



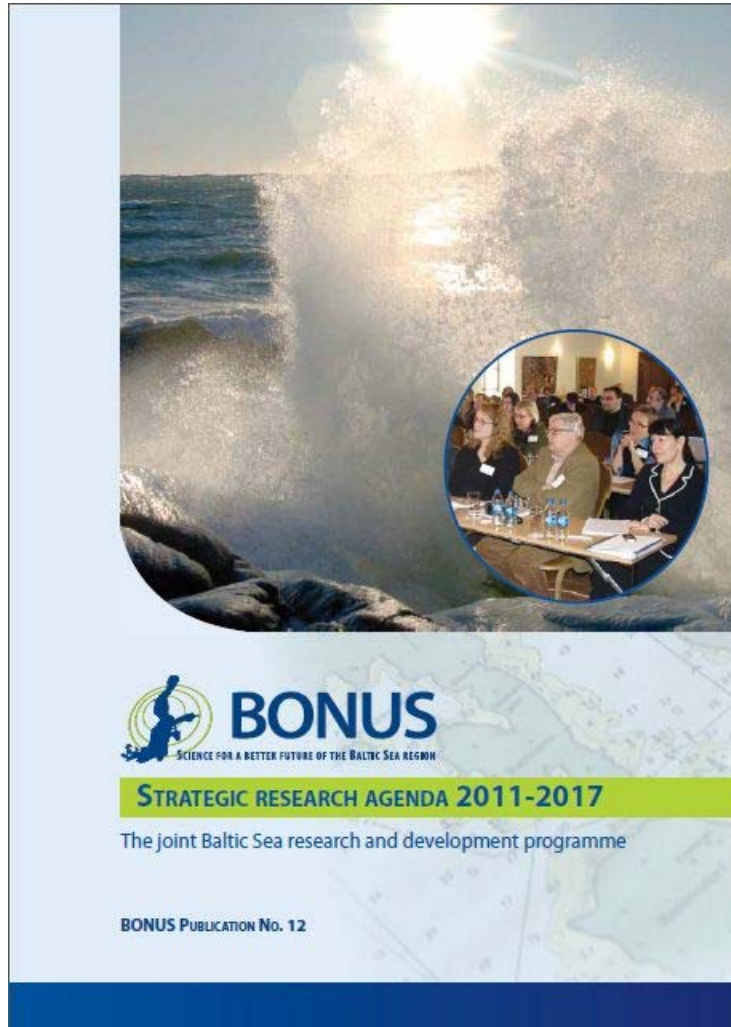
**BONUS calls
2011 -2017: CONTRIBUTION TO
THE EARTH SYTEMS SCIENCE**



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SCIENCE FOR A BETTER FUTURE OF THE BALTIC SEA REGION

Important news



- **BONUS strategic research agenda 2011-2017 available online**
- **In October 2011 also in hard copies**
- **Website downloads at**
www.bonusportal.org/sra
- **Executive summary documents also available online and hard copies**

