The Gulf of Bothnia as Resource for Blue Growth - SmartSea

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 great potential for further exploiting of natural resources and economic growth. Especially if the growth can be achieved in an environmentally sustainable way, benefits are obvious. It has been 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).

However, coastal seas already experience multiple stressors like off-shore construction, shipping, pollution, eutrophication, 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 marine environment.

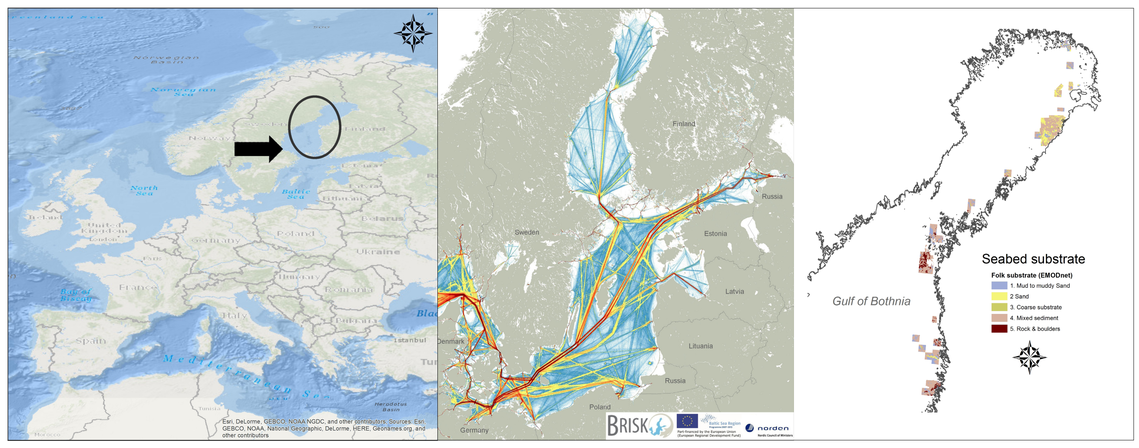

Figure. The Gulf of Bothnia, between Finland and Sweden, forms the northernmost part of the Baltic Sea (top left). Ship traffic density in the Baltic Sea 2008-2009 is shown in the Figure (top right). Marine geological information useful for both scientists and marine managers contains data on seabed substrates (lower) among others.

Figure. 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 (GoB) region, in the northern Baltic Sea. The GoB 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 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 GoB. The SmartSea project aims to identify these risks and find solutions for the sustainable use of the sea, and the project has already produced new detailed information on seabed structures and sediment dynamics in the GoB. The end products of the SmartSea project will include e.g. MSP Toolbox used in maritime spatial planning, spatial estimation of the effects of climate change to GoB region, and guidelines for the sustainable use of marine mineral resources and seafloor deposits.

SmartSea project is funded by the **Strategic Research Council of Academy of Finland**, grant No: 292 985. 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).

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