**EDITORIAL**

Although BONUS has reached a mature age, it is far from growing old. With a slight rewording of an old Latin saying, it’s quite the opposite as BONUS “brings always something new”. In this issue of our newsletter, we present eight NEW knowledge synthesis projects commencing this autumn, the NEW Baltic and North Sea Coordination and Support Action and four NEW strategic partners.

Knowledge synthesis pulls together the outputs of individual studies addressing a particular question. By default it involves also a comparison and critical assessment of these findings in order to confirm the truly robust evidence and identify those questions where our understanding is still controversial and insufficient. At BONUS, we see the knowledge synthesis as central for knowledge translation from research community to practice and for ensuring evidence-based decision making. In August 2017, we published a call for proposals to synthesise the research outputs in nine important areas related to sustainable use of the Baltic Sea ecosystem services. Now we are proud to present a whole generation of new BONUS projects that will summarise and review our knowledge in such important areas as the Baltic Sea food web, advancement of the monitoring and assessment systems, creation of policy instruments for nutrient abatement, non-monetary valuation of the ecosystem services and improvement in maritime risk analysis and mitigation. One of the new projects will survey the landscape of various existing decision support tools and develop a guiding map and a unified entrance point for potential users of these tools. Logically, our knowledge synthesis projects will not limit their analysis to the scientific production of BONUS but will delve as deep and broad as possible into the selected topic.

November will become the first implementation month of Baltic and North Sea Coordination and Support Action (BANOS CSA) funded within the EU’s Horizon 2020 framework. In the coming 30 months, BONUS together with the major research and innovation funders from Belgium, Denmark, Estonia, France, Germany, Latvia, Lithuania, the Netherlands, Norway, Poland, Sweden and United Kingdom, will lay the foundation for the future joint Baltic Sea and the North Sea research and innovation programme.

It would be impossible to embark on such ambitious task without the guidance and advice by our four new strategic partners: HELCOM, OSPAR, ICES and JPI Oceans. The Baltic Sea Environment Protection Commission, known as HELCOM, is an intergovernmental environmental governing body established by all countries surrounding the Baltic Sea. OSPAR Commission, known as HELCOM, is an intergovernmental environmental governing body established by all countries surrounding the Baltic Sea. OSPAR Commission, known as HELCOM, is an intergovernmental environmental governing body established by all countries surrounding the Baltic Sea. OSPAR is a good example of the importance of close co-operation between scientific institutions and environmental governance in the Baltic Sea. ICES and JPI Oceans. The Baltic Sea Environment Protection Commission, known as HELCOM, is an intergovernmental environmental governing body established by all countries surrounding the Baltic Sea. OSPAR is a good example of the importance of close co-operation between scientific institutions and environmental governance in the Baltic Sea. ICES and JPI Oceans. The Baltic Sea Environment Protection Commission, known as HELCOM, is an intergovernmental environmental governing body established by all countries surrounding the Baltic Sea. OSPAR is a good example of the importance of close co-operation between scientific institutions and environmental governance in the Baltic Sea. ICES – The International Council for the Exploration of the Sea is a global organisation that develops science and advice to support the sustainable use of the oceans. ICES network involves scientists from over 60 marine institutes in 20 member countries. Globally ICES serves as one of the best-established ocean knowledge brokers - a transfer link between science and practice, therefore its partnership is important for the future programme. Finally, the Joint Programming Initiative Healthy and Productive Seas and Oceans (JPI Oceans) covering all European sea basins and providing a long-term integrated approach to marine and maritime research and technology development in Europe is a natural umbrella for the future programme’s strategic research and innovation agenda and a networking hub among the regional seas’ programmes.
The HELCOM assessment of the Baltic Sea is an opportunity to improve our sea and foster new partnerships

by Monika Stankiewicz, Executive Secretary HELCOM

The second holistic assessment of the ecosystem health of the Baltic Sea is the largest assessment project ever carried out by HELCOM. The ambition was to provide a holistic view of the status of the marine environment, identifying and measuring the pressures and impacts from human activities on our sea. We strived to ensure it is based on the best available scientific knowledge, as well as to enhance the regional assessment system including indicators that measure the ecological state of the Baltic Sea. We also aimed at delivering a product that meets multiple and often specific policy needs.

These ambitions were fulfilled with the unfailing support of the Baltic Sea countries that contributed to the assessment with unprecedented resources, and through frequent science-policy interactions. Additional funding by the EU enabled substantial development of the assessment methods, among others.

Our mission now is to ensure that the assessment is being used. The assessment reveals a poor status of the Baltic Sea, and the goals and objectives of the Baltic Sea Action Plan (BSAP) are unlikely to be reached by 2021. Due to the time lag between our actions for a healthy Baltic Sea and the response of the ecosystem, these results don’t come as a surprise. Thus, comparing with the previous assessment, our task was also to detect trends and signals of change, and to identify emerging issues such as those related to climate change.

