

BONUS BALTCOAST PROJECT (1 April 2015 to 31 March 2018)

The final publishable summary report

Date: 30 May 2018

1 Project outline of goals and results envisaged at the beginning of the project cycle

The **overarching aim** of the BONUS BALTCOAST project was to overcome the lack of a holistic approach for coastal research and management, which integrates different human activities with ecosystem capacity and environmental forcing. Therefore, BONUS BALTCOAST had the ultimate objective of developing a coherent and systematic management approach that encompasses multiple impacts in a spatially heterogeneous context. This was done using a Systems Approach Framework (SAF) as a tool to be applied through case studies that reflect current regional management challenges. Thereby a generic tool for integrated system assessment was developed.

The **main objectives** were:

- a) to further develop a SAF for science and policy integration in the coastal zone into an applicable, user-friendly tool with high practical relevance that allows 1) users to manage multiple, complex, and diverse issues in the coastal zone and 2) an integration of spatial information and concerns;
- b) to tackle major thematic coastal issues that require a comprehensive interdisciplinary approach, in a manner that is structured, transparent and provides a framework to deal with complex issues and which is applicable for evaluating solutions with end-users;
- c) to further develop and apply an indicator-based concept that allows users to measure the sustainability and the success of SAF, Integrated Coastal Zone Management (ICZM) and Maritime Spatial Planning (MSP), as well as a concept to integrate the SAF into existing policy frameworks of EU (e.g. EU Strategy for the Baltic Sea Region (EUSBSR), EU Integrated Maritime Policy, EU Marine Strategy Framework Directive (MSFD), Water Framework Directive (WFD), Natura 2000 as well as the HELCOM Baltic Sea Action Plan (BSAP));
- d) to carry out intensive SAF training and education for academics and professionals in order to increase the capacity to deal with complex coastal issues in a systematic way;
- e) to strengthen and link existing Baltic activities and initiatives on Integrated Coastal Management (ICM) into a lasting Baltic coastal management competence network.

To achieve this, the work tasks of the BONUS BALTCOAST project were divided into seven work packages. In-depth analysis of at least 15 existing and documented ICM best-practise studies (work package WP 4 'Re-analysis studies') as well as the application of the SAF in six thematically and

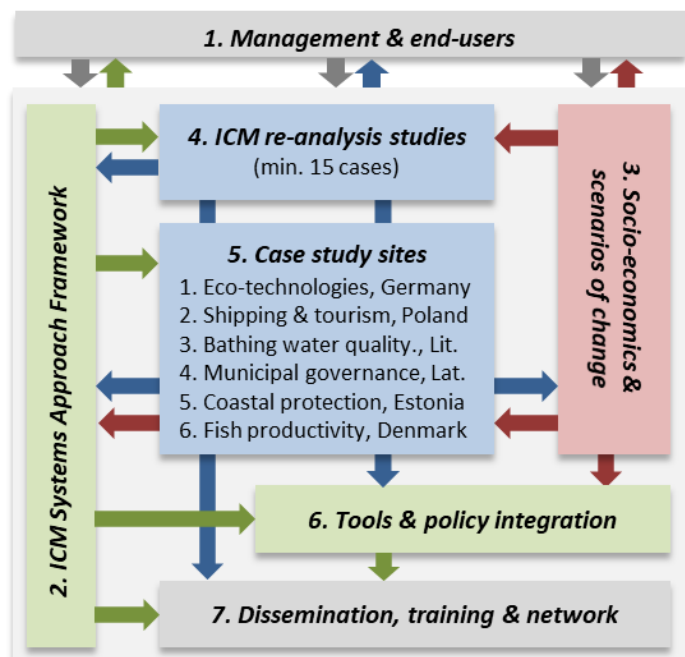


Fig. 1 BONUS BALTCOAST project structure, work packages and interactions

BONUS BALTCOAST project has received funding from BONUS (Art 185), funded jointly by the EU and the Innovation Fund Denmark, the Estonian Research Council, the German Federal Ministry of Education and Research, the Latvian Ministry of Education and Science, the Research Council of Lithuania, the Polish National Centre of Research and Development and the Swedish Environmental Protection Agency.

