques for defining the ecosystem status.
- Communicating the results to stakeholders and policymakers.
- Conducting a comparative baseline study across different deep-sea environments (eg. trophic states and seamounts)

The German Federal Ministry of Education and Research (BMBF) provided 118 days of ship time for on-site research



Undisturbed seafloor with nodules



Disturbance track (0 years)



Disturbance track (7 years)



Disturbance track (26 years)

IN 1989, GERMAN SCIENTISTS CONDUCTED THE DISTURBANCE AND RE-COLONIZATION EXPERIMENT (DISCOL) OFF THE COAST OF PERU TO SIMULATE AND INVESTIGATE THE ENVIRONMENTAL IMPACT OF NODULE MINING. IMAGES OF THE UNDISTURBED SEAFLOOR IN THE DISCOL AREA PRIOR (LEFT), WITH PLOUGH MARKS DIRECTLY AFTER DISTURBANCE, 7 YEARS AND 26 YEARS AFTER THE EXPERIMENT. THIEL ET AL. & TUSCH (2001) - AUV ABYSS, GEOMAR.



PICTURE CREDIT: ROV KIEL 6000, GEOMAR HELMHOLTZ CENTRE FOR OCEAN RESEARCH KIEL

in the Pacific on the RV SONNE. The project started in January 2015 and will run for 36 months with an overall budget of approximately €9.5m. Over the course of two cruises, researchers from 11 countries mapped habitats, studied deep sea ecosystems and investigated their functioning in addition to predicting and identifying the environmental implications of nodule and sediment removal, sediment plume dispersion and redeposition caused by mining activities.

The research expeditions focused on investigating different types of seafloor disturbances in the deep sea that were created from a few days and months up to almost 40 years ago. While three expeditions (Sonne 239, 240 and James Cook 120) worked in International Seabed Authority contractor areas of the United Kingdom, Germany, Belgium, France, IOM, and two of the Areas of Particular Environmental Interest (APEIs 3 and 4) located in the Clarion-Clipperton Fracture Zone (CCZ), both legs of the last expedition (Sonne 242) re-visited the DISCOL area in the Peru Basin, where a disturbance experiment was conducted 26 years ago.

Following the cruises, which were finalised in October

2015, scientists are evaluating the collected data on-shore in the participating institutes. Preliminary results of the cruise show that the plough marks in the DISCOL area have hardly changed. Very little recolonization, low bioturbation and microbial activity was observed, implying that nodule mining will likely disturb the deep-sea ecosystem for many decades. Numerous seamounts were also detected in the deep sea which may make it difficult to mine on large continuous areas. Finally, the cruise has proven that the technology to conduct environmental impact assessments and monitoring is available.

Next Steps

Scientific data analyses will be targeted towards formulating recommendations for deep-sea nodule mining. Workshops with policymakers, stakeholders, contractors holding exploration licenses and interested industry planning offshore mining activities will be organised to communicate the project results. Scientific data and results will be stored in public databases and will also be made available to the Legal and Technical Commission of the International Seabed Authority (ISA) to facilitate implementation into regulations.

Multi-use of Infrastructure for Monitoring in the North Sea

The pilot action "Multi-use of Infrastructure for Monitoring in the North Sea" was proposed by The Netherlands in the Management Board meeting of October 2012. A long history of monitoring of the marine environment in the North Sea exists, including oceanographic, hydrographic, biological and human impact monitoring programmes. Some of these programmes have been active consistently and have produced very valuable time-series, while others monitored irregularly or opportunistically.

Current policy developments and related European and national legal obligations (e.g. MSFD) will lead to an increase of data requirements for monitoring purposes. Indicators have been proposed in order to monitor the status of the environment, requiring additions to or extensions of current monitoring programmes or new innovative programmes.

To make best use of each Euro spent on costly monitoring programmes, international collaboration is recommended to coordinate the North Sea monitoring activities, crossing national borders.

The pilot action picked a number of topics that require monitoring activities, to evaluate the feasibility of being added to current (fish stock) monitoring programmes. The intention was to develop pilot studies to test these on current monitoring activities as soon as possible. The process of organising the pilot, the needs (budgets, equipment, time) and the limitations (vessels, crew, permits) were of more interest than the actual data

collected at sea. Such information was considered a useful input for the project of the Directorate-General for the Environment, European Commission to be able to calculate costs and design an efficient integrated monitoring programme.

The overall approach of the pilot action was directed towards the following three components: (1) setting up integrated monitoring surveys, (2) enhancing integration of monitoring efforts and (3) promoting data sharing and integrated information systems. The pilot action focused on integrated surveys but considered the requirements of the other components during implementation.

As such the pilot action incorporated monitoring for MSFD descriptors in the current ICES International Bottom Trawl Survey (IBTS). The IBTS survey is coordinated internationally by experts from Germany, France, England, Scotland, the Netherlands, Denmark, Sweden and Norway, executed twice a year covering the Greater North Sea.

The whole process has given an impression of issues and problems related to organising additional monitoring for incorporating flexible, adaptive elements to the traditional approach, allowing for the implementation of future needs as they emerge. With regard to the experiments at sea, these were limited in amount and have resulted in some simple overviews e.g. of extra man-hours needed related to more integrated monitoring. The pilot action is being evaluated by the lead country, the Netherlands, to assess the opportunities to involve additional monitoring activities on existing surveys and possible follow up actions.

Intercalibration for the EU Water Framework Directive

Background

The EU Water Framework Directive (WFD) was adopted in 2000, the purpose being establishment of a framework for protection of inland surface waters, transitional waters, coastal waters and groundwater. Significant gaps still existed to achieve comparability of different water quality assessment methods of the member states, despite two preceding intercalibration phases for coastal and transitional waters. Intercalibration was time consuming and costly. Therefore JPI Oceans was approached by relevant authorities to facilitate further progress.

Objectives

The JPI Oceans pilot action adds value by:

- testing a mechanism for joint funding from environmental authorities of nine member countries (BE, DE, DK, FR, IE, NL, NO, SE, UK), surpassing the traditional model of joint calls;
- finding experienced scientific expert leads to perform required analyses in the most cost-efficient way for phytoplankton and benthic invertebrate fauna (as there are constraints in the availability of experts of national environmental authorities);
- reducing fragmentation of calculation efforts and increasing efficiency in relation to the Water (and Marine Strategy) Framework Directive;
- increasing experience with joint data collection and analysis, resulting in harmonisation and strengthening of scientific basis for cooperation.

In doing so, the JPI Oceans pilot action enables a long-term dialogue between environmental authorities and the scientific community of member countries to solve remaining scientific challenges jointly.

Results

A real common pot was created and governed by a research funding body that contracted the different expert leads after a specifically designed questionnaire selection process. In 2015 the financial commitments through fixed country specific budget contributions were renewed and three additional experts recruited.

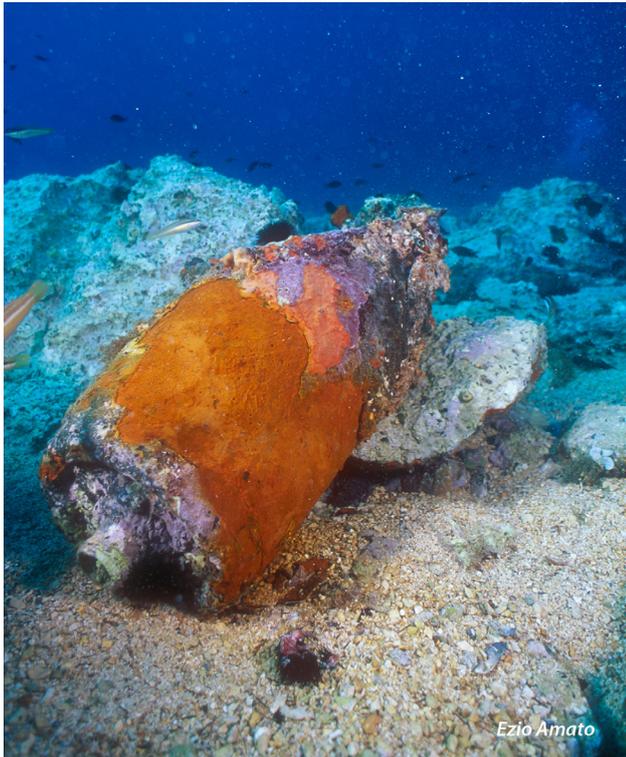
The first Memorandum of Understanding from 2014 with a commonly agreed work programme co-designed between environmental and scientific authorities was renewed after an evaluation of the activities from the first year and adjusted through a second MoU in 2015, covering work for 2015 and 2016.