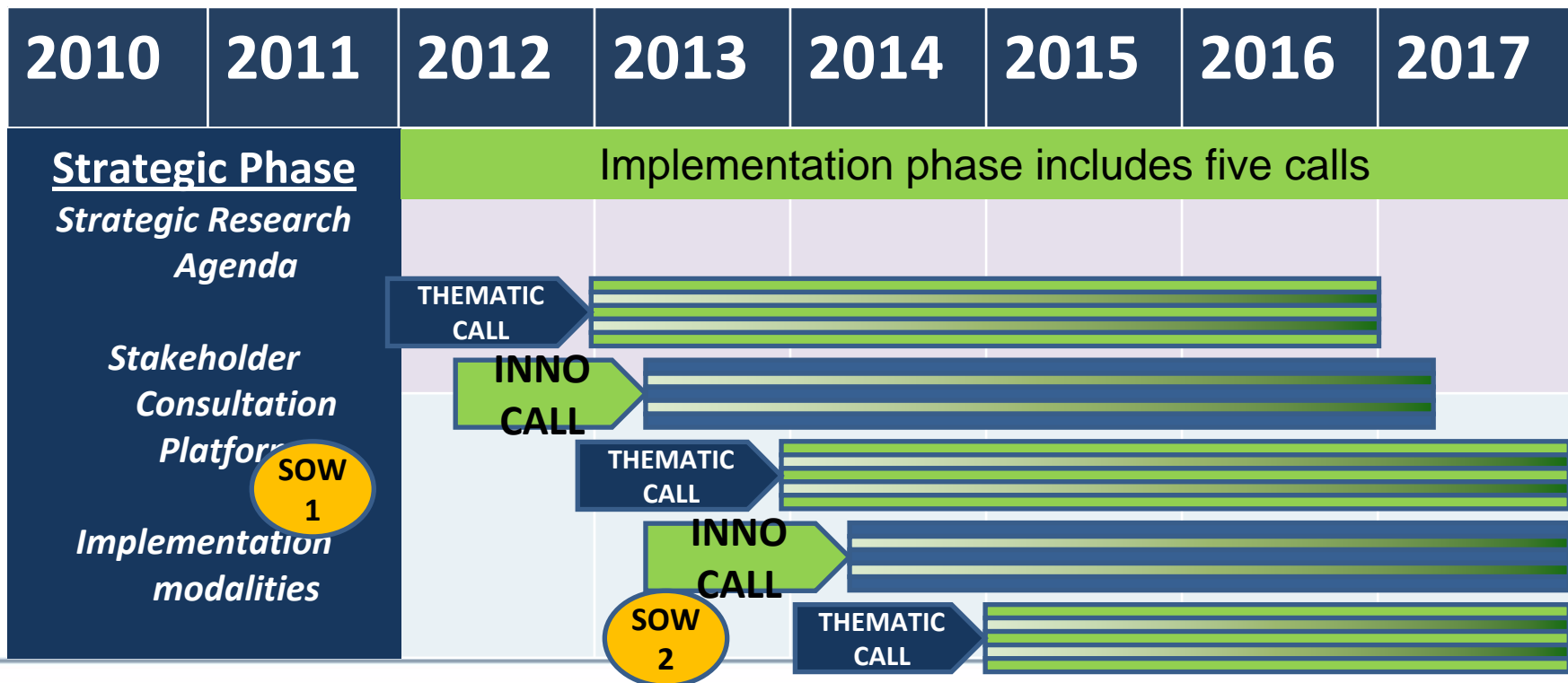
- **Use opportunity to hear the key results of BONUS+ directly from scientists: **BONUS FORUM**, Hotel Gdansk, 24 October, 11:00-18:30**
- **Register at**
www.bonusportal.org/BF11



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Emphasis of the research agenda



- **Ecosystem approach** – both marine and coastal aspects
- **Interdisciplinary** – incl. natural sciences, socio-economics
- **Transnational** – region-wide, cross-national approach
- **Fit-for-purpose** – demand for the research in the society, region
- **Policy-driven** – improvement and/or enhancement of the effectiveness of relevant policies
- **Stakeholder and end-user focussed** - integral part of the agenda, take up and use of the project results by end-users according to planned knowledge transfer measures

BONUS research themes	Calls				
	Thematic 2011	Innovation 2012	Thematic 2012	Innovation 2013	Thematic 2013
1.1. Dynamics of biogeochemical processes	●				
1.2. Changing biodiversity	●				
1.3. Food web structure and dynamics	●				
1.4. Impacts of hazardous substances	●				
2.1. Changes in catchment land cover patterns	●				
2.2. The role of the coastal systems	●				
2.3. Integrated coastal management			●		
2.4. Eco-technological approaches		●		●	
3.1. Maritime risk analysis and management			●		
3.2. Effects of air and water pollution by shipping			●		
3.3. Improving stock assessments spatial heterogeneity of stocks	●				
3.4. Evaluation framework for fisheries management	●				
3.5. Sustainable aquaculture in the Baltic Sea				●	
4.1. Governance structures, performance and policy instruments	●		●		
4.2. Linking ecosystem goods and services to human lifestyles and well-being			●		
4.3. Maritime spatial planning			●		
5.1. Integrated monitoring programmes	●				
5.2. Innovative measurement techniques		●		●	
5.3. User-driven ICT services		●		●	

Themes for thematic call 2013 will be confirmed after the review of the agenda in spring 2013



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THE SELECTED OUTCOMES



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Strategic Objective 1

Understanding the Baltic Sea ecosystem structure and functioning

Theme 1.1: Ecosystem resilience and dynamics of biogeochemical processes, including cumulative impacts of human pressures

- Improved understanding of the [...] drivers of the Baltic Sea and their future alterations by climatic impacts.
- Improved knowledge on ecosystem stability and resilience with regard to different natural processes, human pressures and climate.
- Reliable quantification of additive, synergistic and/or cumulative effects of human pressures on ecosystem structure and functioning.
- Estimates on qualitative and quantitative effects of climate on external and internal loading of nutrients and their availability to primary producers in different Baltic Sea basins.



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Strategic Objective 1

Understanding the Baltic Sea ecosystem structure and functioning

Theme 1.1: Ecosystem resilience and dynamics of biogeochemical processes, including cumulative impacts of human pressures (continued)

- Improved models of biogeochemical cycles (N, P, C, O, and other redox-sensitive elements), including bioavailability of nutrients, and identification of key factors controlling eutrophication in different parts of the Baltic Sea.
- New detailed information on differences of the effects of oxygenated, hypoxic and anoxic waters and sediments on biogeochemical cycles and food webs.
- Combining biogeochemical and food-web models to describe effects on ecosystem functioning and resilience.