In addition, the report provides an insight into economic and social aspects. No holistic view of the marine ecosystem can be provided unless social and economic aspects are also included.

The assessment had a significant impact on policy making in HELCOM. Based on its results, the HELCOM Ministers and the EU Commissioner decided earlier in March to strengthen the implementation of the BSAP and to update it by 2021. The water and marine related targets of the UN Sustainable Development Goals will be utilized as a framework for this update.

Furthermore, the EU countries in the Baltic Sea have expressed their intention to use the report for this year’s reporting under the EU Marine Strategy Framework Directive (EU MSFD).

Pressingly, we need to know how the Baltic Sea’s ecosystem responds to the undertaken measures and within which timeframes, to see when good status can be expected, and what actions work and what don’t.

HELCOM will draw from the newest scientific results to seek answers on this issue and to meet this clear policy need. Fresh outcomes from BONUS projects have been released just in time for this purpose.

Last but not least, being a strategic partner in the Baltic and North Sea Support and Coordination Action (BANOS CSA) that prepares for the future northern European regional seas research and innovation programme, is a clear opportunity for HELCOM to expand on the currently available results and build new partnerships. This will support the future implementation of the updated Baltic Sea Action Plan even more.

Cross-sectoral and inter-regional cooperation is increasingly relevant and necessary

by Susana Salvador, Executive Secretary OSPAR Commission

The Convention for the Protection of the Marine Environment of the North-East Atlantic – the OSPAR Convention – guides international cooperation on the protection of the marine environment of the North-East Atlantic. The activities and work under the Convention are managed by the OSPAR Commission.

OSPAR’s vision is of a “clean, healthy and biologically diverse North-East Atlantic Ocean, used sustainably” and its guiding principles underpin the sustainable use of the marine environment. The specificities of the North-East Atlantic are addressed by OSPAR through 5 thematic strategies dealing with the main threats identified within OSPAR competence: The Biological Diversity and Ecosystems Strategy, the Hazardous Substances Strategy, the Eutrophication Strategy, the Offshore Oil and Gas Industry Strategy and the Radioactive Substances Strategy.

While requiring a sound coordination amongst Contracting Parties, also cooperation with international organisations, using science-based evidence whenever possible, is of a key importance. Cross-sectoral and inter-regional cooperation is increasingly relevant and necessary also as measures adopted by OSPAR do not address all human activities that may adversely impact the North-East Atlantic marine environment.

OSPAR has signed Memoranda of Understanding (MoU) with IMO and JAS, of utmost relevance, alongside with the Collective Arrangement adopted in 2014 with NEAFC. Furthermore, MoUs are in place with many other international organisations and regional bodies such as NASCO, HELCOM, ICES, EEA, ECE, Abidjan and Cartagena Conventions. These are all suitable platforms for collaboration, exchange of information on lessons learnt and experience from other regions and sectors.

OSPAR assessments of the North-East Atlantic marine environment

An important achievement towards a better understanding of the North-East Atlantic marine environment was reached in 2017 with the launching of the OSPAR Intermediate Assessment.

This was the first OSPAR scientific assessment based on specific and commonly measurable indicators, thus consisting on a significant cornerstone towards the realisation of the OSPAR vision. It was the result of an ambitious data collection exercise in which OSPAR Contracting Parties joined efforts, including on methodologies and indicators that would serve the purpose of sound scientific examination.

The impact of pressures from human activities on the state of the marine environment was assessed through common indicators, all detailed in an online-only publication available at https://oap.ospar.org/en/ospar-assessments/intermediate-assessment-2017

The Intermediate Assessment 2017 constitutes a valuable contribution to the next OSPAR integrated assessment in 2023 - the Quality Status Report 2023 - which will include recommendations on priority actions.

For OSPAR Contracting Parties that are also EU Member States, OSPAR regional assessments can be used to help providing information on the state of the marine environment in the North-East Atlantic, as the regional context for national marine status reporting under the EU Marine Strategy Framework Directive. It is also available to be used as regional context to supplement national reporting under the UN Sustainable Development Goals, in particular SDG 14.

OSPAR is a strategic partner in the Baltic and North Sea Coordination and Support Action (BANOS CSA) that prepares a framework for launching a joint Baltic and North Sea research and innovation programme in 2021. 
Advancing and sharing scientific understanding for the benefit of long-term sustainability

by Anne Christine Brusendorff, General Secretary International Council for the Exploration of the Sea

S eas and oceans are shared between many jurisdictions, with some parts being common to all. With increasing human activities in the ocean, it has become more important than ever to consider the common science needs to address interrelated effects. BONUS has shown how science priorities can be identified at ecoregion scale, and with the new Baltic and North Sea Coordination and Support Action (BANOS CSA), it will be possible to make use of the experience gained during BONUS, and continue to work together with stakeholders, as well as scientific and funding organizations. While it is important to identify research priorities, experience has shown that it is also important to ensure the scientific results are used to inform policy and management. Making this link helps demonstrate the significance and impact of science, and thereby the benefits to society. A joint programme for the Baltic and the North Sea is a first step in ensuring the societal relevance of integrated marine research, and through the participation of consortium members and strategic partners, it will be possible to address how to interact with, peer-review and synthesize the research for best use by decision-makers.