For the analysis of phytoplankton in coastal waters a new milestone was achieved with chlorophyll a and nutrient data from all eleven North-East Atlantic member countries analysed together (one common and several linked regional fitting models obtained). Afterwards a comparability analysis was performed between legal boundaries of countries on the basis of the models that indicated how regions and countries differ from each other. In this way a complex problem is close to a satisfactory and scientifically sound solution through ongoing in-depth exchange on the results with environmental authorities.

In the case of benthic invertebrates in coastal waters regional differences in behaviour of assessment methods of nine countries were verified for the comparison of their legal boundaries in the North-East Atlantic and in the Wadden Sea. The comparability analysis with all countries showed that member countries have developed comparable methods with only few adjustments needed. The results were evaluated positively by the intercalibration review panel and the European Commission's Joint Research Centre to include in the next European Commission Decision on the values of the Member State monitoring system classifications.

Equivalent work for phytoplankton and benthic invertebrate fauna in transitional waters is still ongoing.

New Action on Munition in the Sea



Ezio Amato

PICTURE CREDIT: EZIO AMATO

Twelve European countries, under the lead of Italy, expressed their interest to participate in an action on the issue of munition in the sea.

Background

Large quantities of conventional and chemical weapons have been dumped in European seas throughout the 20th century, particularly in the aftermath of the first and second world wars as well as of the recent conflicts in the Balkan area. The problem of dumped munitions is understood within the European region, but they are not currently seen as a high priority for scientific research. Being a sensitive subject, it is sometimes difficult to coordinate activities internationally and across scientific disciplines.

Munitions in the sea pose a number of risks to human safety and wellbeing, environmental integrity and economic activity. Research into the effects of conventional and chemical weapons has shown the negative impacts on marine life, which in turn has implications for human health. Over time, the degradation of shell casings and containers leads to instability in dumped munitions. Coupled with the intensification of the use of marine space for economic and

social activities inevitably the likelihood of harm increases. A coordinated transnational response could increase the efficiency and effectiveness of interventions by sharing experience and skills across Europe.

Expected Impact

This JPI Oceans action is being coordinated by Italy and an action plan is being developed in collaboration with other interested countries.

By addressing the aspects of research and innovation, JPI Oceans can provide knowledge based support to operators and policy makers.

The aim is to assess risks and describe case studies, define priorities and suggest intervention options. These outcomes will be used to support decision making related to identification, monitoring and elimination of threats through a more systematic approach.

A number of related initiatives have been identified and analysed to find where JPI Oceans can add value. As a result of discussions between the most relevant stakeholders, it has been decided that JPI Oceans will conduct activities along three lines:

Science Support- By combining different scientific disciplines, JPI Oceans intends to support the development of a service to forecast changes in the sea state in relation to munitions. Simulating the impact of removal, dispersion and detonation on human health, on the environment, and on economic activities will also be investigated.

Technology Transfer- JPI Oceans will analyse different technologies and procedures for intervention to support decisions by operators and policy makers. The development demonstration of technologies and procedures can be used to increase safety, improve the efficacy and reduce the environmental impacts of interventions. JPI Oceans will provide support to exchange findings between different disciplines, projects and initiatives.

Exchange of Knowledge- Panels of experts will support transfer of knowledge and experiences of dealing with munitions in the sea.

CSA Oceans Project Activities

CSA Oceans was an EU FP7 project which facilitated the implementation of JPI Oceans in its startup phase. The project proposed tools, procedures and structures for long-term governance and operational cooperation of the Joint Programming activities. Furthermore CSA Oceans identified best practices and innovative solutions to propose new ways of interaction and alignment between the member countries of JPI Oceans.

Therefore the project has provided input to facilitate the development of a Strategic Research and Innovation Agenda and an Implementation Plan according to the vision and goals of JPI Oceans. Furthermore, CSA Oceans assessed the governance structures of JPI Oceans and made proposals for improvements accordingly.

CSA Oceans responded to the following objectives:

- Further elaborate and consolidate the governance structures and procedures in JPI Oceans;
- Map and analyse the marine and maritime research and innovation landscape in order to identify the gaps, overlaps and needs in four key areas: (i) Scientific gaps and overlaps; (ii) Barriers to Innovation; (iii) Science to Policy Mechanism; (iv) Observations, Infrastructures and Capacity building;
- Identify better ways of governance of EU marine and maritime research in support of the European maritime economy and related policies in particular in the implementation of the Marine Strategy Framework Directive;
- Develop a coherent Strategic Research and Innovation Agenda (SRIA) and Implementation Plan (IPlan) on the basis of the mapping and gap analyses;
- Develop effective and efficient methods of collaboration and joint activities and actions, peer review procedures, evaluation of joint programmes, cross-border funding.



- Make proposals for cross-border activities and initiate pilot actions based on the established framework conditions;
- Design a foresight process to be used by JPI Oceans beyond the lifetime of the CSA Oceans project;
- Develop and implement communication and dissemination activities and products for the CSA Oceans project towards relevant end-users (science, industry and civil society) and the general public, in particular to increase the visibility and profile of JPI Oceans and raise awareness about the benefits and opportunities it provides.

To ensure that CSA Oceans activities supported the long-term objectives of JPI Oceans, the deliverables and proposals from the CSA Oceans project were directly embedded into the discussions and decisions to be made by JPI Oceans governance bodies.

In 2015 the work of CSA Oceans was specifically focused on the development of an Implementation Plan for JPI Oceans, resulting from the previously agreed Strategic Research and Innovation Agenda. The project further organised the first JPI Oceans conference and Belgian premiere of Jean Michel Cousteau's Secret Oceans 3D (see Chapter 4 Communication and Outreach) and developed an online toolkit to facilitate the design of joint actions.

The project was launched on 1 September 2012 and ran until 31 August 2015.

Toolkit

The Council conclusions on Joint Programming of 2 December 2008 encouraged Member States, with the support of the European Commission, to consider how to best find common approaches to a number of issues, usually referred to as 'Framework Conditions', thought to

be essential for an effective development and implementation of Joint Programming in research.

CSA Oceans gathered information and analysed existing procedures, best practices and novel procedures with regards to the framework conditions. This information was gathered in an [online toolkit](#) to facilitate the selection, design, implementation and evaluation of joint actions.

The toolkit provides guidelines, templates and examples of joint actions which were conducted by different projects and initiatives. It does not only focus on joint calls but rather on a wider range of activities for crossborder cooperation. This is the case because JPI Oceans seeks to make use of a broad range of tools to implement its actions, including national research funding, institutional investments, human resources, existing infrastructure, structural funds, networking, and research alliances. For the implementation of these activities, the toolkit also lists criteria, guidelines for evaluation. The toolkit content is designed to be dynamic, allowing quick modifications and updates by the JPI Oceans secretariat.

Foresight

The CSA Oceans project developed a recommendation for a foresight process in JPI Oceans – another framework condition – that would support the strategy-making and guide the implementation of joint activities. As foresight has been applied in many different ways in the past, the project first defined the concept of foresight and reviewed existing processes in the European marine and maritime landscape. This [report](#) aimed served to create a common and shared understanding among the CSA Oceans partners and JPI Oceans members and provided a basis for discussion about the type of foresight JPI Oceans could be willing and able to coordinate.

On this basis, the project recommended to the JPI Oceans Management Board to implement a [two-pronged foresight approach](#) that addresses the needs of JPI Oceans. First, JPI Oceans needs a strategic foresight process to support strategy-making in JPI Oceans, in particular the update of the Strategic Research and Innovation Agenda. By creating a forum for critical debate about the long-term strategic orientation of marine and maritime research in Europe, where the research and

policy-making communities together with industry and civil society can openly discuss and devise integrated strategies for Europe, JPI Oceans could place itself at the centre of debate about European marine and maritime research and technology development.

