

BONUS annual review 2019: Research results of BONUS funded projects are making major contributions to implementation of the Baltic Sea related policy action plans

The aim of BONUS, the joint Baltic Sea research and development programme (www.bonusportal.org), is to enhance region's research capacity and underpin the development and implementation of 'fit-for-purpose' regulations and management practices. This is done in order to respond effectively to the major environmental and key societal challenges which the region faces, and will face, in the coming years. Also, another aim of BONUS is to improve the effectiveness of the Baltic Sea region's 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



BONUS strategic research agenda is sufficiently covered

By the end of 2019, BONUS had launched five calls (2012 (two calls), 2014, 2015 and 2017), and selected 48 projects for funding. So far, 28 projects of the *Viable ecosystem* and *Innovation* calls of 2012 and *Sustainable ecosystem services* call of 2014 have been completed while 12 projects of *Blue Baltic* call 2015 and 8 projects of *Synthesis* call 2017 continue. All 19 themes of the *BONUS strategic research agenda (SRA)* are satisfactorily covered. The topics of the final *Synthesis* call extend across the strategic objectives and themes of the SRA. These knowledge synthesis projects are expected to analyse as broad body of research outputs as necessary for robust and unbiased review and credible gap analysis, including, but not limited to, the outputs of research done within BONUS.

Highlights from the project reports

The research results – based on the jointly agreed BONUS SRA – are making major contributions to

To date BONUS has funded 48 projects close to a total value of EUR 100 million. The BONUS strategic research agenda themes as covered by BONUS-funded projects. Project name shows the key theme, coloured circles are for sub-themes.

• BONUS call 2012: *Viable ecosystem*' (green), implementation of the projects 2014–2018

• BONUS call 2012: *Innovation*' (red), implementation of the projects 2014–2017

• BONUS call 2014: *Sustainable ecosystem services*' (orange), implementation of the projects 2015–2018, and

• BONUS call 2015: *Blue Baltic*' (blue), implementation of the projects 2017–2020.

• BONUS call 2017: *Synthesis*' (purple), implementation of the projects 2018–2020.

RESEARCH THEMES (ABBREVIATED TITLES)	THE SRA THEMES' COVERAGE
1.1 Dynamics of biogeochemical processes	
1.2 Changing biodiversity	BAMBI, BIO-C3
1.3 Food web structure and dynamics	BLUEWEBS, XWEBS
1.4 Impacts of hazardous substances	BALTHEALTH, MICROPOLL
2.1 Changes in catchment land cover patterns	SOILS2SEA
2.2 The role of the coastal systems	COCOA
2.3 Integrated coastal management	BALTCOAST
2.4 Eco-technological approaches	MICROALGAE, OPTITREAT, PROMISE, SWERA, ZEB, CLEANWATER, RETURN
3.1 Maritime risk analysis and management	STORMWINDS, BALTIMARI
3.2 Effects of air and water pollution by shipping	SHEBA
3.3 Improving stock assessments, spatial heterogeneity of stocks	INSPIRE
3.4 Evaluation framework for fisheries management	
3.5 Sustainable aquaculture in the Baltic Sea	CLEANAQ, FLAVOPHAGE, OPTIMUS
4.1 Governance structures, performance and policy instruments	CHANGE, GO4BALTIC, GOHERJI, MIRACLE, TOOLS2SEA, DESTONY
4.2 Linking ecosystem goods and services to human lifestyles and well-being	BALTICAPP, ROSEMARIE, MARES
4.3 Maritime spatial planning	BALTSPACE, BASMATI
5.1 Integrated monitoring programmes	BLUEPRINT, INTEGRAL, SEAM, FUMARI
5.2 Innovative measurement techniques	AFISMON, FERRYSCOPE, FISHVIEW, HARDCORE, PINBAL, ECOMAP, SEAMOUNT
5.3 User-driven ICT services	ANCHOR, ESABALT, GEOILWATCH