Another important aspect of a future joint Baltic Sea and North Sea research and innovation programme is the transfer and knowledge sharing across countries, providing a platform of excellence for carrying out research. We are looking forward to participating in BANOS CSA as a strategic partner in the preparation of a future joint Baltic Sea and North Sea research and innovation programme. ICES will be able to draw on its diverse community of scientists and experts, long-standing cooperation structure, as well as its new Strategic Plan. This plan sets science priorities for marine ecosystem and sustainability science for the 2020s and beyond.

Cooperation within a future joint Baltic Sea and North Sea research and innovation programme will help to advance and share scientific understanding of marine ecosystems and the services they provide. We can use this knowledge to generate state-of-the-art advice for meeting conservation, management, and sustainability goals.

A European platform to bridge the regional and global dimension

by Jacky Wood, Acting Executive Director, JPI Oceans

J PI Oceans is one of ten Joint Programming Initiatives with the aim to pool national research and tackle societal challenges through better use of research and innovation funding in Europe. As a strategic partner in the Baltic and North Sea Coordination and Support Action (BANOS CSA), JPI Oceans is looking forward to further close collaboration with the Baltic and North Sea research and innovation communities. With member countries from all European sea basins and a widening international collaboration outside Europe, JPI Oceans can offer a platform to bridge the regional and global dimension.

A prime example of this is the first JPI Oceans action on microplastics in the marine environment initiated in 2013. With the growing understanding of the issues generated by the JPI Oceans research projects, the G7 countries acknowledged the lead given by the JPI Oceans action and they and the G20 countries put marine litter as a priority on their agendas. As a follow up, JPI Oceans can announce that 10 member countries have agreed in principle to launch a new, open joint call on the topic of microplastics. The call will be officially announced after the conclusion of the first four projects on microplastics in November 2018 and we hope the Baltic and North Sea communities will participate as partners in proposals.

JPI Oceans is also growing its international dimension outside of Europe, not least in the context of the UN sustainable development goals and the agreement to designate a UN Decade for Oceans Sciences. As a partner in the new action to underpin the Belem statement, the agreement between the EU, South Africa and Brazil, JPI Oceans involvement in the transatlantic collaboration also moves up a gear.

The JPI Oceans table further provides a flexible framework for collaboration. For example, JPI Oceans, together with the former ERA-NETS COFASP and the Marinebiotech ERA-NET and the European Commission Horizon 2020 programme have developed a new ERA NET Cofund on the blue Bioeconomy. The Cofund will launch a first joint call in December 2018 with a maximum budget of approximately 32 million Euro. The MarTERA ERA-NET Cofund, which was the joint initiative of the former ERA-NET MARTEC consortium, and JPI Oceans members recently announced the 19 research and innovation projects, which were selected for funding. Together representing 23 million euros of new funding, a wide variety of projects has started ranging from marine robotics to shipping, aquaculture, biosensing and more.

JPI Oceans and the BONUS Article 185 Initiative (ending 2020) share some funding partners and have been collaborating for some time. BONUS has created a scientific community around the Baltic Sea basin and has provided a harmonized way to look at the issues surrounding the management of a regional sea basin which reaches across national boundaries. It has helped to bridge the gaps, for example on ensuring harmonized and comparable data and brought together the critical mass of funding for research projects needed to achieve its ambitious research goals.

There is a real opportunity now for the Baltic community to bring the experience forward in a broader context and to exchange best practices where BONUS has succeeded. As a Strategic Partner in the new BANOS CSA, JPI Oceans looks forward to working with the BANOS CSA consortium to help shape the regional research agenda and to provide a pan European dimension and a European bridge to the wider international community.

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BONUS is a joint Baltic Sea research and development programme providing knowledge and eco-technological advances to support development and implementation of regulations, policies and management practices specifically tailored for the Baltic Sea region. It issues calls for competitive proposals and funds projects of high excellence and relevance based on its strategic research agenda.

BONUS is funded jointly from the national research funding institutions in the eight EU member states around the Baltic Sea and the European Union by a total of EUR 100 million for the years 2011-2020. Russia participates in BONUS through bilateral agreements.

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BONUS EEIG is the legal management organisation of BONUS.

