

Alignment at Trans-Regional Level: Case Study No.2

BONUS Programme



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ABSTRACT

The joint Baltic Sea research and development programme (BONUS) which was launched under the Article 185 of the Treaty on the Functioning of the European Union as a strategic, multi-annual joint research undertaking of eight Baltic Member States

The Programme has created a macroregional collaboration of research and innovation funding institutions that supports sustainable development of the Baltic Sea ecosystem services. Its purpose is to overcome research fragmentation and duplication by integrating national programmes into a single centrally managed programme

The study highlights the Article 185's many benefits. BONUS has enabled participating countries to achieve strong alignment at strategic and operational levels, thanks to:

- (i) the elaboration of a common vision and Developing a Strategic Research Agenda;
- (ii) the improvement of a research capacity across Europe thanks to joint training and capacity building activities for participating researchers and the sharing of national research infrastructures;
- (iii) a better visibility and dissemination of research data at European and international level;
- (iv) the increase of cross border cooperation with various European initiatives in the Baltic region and cooperation with non- European Countries.

Yet, the BONUS programme has also been confronted with: (i) a weak financial integration with financial administrated within a **virtual common pot** rather than a real common pot (ii) the low participation of small and medium enterprises.

ACKNOWLEDGEMENTS

The case study builds on the ERALEARN2020 Task 4.3 ("Alignment at Trans-Regional Level"), and relies on an analysis of existing and potential modalities for aligning national/regional activities.

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1. Introduction

This case study examines the key features and overall strengths and weaknesses of a specific alignment modality, namely the Article 185 Initiative/European BONUS as the highest level of formalized integration (in the European Research Area. Implementing Article 185 implies that the participating EU Member States integrate (rather than simply coordinate) their research efforts by defining and committing themselves to a joint research programme, in which the European Community promotes the voluntary integration of scientific, managerial and financial aspects.

According to the Typology of Alignment, **the Article 185 instrument** is used during the research implementation phase in view of establishing a strategic, long-term and integrated European research programme. The modality of this alignment is focused on the operational and strategic levels, and involves many actors in the research programming cycle (policymakers, scientist, research funding agencies, performing organisations, and individual researchers).

The programme plays an important role in Europe's efforts to design and promote diverse and often conflicting sectors of blue economy and align them with societal goals including good environmental status of our seas.

To ensure that expansion of the blue economy truly increases welfare, it must go along with the fundamental principles formulated in the Europe 2020 strategy: growth must be smart, sustainable and inclusive; smart with respect to integration of cutting edge science-based, innovative solutions and industrial leadership, sustainable in economic, social and ecological terms tackling societal challenges and inclusive considering the multitude of coastal, marine and maritime activities and trade-offs between them.

The general objectives for BONUS correspond to those defined by Article 185, which seeks to integrate national research programmes and as a consequence requires integration at three levels:

1. Managerial integration such as management by a dedicated implementation structure(DIS);
2. Scientific integration by the establishment of central programming and a common excellence-based evaluation
3. Financial integration which may be achieved through a 'common pot' that pools Participating States' and EU funds and common funding rules;

These objectives towards financial, managerial and scientific integration seek to move towards a European Research Area, which will overcome problems of fragmentation in research.

2. Key features of Bonus

2.1 Overview

The joint Baltic Sea research and development programme (BONUS) for years 2010-2017, was started by the BONUS member states¹ together with the EU and officially launched in September 2010.

It has been decided by a co-decision procedure of the European Parliament and the Council as a Treaty on the Functioning of the European Union (TFEU) Article 185 activity and it is the first European strategy targeting a particular macro-region.²

Since its inception in 2007, BONUS has built a unique, macroregional collaboration of research and innovation funding institutions that supports sustainable development of the Baltic Sea ecosystem services through research and innovation. BONUS is considered an EU-wide pioneer in creating a macroregional governance network for research and innovation and a forerunner in testing many of the principles now implemented in Horizon 2020

¹ Denmark, Germany, Estonia, Latvia, Lithuania, Poland, Finland and Sweden (the Participating States) defined in the Decision No 862/2010/EU of the European Parliament and of the Council of 22 September 2010 on the participation of the Union in a Joint Baltic Sea Research and Development Programme (BONUS) undertaken by several Member States.

² In April 2011 European Council adopted the Strategy of the Danube Region as the second macro-regional strategy of the EU.

such as pursuing challenge-oriented interdisciplinary research, bringing closer science and innovation and involving stakeholders across multitude of sectors in all phases of the programme.

Its main aim is to overcome research fragmentation by integrating national programmes into a single centrally managed programme which will more effectively provide solutions supporting sustainable development, effective and long-term management and policy that is 'fit-for-purpose' and based on sound scientific knowledge derived from multidisciplinary research. Indeed,, the programme seeks to extend the participation to different funding institutions.

It has also been foreseen that funding institutions in the Russian Federation and other third countries (that are not participating in BONUS nor are EU member states or associated to EU's Horizon 2020 Programme) may support their national project participants in the BONUS programme through separate agreements.

The experience of its two predecessors **ERA-NET**³ and **ERA-NET Plus (BONUS+)**⁴ has influenced the definition and implementation of the BONUS programme.

Indeed, it was established in two phases: an **initial strategic phase** and a fully **operational implementation phase**. BONUS was the first Article 185 initiative to include a strategic phase to enable the development of the **Strategic Research Agenda**⁵ that links terrestrial, coastal and marine ecosystems and their response to both development pressures and effects of climate change, modalities and structures in advance of the implementation phase.

This initial phase has been essential and it has allowed a transition where stakeholders can be engaged to jointly develop and support the scientific programme reflected in the Strategic Research Agenda.⁶

The strategic phase was effective in enabling the necessary formulation of the modalities and funding rates within the framework of the mandate provided by the legislative decision. This is effective in providing a clear framework within which the programme must proceed.

The **strategic phase** started in June 2010 and **the implementation phase**, lasting at least five years, started in October 2012 as a EUR 100 million joint undertaking of eight Baltic Member States with the support of the EU. The total funding amount comprises an EU contribution not exceeding EUR 50 million matched by an equal amount of contributions of the Participating States.

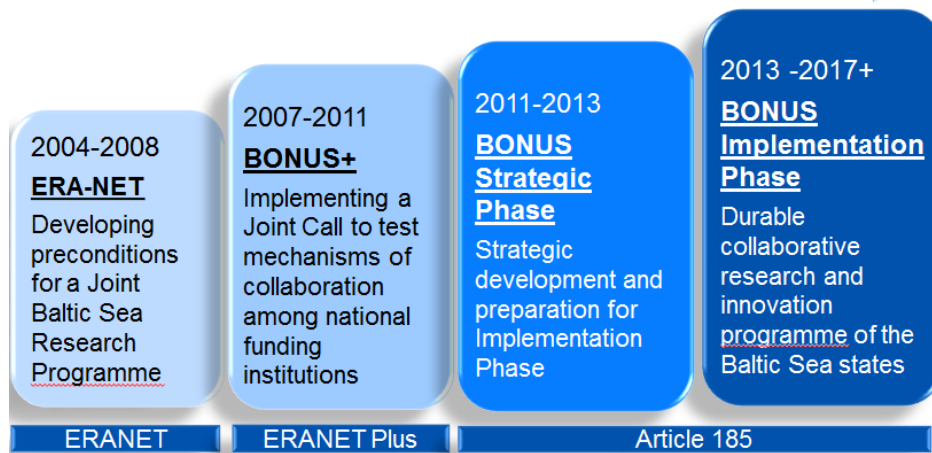
³ The initial BONUS ERA-NET (BONUS for the Baltic Sea Science – Network of Funding Agencies) was supported by the 6th Framework Programme of the EU with a total funding of EUR 3 million between 2003 and 2008. This project brought the key research funding organisations from all EU Baltic Member States and Russia together for the first time. The project consortium comprised eleven funding agencies, a research institute and two international organisations. BONUS ERA-NET aimed to establish a network and partnership of key agencies funding research to deepen the understanding needed for science-based management of environmental issues within the Baltic Sea. The BONUS ERA-NET did not fund research projects, but aimed at enhancing cooperation between the national research funding organisations with a vision to create a Joint Baltic Sea Research and Development Programme to fund research.

