

SmartSea – The Gulf of Bothnia as Resource for Blue Growth

Blue growth is a long term strategy of the European Union (EU) to enhance the sustainable growth of the maritime sector. Our surrounding seas have been drivers for the European economy for a long time, but still they have a great potential for further harnessing of natural resources and economic growth. Especially if the growth can be achieved in an environmentally sustainable way, benefits are obvious. It has been recently estimated that improvement of the state of the Baltic Sea would until 2030 create 900 000 jobs in the

whole Baltic Sea area, mainly in Blue Tech, tourism, real estate and building businesses (Dahlgren et al. 2015).

Coastal seas already experience multiple stressors like off-shore construction, pollution, eutrophication, shipping, over-fishing, and climate change. In order to obtain sustainable Blue Growth, it is necessary to localize and assess the current maritime activities, estimate their growth potential, and investigate their present and future effects on each other and on the environment.

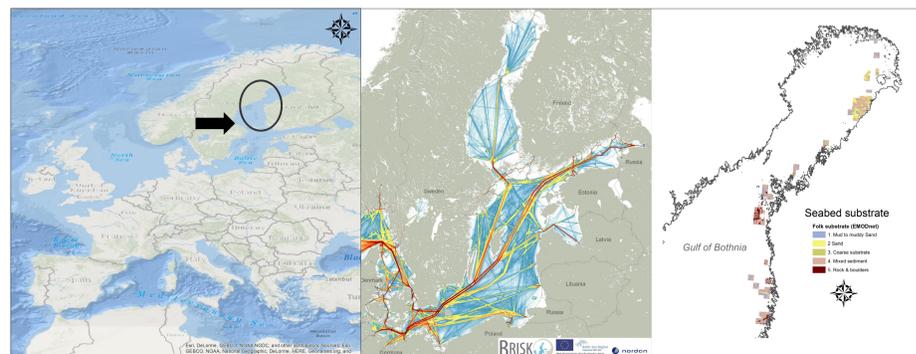


Figure. The Gulf of Bothnia, between Finland and Sweden, forms the northernmost part of the Baltic Sea (left). The area freezes yearly and the icebreakers are needed to keep the shipping routes open. Ship traffic density in the Baltic Sea 2008-2009 is shown in the Figure (middle). Marine geological information useful for both scientists and marine managers contains data on seabed substrates (right) among others.



SmartSea project is focused on the **Gulf of Bothnia** as its active maritime sector ensures vast potential for **Blue Growth***

-  Smart sea is active for the next **6** years
-  Smart sea plans **10-20** years in future

SMARTSEA'S OBJECTIVES AND EXPECTED RESULTS INCLUDE



ESTIMATE the impacts of human activity changes on Gulf of Bothnia's state



IDENTIFY key locations of natural resources and ecosystem functioning in the Gulf of Bothnia



STUDY new innovations for efficient Blue Growth, including sustainable fish farming for enabling recycling of the nutrients and reduce the impact of climate change significantly.



PROVIDE open source Marine Spatial Plan toolbox with open access data for commercial and non-commercial applications



CREATE a strategy for a Gulf of Bothnia as resource for sustainable growth



IDENTIFY obstacles of sustainable transition

* Blue Growth is the long term strategy to support sustainable growth in the marine and maritime sectors as a whole.

© Smartsea

Funded by: Strategic Research Council of Academy of Finland

The SmartSea project will assess how the Gulf of Bothnia will change in the next decades and strives to find out how the natural resources of the Gulf of Bothnia can be used sustainably.

The purpose of the SmartSea project is to support the growth of commercial marine activities in the Gulf of Bothnia region. The Gulf of Bothnia is an essential resource in terms of fish farming and wind power, for example, and it is also possible to make use of the geological natural resources of the gulf.

Moreover, the rapid growth of the commercial marine activities and the consequences of the climate change

may lead to conflicts between the different activities and harm the marine ecosystem of the Gulf of Bothnia. The SmartSea project aims to identify these risks and find solutions for the sustainable use of the sea.

SmartSea is one of the projects the Strategic Research Council of the Academy of Finland has selected for its newly founded 'Climate-Neutral and Resource-Secure Finland' research programme. The project will last for

six years (2015-2020) and its funding totals nearly 8 million euros. The project involves close to 40 researchers from eight different institutions: the Finnish Meteorological Institute (coordinator), the Finnish Environment Institute, Natural Resources Institute Finland, Geological Survey of Finland (GTK), VTT Technical Research Centre of Finland, the Universities of Helsinki and Turku and the Swedish Meteorological and Hydrological Institute (SMHI).



Geological Survey of Finland

Aarno T. Kotilainen*, Kimmo Alvi, Anton Boman, Jyrki Hämäläinen, Anu M. Kaskela, Jyrki Rantataro, Henry Vallius, Joonas J. Virtasalo and SmartSea project partners

Geological Survey of Finland (GTK), P.O. Box 96, 02151 Espoo, FINLAND (email: firstname.lastname@gtk.fi)