Moreover, a strategic foresight process can strengthen JPI Oceans both internally and externally, by generating buy-in from its member countries as well as from important stakeholder communities. For this to happen, the strategic foresight needs to have a clear procedure, be centrally rooted in the interests of the JPI Oceans member countries, and build up strategic partnerships with central stakeholders. CSA Oceans, therefore, recommends an operationalisation of this approach in the future, which should seek to establish a structured relationship with key players in the European landscape, in particular, with the European Marine Board.

Second, thematic foresight exercises should be implemented to further develop specific topic areas. Such exercises could be launched by the Management Board in order to develop (a) implementation plans for strategic areas of the SRIA, (b) embed existing actions (e.g. pilot actions) in a longer-term strategy and broader debate, or (c) explore newly emerging issues and make recommendations for transnational cooperation activities.

During the CSA Oceans Project, an operational 6-step procedure was developed and tested in the field of microplastics, thus helping to shape and implement the JPI Oceans Pilot Action "Ecological aspects of microplastics in the marine environment". In particular, the test run identified scientific priority areas which were subsequently (partially) addressed in a joint call for proposals. Moreover, the foresight process produced discussion papers for an international experts' workshop and contributed to the establishment of a scientific network in microplastics which, for instance, applied for a Marie Skłodowska-Curie network. A more detailed report of the experiences with the test exercise can be found [here](#).

Due to the success of the test foresight exercise, the CSA Oceans project recommended to implement further thematic foresight exercises in the future and use the developed procedures as a blueprint.

CSA Oceans 2

As the successor of the first CSA Oceans project, a consortium was formed to prepare the CSA Oceans 2 project. The project is an Horizon 2020 Coordination and Support action which aims to support the implementation of JPI Oceans' Strategic Research and Innovation Agenda. It will support the Management Board in implementing actions and other activities.

JPI Oceans has completed its planning phase and will now focus on coordinating actions to address the Strategic Research and Innovation Agenda. The CSA Oceans 2 project will support this process.

The objectives of CSA Oceans 2 are:

- to facilitate the design, implementation and management the actions of JPI Oceans;
- to support the Member Countries in selecting and developing the right tools to implement the actions of JPI Oceans;
- to provide a framework for monitoring and evaluating the impact of JPI Oceans' actions;
- to promote cooperation between JPI Oceans and relevant national, European and international actors in the field of marine and maritime research. These include funding agencies and ministries,

the research performing organisations, industry, civil society, policy makers;

- to conduct thematic foresight exercises and design a process to update the Strategic Research and Innovation Agenda and Implementation Plan;
- to develop an information management system for JPI Oceans;
- to develop specific communication and outreach materials and organise events for the JPI Oceans and the CSA Oceans 2 project.

The work of CSA Oceans two will be conducted by five work packages. Each work package has a specific focus and will draw on the expertise of multiple partners. These work packages are:

- WP1: Consortium coordination and management
- WP2: Efficient Implementation of JPI actions
- WP3: Connectivity to support implementation
- WP4: Forward looking activities
- WP5: Develop information management and outreach tools to support JPI Oceans implementation and networking

ERA-NET Cofund on Marine Technologies

In the context of cooperation between European Commission and member countries, JPI Oceans has been working towards the identification of topics to be cofunded under the ERA-NET Cofund scheme. The ERA-NET Cofund under Horizon 2020 merges the former ERA-NET and ERA-NET Plus into a single instrument with the central element of implementing one substantial call with top-up funding from the Commission. The focus of ERA-NETs is therefore shifting from the funding of networks to the top-up funding of single joint calls for transnational research

and innovation in selected areas with high European added value and relevance for Horizon 2020. Under the auspices of JPI Oceans and the former MARTEC consortium a proposal was prepared for the establishment of an ERA-NET Cofund on Marine and Maritime Technologies. The proposal places a strong emphasis on boosting innovation by requiring industry participation (in either supporting or leading role) in all funded projects, and adopts a cross-cutting perspective by focusing on the technological challenges relevant to a large number of applications.



CHAPTER 2

Our Network

Events and Conferences



PIERPAOLO CAMPOSTRINI, JPI OCEANS EXECUTIVE COMMITTEE - PHOTO CREDIT: STEPHEN HALL

European Maritime Day

JPI Oceans took an active role in this year's European Maritime Day in Greece, with attendance from the Management Board and secretariat. There was a particularly strong focus on innovation, growth and jobs over the two days, with members of the secretariat attending a number of workshops relevant to the activities of JPI Oceans.

JPI Oceans co-hosted a workshop with the European Marine Board and Euromarine on 'How Innovative Training can Support Blue Growth'. Presenters from a number of organisations, including Pierpaolo Campostrini of the JPI Oceans Management Board and Tom Redd of the Secretariat, presented an analysis of the current state of marine science education and their visions for the future. A large and enthusiastic audience gathered to take part in the discussions with a panel of experts from academia, the private sector and public policy. The output of the workshop will contribute to the discussions within the European Marine Board's Working Group on Marine Graduate Training.

Pierpaolo Campostrini also hosted a workshop on regional cooperation on maritime spatial planning, which is a strategic area in which JPI Oceans plans to initiate an action in the coming year.

ICES Annual Science Conference

JPI Oceans was invited to present its actions to the ICES community at the project marketplace organised on the occasion of its Annual Science Conference. The marketplace key event was a panel session at which international initiatives highlighted opportunities and applicable outcomes which ICES could benefit from in its work or where ICES could contribute to. JPI Oceans was represented by Wendy Bonne who gave an overview of the relevant JPI Oceans actions and their outcomes and Tom Redd who participated as a speaker in the careers talk event.



WENDY BONNE, JPI OCEANS SECRETARIAT

Launch BLUEMED initiative

In the presence of Italian Minister Stefania Giannini and European Commissioner Moedas, the Strategic Research and Innovation Agenda for Blue growth in the Mediterranean was launched in Venice. Representatives of EU Governments met to endorse the initiative proposed by Greece, Spain, France, Croatia, Italy, Cyprus, Malta, Portugal, Romania, and Slovenia to coordinate and integrate efforts to implement the agenda. In the agenda of the BLUEMED initiative the following key challenges have been identified.

Key enabling knowledge for the Mediterranean

- Mediterranean Sea ecosystems: services, resources, vulnerability and resilience to natural and anthropogenic pressures
- Mediterranean Sea dynamics: developing services in the field of sustainable adaptation to climate change and plans for mitigation
- Hazards and the protection of coastal areas in the Mediterranean

Key sectoral enablers in the Mediterranean Specific subsections of the blue growth path

- Innovative businesses based on marine bio-resources in the Mediterranean
- Ecosystem-based management of Mediterranean aquaculture and fisheries
- Sustainable tourism in the Mediterranean
- Maritime clusters in the Mediterranean
- Maritime Spatial Planning and Integrated Coastal Zone Management in the Mediterranean

Enabling technology and capacity creation for the Mediterranean Innovative human potential and infrastructure required

- Smart, greener maritime transport and facilities in the Mediterranean

- Observing systems and operational oceanography capacities in the Mediterranean
- Multi-purpose offshore platforms in the Mediterranean
- Marine and coastal cultural heritage in the Mediterranean: discovering, protecting and valuing

Kathrine Angell-Hansen, Director of the JPI Oceans Secretariat, participated in a roundtable at the high level conference and welcomed the launch of the BLUEMED initiative. "As JPI Oceans is based on the principle of variable geometry and the BLUEMED initiative identified similar challenges as JPI Oceans, we would be happy to cooperate on the joint implementation of the Research and Innovation Agenda."

EMODnet Open Conference

In October Kathrine Angell-Hansen, Director JPI Oceans, participated in a panel session of the EMODnet open conference. The conference aimed to reinforce the foundations and consider avenues for the further development of an open, user-friendly and fit-for-purpose pan-European marine data infrastructure.