regionally contrasting Baltic sites (WP 5 'Case study sites') comprised the major inputs for the further development of the SAF (WP 2 'Systems Approach Framework'). Furthermore, they formed the basis for WP 6 'Policy integration, transfer & evaluation' and WP 7 'Dissemination, training & network'. Additionally, the case study sites tackled issues with high scientific and practical relevance, generating spatially transferable results and potential solutions. Aim of WP 3 'Socio-economics & scenarios of change' was to support and guide social and economic studies in the study sites. Another aim of WP 3 was to provide joint scenarios for climate, social and economic change in the Baltic for the entire project. Moreover, it provided input to and expertise for most other WPs. WP 6 'Tools & Science-Policy Integration' aimed at integrating important results and developing innovative concepts. Tasks within WP 7 were to disseminate the results, carry out intensive training and capacity building and ensure that major elements of the project will survive in a lasting Baltic ICM network.

2 Work carried out in the project

During the first project year, 19 existing and documented ICM case studies were reviewed to analyse which steps and elements of the SAF are already applied in ICM practice. The re-analysis case studies covered all Baltic Sea Region countries and a wide range of coastal themes and key approaches. Overall strengths, weaknesses and lessons learned were extracted. For this, a standardized questionnaire was developed in cooperation with WP 2 and WP 3. Lessons learned from the re-analysis cases were incorporated in the further development of the SAF, which was applied in the six BONUS BALTCOAST case studies. All case study teams received a SAF training in the beginning of the project and continuous support and guidance from WP 2 throughout the application process. Themes that were covered in the six case studies included fisheries, ecotechnologies, bathing water quality, improvement of local economy, coastal governance and coastal protection. Each case study covered all SAF steps from the Issue Identification to the System Assessment and implementation concepts were developed. Local stakeholder groups were engaged throughout the SAF applications. In total, 13 local stakeholder workshops were carried out in the case study sites. Lessons learned from each case study site were also used for the iterative further development of the SAF.

Supporting tools were developed, including an Indicator-based Sustainability Assessment Tool (InSAT), a Marine Ecosystem Services Assessment Tool (MESAT) and a Stakeholder Preference and Planning Tool. Their application within different SAF steps was tested in selected case study sites and as part of training and capacity building activities of WP 7 during BONUS BALTCOAST summer schools and graduate courses. The further developed SAF and its supporting tools as well as examples and major lessons learned from the case study sites provided the basis for the SAF handbook (<http://www.safhandbook.net/>). Complementary teaching and e-learning materials were developed and tested during BONUS BALTCOAST teaching activities including the two BONUS BALTCOAST summer schools.

A broad range of dissemination activities was used to promote science-policy interactions with a broad range of stakeholders. These included end-users and authorities, local stakeholders, the broad public and BONUS community as well as wider scientific community. Dissemination output included around 40 press releases, newsletter contributions, and short articles and the provision of regular information via the BONUS BALTCOAST website and social media channels (Facebook and Twitter). In addition, three BONUS BALTCOAST special issues of the popular science magazine "Coastal & Marine" were published and are publicly available: <https://www.baltcoast.net/dissemination/publications-via-coastal-marine-magazine.html>. The first issue was dedicated to the results of the re-analysis studies. The second issue focused on training activities and supporting tools for SAF. The third issue covered the further developed SAF and its application in the six case study sites. The magazines were used to inform end-users about the project's progress and used for wider dissemination purposes. To raise awareness about coastal issues in the Baltic and the BONUS BALTCOAST project, the photo competition "Me and my Baltic Coast" was organized. The best 20 of around 350 submitted pictures were selected for a touring exhibition, which has been shown in Finland, Lithuania, Latvia and Estonia and will continue to tour around the Baltic.

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To inform about ICM principles, the SAF, key aspects and highlights of the case study sites and the project in general, 14 interviews and two short BONUS BALTCOAST films were produced.