⁴ BONUS+ tested the mechanisms of collaboration among the national funding institutions with a total of 16 projects funded for EUR 22 million and involving over 100 research institutes and universities. Currently there are 21 national funding institutions involved in BONUS either as members (10 funders) or associated through specific co-financing agreements (11 funders). Based on their mandates, these include basic research (8 funders) and innovation funders (8 funders), as well as those able to fund both types of research (5 funders)

⁵ SRA identifies gaps in our current scientific knowledge or technological base and infer from these research priorities and needs. They tend to be forward-looking as they provide a list of future research topics which are of particular relevance.

⁶https://www.bonusportal.org/files/1246/Publication_No._12_SRA.pdf

Figure 1: Development of BONUS



2.2 Mission and activities

The BONUS research and development programme aims to facilitate generation of fit-for-purpose knowledge and know-how necessary to overcome the major environmental and key societal challenges which the Baltic Sea region faces and will face in the coming years⁷. These efforts aim to ensure ultimately the long-term sustainability of the Baltic Sea ecosystem services. In order to achieve this, BONUS works to improve the efficiency and effectiveness of the Baltic Sea region's research programming by integrating the research activities into a durable, cooperative, interdisciplinary and focused multi-national programme.

BONUS responds to the EU's growth and jobs strategy by implementing many principles of the EU Horizon 2020 (2014-2020) by e.g. pursuing challenge-oriented interdisciplinary research, bringing closer science and innovation and involving stakeholders across multitude of sectors in all phases of the programme.

All the activities carried out are focused on the main aim of BONUS: namely to respond to the unsustainable situation through a strong cooperation across the region and consolidate the joint research effort on a macro-regional level.

Fostering such aim is possible through collaboration within the so-called 'triple helix' in which academia, industry and policy constitute the three helices and work together. The need for sustainability solutions arises from society and involves a major potential, which is capable of triggering emergence of globally leading research and development networks and hubs based on market and business-demand.

The BONUS strategic research agenda 2011–2017 is policy-driven and serves as the basis for a multidisciplinary and transnational research programme in support of knowledge-based decision-making and long-term solutions beneficial to the Baltic Sea region. Themes and activities of the BONUS as defined in the strategic research agenda are linked and arise from five mutually interlinked **strategic objectives**:

1. Understanding the Baltic Sea ecosystem structure and functioning
2. Meeting the multifaceted challenges in linking the Baltic Sea with its coast and catchment area
3. Enhancing sustainable use of coastal and marine goods and services
4. Improving the capabilities of the society to respond to the current and future challenges directed to the Baltic Sea region

⁷ There are many challenges to ensure the sustainable use of the Baltic Sea, which require comprehensive understanding of the inter-relationships among terrestrial, coastal and marine components of the Baltic ecosystem as well as the economic, social and environmental effects of interactions among human activities.

5. Developing improved and innovative observation and data management systems, tools and methodologies for marine information needs in the Baltic Sea region.

2.3 Governance structure

The programme is managed by a dedicated implementation structure (DIS), the BONUS European Economic Interest Grouping (EEIG) and its Secretariat, located in Helsinki and established by the key national funding institutions from all eight Baltic Sea EU member states. The programme governance structure includes:

- ✓ **Steering Committee** composed of representatives of national funding institutions as the highest authority of the BONUS EEIG, forming its decision making body and board governing the Secretariat; Steering Committee's Executive Committee is formed by the current chair, vice-chair and the previous chair. The chairmanship rotates and changes 1 July of each year.
- ✓ **Secretariat** as the management body implementing the Steering Committee's decisions and it is funded by the member fees and the Finnish Ministry of Education. **The Secretariat also draws valuable support** from the members of the BONUS Advisory Board, the Forum of the Project Coordinators and the **national contact points network**.
- ✓ **Advisory Board** consisting of scientists of high international standing and representatives of relevant key stakeholders. It assists by providing independent advice, guidance and recommendations regarding scientific and policy-related issues of BONUS.
- ✓ **Forum of Project Coordinators** is composed of coordinators of ongoing projects funded through BONUS. It assists the Secretariat in matters dealing with the scientific coordination of BONUS.
- ✓ **Forum of sector research: it is a** bespoke platform and it brings together representatives of ministries and governmental institutions working on marine and maritime related issues in the Baltic Sea countries⁸.

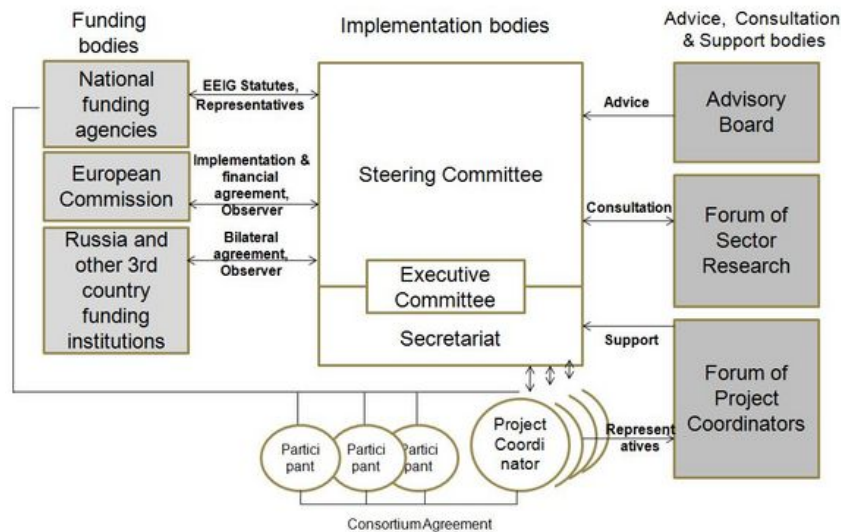
The law defines the Forum as follows:

"A Forum of Sector Research (a body of representatives from ministries and other actors dealing with Baltic Sea System research and governance) shall be established as a permanent body in support of BONUS and be responsible for discussing its planning, outcomes and emerging research needs from the decision-making perspective." The Forum shall facilitate and advance the pan-Baltic integration of research, including the joint use and planning of infrastructure capacities, assist in highlighting research needs, advance the utilization of the research results and facilitate the integration of research funding.