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T
his autumn BONUS together with major research and innovation funders of 12 countries and four transnational organisations starts the Baltic and North Sea Coordination and Support Action (BANOS CSA). The aim is no less than preparing a framework for launching a joint Baltic and North Sea research and innovation programme. Our promise is to ensure that the future programme will achieve high level of scientific, administrative and financial integration, and generate strong impact as well as EU-level benefit. Already while designing the CSA proposal, we pictured it to be a bit similar to that of a ‘launching complex’ of a spacecraft - providing the right direction and speed that would bring it to the necessary orbit and send it to the desired destination. In-flight, adjustments are possible, the success of the whole mission depends on proper function of the launch pad and the booster engines. BONUS – the implementing structure of the future programme will invest its 15-year experience in creating a programme that can fly high and far.

Slowly but steadily

The idea of a future programme in support of achieving sustainability of the ecosystem services of the two sister seas washing the coasts of Northern Europe sparked already in early 2013. In 2015, the participating states expressed their commitment and in the same year a group of research policy experts and scientists draw an outline of what the programme could practically see (see BONUS in Brief 2015 issues). Now, with an ongoing debate on the design and priorities of the next EU research and innovation framework Horizon Europe, it is crucial that BANOS CSA provides us with more resources and time to build a firm fundament for an enduring and genuinely consolidated future collaboration.

A joint programme starts with a joint vision

Developing a joint research and innovation agenda (SRIA) will be the most important task of BANOS CSA. Prior to it, we must first scout the landscape of current priorities by individual nations and transnational organisations and agree on the scope of the future programme. Our experienced German and Swedish partners have assumed these ground-preparing tasks. As soon as this is completed, we will activate the well-tested BONUS production chain: the international drafting team will draw the blueprint. This will be further discussed and adjusted through a series of stakeholder meetings and eventually be delivered to the Strategic Orientation Workshop (SOW) for its scrutiny. The SOW is a cross-national, cross-disciplinary and cross-sectoral consultation platform that will give the SRIA its ultimate shape and direction. We anticipate that the SRIA of the future programme will retain two important qualities of the current Baltic Sea strategic research agenda:

- being a ‘living document’, a character achieved through systematic updates, and
- amalgamation of a far-reaching strategy with an operational programming (i.e. this provides the research and eco-innovation communities a single entry point to understand both the strategic direction and the timeline of its calls and actions).

Making it tick

In which way the future programme will be governed and managed? How its funds will be administrated? What kind of a joint executive structure would be best suited to run it? And, most importantly, what format will it take? These are big questions, each entwined with another! There are many options and different scenarios have to be carefully analysed to find the most viable one. BONUS will lead the work package tasked to design the mechanism of the future programme. This does not mean that the solutions serving the Baltic Sea programme will be simply replicated. Instead, the priority of BANOS CSA will be to strengthen the North Sea component and find the ways that work flawlessly in the new context. Many lessons learned from BONUS’s years of practice will benefit the improvements in the new programme, for instance, the aim to simplify the participation of future beneficiaries.

Turning idea into impact

The ongoing Baltic Sea programme has achieved much in strengthening the impact of research. Nevertheless, there is still lot of room for development of genuinely efficient platforms for engaging with the stakeholder and communicating the new scientific knowledge to its potential users, be it policy makers and managers in various economical sectors or innovative entrepreneurs. The BANUS CSA plan includes two dedicated packages to deal with communications and dissemination and strengthening the impact of research and innovation. For instance, our Belgian partners will lead the search for the best ways for implementing full data openness while the future programme’s strategies and instruments in support of diffusion of open innovation will be developed under coordination of the Dutch partners.

The regional seas surrounding the European continent might seem very different but in one aspect they are similar – that is where the interconnection between the sea and human society comes to its closest. The bulk of the marine ecosystem services, be it tangible biological or mineral resources and waterways or recreation and inspiration, all originate in the regional seas. It is there where the strongest pressures are felt and where achieving good environmental status is most urgent.

Engineering a launch pad

By Andris Andrusaitis, Coordinator of the Baltic and North Sea Coordination and Support Action, and Acting Executive Director, BONUS

Syntgiseing knowledge and setting trends

By Melis Sirendi, Deputy Acting Director, BONUS

Much has to be done to establish systematic cooperation among the research and innovation programmes created for support of sustainable blue growth in Europe’s regional seas and BANOS CSA is committed to contribute to this important task.

In the next three pages, the coordinators of BONUS Baltic-Marin, DESTONY, FUMARI, MARES, ROSEMARIE, SEAM, TOOLS2SEA and X-WEBS will introduce their projects.

www.bonusportal.org/synthesis_projects
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BONUS BALTIMARI
Review, evaluation and future of Baltic risk management

The BONUS BALTIMARI sets out to review the current state of the-art in risk analysis and decision support, focusing on the Baltic Sea area. We target the areas of Maritime transportation systems (MTS) and offshore energy production systems (OEPS). In collaboration with stakeholders, we aim to identify priorities for future research in risk management.