3 Main results achieved during the project

As a result of the re-analysis studies it became apparent that various ICM elements that are defined in the SAF are already standard within the Baltic Sea Region. Other deficiencies seem to be systematic challenges in the ICM processes. Deficiencies are mostly related to the following issues: 1) challenges in the establishment of an ICM core group including associated experts and ensuring effectiveness of the team in its multidisciplinary and holistic approach; 2) lacking performance of true participatory processes in which stakeholders are involved throughout the process and which make use of appropriate forums, media and communications; 3) focus on top-down approaches used, which often lacked genuine collaboration elements.

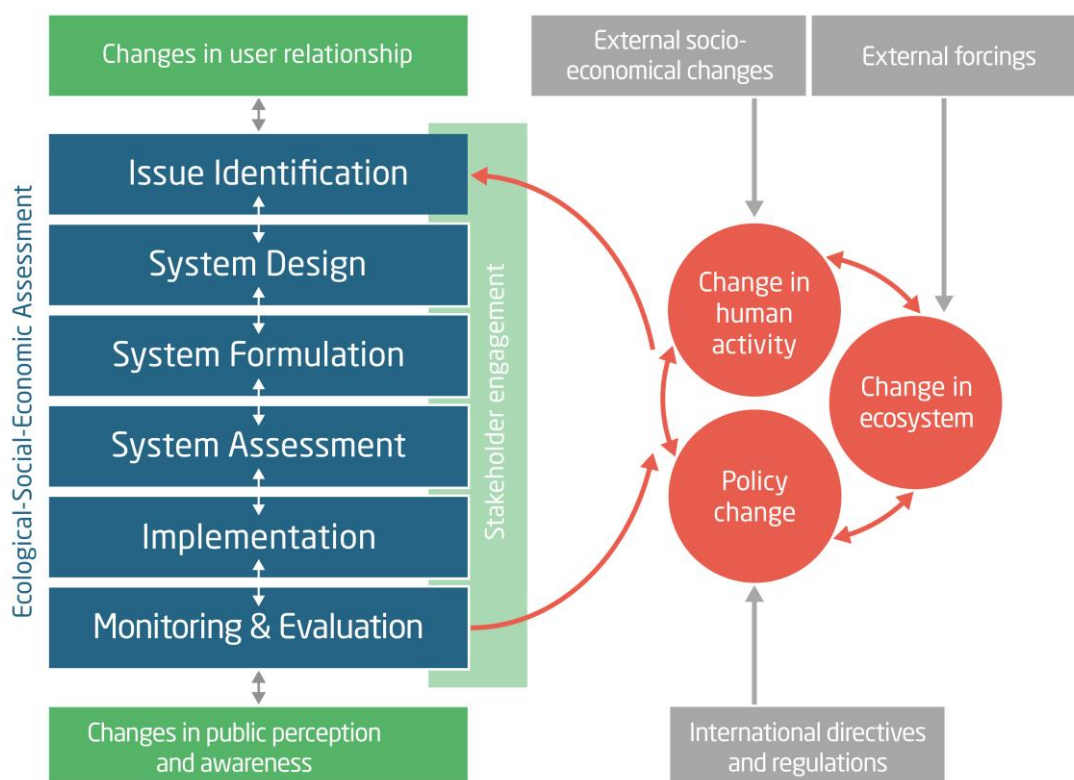


Fig. 2 Revised SAF in the socio-economic context and the role of external forcings and changes

Shortcomings of the SAF that were identified included the absence of a monitoring and evaluation step as well as a lack of supporting tools. This was included in the revised SAF, which now includes the new steps Implementation and Monitoring & Evaluation. A decision validation was included as part of the Implementation step. Due to feedback of end-users and SAF applicants in the case study sites, other steps were renamed to make them more understandable. Concrete actions and supporting tools with descriptions and instructions on how to apply them were included in the SAF handbook (<http://www.safhandbook.net/>). Moreover, as illustrated in the SAF handbook, the actions and activities within the six SAF steps were modified with the aim to improve the stakeholder participation by integrating governance-citizens collaborations and improving the science-policy interface.