"The Forum of Sector Research shall be composed of representatives from ministries and other actors dealing with Baltic Sea System research and governance. It shall convene once a year as a consultation meeting that discusses the outcomes of BONUS and emerging research needs from the decision-making perspective. It shall serve as the forum for advancing the pan-Baltic integration of research, including relevant sectorially-funded research and the use and planning of joint infrastructures".

⁸ According to the EU Parliament and Council codecision (OJ 30.9.2010, L 256/1) one of the three key objectives of the BONUS Strategic Phase is to establish stakeholder platforms, through which the relevant stakeholders would be able to contribute to the development of the BONUS Programme.

Figure 2: Funding distribution by the BONUS calls



Source: **BONUS website**

2.4 The implementation phase

The implementation phase is the core of the programme. Its focus is the launch, evaluation and management of calls for proposals. The planning and content of calls are formulated on the basis of the Strategic Research Agenda with reference to relevant policies, in consultation with the Commission, National Funding Institutions and stakeholders to address the strategic objectives of BONUS research.⁹ They reflect the operational objective to launch at least three cross-thematic strategic multi-partner joint calls underlined in the Decision No. 862/2010/EU (See Annex 1)

The Programme has defined a holistic integrated approach and an inter-disciplinary scientific research strategy, which addresses both environmental and socio-economic issues and has well-functioning interfaces between science and policy. This requires close transnational collaboration between research communities and well-functioning interfaces between science and policy.

This holistic approach and the necessity to enhance the innovation and not only the research is evident in the BONUS calls. Bonus has implemented already three calls, **BONUS+ call 2007** within the ERA-NET+, and **calls 2012** ("Viable Ecosystem" and "Innovation¹⁰") and **call 2014** ("Sustainable Ecosystem Services") and **call 2015** (Blue Baltic) within Article 185.

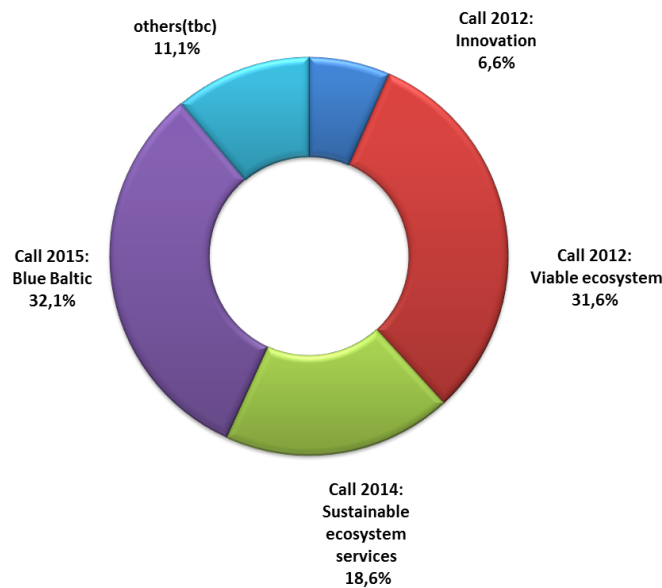
At present, 28 research or innovation projects have been selected and are ongoing. The start of the **BONUS innovation projects** marked a historical moment for BONUS. This means that the scientific knowledge is being put into practice in real world applications and typically tested in a live environment using a prototype or pilot installation. As intended, the introduction of the innovation track into the BONUS project portfolio brought a number of enterprises to take part in the projects.

⁹ BONUS, Policy Framework Analysis in the Fields relevant to the BONUS programme. Publication No. 13, March 2013

¹⁰ Innovation contributes to supporting a sustainable "Blue Economy" in line with the objectives of the Commission Communication "Blue Growth opportunities for marine and maritime sustainable growth" and the specific reference to BONUS made within the Staff Working Document "A Sustainable Blue Growth Agenda for the Baltic Sea Region".

The funding for the projects of the BONUS calls 2012 and 2014 constitutes 57 % of the total funding of EUR 100 million reserved for implementing the BONUS programme. Together with the EUR 30 million funding of the BONUS call 2015: Blue Baltic, this will amount to nearly 90 % of the funding available in the programme.

Figure 3:Funding distribution by the BONUS calls



Source: **BONUS annual review 2015**

3. Overall strengths and key achievements of programme

BONUS calls require research that links science with relevant EU policies, which are in line with objectives defined by the BONUS Decision. There is a clear understanding within BONUS that **the research has to be relevant to "Science for a better future of the Baltic Sea Region"**¹¹ to deserve support. The cooperation and the synergies with various European initiatives represent the particular value of the BONUS programme.

Since signing in 1974 the Convention on the Protection of the Environment of the Baltic Sea Area a vast number of other Baltic Sea regional collaborations with relevance to sustainability have also emerged. BONUS works closely with and contributes to a number of key European, regional and national programmes including a wide array of different actors on varying levels and capacities.

The two central intergovernmental organisations of the region: **HELCOM**¹² and **Visions and Strategies around the Baltic Sea** (known as **VASAB**)¹³ lead together the development of coherent maritime spatial planning of the Baltic Sea.

The cooperation between BONUS and HELCOM is unique, because their fields of expertise encompass both environmental policy and research, which provides a fruitful ground for policy-relevant research and dialogue.

In parallel, a considerable number of networks and collaborations, such as the **Council of the Baltic Sea States (CBSS)**, **Baltic Sea Parliamentary Conference (BSPC)**, **Baltic Sea States sub regional Cooperation (BSSSC)**, **Baltic**

¹¹ http://www.bonusportal.org/files/3275/BONUS_brochure_2014.pdf

¹² Baltic Marine Environment protection commission is the governing body of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, known as the Helsinki Convention. The Contracting Parties are Denmark, Estonia, the European Union, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden. It defined **the Baltic Sea Action Plan (BSAP)** was adopted in 2007 by nine Baltic Sea coastal states as an ambitious cooperative action programme under the auspices of HELCOM. The HELCOM Baltic Sea Action Plan aims at establishing good environmental status in the Baltic Sea by 2021 thus serving as a pilot project under the EU Marine Strategy Framework Directive. Progress in implementing the Baltic Sea Action Plan has been reviewed and commitment to its goals endorsed in two successive Baltic Sea Ministerial Meetings of 2010 (Moscow) and 2013 (Copenhagen).

¹³ **Visions and Strategies around the Baltic Sea (VASAB)** established in 1992, is an intergovernmental forum for cooperation of ministers responsible for spatial planning and development around the Baltic Sea. In 2009, VASAB ministers adopted the Long Term Perspective for the Territorial Development of the Baltic Sea Region. VASAB cooperates closely with HELCOM, for example, through the joint HELCOM-VASAB Working Group on Maritime Spatial Planning that was created in 2010

Sea Forum, Baltic Development Forum (BDF) and Baltic Sea Action Group have been established, all aiming at facilitating the implementation of the environmental and sustainability objectives.