Review of current state-of-the-art

We review several R&D projects in the Baltic Sea area which have developed analysis methods for decision support in accident prevention, response and risk mitigation. The key factors that will be studied are:

- Utility: cost-effectiveness and technology readiness level
- Quality of the underlying evidence
- Firmness of the method's scientific basis
- Existing knowledge gaps
- Intended end users.

Evaluation of and assessment of uptake of past R&D

The assessment of R&D investigates whether the results of research are being used in practice. We aim to understand factors affecting successful uptake of R&D. We will compile a document of best practices based on interactions with relevant stakeholders. Selected projects with varying uptake and different budgets in different organizations will be analysed through interviews.

Decision support tools represent various compartments from the pressure-state-impact-response (PSIR) chain of actions, cover a wide field of disciplines, and vary in the degree of their availability and use – all these properties characterise them as well as enable investigating their successfulness. During the coming 1.5 years, BONUS BALTIMARI will develop definitions and criteria to help evaluate the performance of DST. Furthermore, the tools will be analysed against the current and anticipated future needs. Finally, an internet-based catalogue will be created as an information base.

A common feature to successful DST is that they are developed in close collaboration with end-users, or even by end-users themselves, and constantly updated along with increasing knowledge or changing requirements. BONUS BALTIMARI has gathered together a core group of end-users to be interactively involved in the project implementation.

PROJECT PARTNERS
Finland
Aalto University (coordinating partner)
University of Helsinki
Estonia
University of Tartu
Germany
Hochschule Wismar
Poland
Edzno Maritime University
Sweden
World Maritime University

The key theme addressed from BONUS SRA*
3.1 Maritime risk analysis and management
www.bonusportal.org/baltimari
https://wiki.aalto.fi/display/BB/

BONUS DESTONY
Decision support tool for management of the Baltic Sea ecosystem

Successful environmental management relies on an enormous amount of complex information that is processed further to interpret or predict potential changes and responses. A number of decision support tools (DST) have already been developed to support this process. The aim of BONUS DESTONY is to evaluate these tools and propose the direction of further development.

Decision support tools represent various compartments from the pressure-state-impact-response (PSIR) chain of actions, cover a wide field of disciplines, and vary in the degree of their availability and use – all these properties characterise them as well as enable investigating their successfulness. During the coming 1.5 years, BONUS DESTONY will develop definitions and criteria to help evaluate the performance of DST. Furthermore, the tools will be analysed against the current and anticipated future needs. Finally, an internet-based catalogue will be created as an information base.

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Aarhus University
Leibniz University for Baltic Sea Research Warnemünde
Sweden
Stockholm University

The key theme addressed from BONUS SRA*
4.7 Governance structures, performance and policy instruments
www.bonusportal.org/destony

BONUS FUMARI
Future marine assessment and monitoring of the Baltic

BONUS FUMARI will explore gaps in current Baltic Sea monitoring and the possibility of using novel monitoring methods to address these shortcomings. The recommendations aim to enhance future coverage, comparability, sensitivity and cost effectiveness of Baltic Sea monitoring. Given the complexity of this task, stakeholder involvement will be critical to project success and will be integrated at all stages of the project.

BONUS FUMARI builds on past evaluations of relevant directives and combines these with the insights and lessons learned from both freshwater EU projects led by the project partners (such as EU FP7 WISER, MARIS and the COST action DNAqua-Net) and marine projects (such as BONUS BLUEWEB, EU-LIFE MARMONI, EU FP7: ODEMM, and DEVOTES). The combined experience from both marine and closely related freshwater monitoring will be a valuable basis for the evaluation and recommendation for a renewed monitoring system of the Baltic Sea environment. BONUS FUMARI will coordinate actions with the project BONUS SEAM, which also aims to provide recommendations for a renewed monitoring of the Baltic.

Outputs of the project will include review papers and related policy briefs that address current monitoring and its gaps in relation to legislative requirements, shortcomings and improvements of data management, and novel monitoring methods that could be applied in Baltic marine monitoring.

In particular BONUS FUMARI sets out to answer the following questions:

- Does the current monitoring sufficiently address the requirements set by the EU data collection regulation, Baltic Marine Environment Protection Commission’s (HECOM) Baltic Sea Action Plan, EU Water Framework Directive (WFD), and EU Marine Strategy Framework Directive (MSFD)?
- What are the most critical shortcomings of the current marine monitoring programs regarding the requirements set by relevant EU directives?
- Which novel methods could efficiently enhance the Baltic marine monitoring through improving its coverage, cost effectiveness, and reliability?
- What is the state-of-the-art of these methods related to their use in operational monitoring?
- How could the monitoring system be rearranged and complemented to achieve improved coverage, sensitivity, and cost effectiveness?