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Strategic Objective 1

Understanding the Baltic Sea ecosystem structure and functioning

Theme 1.2: Causes and consequences of changing biodiversity

- Knowledge on sensitivity and resilience of marine biodiversity under different environmental scenarios including [...] the effect of human-induced environmental pressures as well as climate on spatial and temporal dynamics of species and habitats...



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Strategic Objective 1

Understanding the Baltic Sea ecosystem structure and functioning

Theme 1.3: Food web structure and dynamic

- Improved data and knowledge base for Baltic Sea food web models, being able to handle the impact of eutrophication, climate forcing, ...*etc. etc.*



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Strategic Objective 1

Understanding the Baltic Sea ecosystem structure and functioning

Theme 1.4: Multilevel impacts of hazardous substances

- Improved capacity to assess and predict interactions between hazardous substances and other stressors e.g., eutrophication, climate in order to advise protection and remediation measures at the appropriate temporal and spatial scales.



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Strategic Objective 2

Meeting the multifaceted challenges in linking the Baltic Sea with its coast and catchment

Theme 2.1: Natural and human-induced changes in catchment land cover patterns, including the role of e.g. agriculture, forestry and urbanization

- **Integration of spatially distributed and mediated effects of environmental pressures in the catchment-coast-sea continuum, with the emphasis on development of decision making tools, both in the political and management domains.**
- **An integrated assessment of the impact of climate change, in particular with a consideration of changes and impacts of extreme and rare events across the whole Baltic Sea catchment. The assessments are to be based on advanced, up-to-date projection and forecast tools using harmonised, holistic scenarios of all relevant drivers, and adequately addressing the different space and time scales of drivers, pressures and response actions, including e.g. appropriate down-scaling techniques.**



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Strategic Objective 2

Meeting the multifaceted challenges in linking the Baltic Sea with its coast and catchment

Theme 2.2: The role of coastal systems in the dynamics of the Baltic Sea

- Future projections, scenarios and support tools for decision makers that can be used to develop strategies for inner coastal waters with emphasis on trajectories of socio-economic development. Assessment of the present and future roles of coastal waters in the Baltic Sea area with regard to e.g. retention, transformation and transport of organic matter, nutrients and hazardous substances. Assessment of the physical and biogeochemical processes at the freshwater–seawater interface as well as changes in the food web dynamics.
- New systems of observations and monitoring and improved tools for projections and predictions of conditions in the context of climate change. Coupled physical-biogeochemical land surface, coastal zone and large-scale ocean models integrated with regional climate models.



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Strategic Objective 3

Enhancing sustainable use of coastal and marine goods and services of the Baltic Sea.

Theme 3.1: Enhanced, holistic cross-sector and cross-border maritime risk analysis and management, including effects of new technologies, human element, climate change effects in open water and in ice, and interaction with onshore activities

- **Analysis of the effects of the transmitted real-time and predicted meteorological conditions (wind, waves, ice) combined from both onboard and from shore-based stations' measurements of observed traffic situations in determining the risk levels and safest route for the vessel to follow both in open water and in ice.**



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Strategic Objective 4

Improving the capabilities of the society to respond to the current and future challenges directed to the Baltic Sea region

Theme 4.3: Maritime spatial planning from local to Baltic Sea region scale

- **Methods, tools and databases for spatial planning that will contribute to maintenance and development of ecosystem services along the catchment-coast-sea continuum.**



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Strategic Objective 5

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

Theme 5.1: Developing and improving scientific basis for integrated monitoring programmes for continuous assessment of ecological status and human pressures

- **Integrating recently done or planned infrastructure investments for marine research, environment and traffic into comprehensive next-generation monitoring and assessment activities.**



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Strategic Objective 5

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

Theme 5.2: Developing and testing innovative *in situ*, remote sensing and laboratory techniques

- **Advanced scientific information collection techniques specific to the Baltic Sea area amplifying the performance of next-generation monitoring programmes.**



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Strategic Objective 5

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

Theme 5.2: User-driven new information and communication services for marine environment, safety and security in the Baltic Sea area

- **New information and communication technology-based tools and services responding to the contemporary and future marine and maritime information needs in one or several end-user areas.**



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Where to find information?



www.bonusportal.org:

- BONUS SRA and summary document – www.bonusportal.org/sra , hard copies available in October 2011
- Call fact sheet, Guide for applicants, Guide for evaluators – when the call opens
- National contact points – www.bonusportal.org/contactpoints
- BONUS helpdesk for general questions, EPSS, legal questions: consortium agreement, IPR, interactive questions & answers section



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THANK YOU!