The main body for facilitating regional cooperation and networking is the Forum of Project Coordinators that acts as the core organ for the scientific coordination of the Programme. The Forum serves as a main platform facilitating cross-project collaboration and promoting clustering among projects and its role is to collect further information on outcomes that are systematically gathered by stakeholders such as HELCOM, ICES, VASAB and other organisations concerned with BONUS. The annual BONUS conference integrated with the biennial Baltic Sea Science Conference will be crucial for revealing further the need for scientifically valid answers to ensure sustainable delivery of ecosystem services from the sea.

3.1 Alignment at strategic level: Cross border cooperation and synergies with initiatives at EU level, in particular EUSBSR

In its efforts to broaden the cooperation with various regional initiatives, BONUS tried to align to the **European Union Strategy for the Baltic Sea Region (EUSBSR)**¹⁴

Both the EUSBSR and BONUS share the same target of building prosperity of the Baltic Sea region and this can be done by better cooperation and more efficient use of new knowledge and coordination of funding.

Aligning the funding in the context of the EUSBSR becomes possible when the objectives of the EUSBSR coincide with the one or several of the themes derived from strategic objectives included in the BONUS strategic research agenda¹⁵. Within the ongoing funding scheme (BONUS programme 2012-2017), a good example of the alignment and coordination of funding is the **BONUS call 2012: Innovation**.

This was organised in collaboration with the EUSBSR flagship project 'BSR Stars' and brought innovation funding agencies of the participating countries to a joint funding cooperation. A total of 13 innovation projects now implement the objectives common for both the EUSBSR and BONUS and cover three key themes of the BONUS strategic research agenda with the co-funding by 13 different funding agencies in the eight Baltic Sea states and the EU's Seventh Programme for research, technological development and demonstration.

*Collaboration with BONUS is a great opportunity. It enables us to combine the tools, clusters and structure to be developed via our BSR Stars to match the calls to be opened in BONUS, and vice versa. There are several themes of mutual interest, such as ICT services, ecoinnovation, and observation and data management technologies)*¹⁶.

In this context, it is worth mentioning that the Innovation call arranged in collaboration with the EU Strategy for the Baltic Sea Region flagship project 'BSR Stars' strongly encourages applicants to seek BSRP funding in collaboration with partners applying for funding under the BONUS calls in order to facilitate exploitation of the research results.

The support of BONUS towards delivery of the EUSBSR and overcoming regional fragmentation of Baltic Sea research is evident. Additional synergies have been established by means of information exchange and cooperation between BONUS and the Baltic Sea Region programme and to ensure an active regional science policy dialogue within fora such as the Annual Fora of the EUSBSR. Within this forum BONUS has organised joint

¹⁴ **The European Union Strategy for the Baltic Sea Region (EUSBSR)** is the first macro-regional strategy in Europe. It aims at reinforcing cooperation within this large region in order to face several challenges by working together as well as promoting a more balanced development in the area. The Strategy was approved by the European Council in 2009 following a communication from the European Commission. In this respect, it provides an integrated framework for improving the environmental condition of the sea, transport bottlenecks and energy interconnections as well as facilitating the development of competitive markets across borders and common networks for research and innovation

¹⁵ Eight out of the fifteen priority areas are clearly within the scope of BONUS (1, 2, 3, 4, 5, 9, 13 and 14) while priority area 7, exploiting the full potential of the region in research and innovation is, fully aligned with the core objective of BONUS to "integrate the Baltic Sea system research into a durable, cooperative, interdisciplinary, well integrated and focused multinational programme in support of the region's sustainable development" (BONUS, 2010). In addition to these fifteen priority areas, the EU Strategy for the Baltic Sea Region foresees a number of horizontal cross-cutting actions that are vital for implementing the strategy.

¹⁶ Karin Nygård Skalman, Programme Manager of BSR Stars, VINNOVA, Sweden

sessions with relevant EUSBSR area coordinators (such as the CBSS Baltic-21¹⁷), workshops (such as on science and knowledge). Also close links have been established between the 10th Baltic Sea Science Congress and the 6th EUSBSR Annual Forum (in 2015). Ensuring this dialogue links common values and aims which are founded upon sound scientific evidence and communicated within effective stakeholder platforms to maximise macro-regional efforts towards a clean, prosperous and sustainable Baltic Sea.¹⁸

3.2 Alignment at strategic level: Cross border cooperation and synergies with JPIs Oceans

BONUS is also in synergy with and complement within geographic and thematic scope of the key strategic objectives **Joint Programming Initiative (JPI) 'Healthy and Productive Seas and Oceans'**¹⁹.

The possibilities for alignment between the strategic umbrella of JPI Oceans and the Article 185 BONUS programme are of remarkable importance and this has been recognised by their governing bodies. To this end, and in view of the necessity for Member States to optimize resources and maximize synergy, in 2015 a Joint Working Group was established by the BONUS Steering Committee (BONUS SC) and the Management Board of the joint programming initiative "Healthy and productive seas and oceans" (JPI OCEANS MB) consisting of a subset of Members of the JPI OCEANS MB and the BONUS SC. The group is jointly chaired and with terms of reference agreed by both governing bodies. This working group will be responsible for aligning the strategic research and innovation agendas of both programmes and developing concrete mechanisms of coordinating their implementation plans, also considering other relevant Joint Programming Initiatives, such as the JPI on Agriculture, Food security and Climate Change and the JPI Water challenges for a changing world. The activities of the proposed programme will also be coordinated with other thematic science programming initiatives, such as other regional initiatives e.g. PRIMA (partnership for research and innovation in the Mediterranean area) and BLUEMED (initiative for blue growth and jobs in the Mediterranean), the relevant ERA-NETs.

The remit of the WG includes the following:

- Facilitating exchange of information
- Advising on strategic research and innovation agendas and implementation plans of the two [JPI Oceans and BONUS A 185] in order to maximize their compatibility and achieve maximum synergy and impact of research and innovation supported by both programmes
- Advising on coordination of the calls for research and innovation projects issued by both programmes in order to avoid overlaps and seek maximum of synergy
- Initiating and overseeing arrangement of joint or coordinated support activities between BONUS and JPI OCEANS and other relevant actors in areas of e.g. human capacity building (such as schools, courses, scholarships, mobility actions etc.), dissemination of research and innovation results (such as conferences, sessions, workshops, exhibitions, publications etc.), activities promoting access to significant research infrastructures
- Facilitating exchange of the best practice in governance and advising on optimizing administration of both programmes thereby advancing management quality and cost effectiveness of everyday management.

In addition, to aid strategic alignment, the Director of JPI Oceans is a member of the Advisory Board for BONUS

This alignment will be reinforced in the new joint Baltic Sea and the North Sea research and innovation programme 2018–2023 that is being discussed with the European Commission.

¹⁷ Initiated by the Prime Ministers of the Baltic Sea countries in 1996, Baltic 21 is a macro-regional expression of the global Agenda 21 adopted by the United Nations "Earth Summit." The term Baltic 21 tags the CBSS Expert Group on Sustainable Development as well as a network of partners from different levels and sectors, working together in projects and policy development for increased sustainability and resilience in the Baltic Sea Region.

¹⁸ Commission staff working document (SWD)177 final, 2015

¹⁹ The Joint Programming Initiative Healthy and Productive Seas and Oceans (JPI Oceans) is established in 2011 as a coordinating and integrating strategic platform, open to all EU Member States and Associated Countries who invest in marine and maritime research. JPI Oceans covers all European sea basins with 21 participating countries and provides a long-term integrated approach to marine and maritime research and technology development in Europe.