PROJECT PARTNERS
Finland
Aalto University
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Sweden
Swedish University of Agricultural Sciences
Halmstad University
Swedish Meteorological and Hydrological Institute

The key theme addressed from BONUS SRA*
3.1 Integrated monitoring programmes
www.bonusportal.org/fumari

*BONUS strategic research agenda, update 2014
BONUS MARES
Multi-method assessment for resilient ecosystem services and human-nature system integration

Coordinator Maurizio Sajeva, Pellervo Economic Research PTT

BONUS MARES will set out to identify possible future scenarios of best practices in the knowledge transfer and generate a geospatial tool to represent ecosystem goods and services, as well as their impact on human lifestyles and well-being. This in turn will contribute to efficient and sustainable use of natural resources.

An idea of natural capital has emerged to identify the potential and actual benefits that humans derive from nature. Economic research and various monetary and non-monetary methods have also been developed to reintroduce environmental goods into economic evaluations, generating the concept of ecosystem services. However, there is much debate within the scientific community, and a general agreement on the validity of evaluation methods is often missing: not all methods are adequate to evaluate all kinds of environmental goods. Moreover, much about ecological processes and the amount of resources that can be used in a sustainable way is still unknown. Understanding the interactions between biodiversity, humans and geophysical processes are of primary importance in BONUS MARES. Economics is approached as an open system that is intertwined with other environmental and human systems. In this light, the BONUS MARES project will:

- observe and monitor ecosystem goods and services in the Baltic Sea region, and more specifically of its coastal territories threatened by multiple pressures and climate change (macroalgae, seagrass beds and mussel reefs);
- analyse the adequacy of existing methods to transfer this scientific knowledge for practitioners (combination of ‘eco-system service-evaluation method’);
- provide an interface that brings science closer to society and policy, and thereby support policymakers with scientific evidence, upon which critical decisions can be made, and the principle of accountability adequately implemented.

A highly participatory research process will involve experts, stakeholders and decision-makers from the Baltic countries and possibly from other regions where similar experiences can be found. BONUS MARES’ work will be captured in newsletters, policy briefs and a final popular publication that will pull together findings, lessons learned, and gaps identified in current practices.

BONUS MARES will inform and interface in this way with the concerned stakeholders and the general public, thereby pursuing the objective of concretely reducing the distance between the scientific community, decision-making and the overall society.

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Germany GEOMAR Helmholtz Centre for Ocean Research Kiel
Estonia Edistysmielisen tutkimuksen yhdisty

The key theme addressed from BONUS SRA*
4.2 Linking ecosystem goods and services to human lifestyles and well-being
www.bonusportal.org/mares

BONUS ROSEMARIE
Blue health and wealth from the Baltic Sea – a participatory systematic review for smart decisions

Coordinator Soile Oinonen, Finnish Environment Institute

When sustainable blue growth is the target, what are the burning questions of the decision makers? How can they balance the current uses of the Baltic Sea ecosystem services with the future uses? BONUS ROSEMARIE aims to act as a ‘research broker’: By meeting policy advisors and decision makers we set out to identify their knowledge needs, and then search for the answers through the existing scientific works.

The answers will be summarised in three separate evidence syntheses. The first synthesis focuses on the state and future of the Baltic Sea ecosystem services and what is now known about the synergies and trade-offs that link different uses of these services. The second sheds light on the impacts these ecosystem services have on human mental and physical health and well-being. The third synthesis will help decision makers navigate through the different non-monetary and monetary valuations methods used to capture full spectrum of values attached to the marine ecosystem services. We will also highlight our main findings in policy briefs and an animation. To reach the wider public we will publish the animation in German, Estonian, Finnish, Swedish and English. To ensure high quality, the work will follow the guidelines and standards of Collaboration for Environmental Evidence. This means that we will separate the wheat from the chaff: Evidence is searched following predetermined rules, findings are listed transparently and their quality will be checked. This will help us also find the gaps in knowledge. Such a systematic method allows for repeating similar analyses later on when new research is available.

BONUS ROSEMARIE engages with stakeholders throughout the project implementation. Both the systematic reviews and the policy briefs will be produced in dialogue with the end-users. This way, new and even unexpected results are hopefully easier to assimilate and apply in the daily work of decision makers. Moreover, it will add to the researchers’ understanding of the ways that practitioners use scientific outputs. This can pave the way for increased societal impact of research.

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Germany Gottfried Wilhelm Leibniz Universität Hannover
Sweden Royal Institute of Technology

The key theme addressed from BONUS SRA*
4.2 Linking ecosystem goods and services to human lifestyles and well-being
www.bonusportal.org/rosemare

BONUS SEAM
Towards streamlined Baltic Sea environmental assessment and monitoring

Coordinator Mats Lindgarth, University of Gothenburg

A safe, secure and sustainable society needs good information on the state of the sea. Monitoring of the marine environment and its biodiversity generates this valuable information describing how the marine environment and marine ecosystems vary through time. The objective of the BONUS SEAM project is to propose recommendations for a more efficient monitoring system to ensure that the information generated can be used by policymakers, scientists and wider society to inform and guide policies and actions for the sustainable management of the Baltic Sea.