Kathrine Angell-Hansen applauded the work already done in the framework of EMODnet. She mentioned that, through JPI Oceans, Member States can ensure data accessibility and harmonisation through examples like the microplastics' pilot action aiming at homogeneous monitoring of microplastics. She added: "through a step by step approach raw data should become more available to obtain a win-win between science and policy, on the condition that protocols for treating data are agreed upon and supported by bodies such as Regional Sea Conventions."



KATHRINE ANGELL-HANSEN, JPI OCEANS SECRETARIAT



ULRICH WOLF, JPI OCEANS MANAGEMENT BOARD - PHOTO CREDIT: HARTMUT SCHUG/VDI TECHNOLOGIEZENTRUM GMBH

JPI Oceans stresses importance of oceans in climate change at COP21

Ulrich Wolf, Management Board member of JPI Oceans, chaired the event "The Changing Ocean & its impact on Society" at the climate negotiations in Paris. This side event of COP21, organised by Dr. Carol Turley (Plymouth Marine Laboratory), provided an integrated perspective by ocean experts on the climate related changes, risks and projections for both natural and human ocean systems. It included a review of key reports and sources of information on science and policy related to ocean acidification, warming, deoxygenation and sea-level rise, including the major global synthesis of knowledge by IPCC AR5, and ocean research since 2014, including the synthesis by the Oceans Initiative 2015.

Speakers at the event were:

- Carol Turley, Plymouth Marine Laboratory, UK Ocean Acidification research programme
- Paul Pearson, Cardiff University and UK Ocean

Acidification research programme

- Hans Pörtner, Alfred Wegener Institute for Polar and Marine Research; German BIOACID research programme, IPCC
- Jean-Pierre Gattuso, CNRS-UPMC, Oceans 2015 Initiative
- Vladimir Ryabinin, Intergovernmental Oceanographic Commission of UNESCO
- Phillip Williamson, UK Ocean Acidification Research Programme and Natural Environment Research Council
- Alex Magnan, IDDRI

The event was hosted in the margin of COP21, the Conference of the Parties to the United Nations Framework Convention on Climate Change which was held from 30 November to 11 December 2015. The conference was crucial because it led to a new international agreement on climate change, to keep global warming below 2°C.

Meeting Commissioner for Maritime Affairs Karmenu Vella



COMMISSIONER KARMENU VELLA AND CARON MONTGOMERY

Commissioner Vella, responsible for Environment, Maritime Affairs and Fisheries, hosted a meeting with Caron Montgomery, chair of the JPI Oceans Management Board. During the meeting it was illustrated how JPI Oceans is already making an impact at international policy level using the pilot actions on deep sea mining and on microplastics in the marine environment. The pilot actions will contribute knowledge to underpin the debates on ocean governance, and inform the scientific basis for the implementation of key environmental and economic policies such as the Marine Strategic Framework Directive, Marine Spatial Planning and the Commission's Blue Growth agenda. Better knowledge of the oceans role is vital in addressing the big societal challenges of food, energy and health.

The conversation further focused on the importance of having long-term sustained observations and predictive capabilities on the global, regional and local scale and the need for open data sharing policies. The JPI Oceans chair also highlighted the need to collaborate in the development of new cost effective technologies and observation strategies that can help to understand how the marine ecosystem as a whole is changing in response to cumulative impacts, natural and manmade, and the implications this may have for blue growth and environmental stewardship.

Finally the representatives of JPI Oceans welcomed the good cooperation with the European Commission 's DG Research and Innovation, Environment and Maritime Affairs and explored how this might be further strengthened.

JPI Chairs Release Statement at Lund Revisited Conference

The statement, presented by Patrick Monfray, Chair of JPI Climate, states that considerable progress has been accomplished during the first phase of the JPIs. "However there are still barriers to break down in order to improve the conditions for transnational research collaboration, to move towards more aligned research systems." The JPI Chairs are further looking forward to develop European synergies for knowledge based solutions and policies, with the European Commission beyond Research, Science & Innovation and with others European initiatives, as well as with European Council and Parliament. In the further internationalisation of JPI's the Chairs wish to ensure a better international coordination between JPIs, the bilateral cooperation of Member States, the European Commission and European Research Area and Innovation Committee (ERAC). The statement is the first of its kind released by the ten Joint Programming Initiatives acting together.

The Lund revisited conference on 4 December 2015 follows up the event which took place in 2009 and concluded that European research must focus on the Grand Challenges of our time. It was the first stocktaking of the progress made, through Member State initiatives and programming within the framework of the European Research Area and Horizon 2020, in order to address Societal Challenges and the role of frontier research.

Kathrine Angell-Hansen, Director of the JPI Oceans secretariat, was a speaker at the conference, presenting

JPI Oceans as a showcase in the session on the alignment of national research and innovation agendas. In her presentation she explained the specific approach of JPI Oceans and the current process on the standardisation of microplastics sampling and detection in the European seas. She also responded to the call for an interministerial approach to solve Europe's challenges by explaining the added value of the JPI in catalyzing the establishment of interministerial "Ocean" working groups at national level.

The Lund Revisited Conference was closed with the announcement of the new Lund Declaration 2015. The declaration identifies four priority areas and calls on all stakeholders to take these priorities into account. Firstly it states that Europe needs clear political commitment to step-up efforts to align strategies, funding instruments, resources and actors at national and European level in order to address the grand societal challenges. This commitment needs to be underpinned by an excellent science base, world-class research infrastructures and a new generation of researchers with the right set of skills. Europe further needs to connect with partners around the world, in advanced, emerging and developing countries to address the grand societal challenges in partnership and to attract the world's best researchers and innovators and private sector investments. Lastly, greater impacts on the challenges have to be achieved through involvement of the public sector and industry in knowledge creation, with a stronger focus on open innovation and the role of end-users.



LUND REVISITED CONFERENCE - PICTURE CREDIT: CHARLOTTE CARLBERG BÄRG



CHAPTER 3

International cooperation

Marine Litter and Deep-sea Mining Featured as High Priorities at the G7 Science Ministers Meeting



FEDERAL MINISTER JOHANNA WANKA DURING THE MEETING OF THE G7 SCIENCE MINISTERS IN BERLIN IN OCTOBER 2015. © BMBF/HANS-JOACHIM RICKEL

At the latest meeting of the science ministers of the G7 countries, one of the common priorities discussed was the future of the oceans, in particular marine litter and the potential impact of deep-sea mining. The meeting was hosted by Johanna Wanka, German Minister of Education and Research in Berlin. In their statement the ministers acknowledged existing activities by JPI Oceans and work under the Galway Statement initiative and committed to coordinating with the G7 countries on the Action Plan to Combat Marine Litter. This would include a joint research approach towards reducing the growing amounts of plastic litter in the oceans and the launch of joint education programmes. The Ministers committed to continue discussions and develop a proposal for international cooperation amongst the G7 ahead of the next science Ministers meeting in Japan 2016.

The meeting follows after the summit of the heads of state and government of the G7 countries in June. The Leader's Declaration of this Summit acknowledged the global risks posed by marine litter, particularly plastics, to marine and coastal life, ecosystems and potentially human health.

Marine Litter:

"Building upon the European JPI Oceans pilot action we, the G7 partners, are reinforcing our international research cooperation and affirm that increased efforts are needed on analytical method harmonisation and ecotoxicological assessment of the effects of plastic waste in the sea, as well as potentially to our food."

Deep-sea mining:

"We, the G7 Ministers of Science, acknowledge that some countries have carried out such research cooperatively under other auspices, for example through the European JPI Oceans. We encourage G7 countries that have a desire to carry out research to assess the nature and scale of the potential impacts of mining and how they would affect deep sea ecosystems, consistent with their other national priorities for oceans research."

(Communiqué, Meeting of the G7 Ministers of Science, Berlin, 8-9 October 2015)

The G7 also took note of the growing interest in deep-sea mining beyond the limits of national jurisdiction. The statement calls on the International Seabed Authority (ISA) to involve relevant stakeholders and develop a clear, effective and transparent code for sustainable deep-sea mining. The participants emphasise a commitment to the precautionary approach to these activities, supporting legislation with environmental impact assessments and scientific research.