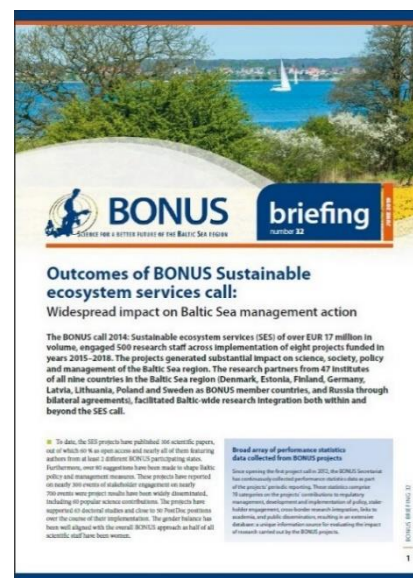
development and implementation of the Baltic Sea related policy action plans. Resulting from efficient activities and communications towards stakeholders, BONUS has established itself firmly in the broad landscape of key networks crossing over a variety of sectors in the Baltic Sea region.

By the end of this reporting period the final three projects of the ‘BONUS call 2014: Sustainable ecosystem services’ (BONUS GO4BALTIC, GOHERR and MIRACLE) were completed (other five projects of this call were completed by the end of 2018). The BONUS Secretariat examined final reports of these projects, requested corrections, if necessary, and approved them. The summary statistics collected about the projects’ performance revealed that the projects are contributing significantly to the aims of the programme: By the end of projects they had made 85 suggestions for designing, implementing and evaluating the efficacy of relevant public policies and governance on international, European, the Baltic Sea region or national level and organised 112 stakeholder meetings.

More than 600 scientists from the BONUS projects have participated in 368 stakeholder committees. Also, most of the projects have been active in organising stakeholder events and involving stakeholders from the very beginning of their projects’ implementation. Altogether projects have organised more 250 different international, national and regional stakeholder events during the implementation period.

In 2019, a total of 186 peer reviewed articles acknowledging BONUS funding were published, with the total number of papers climbing now to 716 (end of 2019 situation). In addition, a total of 53 PhD thesis have been defended acknowledging BONUS funding.

Click on the BONUS briefings pictured on the right to download these and find out more about the impact generated by the BONUS *Viable ecosystem* and *Sustainable ecosystem services* projects.



Clustering and cooperation for stronger impact of research



BONUS continued its clustering efforts over the reporting period and looks forward to supporting the next two BONUS Symposia scheduled for the 2020 of joint effort by BONUS FUMARI, INTEGRAL and SEAM projects in May and BONUS BLUEWEBS and XWEBS projects later in 2020. Also, the BONUS-funded knowledge synthesis project – BONUS ROSEMARIE – collaborates with Horizon 2020 project SOPHIE on the linkages between human wellbeing and marine and coastal environment, and for example, together they convened a workshop *Future Outlooks on Oceans and Human Health for the Baltic Sea* in October 2019.

Strong science-policy interface

The highlight of the year for BONUS was the [12th Baltic Sea Science Congress](#) held at the Stockholm University during the week 19-23 August. BONUS, as a co-organiser of the congress sponsored a strong policy-science component. This underlined presence at BSSC portrayed well BONUS emphasis on importance of the necessity for clear and well-structured science communication by the scientific community which at its best can create strongest possible impact. The BSSC 2019 was also the last co-organised Congress by BONUS in the current BONUS Art. 185 lifespan.

In the opening plenary of the BSSC, attended by close to 400 registered participants, BONUS brought to the stage a panel of leading scientists and journalists that took part in a fast-paced mock press conference titled [What does society really want to know about the changes in the Baltic Sea and why it matters?](#) The session was moderated by [Nancy Baron](#), the world renown science-communication trainer and Science Outreach Director of [COMPASS](#). The scientists also got a chance to pitch their science in the 'BONUS Pitch Pit' -event where they were given feedback in front of a fully packed room of spectators by a Pulitzer prize winning journalist, the news editor of the Science Magazine as well as prominent journalists from Finland, Latvia and Sweden.