A key challenge for the organisation of monitoring activity at Baltic Sea scale is to ensure that it can serve the required information needs in a streamlined way while delivering comparable and consistent data transnationally. In parallel, innovations for data collection and interpretation may offer possibilities for further refining approaches for marine monitoring and assessment to provide an increased return of information on present investments in monitoring. To achieve this objective BONUS SEAM will follow a threefold approach:

Firstly, BONUS SEAM will critically analyse the adequacy of current Baltic Sea environmental monitoring to support assessment requirements under different environmental policies, e.g. the assessment of status and trends, identify gaps and mismatches in relation to policy and science, and identify potential routes for improvement. A particular focus will be given to the monitoring of hazardous substances and the habitats and communities of the seafloor and water column.

Secondly, BONUS SEAM will review recent innovative approaches for a more cost-effective collection of data and evaluate their potential application in an operational monitoring programme. Building on these two steps BONUS SEAM will develop a proposal for a revised monitoring system for the Baltic Sea. We will communicate and test with key policy and technical stakeholders, including those authorities in charge of the monitoring nationally, to ensure that there is a close fit with possible implementation routes. The outcome of BONUS SEAM will be a realistically applicable proposal for how the current system of monitoring in the Baltic Sea can be revised. BONUS SEAM will also identify priority research needs to contribute to the further development of Baltic Sea assessments over the longer term.

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Sweden Swedish Institute for the Marine Environment/University of Gothenburg (coordinating partner)
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Estonia Tallinn University of Technology
Finland Finnish Environment Institute
Germany Leibniz-Institut für Ostseekunde Wismar

The key theme addressed from BONUS SRA*
3.1 Integrated monitoring programmes
www.bonusportal.org/seam
www.havsmiljoinstitutet.se/english/themes/research/bonus-seam
BONUS TOOLS2SEA
Policy tools for Baltic Sea nutrient management
Coordinator Mikael Skou Andersen, Aarhus University

From the end of the 20th century and up to 2014 nutrient loads to the Baltic Sea declined by 13% for nitrogen and 19% for phosphorus. Despite this relief, virtually the entire Baltic Sea (97%) remains eutrophic, according to HELCOM’s second holistic assessment, and deep emissions reductions are required as agreed under the Baltic Sea Action Plan. In this context, the BONUS TOOLS2SEA project will provide much needed knowledge about the history and performance of governance approaches and policy instruments for nutrient management.

Aims
BONUS TOOLS2SEA will focus its work on three fronts. Firstly it sets out to assess where national regulatory traditions, individual attitudes and human behaviour shape nutrient management policies, in order to understand countries’ policy performance around the Baltic Sea and beyond. Secondly, we will provide a synthesis of the most reliable cost and benefit estimates, identifying socio-politically suitable policy instruments for spatially targeted nutrient management. It will take into account distributional implications, regional disparities and possible win-win approaches. Thirdly, to facilitate accomplishment of Baltic Sea Action Plan targets, we will provide an outlook on possible future directions in emissions abatement. Critical gaps in current knowledge will be identified and translated into practice to provide suggestions for pilot experiments and innovations. The project will thus provide support to deliberations in HELCOM and in individual countries, including with relevance to the planned 2020 revision of the EU Water Framework Directive.

Methods
BONUS TOOLS2SEA will screen and synthesise results from previous BONUS funded projects (MIRACLE; GO4BALTIC; GOHERR; BALTICAPP; COCOA; SOILS2SEA) as well as summarise research results and insights from a broader array of studies, projects and publications available in the international literature and in national languages of the Baltic Sea region. Stakeholders from farming, NGO’s and government agencies are invited to provide input early on of the project, as well as at a policy scenario workshop scheduled for Fall 2019, where preliminary findings will be presented and reviewed.

Outputs
Results will be subject to peer review under the high standards of scientific publications. They will be available in a condensed version as policy briefs accompanied by infographics, with summaries in national languages of the Baltic Sea region. Three sets of brochures will target farmers, water planners and investors respectively. Lessons with regard to the coordination of rural development funds with targeted water quality measures will be highlighted.

BONUS XWEBs
Taking stock of Baltic Sea food webs: synthesis for sustainable use of ecosystem goods and services
Coordinator Jan Dierking, GEOMAR Helmholtz Centre for Ocean Research Kiel

BONUS XWEBs wants to take stock of the field of food web science in the Baltic Sea region (“what do we know, what do we not know?”), provide a vision for this field for the coming decade (“what do we need to know, and how can we obtain this knowledge?”), and assess barriers standing in the way of the integration of food web knowledge in sustainable management of ecosystems.