Both issues are high priorities within JPI Oceans which is currently conducting two separate Pilot Actions in these

areas. The first, Ecological Aspects of Microplastics, funds four projects to increase the knowledge about microplastics in the marine environment which were selected after a €7.5 million call organised by Project Management Jülich (PtJ) in Germany. The second pilot action, Ecological Aspects of Deep-sea Mining, aims to study of the long-term ecological effects of deep-sea mining. To realise this aim, the German Federal Ministry of Education and Research (BMBF) offered 90 days of on-site research on the Research Vessel Sonne for a cruise in the Pacific conducted in early 2015.

International Guests at JPI Oceans Management Board Meeting November 2015

For the first time, JPI Oceans invited international partners to participate in the 9th Management Board meeting as observers and to discuss which of the action of JPI Oceans could be of interest to their national priorities. Representatives from Canada, New Zealand and the USA were invited to present their ocean strategies, and how these align with JPI Oceans' SRIA:

- Bruce McCallum- Counsellor, European Union New Zealand Mission to the European Union;
- Michael Willmott- First Secretary, Science and Technology at the Mission of Canada to the European Union;
- Terry Schaefer- International Activities Office, Office of Oceanic and Atmospheric Research National Oceanic and Atmospheric Administration.

JPI Oceans also took part in the EU-Brazil Atlantic Research Cooperation meeting in Brazil and the TransAtlantic oceans literacy meeting in Copenhagen. In the future a tri-lateral meeting will take place every 8-12 months between the US, Canada and the European Commission. JPI Oceans is invited to take part in these meetings.



BRUCE McCALLUM - NEW ZEALAND SCIENCE AND INNOVATION COUNSELLOR TO THE EUROPEAN UNION



CHAPTER 4

Communication & Outreach

First JPI Oceans & Final CSA Oceans Conference



FIRST JPI OCEANS & FINAL CSA OCEANS CONFERENCE

The first edition of the JPI Oceans conference was a success with 175 participants from 29 different countries. The event was opened by the Chair of JPI Oceans' Management Board, Caron Montgomery. After welcoming all participants she gave the floor to Belgian State Secretary Bart Tommelein. The State Secretary presented himself as a man of the ocean, born by the sea and still living at the sea. He highlighted the role of Belgium in JPI Oceans and especially looked forward to joint initiatives on marine spatial planning.

After the intervention of the Belgian State Secretary, Norwegian State Secretary Dilek Ayhan underlined the potential and complexity of the oceans. She argued that "Nations need to cooperate to maximize the oceans potential". She presented JPI Oceans as a part of the solution in order to achieve a stronger cooperation between nations.

The opening session was concluded by Director General Robert-Jan Smits who stated that the JPI Oceans Vision document and the Strategic Research and Innovation Agenda have made a significant contribution to the Blue Growth agenda of the European Commission and that it is now time to focus on its implementation.

At the end of the session the first copies of the Strategic Research and Innovation Agenda were handed by Caron Montgomery to Norwegian State Secretary Dilek Ayhan,

Belgian State Secretary Bart Tommelein and, Director General of DG Research and Innovation, European Commission Robert-Jan Smits.

In the subsequent sessions, the SRIA and Implementation Plan of JPI Oceans were further presented and panel discussions took place on blue growth and forward looking activities. A comprehensive [report](#) of the conference is available on the JPI Oceans [website](#) in addition to the videos, presentations and pictures of the event.



BART TOMMELEIN, BELGIAN STATE SECRETARY FOR THE NORTH SEA



Pre-event Conference: Belgian Premiere Jean-Michel Cousteau's Secret Ocean 3D

The conference was preceded by the Belgian premiere of Jean-Michel Cousteau's Secret Ocean 3D. The film offered a breakthrough look at a secret world within the ocean. As the son of ocean pioneer Jacques Cousteau explains: "We are used to seeing the big marine animals such as whales, dolphins and sharks, and many have focused on protecting these great animals. But these represent only the top of the food chain. With "Secret Ocean" we understand that the most important is the bottom of the food chain on which everything else in the ocean depends.", says Cousteau.

Narrated by renowned oceanographer Dr. Sylvia Earle, "Jean-Michel Cousteau's Secret Ocean 3D" introduces audiences to over 30 species, illuminating behaviors captured for the first time on film thanks to the development of new tools that allow underwater filming in 3D, ultra-HD and takes them to remarkable and vibrant environments such as the Bahamas, Fiji, and Bimini.

In a video message specifically for the event Mr. Cousteau stressed the importance of the ocean and the opportunities

it offers in numerous economic areas. He encouraged the participants of the conference to collaborate and work on new recycling technologies to, among others, prevent waste entering our seas.

Oceans Get-Together

A new concept saw the light in 2015. The JPI Oceans secretariat organised for the first time a so called "Oceans Get-Together" in Brussels. The lunch meetings gathered representatives from the marine and maritime research and innovation community in Brussels and Belgium. The objective is to meet in an informal atmosphere and exchange ideas and information about ocean related matters. In that regard it is an opportunity to talk to one another about the latest activities, initiatives and projects in the marine and maritime fields.

The first two lunches were a success with a variety of participants ranging from NGOs to policy makers from the European Commission and the European Parliament. Further meetings are planned for 2016.

Publications & Outreach Materials



FIRST JPI OCEANS & FINAL CSA OCEANS CONFERENCE - PHOTO CREDIT: SCORPIX JPI OCEANS

To prepare for the first JPI Oceans conference a new and updated brochure was created which highlighted the strategic areas agreed upon by the JPI Oceans Management Board in the Strategic Research and Innovation Agenda. In addition fact sheets and posters of the four pilot actions were created:

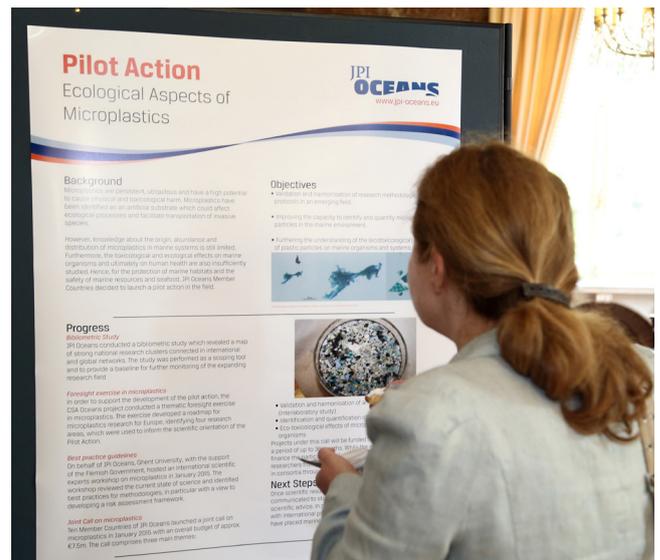
- [Multi-use of infrastructures for monitoring](#)
- [Ecological aspects of micro-plastics in the marine environment](#)
- [Ecological aspects of deep-sea mining](#)
- [Intercalibration for the EU Water Framework Directive](#)

Posters and factsheets were on display for conference participants and are available on the JPI Oceans website. After the conference a news release was sent to a list of selected contacts and Management Board and StAB members.

To complement the printed outreach materials a new PPT presentation was developed in which the Strategic

Research and Innovation Agenda and Implementation Plan are presented.

Through the CSA Oceans project an updated communication plan was developed and presented at the Management Board and Strategic Advisory Board meeting. The updated plan follows after the original plan which was presented at the 4th Management Board meeting In 2012.



POSTER SESSION JPI OCEANS CONFERENCE - PHOTO CREDIT: SCORPIX JPI OCEANS



CHAPTER 5

Our Governance

Towards a Legal Entity

At its meetings the Management Board has discussed the future sustainability of JPI Oceans. The international secretariat and offices are currently funded predominantly by Norway and Belgium (Flanders), with staff secondments from France, Germany and Italy. The Management Board therefore supported the proposal that the costs should be shared more equitably by the Member Countries of JPI Oceans. It was concluded that JPI Oceans should aim to become a legal entity with members on a contribution basis. With the establishment of such an entity JPI Oceans would be the first Joint Programming Initiative with a legal status.