3.3 Alignment at strategic level : Conduct of joint stakeholder consultation

The programme previews the involvement of the stakeholders in different phases of the BONUS Programme through the **stakeholders' consultation platform**.

According to the EU Parliament and Council co-decision²⁰, one of the three key objectives of the BONUS Strategic Phase is to establish stakeholder platforms, through which the relevant stakeholders would be able to contribute to the development of the BONUS Programme.

When developing the BONUS Strategic Research Agenda, it is crucially important to involve actors who actually design and implement marine and maritime policies in the Baltic Sea countries.

Strategic orientation workshops are organised and scheduled at the end of the transparent and thorough stakeholder consultations' cycle. During these workshops, the draft of the (updated) agenda is presented to a broad circle of stakeholders (national and regional stakeholders) including ministries in the Baltic Sea countries which deal with marine and maritime issues: environment, agriculture and forestry, fisheries, transport, energy and other government organisations²¹ of all the Baltic Sea states, intergovernmental organisations, European Commission, industries, NGOs and last but not least, the scientific community. The main purpose of the strategic orientation workshop is then to discuss each objective of the research agenda and to achieve a broad consensus among the research funding organisations and the stakeholders on the contents of the programme

3.4 Alignment at operational level: Contribution towards increasing collaboration with Russian funding agencies

BONUS has also increased collaboration outside of the European Union towards Russia²² and other third countries (countries that are not participating in BONUS nor are EU member states or associated) may support their national project participants in the BONUS programme through separate agreements.

Bonus has concluded several successful memoranda of understanding with relevant Russian research bodies. Under the terms of these agreements, the Russian funding agencies undertake to financially support a Russian participant within a BONUS project if it is also evaluated positively by both the Russian body and BONUS. The Russian funding agencies financed the Russian participants with own budget on principles of virtual common pot.

So far, this has worked very well, without any cases where a successful BONUS project including Russian participants has not also been considered positively by Russia.

This cooperation has been increased the collaboration between all Baltic countries and the involvement of Russia is essential and necessary for the implementation of BONUS objectives due to the extent of its influence on the Baltic. It also facilitates an important regional dialogue with all key players around the Baltic and this mobilisation ensures collective approach to tackle issues that are of EU concern within the Baltic and facilitate a common approach with those concerned with monitoring and improvement of the Baltic environment. In this respect, it facilities a common vision based on jointly undertaken research to address some of the major drivers of degradation of the Baltic from within all of the coastal states.

The mechanism for the involvement of Russia developed within BONUS could also be applied as a model to involve non-EU Member States within other EU research programmes.

²⁰ Article 2 point 3b of Decision No 862/2010/EU of the European Parliament and of the Council of 22 September 2010 on the participation of the Union in a Joint Baltic Sea Research and Development Programme (BONUS) undertaken by several Member States and OJ 30.9.2010, L 256/1

²¹ Research institutes under their governance tasked to produce knowledge that is needed for the implementation of their policies

²² This involvement started during the BONUS +. 7 projects with Russian participants supported with a total RFR contribution around 350 000 euros

Also HELCOM has also stressed that BONUS makes a substantial contribution to increasing cross-sectorial research collaboration with Russian research establishments and that this has enabled the involvement of Russian legal entities rather than only the more common direct involvement of scientists.

The first participation and involvement of Russian funding agencies within BONUS calls was in the **BONUS call 2012: Viable ecosystem**.

According to the bilateral agreement between BONUS and the Russian Foundation for Basic Research (RFBR), funding was granted to those Russian participants who were involved in projects that RFBR evaluated successfully. It funded 2 projects with Russian participants supported and for a total contribution of around 150 000 euros.

In the call 2015 (Blue Baltic), the Russian Foundation for Humanities (RFH) and BONUS launched a competitive call for joint research projects in the field of humanities and social sciences.

The call is aimed at promoting and supporting scientific cooperation between Russian and European researchers as part of the BONUS program. The call's terms and conditions suggest that the Russian side of joint projects is to be funded by the RFH, while their foreign partners are to be funded by BONUS. Joint projects are evaluated based on the information systems of the RFH and BONUS.

The competitive call for joint research projects is aimed at selecting and further funding of 2017-2019 projects according to the priorities common for all finance parties.

As part of the RFH–BONUS call 2015: Blue Baltic, the RFH supports research projects in the field of humanities and social sciences in priority directions approved by the BONUS Secretariat. The RFH provides financial support of up to RUB 1,000,000 per one year of project implementation with each project running for a maximum of three years. The Foundation awards grants for joint research only to the Russian project party.

3.5 Alignment at operational level : Joint use of research infrastructures

BONUS contributes significantly to the increase of **scientific excellence, level of interdisciplinarity and joint use of research infrastructures**.

In the terms of research infrastructures, BONUS Programme fosters on the joint use of the research infrastructures.

The Baltic Sea countries own and operate a considerable amount of research infrastructures and therefore the joint use of them is essential for enhancing research quality and impact. According to BONUS Decision²³, is foreseen that up to 25% of the EUR 50 million national contributions towards BONUS may be provided as an **in-kind infrastructure contributions provided free of charge to BONUS beneficiaries**. The provision of in-kind infrastructures is beneficial to Participating States and the related National Funding as, reduces the national cash contributions and per se creates added value and increases the efficiency of the limited resources towards research within the Baltic Sea countries.

The BONUS Programme listed an inventory with all the facilities (the research ships, field stations and advanced computing facilities) potentially available for the applicants to BONUS calls. Due to national differences concerning organisation of access to large infrastructures, the 'infrastructure provider' may in this context be the owner of the infrastructure, or the body administrating or granting the right to use a large infrastructure free of charge for the benefit of the BONUS projects. The national authorities provide research infrastructures to applicants and the use of them is subordinated to a bilateral agreement between a national infrastructure providers and BONUS EEIG.

²³ Article 3.2 of BONUS Decision no 862/2010/EU of the European Parliament and of the Council of 22 September 2010 on the participation of the Union in a Joint Baltic Sea Research and Development Programme (BONUS) undertaken by several Member States

3.6 Alignment at operational level: Strategies to strengthen human capacity-building in interdisciplinary science and science-based management

In addition to the joint use of physical resources, the human research capacity has been increased. Networking events and platforms have especially benefited **young scientists**. BONUS has contributed towards training and mobility of researchers by several measures such as setting up a young researchers group and organising career development activities (e.g. skills concerning presentation of research to a non-research audience) as well as encouraging mobility and best practices.

Education and training is an integral part of the Baltic Sea System science mission, as new knowledge arising from research – including lessons learnt and best practices – must be fed back into appropriate levels of the education, training, and human resources development system.

The programme wants to create the leaders of tomorrow and that the scientific community of tomorrow more fully understands the need for responsible and sustainable use of the seas, the role of the seas in human welfare, and the important linkages between science, policy, and society. Furthermore, as research is becoming increasingly inter- and multidisciplinary, opportunities for collaboration need to be stimulated in education and training that cross the traditional boundaries between disciplines, issues, and academic and maritime industrial sectors.