Where does BONUS XWEBs come in?
Our aim is to advance the field of Baltic food web science via a systematic review effort including a synthesis of syntheses to reap the harvest of the wealth of new information that has become available from BONUS as well as outside it. This will include topic reviews of particularly dynamic fields, like the food web interactions of non-indigenous species. As second step, we will assess existing knowledge gaps and develop a vision for priority studies in this field. In the more applied management context, we are then interested how complex knowledge can be best funnelled into “simple” decision support with the help of models and indicators. Finally, we will provide a systematic assessment of food web knowledge transfer into management advice and decision making: what is working, where are barriers, what can we improve and how to implement it in practice?

Project approach and call for participation
At the heart of BONUS XWEBs stands a series of scoping and writing workshops, in which we will bring together experts on various aspects of Baltic food webs, including researchers from within and outside BONUS XWEBs and stakeholders (e.g., HELCOM and ICES, but open to others). Watch out for calls for participation in the 2019-2020 XWEBs workshop series – and join us to contribute with your knowledge, views and expertise!

Chair of the BONUS Steering Committee, Dr. Joachim Harms

On 1 October 2018, Dr. Joachim Harms, from the Jülich Research Centre, Germany was appointed as the Chair of the BONUS Steering Committee. Dr. Maija Bundule from the State Education Development Agency of Latvia acts as the current Vice Chair. The BONUS Steering Committee chairmanship rotates annually among the representatives from the national funding institutions that are members of BONUS.

Dr. Joachim Harms, what is your professional background?
My professional background is marine biology. I worked as scientist for 14 years at the Marine Station Heligoland in the North Sea, with research visits to New Zealand, Japan and Brazil working on cultivation of Crustacea and Fish. Now for close to 25 years, I have been working in science administration co-ordinating research activities in the marine and maritime area and assisting the respective ministries to align national programme activities with international agenda.

Germany joined BONUS in December 2007, what has been the most memorable event since then in BONUS? BONUS is a wonderful example of a fruitful cooperation between its member states. Over the years, trust and friendship has developed, making this one of the secrets why BONUS has managed all difficulties and burdens and why we have always been able to find good solutions for further intensifying our cooperation.
M
arine science and technology is traditionally a male-dominated field, with a significant lack of women in leadership positions. Therefore, there is an urgent need for change. ‘Baltic Gender’ responds to the need of harvesting the whole capacity of men and women alike at all levels of research and in the technology teams to tackle the various challenges lying ahead in the marine environment. ‘Baltic Gender’ is an EU-funded project that brings together eight scientific institutions in five countries around the Baltic Sea to work on reducing gender inequalities in marine science and technology. The project has been funded for 4 years, starting in September 2018, by the HORIZON 2020 programme under the call “Gender Equality in Research and Innovation” and is coordinated by Prof. Dr. Katja Matthes (GEOMAR Helmholtz-Centre for Ocean Research Kiel). Acting as a platform for the exchange of institutional practices and the transfer of knowledge between the consortium partners, ‘Baltic Gender’ will work towards the establishment and implementation of Gender Equality Plans in its partner institutions, which play an important role in committing institutions to long-term approaches, realistic targets and concrete measures. The project will establish practical schemes and innovative strategies including user-friendly output that promote gender equality around the Baltic Sea.

The following publications are already available from the project:
• The brochure “Best practices on structural change” provides various best practice measures in the different Baltic Gender institutions
• A leaflet on how to establish strategies for promoting a family-friendly working culture
• A resource pack to build competence and skills in gender sensitive teaching methods
• The practical guide on how to include Gender Equality Plans in research projects

Past and coming events
Early career researcher discuss knowledge transfer in marine sciences

The keywords ‘science communication’, ‘application of scientific results’ and ‘proactive behaviour’ dominated the discussions of the PtJ-BONUS workshop during the 9th YOUMARES conference on 13 September 2018 in Oldenburg. An intense World Café session highlighted the opportunities and limitations of knowledge transfer. Furthermore, the participants considered the enormous impact that can be achieved by having research results strategically transferred to non-expert communities. Also the support of open access as an important fundament to foster the exchange within the scientific community was widely discussed. Further, the workshop participants were convinced that the transfer of information has to go hand in hand with a certain degree of ‘entertainment value’, which is crucial to communicate the central message of ‘Research is fun’. All personal contacts between scientists and the society were considered of key importance. Hence, in order to directly involve the society at large in marine science, the attendees suggested to design a special public session to be part of the next YOUMARES conference taking place in Bremen, 24-27 September 2019.

BONUS members

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<td>Denmark</td>
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<td>Germany</td>
<td>Forschungszentrum Jülich Beteiligungsgesellschaft mbH</td>
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Read more at www.baltic-gender.eu

/Dr. Lydia Gustavs, Projekttträger Jülich (PtJ)