After an analysis of different options and the experience of among others COST, EuroG00S and the European Marine Board it was agreed to establish an international non-profit association under Belgian law (AISBL). The Management Board requested further that a legal advisor is appointed to facilitate the process of setting up the AISBL. In addition a Working Group which had been established before was asked to further define a business plan for JPI Oceans in line with MB requests. At the first Management Board meeting in 2016 member countries will further discuss the structure and financing of this legal entity.

Croatia Joins JPI Oceans as a New Member

Two representatives of Croatia were officially nominated by assistant Minister Ivan Pejic, Phd from the Ministry of Science Education and Sports the Republic of Croatia: Ivica Vilibić, PhD, of the Institute of Oceanography and Fisheries and Sandi Orlić, PhD, of the Ruđer Bošković Institute. The addition of Croatia to the JPI Oceans' member list takes the number of nations involved in the initiative to 21.

The Chair of the JPI Oceans Management Board Caron Montgomery welcomed Croatia to the board: "With the inclusion of Croatia we are very pleased to have a new partner from the Mediterranean sea basin committed to contribute to our common goal to enable Blue Growth and jobs, whilst fostering the health and productivity of the seas and oceans". Sandi Orlić added that he looked forward to work together to enable a mutually beneficial partnership between Croatia and JPI Oceans.

Election New Executive Committee

At the 9th Management Board meeting in Brussels the board elected four members for a new term of the Executive Committee (ExCom). The ExCom is made up of eight members: the Chair and Vice Chair of the Management Board (MB), Caron Montgomery and Lourdes Armesto who also act as Chair and Vice Chair of the ExCom, and six additional members from which four members are elected by the MB of each participating country (either the representative or the alternate member).

The positions of the two other additional ExCom members are reserved to representatives from the country holding the Presidency of the Council of the European Union and the country taking over the next Presidency. The Management Board agreed at its last meeting that the CSA Oceans 2 coordinator should also be invited to meetings as an observer.

The elected members are:

- Christina Abildgaard, Research Council of Norway, Norway

- Pierpaolo Campostrini, Italian Consortium for Managing Research Activities Venice Lagoon (CORILA), Italy
- John Evans, Marine Institute, Ireland
- Joachim Harms, Project Management Jülich, Germany
- Gilles Lericolais, Ifremer, France
- Gert Verreet, Flanders Authority, Department of Economy, Science and Innovation, Belgium

The main tasks and responsibilities of the Executive Committee are to assist in the preparation of the Management Board meetings. In addition, the ExCom ensures that the work of the secretariat is carried out according to the Management Board decisions. Finally the ExCom guides and follows up the work conducted by the Strategic Advisory Board.



**Christina
Abildgaard**



**Pierpaolo
Campostrini**



**John
Evans**



**Joachim
Harms**



**Gilles
Lericolais**



**Gert
Verreet**



**Caron
Montgomery**



**Lourdes
Armesto**

Strategic Advisory Board News

During 2015 the Strategic Advisory Board (StAB) advised the Management Board on the implementation of the selected actions. The StAB provided among others specific advice on the new action on munition in the sea (see above). The StAB further gave advice on the ex post evaluation of the actions and discussed and reviewed the current structure of the StAB.

With regards to governance of the StAB, Professor Herzig, Chair of the Board, chose to step down from the StAB due to his recent appointment as Vice-President of the Helmholtz Association of German Research Centers and the increased responsibilities resulting from this new position. JPI Oceans would like to thank Professor Herzig for the dedicated chairmanship and advice on the different activities of JPI Oceans and the contributions and support in the development of the Strategic Research and Innovation Agenda and Implementation Plan. It was a great pleasure and honour to have Professor Herzig chairing the Advisory Board in the start-up phase of JPI Oceans.

Wendy Watson-Wright informed that due to her move to a new position in Canada she did not find it feasible to continue her membership in the Strategic Advisory Board. We would like to thank Ms. Watson-Wright for her detailed suggestions on the JPI Oceans pilot actions and her advice during the consultation and development phase of the JPI.

In Memoriam Jørn Aksel Krog

On 3 March 2015 Jørn Aksel Krog, member of the JPI Oceans Strategic Advisory Board, passed away at the age of 66 years.

We were deeply saddened by the loss of one of our esteemed StAB members. Jørn Krog was a profound supporter of JPI Oceans since the launch of the initiative, when he held the position as Secretary General to The Norwegian Ministry of Fisheries and Coastal Affairs. Jørn Krog was knowledgeable, a strategist, an attentive listener, and a profound believer in the need to cooperate internationally and to continue investing in science to advance our knowledge of seas and oceans. Our thoughts go to his family.



JØRN KROG (FOTO: FYLKESMANNEN I SØR-TRØNDELAG)

ANNEXES

Annex I: Website - Social Media Statistics

Website analytics

Year	Visits	Unique visitors	Pageviews	Avg. Visit Duration
2012	11,848	6,560	37,468	03:16
2013	16,882	9,615	55,914	03:07
2014*	36,139	18,076	155,318	03:01
2015	79,829	48,669	350,926	04:25

Website Content & Newsletter

Year	News articles published	Newsletters sent	Newsletter subscribers
2012	31	4	/
2013	32	5	545
2014	37	7	641
2015	25	6	955

Social Media & Newsletter analytics

Year	LinkedIn group members	Twitter followers	Facebook likes	Slideshare views (cumulated)	Klout Score
2012	126	/	/	/	/
2013	356	457	54	2,589	41
2014	478	707	74	3,357	41
2015	624	1102	200	6,283	44

* 2014 figures are partly based on Google Analytics in combination with an in-house analytics programme from September 2014 onwards.

Annex II: JPI Oceans presentations at external events

Event & place	Date	Representative
Microplastics Best Practice Workshop, Ostend	13/01/2015	John Hanus
Ocean Energy ERA-NET Strategic Advisory Board, Scotland	22/01/2015	Kathrine Angell-Hansen
DG ENV MSFD Project Coordination Group meeting, Brussels	10/2/2015	Wendy Bonne
Partnership for Observation of the Global Oceans (POGO) 2015 plenary meeting, Las Palmas	27/01/2015	Jacky Wood
Euromarine- Training 21st Century Marine Scientists and Engineers for Academic and Non-academic Careers, Naples	23/02/2015	Tom Redd
Flanders Marine Institute Seminar, Ostend	13/03/2015	Tom Redd
NOC Association annual meeting, London	30/03/2015	Jacky Wood
Havet og kysten-konferansen, Trondheim	9/4/2015	Kathrine Angell-Hansen
Kick-off meeting of the BIODIVERSA 3 project, Paris	28/04/2015	Wendy Bonne
European Marine Board Spring plenary, Ghent	29/04/2015	Jacky Wood
Visit of Norwegian Minister Elisabeth Aspaker, Brussels	20/04/2015	Kathrine Angell-Hansen, Wendy Bonne, John Hanus
Blue Growth in Norway and the EU – Challenges and Opportunities, Brussels	20/04/2015	Willem De Moor
Informal Group of RTD Liaison Offices (IGLO) open meeting, Brussels	12/5/2015	Willem De Moor
Presentation at the European Parliament, Brussels	12/5/2015	Kathrine Angell-Hansen
Sea Europe - Waterborne tech Platform, Brussels	20/05/2015	Kathrine Angell-Hansen
EOOS for Meds Kostas Nittis, Athens	25/05/2015	Kathrine Angell-Hansen
European Maritime Day: How innovative training can support Blue Growth? Athens	28/05/2015	Tom Redd
Arctic from a JPI Oceans perspective, Brussels	15/06/2015	Kathrine Angell-Hansen
JPI Climate, climate services workshop, Brussels	16/06/2015	Florence Coroner
DG MARE Maritime Policy National Expert Group, Brussels	26/06/2015	Kathrine Angell-Hansen
Final ADRIPLAN conference, Venice	10/7/2015	Wendy Bonne
Flanders Marine Institute Seminar, Ostend	4/9/2015	Willem De Moor
European Marine Board autumn plenary, Split	13/10/2015	Jacky Wood
GPC meeting, Council of EU, Brussels	11/3/2015	Pier Francesco Moretti, Kathrine Angel-Hansen
GPC meeting, Council of EU, Brussels	3/6/2015	Pier Francesco Moretti, Jacky Wood
3rd conference JPI Healthy Diet for Healthy Life, Brussels	19/06/2015	Pier Francesco Moretti
ERA-MBT- Future collaboration opportunities with Marine Biotechnology, Berlin	8/9/2015	Tom Redd
Opening of NTNU, UiB and SINTEF office, Brussels	22/09/2015	Kathrine Angell-Hansen
Workshop on Ocean Science and Technology, Brussels	23/09/2015	Pier Francesco Moretti, John Hanus, Kathrine Angel-Hansen
ICES Annual Science Conference - Careers talk, Copenhagen	23/09/2015	Tom Redd