The areas of activity are:

- Providing support to pan-Baltic researcher training activities. This means establishing of a series of international BONUS PhD courses by providing supplementary competitive funding to project consortia for offering such courses;
- Coordinating the region's post-doctoral Baltic Sea System training activities. This will be achieved through establishing a Forum for Education and Training that will plan and facilitate the education, training, and professional development of researchers and technicians at all developmental levels through advancing intellectual, technological, information integration and team-building skills in a large but cohesive multidisciplinary forum;
- Supporting the mobility of young scientists by awarding individual stipends/grants to researchers and technicians for study/research/training and exchange arrangements; and
- Supporting young scientists' networking by arranging an annual Young Researchers Seminar focusing on topics of relevance to the Programme and by establishing BONUS Young Researcher Club to (i) serve as a region wide network of scientists who are in their early careers (PhD students and post-docs); (ii) help BONUS management to collect feedback about the specific needs of young researchers and concerning the effectiveness of the BONUS human-capacity building program.

3.7 Alignment at operational level :Develop dedicated dissemination instruments for effective impact on end-user.

As BONUS+²⁴, Bonus operates an open data policy. The Data arising from BONUS funded research are available to the scientific community. This includes storing the original data in common data bases and publishing the research results as far as possible in 'open access' literature.

It previews a dedicated **communication plan addressing the wide area of dissemination**, through an **Open Access** to original data in common data bases, the research results project.

BONUS follows a data policy which is based on the principle that publicly **funded research data** should be used for the public interest and therefore be openly available to the maximum extent possible. In particular, the aim is to ensure that the results and data follow the standards of the European Marine Observation and Data Network.²⁵

²⁴ The projects funded under the previous BONUS+ programme provided their data within the following publicly accessible databases: i) PANGEA database: geological data and ii) SeaDataNet: oceanographic data.

This means that:

- securing high quality of the data produced by BONUS projects is obligatory
- data are shared without any delays within the programme
- data is stored in publicly available data bases or results are published in open access publication fora All BONUS projects are requested to include a data management plan in the research proposals.

The adequacy of the plan will be part of one of the criteria in the proposal evaluation. The BONUS Secretariat maintains a metadata base of all data produced within the programme and it is accessible from the BONUS Portal.

The metadata and databases have been linked with ICES²⁶ and HELCOM, the main scientific organizations in the area.

Historically, ICES played an important role during the early years of BONUS, when it was a partner in BONUS ERANET, responsible for developing BONUS' first science plan and implementation strategy ten years ago. The scientific scopes of ICES and BONUS are very similar, the only differences being that BONUS is geographically limited to the Baltic Sea and includes innovation in a broader sense than ICES – BONUS, for example, funds eco technological projects which include companies aiming at developing new marketable products . Thus ICES, with its network of expert groups, offers a platform for the scientific community to identify knowledge needs and find appropriate links within and beyond the Baltic Sea region for creating excellent and highly relevant research projects which can be funded by BONUS.

Furthermore, ICES Scientific and Advisory Committees offer efficient mechanisms to convert research outcomes from BONUS projects to advising policymakers. Several experts of the ICES community contributed strongly to the shaping of the BONUS strategic research agenda 2011-2017. This represents a huge synergy created by the interlinks between the two organizations.

4. Overall limitations and difficulties encountered during implementation

4.1 Progress in managerial and financial integration

The BONUS legal funding mode for joint calls is administrated within a **virtual common pot**. Consequently, national funding institutions have chosen to make their payments directly to their respective national participants. In this case there are two funding sources (see Figure 4 creating a financial integration): i) EU funds are paid by BONUS EEIG to the project coordinator where they are held and released following the receipt of the equivalent matched national funding by the recipient concerned; ii) Bilateral funding agreements between BONUS EEIG and the national funding institution ensures respect of a standard grant agreement, the application of common rules and the right to audit.²⁷

Compared to **BONUS+**²⁸, a lean administration within BONUS 185 could not be achieved due to the 2-way funding and reporting scheme and the differences in national and EU funding rules. In future, more flexible instruments are needed to avoid legal restrictions. These instruments could/should involve flexible geometry and clear 1-way funding and reporting of joint projects.

This financial structure creates also a delay in the first phase of the project (selected projects) as each of the National Funding Institutions undertake national negotiations and funding decisions with their national

²⁵ European Commission 2009. Building a European marine knowledge infrastructure: Roadmap for a European Marine Observation and Data Network. Commission Staff working document. SEC/2009/499 final.

²⁶ The International Council for the Exploration of the Sea is a network of scientists, based on an international convention. The work of ICES is facilitated through this network of more than 4000 scientists, from over 350 marine institutes in 20 Member Countries and beyond (with experts coming from 45 countries). The ICES network engages in frequent collaborations with industry stakeholders, and with various inter-governmental, and non-governmental organizations.

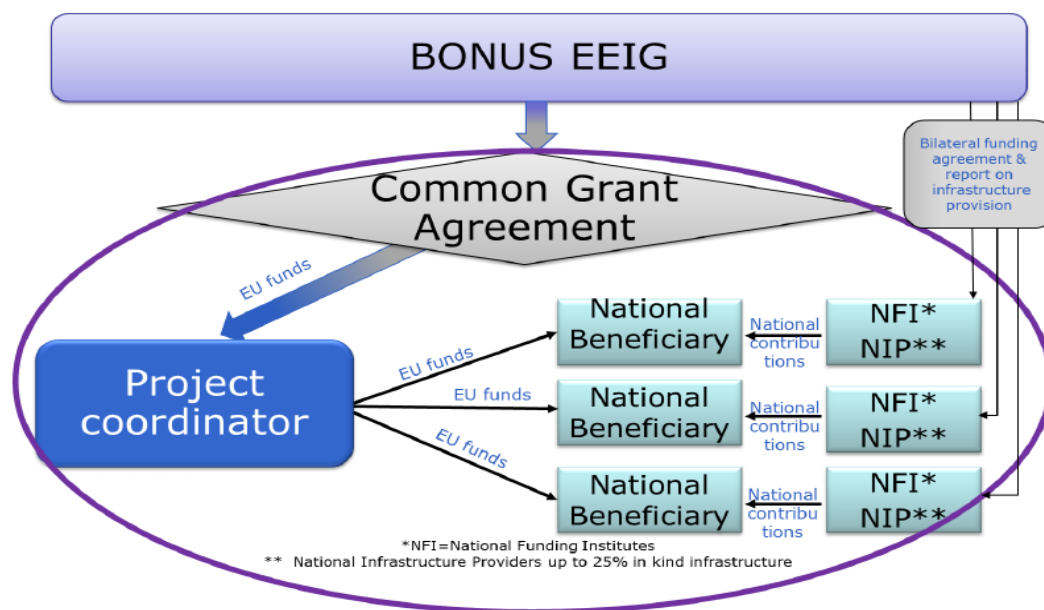
²⁷ Joint Baltic Sea Research and Development Programme BONUS-Interim Evaluation Report, 28 October 2014

²⁸ In Bonus + the funding is handled by one funding organization exclusively. The same is with reporting: The project leaders only report to the one responsible funding organization and it could be defined 1 way funding and reporting scheme.

beneficiaries within the selected projects in accordance with an agreement between BONUS EEIG and the respective National Funding Institution. Due to the separate national funding streams, BONUS beneficiaries must have agreements and receive payments from both BONUS EEIG and their respective national funding institutions²⁹. EU funds are paid by BONUS EEIG to the project coordinator where they are held and released following the receipt of the equivalent matched national funding by the recipient concerned.