What does society really want to know about the changes in the Baltic Sea and why it matters? From right: Nancy Baron, COMPASS, Alf Norkko, University of Helsinki, Michelle McCrackin, Stockholm University, Anna Sobek, Stockholm University, Erik Kjellström, Swedish Meteorological Institute, Henrik Österblom, Stockholm University, Sandra Kropa, Latvia's national TV and Radio, Peter Buchert, Hufvudstadsbladet, David Malakoff, Science and Kenneth R Weiss, independent reporter. Photo: BONUS EEIG

Already on the previous day, the [7th BONUS Young Scientist Club](#) convened with Nancy Baron introducing to the over 70 participants the COMPASS message box as a powerful tool in improving one's science outreach work. The feedback collected from the participants was overwhelmingly positive. In particular, the possibility to interact and receive feedback from the leading journalists was hugely appreciated.



Another BONUS highlight of 2019 was earlier in March when the 40th meeting of the Helsinki Commission (HELCOM 40-2019) convened in Helsinki. During the BONUS special session, BONUS BAMBI that deals with genetic variations and climate change, BONUS BALTICAPP on climate change and its effects on the Baltic Sea, and BONUS GO4BALTIC that looks into the cost-effectiveness of Baltic Sea environmental projects were presented. Also, the HELCOM members particularly welcomed the BANOS CSA initiative and mandated HELCOM to deepen the regional cooperation within the new platform and its sister organisations from the other seas, notably on sharing scientific knowledge to reach the ecological objectives set for the Baltic Sea.

Communications and dissemination

During the reporting period, 70 % of the communications effort switched in to developing different communications and dissemination elements in developing the framework of the successor programme BANOS, the Baltic and North Sea Research and Innovation Programme (as planned in the BANOS CSA). On this backdrop, key communications tools and means were nevertheless continued to be put in practice



as part of the wider BONUS programme delivery. The ultimate aim of the communications effort continued to be in seeking and seizing opportunities to enhance scientific knowledge and its use across different policy and socio-economic stakeholders and stakeholder groups.

The BONUS website at www.bonusportal.org recorded some 30 000 visits, over 20 000 unique visitors and 95 000 pageviews. In 2020, however, a complete overhaul of the electronic BONUS media will be carried out, including the main website, so that all the important elements will be migrated to the future programme's website and its use, and/or as appropriate, to future archives (as planned in the BANOS CSA).

Effective use of resources

The funding for the projects of the five BONUS calls 2012, 2014, 2015 and 2017 (including in-kind, free of charge infrastructure contributions) constitute 95,4 % of the total funding of EUR 98,5 million reserved for implementing the BONUS programme. From the total cash contribution – EUR 26 million – reserved for funding the projects of the 'BONUS call 2012: Viable ecosystem', 99 % is consumed after finishing the projects, respectively 96,5 % of the close to EUR 6 million cash funding for projects of the 'BONUS call 2012: Innovation' and – after the end of the third reporting period – 99 % of the EUR 17 million cash funding for projects of the 'BONUS call 2014: Sustainable ecosystem services'. After the second reporting period the 'BONUS call 2015: Blue Baltic' projects had consumed 54 % of the EUR 30 million cash funding. The total EUR 5 million contribution reserved for the running costs of the BONUS programme was consumed by the early 2019 and since then, the running costs of the BONUS programme have been covered with the contributions of the national funding institutions only. By the end of the reporting year, BONUS has signed 27 bilateral agreements with 19 national providers of in-kind, free of charge research infrastructures from seven BONUS countries (all except Latvia).

BONUS EEIG has obtained reasonable assurance on the legality and regularity of the project expenditures during this reporting period with also financial audits of the beneficiaries of the BONUS projects carried out as planned by the end of 2019.