Event & place	Date	Representative
ICES Annual Science Conference - International market place panel session, Copenhagen	23/09/2015	Wendy Bonne
Québec Delegation Visit, Brussels	24/09/2015	Kathrine Angell-Hansen, John Hanus
ERA-Learn 2020 Workshop on the Practical Implementation of Alignment, Brussels	28/09/2015	John Hanus
GPC meeting, Council of EU, Brussels	30/09/2015	Pier Francesco Moretti
Blue Med high level Ministry meeting, Venice	15-16/10/2015	Kathrine Angell-Hansen
New Frontiers for Blue Growth, Brussels	20/10/2015	Pier Francesco Moretti
BIODIVERSA 3 project, Paris	20/10/2015	Kathrine Angell-Hansen
EU/US/CAN Transatlantic stakeholder meeting, Galway (Videoconference)	26/10/2015	Joachim Harms
Transatlantic Science Week TSW 2015, Boston	3/11/2015	Jacky Wood
Micro B3 Final Conference, Brussels	4/11/2015	Tom Redd
European Commission DG ENV MSFD Project Coordination Group meeting, Brussels	4/11/2015	Wendy Bonne
Ecomondo Exhibition Fair, Rimini	4/11/2015	Ulrich Wolf
High level Oceans workshops and discussions, Barcelona	4-6/11/2015	Kathrine Angell-Hansen
High Level Meeting EU-Brazil Atlantic Ocean Research Cooperation, Rio de Janeiro	17/11/2015	Gilles Lericolais
EC DG RTD conference: The Ocean of Tomorrow projects: What results so far? Brussels	27/11/2015	Wendy Bonne, Lucky Sitorus
Norwegian University of Science and Technology (NTNU) visit to Brussels	3/12/2015	Jacky Wood
Lund Revisited conference, Lund	3/12/2015	Kathrine Angell-Hansen
European Commission DG MARE meeting Member State Expert subgroup on Maritime Spatial Planning, Brussels	8/12/2015	Pierpaolo Campostrini, Andrea Barbanti, Wendy Bonne, Lucky Sitorus

Annex III: Management Board

Country	Organisation	Representatives
	Belgian Federal Science Policy Office (BELSPO)	<i>CONTACT: FRANK MONTENY</i> <i>CONTACT: DAVID COX</i>
BELGIUM	Flemish Government, Department Economy Science and Innovation (EWI) Fonds National de la Recherche Scientifique (FNRS)	<i>CONTACT: DIRK VAN MELKEBEKE</i> <i>CONTACT: GERT VERREET</i> <i>CONTACT: FREIA VAN HEE</i>
	National Institute of Aquatic Resources (DTU-DTU Aqua)	<i>CONTACT: TORGER BØRRESEN</i>
DENMARK	Danish Agency for Science, Technology and Innovation (DASTI)	<i>CONTACT: SUSANNE E. HEDE</i> <i>CONTACT: FLOOR TEN HOOPEN</i>
	Institute of Oceanography and Fisheries Ruđer Bošković Institute	<i>CONTACT: IVICA VILIBIĆ</i> <i>CONTACT: SANDI ORLIĆ</i>
	Ministry of the Environment of the Estonian Republic University of Tartu; Estonian Marine Institute (EMI)	<i>CONTACT: SILVER VAHTRA</i> <i>CONTACT: HENN OJAVEER</i>
ESTONIA	Ministry of Agriculture University of Tartu; Institute of Ecology and Earth Sciences	<i>CONTACT: EVE KÜLMALLIK</i> <i>CONTACT: KALLE OLLI</i>
	Finnish Environment Institute (FEI/SYKE)	<i>CONTACT: MARI WALLS</i>
FINLAND	Academy of Finland, Research Council for Biosciences and Environment	<i>CONTACT: KYÖSTI LEMPA</i>
	French Research Institute for Exploitation of the Sea (IFREMER)	<i>CONTACT: FRANÇOIS JACQ</i>
FRANCE	French National Research Agency (ANR)	<i>CONTACT: GILLES LERICOLAIS</i> <i>CONTACT: MAURICE HERAL</i> <i>CONTACT: PATRICK MONFRAY</i>
	German Federal Ministry of Education and Research (BMBF)	<i>CONTACT: CHRISTIAN ALECKE</i>
GERMANY	German Federal Ministry of Food, Agriculture and Consumer Protection Research Centre Jülich (JÜLICH)	<i>CONTACT: WIEBKE RÜDT VON COLLENBERG</i> <i>CONTACT: HARTMUT STALB</i> <i>CONTACT: JOACHIM HARMS</i>
	Hellenic Centre for Marine Research (HCMR)	<i>CONTACT: EVANGELOS PAPATHANASSIOU</i>
GREECE	Ministry of development; General Secretariat for Research and Technology (GSRT) Hellenic Centre for Marine Research (HCMR)	<i>CONTACT: CHRYSOULA DIAMANTI †</i>
	Marine Research Institute Iceland (MRI)	<i>CONTACT: GEORGE PETIHAKIS</i>
ICELAND	Icelandic Centre for Research (RANNIS)	<i>CONTACT: JOHANN SIGURJONSSON</i> <i>CONTACT: SIGURDUR BJÖRNSSON</i>
	Marine Institute Ireland (MI)	<i>CONTACT: JOHN EVANS</i>
IRELAND		<i>CONTACT: PETER HEFFERNAN</i> <i>CONTACT: CIARAN KELLY</i>

Country	Organisation	Representatives
LITHUANIA	Ministry of the Environment of the Republic of Lithuania (AM)	CONTACT: DALIUS KRINICKAS CONTACT: VIKTORIJA VAŠKEVICIENE
	Research Council of Lithuania	CONTACT: BRIGITA SERAFINAVIČIŪTĖ CONTACT: AUDRIUS ŽVIKAS
MALTA*	University of Malta, Physical Oceanography Unit (UM)	CONTACT: ALLANAH BONNICI
NETHERLANDS	Ministry of Economic Affairs, Agriculture and Innovation (EL&I)	CONTACT: INO OSTENDORF CONTACT: FREIJA H. VAN DUIJNE
	Netherlands Organisation for Scientific Research (NWO) on behalf of the Ministry of Education, Culture and Science	CONTACT: JOSEF F. STUEFER CONTACT: BERNARD WESTEROP
NORWAY	Research Council of Norway (RCN)	CONTACT: CHRISTINA ABILDGAARD CONTACT: KRISTIN ELISABETH THORUD
	Norwegian Ministry of Fisheries and Coastal Affairs	CONTACT: ARNE BENJAMINSEN CONTACT: JARTRUD STEINSLI
POLAND	Polish Academy of Sciences; Institute of Hydroengineering (IBW PAN)	CONTACT: GRZEGORZ RÓŻYŃSKI
PORTUGAL	Portuguese National Funding Agency for Science, Research and Technology (FCT)	CONTACT: TELMO CARVALHO
	Portuguese Institute of Ocean and Atmosphere (IPMA)	CONTACT: NUNO LOURENÇO
ROMANIA	National Authority for Scientific Research, Directorate for European Integration and International Cooperation	CONTACT: VIOREL VULTURESCU
	University of Bucharest, Faculty of Geology and Geophysics	CONTACT: VIOREL GH. UNGUREANU
SPAIN	Spanish Ministry of Economy and Competiveness (MINECO)	CONTACT: LOURDES ARMESTO
SWEDEN	Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (FORMAS)	CONTACT: LISA ALMESJÖ
	Swedish Agency for Marine and Water Management (HaV)	CONTACT: ANNA JÖBORN
TURKEY	Tübitak Marmara Research Center	CONTACT: CINAR ONER
UNITED KINGDOM	Department for Environment, Food and Rural Affairs (DEFRA)	CONTACT: CARON MONTGOMERY
	National Oceanography Centre (SOTON-NOCS)	CONTACT: ED HILL
	Natural Environment Research Council (NERC) Department for Environment, Food and Rural Affairs (DEFRA)	CONTACT: MIKE WEBB CONTACT: TARQUIN DORRINGTON

The European Commission (DG Research and Innovation) has a status of non-voting member. The two appointed members are Jacques Fuchs and Sieglinde Gruber.