This dual money flow is self-evidently less efficient than a 'real common pot'. This is a complex process, which, in some countries, requires beneficiaries to submit to the corresponding National Funding Institution a separate application concerning the provision of national funds. The National negotiations would not be required if there was a 'common pot' for national funds and the system would be more efficient if a decentralised management of national funds was foreseen.

Figure 4: Virtual common pot system



Source: **Joint Baltic Sea Research and Development Programme BONUS-Interim Evaluation Report, 28 October 2014**

Therefore, for the management of a complex financial structure involving multitude of different funders, BONUS has built an efficiently functioning dedicated implementing structure (the BONUS EEIG) which is governed by the participating countries and operated by the BONUS Secretariat. The BONUS Secretariat is the body that, in practical terms, ensures, with the guidance from the BONUS Steering Committee, the functioning of the BONUS programme(administrative, financial and contractual management).

After a rigorous assessment by the European Commission (EC), the BONUS EEIG has signed a delegation agreement with the EC in order to receive and distribute the Union contribution to the BONUS-185 programme(Implementation Agreement concluded between the European Commission and BONUS EEIG on 18 October 2012). In accordance with the conditions of this agreement, BONUS receives EU funds annually following the acceptance of annual reports.

For the Russian funds, bilateral agreements with Russian funding institutions have been established, this allowing participation of Russian scientists in BONUS projects.

In this way, BONUS has created a bridge between and for the European and Russian scientific communities.

²⁹ Finnish national funding is administered centrally by BONUS EEIG (50 MEURO)

4.2 Low Participation of SME

BONUS responds to the EU's growth and jobs strategy, strategy defined to tackle societal challenges by helping to bridge the gap between research and the market. This market-driven approach includes creating partnerships with the private sector and member states to bring together the resources needed.

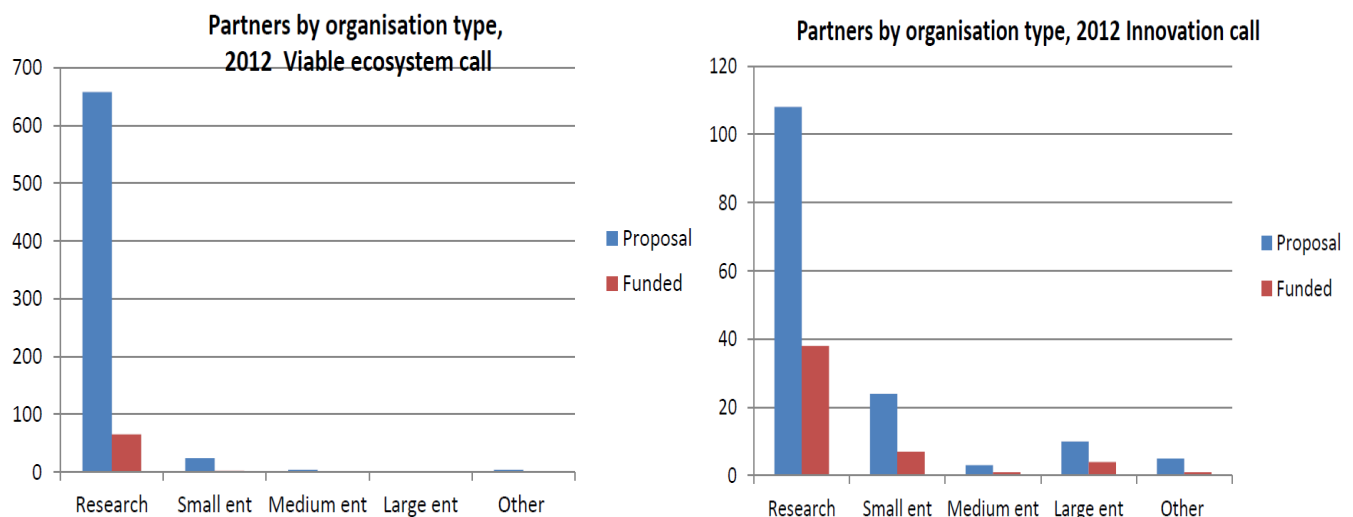
BONUS brings science and innovation close to one another, in particular through its calls open for SMEs and researchers.

Indeed, BONUS published its first two calls in November 2012 covering the topics Viable Ecosystem and Innovation. The calls varied in scale and target group, with the Innovation Call being designed for smaller projects involving SMEs.

This call experienced a significant decline between the number of pre-registered proposals (52) and the number of applications (33) submitted. A survey of applicants indicated that this was due to:

- the amount of funding available, especially compared to the effort required to apply;
- the requirement of SMEs to commit their own funds (BONUS provides 70% support);
- a lack of capacity by SMEs to lead a BONUS project consortium and a preference towards alternative ways of participating in BONUS projects e.g. through sub-contracting;

The data shown as there are some difficulties in encouraging the participation of SMEs in Viable Ecosystem and Innovation call



Source: **Joint Baltic Sea Research and Development Programme BONUS-Interim Evaluation Report, 28 October 2014**

The overall participation of SMEs is low. Within the Innovation Call, enterprises were 25% of the beneficiaries supported, of which 16% were SMEs. Within the Viable Ecosystem Call, only 3% of the beneficiaries supported were SMEs. Out of 119 BONUS project participants, 10 are SMEs.³⁰

However, in the BONUS call 2015: Blue Baltic', the participation of SMEs has been increased. It is due to the new eligibility criteria introduced for the first time in this call: at least 25% of the BONUS funding is direct to enterprises in "theme 2" projects (see Annex 3).³¹ The call is devoted to academic researchers, research institutes and to enterprises – the idea is that new innovative solutions to the environmental problems in the Baltic Sea can be developed and tested.

³⁰ Joint Baltic Sea Research and Development Programme BONUS Interim Evaluation Report

³¹ BONUS in Brief December 2016

The number of SME participants in the proposals was around 66 as well in successful consortia (16) in this call in bigger than in all previous BONUS calls together (in total 64 participants and 12 in successful consortia respectively). Also success rate for SME partners has increased from 18.8% from previous three calls to 24.2% in this call and with the share of SME partners as high as 15.8%.

The data shown an increase in the participation of SME but the numbers are still low but progress is being made.

5. Conclusions: Suitability and key factors of success

The establishment of common and joint structures to adopt and manage joint programmes and initiatives is needed for an effective and efficient regional cooperation.

The programme plays a key role in fostering joint programming within the EU as well as with the international actors involved in the relevant research and innovation arena of regional seas, including funders, academia, industries and public governance institutions. It will at the same time support EU macroregional and sea-basin strategies and contribute to building the EU marine and maritime research and innovation area.

Through mobilisation of the relevant national research and innovation funders, the programme ensures the necessary level of cooperation among the participating states and their financial and management integration.

Besides the strong structuring effect at the macro-regional level, a powerful consequence is also expected on the **national level**. Previously isolated research and innovation efforts by several research and innovation funders supporting interests of different sectors become much more impactful when structured under a durable, jointly coordinated programme.