With the revised SAF, the BONUS BALTCOAST project provided a practice-oriented and user-friendly approach that directly supports the practical implementation of EU coastal and marine policies. It provides a stepwise

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approach for practitioners that guides them through the full ICM cycle. Thereby, it helps to shorten the time from the identification of an issue to the implementation of a solution, and can be directly used by authorities. Due to its flexibility it can be adjusted to and implemented at different scales from local to international and allows joint cross-border applications. It is transferable and allows a wide range of applications.

The SAF handbook is described in an easily understandable way. Consequently, it is not only suitable for scientist and managers, but also the wider public. Intensive training and education activities during the BONUS BALTCOAST projects showed that SAF can be used to train young scientists and practitioners to think in holistic and interdisciplinary ways. Hence, the SAF helps to prepare them to better deal with complex and interdisciplinary coastal issues. The SAF handbook, teaching and e-learning material will continue to serve this demand also after the end of the project.

The six BONUS BALTCOAST case studies addressed concrete coastal issues of high societal relevance. They reflected regional management challenges such as fisheries, eco-technologies, bathing water quality, improvement of local economy, coastal governance and coastal protection. The engagement of stakeholder groups within each case study and throughout the full process provided suggestions towards solutions with high societal relevance.

Concrete suggestions relevant for public policies and governance that resulted from the project include:

- Proposals for the content, structure and missing components of development as well as goals and formulations of the strategic part of Latvian coastal long term thematic plan
- A proposal for the structuring and clarification of an indicator system for a long-term thematic plan for the Latvian coast
- Contributions to a stakeholder dialog concerning marine aggregate extraction and conflicts with fisheries in Denmark
- Design of nutrient trading markets, including credit stacking, for nitrogen and phosphorus for the Baltic Sea Region
- Assessment of carbon sequestration in climate policy on an international level
- Proposal for changes in fisheries management for cod in Denmark
- Suggestions to overlook policy practices related to beach nourishment and dredging in Estonia
- Proposal and outlook for a municipal coastal monitoring for Salacgriva municipality in Latvia

4 The continuity plan of the project

BONUS BALTCOAST has provided guidance, tools and approaches on the practical implementation of ecosystem-based management principles, which are embedded within coastal and marine policies in general and ICM in particular. Major results have been made publicly available as part of the handbook and the BONUS BALTCOAST website (www.baltcoast.net). They can be directly used by practitioners and to train students and young professionals. The project website will be restructured and continued to be used by project partners, as linkage to the handbook and for training and teaching purposes. Published Coastal & Marine magazines will be used further to disseminate project results and inform relevant networks and European Commission bodies about the final BONUS BALTCOAST project outcomes. This was further discussed during the special session on “Future of Coastal Management” that was organized by BONUS BALTCOAST and held as part of the EUROLAG8 Symposium in Athens in March 2018.

In addition, project results are currently being made available through scientific publications. More than 15 scientific papers that received full or partial support from the BONUS BALTCOAST project have already been published in peer-reviewed journals. Additional 13 manuscripts have been submitted and are currently under review, and several more publications are planned or already in preparation. All scientific publication resulting from the BONUS BALTCOAST are listed on the project’s website: <https://www.baltcoast.net/publications.html>

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The tools and approaches developed within BONUS BALTCOAST will be directly taken up and used within an upcoming BONUS Synthesis-project, in which BONUS BALTCOAST scientists are actively involved. They are and will further be used within various national and international projects. Moreover, experiences and results gained from case study sites were picked up and used within other projects including BONUS OPTIMUS and BONUS MICROPOLL.

The SAF applications within BONUS BALTCOAST were mostly science-driven. Furthermore, the framework and its supporting tools were further developed during the application process. Consequently, a more practice-oriented project that ensures a full application of the final BONUS BALTCOAST SAF and its supporting tool would be beneficial to ensure the transfer of the scientific knowledge and experience into practice, and is planned with the involvement of several BONUS BALTCOAST partners.