* Malta is an observing member to the JPI Oceans Management Board

Meeting	Date	Place
Eight Management Board meeting	20-21 April 2015	Brussels, Belgium
Nineth Management Board meeting	12-13 November 2015	Brussels, Belgium

Annex IV: Strategic Advisory Board

Name	Organisation
<i>MANUEL BARANGE</i>	Plymouth Marine Laboratory (PML)
<i>CATHERINE BOYEN</i>	Centre National de la Recherche Scientifique; Station Biologique de Roscoff (CNRS-SBR)
<i>RENÉ P.A. DEKELING</i>	Ministry of Infrastructure and the Environment - Directorate-general for Spatial Development and Water Affairs
<i>LAURA GIULIANO</i>	Italian National Research Council - Institute for Coastal Marine Environment
<i>ARTURO GONZÁLEZ ROMERO</i>	INNOVAMAR
<i>PETER HERZIG</i>	Helmholtz Centre for Ocean Research Kiel (GEOMAR)
<i>JØRN KROG †</i>	County Governor of Sør-Trøndelag
<i>KARIN LOCHTE</i>	Alfred Wegener Institute for Polar- and Marine Research (AWI)
<i>NIALL MCDONOUGH</i>	European Marine Board (ESF-EMB)
<i>JEAN-FRANCOIS MINSTER</i>	TOTAL
<i>SIGVE NORDRUM</i>	Aker BioMarine Antarctic
<i>SEVCAN ÇOLPAN POLAT BEKEN</i>	Scientific and Technological Research Council of Turkey (TÜBİTAK)
<i>EVA-LIISA POUTANEN</i>	Ministry of the Environment of Finland
<i>FRANK ROLAND</i>	Centre of Maritime Technologies e.V. (CMT)
<i>YVONNE SHIELDS</i>	Commissioners of Irish Lights
<i>NILS CHRISTIAN STENSETH</i>	University of Oslo, Centre for Ecological and Evolutionary Synthesis (UiO-CEES)
<i>WENDY WATSON-WRIGHT</i>	Intergovernmental Oceanographic Commission (IOC)

Meeting	Date	Place
Sixth Strategic Advisory Board Meeting	6 May 2015	Brussels, Belgium
Seventh Strategic Advisory Board Meeting*	1 December 2015	Brussels, Belgium

* The Seventh Strategic Advisory Board meeting was postponed to 20 January 2016 due to the security situation in Brussels.

Annex V: Secretariat

Name	Position
<i>KATHRINE ANGELL-HANSEN</i>	Director
<i>WENDY BONNE - PHD</i>	Scientific Adviser Marine Policy
<i>WILLEM DE MOOR</i>	Adviser
<i>JOHN HANUS</i>	Adviser
<i>ANASTASIOS LEKKAS - PHD</i>	Science Officer
<i>PIER FRANCESCO MORETTI - PHD</i>	Science Officer
<i>ÁNGEL E. MUÑIZ PINIELLA</i>	Scientific Assistant
<i>GUNNHILD NEDBERG GRØNLID</i>	Office Assistant
<i>TOM REDD</i>	Scientific Adviser
<i>JACKY WOOD</i>	Deputy Director

Secondees at the JPI Oceans secretariat

In February 2015 Anastasios Lekkas was seconded from the Norwegian University of Science and Technology (NTNU) to the Research Council of Norway (RCN) and joined the JPI Oceans secretariat as Science Officer. He has a PhD in engineering cybernetics from NTNU. At JPI Oceans he is mostly responsible for Strategic Area 2 on Technology and Sensor Developments.

In November 2015 Gunnhild Nedberg Grønlid was seconded by the Research Council of Norway to the JPI Oceans secretariat as an Office assistant. Formerly she worked as an Executive Officer at the University of Oslo, Department of Sociology and Human Geography.

Florence Coroner left the JPI Oceans secretariat in July 2015 and moved to a new position at Ifremer in Brest. Florence joined the JPI Oceans secretariat as one of the first secondees in the start-up phase of JPI Oceans. We would like to thank Florence for the good collaboration throughout the years and wish her the best of luck in her new position.

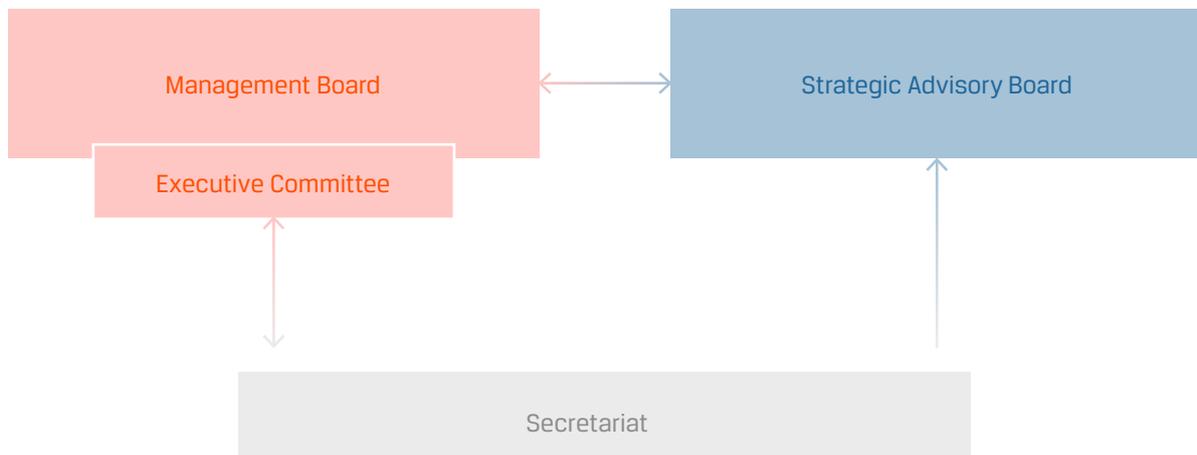


**Anastasios
Lekkas**



**Gunnhild Nedberg
Grønlid**

Annex VI: JPI Oceans Governance Structure



Management Board

The Management Board (MB), the decision-making body of JPI Oceans, has the overall responsibility for the implementation of JPI Oceans. All member countries participating in JPI Oceans are represented in the Management Board (MB). The representatives from each country have sufficient authority to agree on joint action plans and potential funding initiatives across Europe.

Executive Committee

The Executive Committee (ExCom) is an executive body, providing support and assistance to the Management Board during the development and implementation of the JPI Oceans governance, plans, actions and activities.

Strategic Advisory Board

The Strategic Advisory Board (StAB) provides independent advice to the JPI Oceans Management Board. The StAB is made up of selected independent experts from the three key groups of stakeholders targeted by JPI Oceans, namely science, industry and civil society, but each of the StAB members are appointed in their own capacity as independent experts in marine/maritime issues and not as representative of any stakeholder group.

Secretariat

The Secretariat is committed to facilitating and supporting the work conducted under the JPI Oceans process by Member states and stakeholders through efficient and effective processes.

JPI Oceans

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