Key factors of success:

1) At operational level:

- **Cooperation with non-EU/non-Associate countries through bilateral agreement.** Those funding research agencies undertakes to financially support their participants within a BONUS project.
- **Joint use of research infrastructures** by providing an inventory of the facilities available and by coordinating communication between infrastructure owners.(to be improved)
- **Develop dedicated dissemination instruments for effective impact on end-user.** The Data arising from BONUS funded research shall be made available to the scientific community. This includes storing the original data in common data bases and publishing the research results as far as possible in 'open access' literature.
- Development of **dedicated instruments for capacity building**, focusing on (i) involving the wider scientific community (EU Member States and non-EU Member States) and in order to benefit from their expertise and equipment; (ii) facilitating knowledge transfer through data and best practices sharing; and (iii) implementing training.

2) At strategic level:

- **Cross border cooperation and synergies with initiatives at EU level**, in particular EUSBSR
- Conduct of joint stakeholder consultations with the inclusive representation from all relevant sectors and during different phases of the programme.
- Developing a **Strategic Research Agenda** which implies that strategic research priorities are defined in consultation with different stakeholders- national and regional stakeholders including government organisations of all the Baltic Sea states, intergovernmental organisations, European Commission, industries, NGOs and last but not least, the scientific community
- Supporting the research agenda of two initiatives: the **Joint Programming Initiative (JPI) 'Healthy and Productive Seas and Oceans'**.

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Joachim Harms, German Member of the Steering Committee

Ulrich Wolf, National BONUS Contact Point for Germany

Andris Andrusaitis, BONUS Programme Manager

ANNEX 1. BONUS OBJECTIVES

The objectives of BONUS defined within the legislative decision ³²

General objectives achieved ³³
<ol style="list-style-type: none">1. To enhance the Baltic Sea Region's research capacity to underpin the development and implementation of 'fit-for-purpose' regulations, policies and management practices2. To respond effectively to the major environmental and key societal challenges the region faces and will face in the coming years3. To improve the efficiency and effectiveness of the Baltic Sea Region's fragmented environmental research programming and approach by integrating the research activities in the Baltic Sea System into a durable, cooperative, interdisciplinary well-integrated and focused multi-national programme.
Specific and operational objectives
<ol style="list-style-type: none">a. Establish a policy-driven Strategic Research Agenda;b. Increase sustainable cross-border and cross-sectorial public research programme coordination and integration;c. Raise the research capacity of the new EU Baltic Sea States;d. Mobilise additional financial resources through enhanced cross-sectorial Baltic Sea system collaboration;e. Establish appropriate Stakeholder Consultation platforms based on inclusive representation from all relevant sectors;f. Establish appropriate implementation modalities to enable effective implementation of the BONUS programme through a joint management and legally based governance structure;g. Launch at least three cross-thematic, strategically focused and multi-partner joint calls for research proposals

³² Decision No. 862/2010/EU of the European Parliament and of the Council of 22 September 2010

³³ The general objectives have been defined by the Article 185, which seeks to integrate national research programmes and as a consequence requires integration at three levels:

- a) Financial integration which may be achieved through a 'common pot' that pools Participating States' and EU funds and common funding rules;
- b) Managerial integration such as management by a dedicated implementation structure;
- c) Scientific integration by the establishment of central programming and a common excellence-based evaluation.

ANNEX 2. THEMES CALLED FOR BONUS CALL 2015: BLUE BALTIC

BONUS strategic objective	Themes called	Additional eligibility conditions
Theme 1		
1: Understanding the Baltic Sea ecosystem structure and functioning	<p>Theme 1.3: Food web structure and dynamics</p> <p>Theme 1.4: Multilevel impacts of hazardous substances</p>	None
2: Meeting the multifaceted challenges in linking the Baltic Sea with its coast and catchment	<p>Theme 2.4: Eco-technological approaches to achieve good ecological status in the Baltic Sea Focus on (i) economic models supporting elaboration of regulations and incentives facilitating eco-technological development and on (ii) an evidence-based review of the feasibility of new technological solutions and/or bio manipulation methods.</p>	None
3: Enhancing sustainable use of coastal and marine goods and services of the Baltic Sea	<p>Theme 3.5: Sustainable aquaculture in the Baltic Sea Focus on scientifically justified criteria enabling environmentally balanced and socially accepted aquaculture production across the Baltic Sea region.</p>	None
4: Improving the capabilities of the society to respond to the current and future challenges directed to the Baltic Sea region	<p>Theme 4.2: Linking ecosystem goods and services to human lifestyles and well-being Focus on quantification of the socioeconomic value of the ecosystem services and developing models for comparative and consequential analyses of cumulative benefits and trade-offs among different marine ecosystem services.</p> <p>Theme 4.3: Maritime spatial planning from local to Baltic Sea region scale Focus on (i) applying the ecosystem approach in maritime spatial planning (MSP), particularly, developing an ecologically and socio-economically sound network of protected marine areas covering the whole Baltic Sea and (ii) exploring the needs and establishing a region-wide data exchange network in support of MSP in the Baltic Sea.</p>	None
5: Developing improved and innovative observation and data management systems, tools and methodologies for marine information needs in the Baltic Sea region	<p>Theme 5.1: Developing and improving scientific basis for integrated monitoring programmes for continuous assessment of ecological status and human pressures</p>	None
Themes 2		
2: Meeting the multifaceted challenges in linking the Baltic Sea with its coast and catchment	<p>Theme 2.4: Eco-technological approaches to achieve good ecological status in the Baltic Sea Focus on (i) improvement of retention and recirculation of nutrients and other chemical substances, (ii) new methods for improved wastewater treatment efficiency for xenobiotics and persistent micro- and nanoparticles, (iii) new methods for recovery of substances from waste and sediments, (iv) new methods for retention and reduction of air pollution from energy production and transportation, (v) new testing methods for sewage, leachate from landfills, wastewater and storm water and (vi) new methods for restoration of marine and coastal habitats.</p>	Projects will be selected for funding only on a condition that at least 25% of the requested BONUS funding goes to enterprises

<p>3: Enhancing sustainable use of coastal and marine goods and services of the Baltic Sea</p>	<p>Theme 3.5: Sustainable aquaculture in the Baltic Sea Focus on (i) new regionally based fish feed ingredients and on (ii) recirculation and other technologies allowing efficient removal or retrieval of nutrients and pathogens and minimised risk of escapees.</p>	<p>Projects will be selected for funding only on a condition that at least 25% of the requested BONUS funding goes to enterprises</p>
<p>5: Developing improved and innovative observation and data management systems, tools and methodologies for marine information needs in the Baltic Sea region</p>	<p>Theme 5.2: Developing and testing innovative in situ, remote sensing and laboratory techniques Focus on remote sensing, particularly, on full usage of capabilities of the new instruments and developing dedicated and locally calibrated algorithms that could enable usage of remote sensing in the Baltic Sea monitoring.</p> <p>Theme 5.3: User-driven new information and communication services for marine environment, safety and security in the Baltic Sea</p>	<p>Projects will be selected for funding only on a condition that at least 25% of the requested BONUS funding goes to enterprises</p>