WP3: Spatial analysis of socioeconomic-environmental interactions

Harri Tolvanen, WP3 leader, University of Turku / Tallinn Nov. 16th 2017

European Union
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PLAN4BLUE
MARITIME SPATIAL PLANNING FOR SUSTAINABLE BLUE ECONOMIES

Interreg
Central Baltic

Aims of WP3 (2.1.2017-30.6.2019)

- **Thematic line 1**: Producing guidelines for spatial data utilisation in the official MSP process

- **Thematic line 2**: Spatial analysis, map production and support of other WPs in spatial issues

Methods of thematic line 2

- Collecting contemporary spatial data over the Gulf of Finland (HELCOM, Estonian Environmental Agency, Finnish Land Survey, Orbis database)
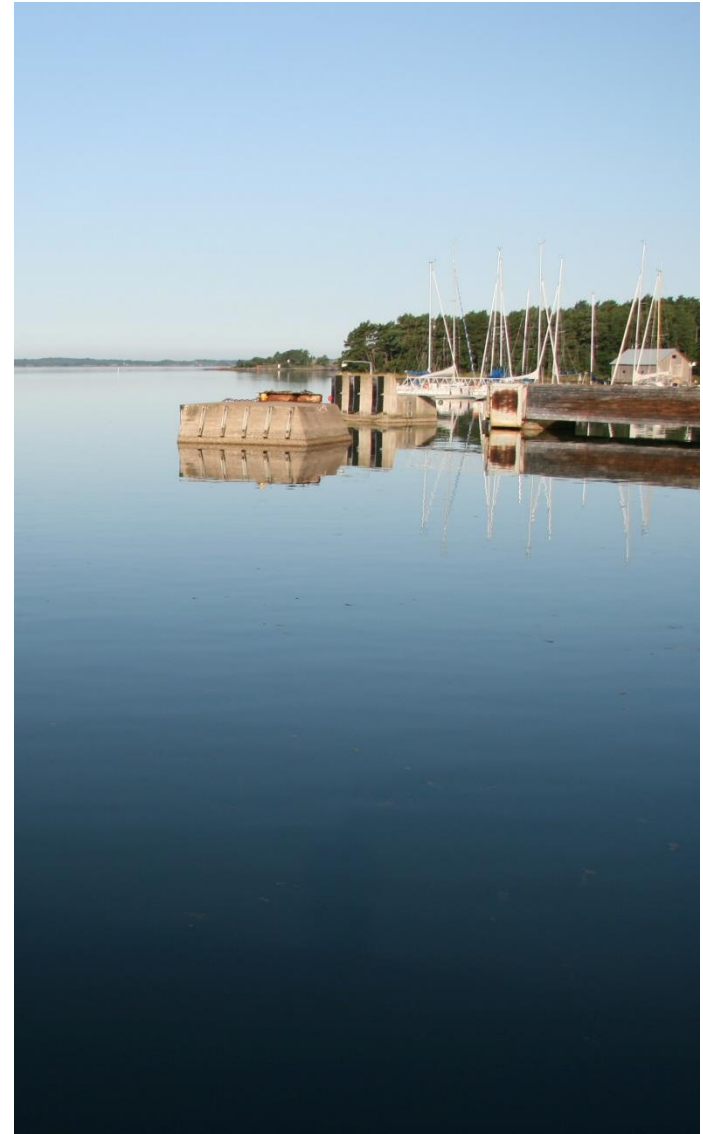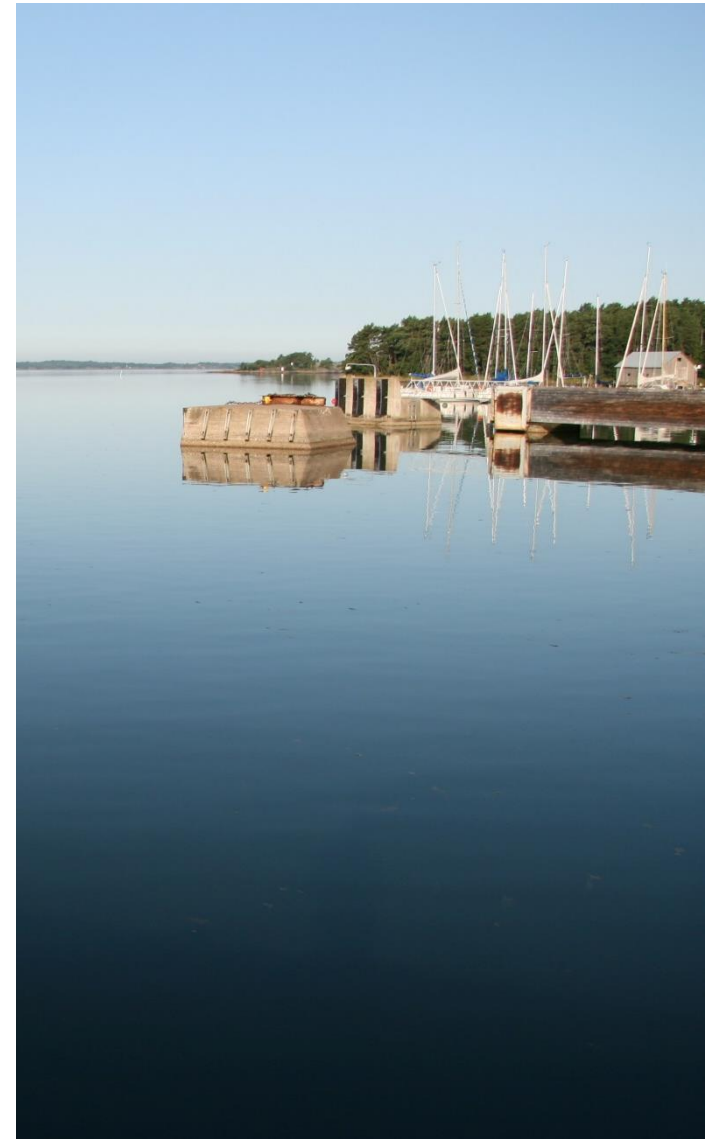
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- Setting the stage: drafting spatial patterns of experts' (Estonian and Finnish stakeholders) future expectations as maps

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- Visualizing first versions of Blue Growth scenarios as heatmaps: point density (Kernel density) of four sectors
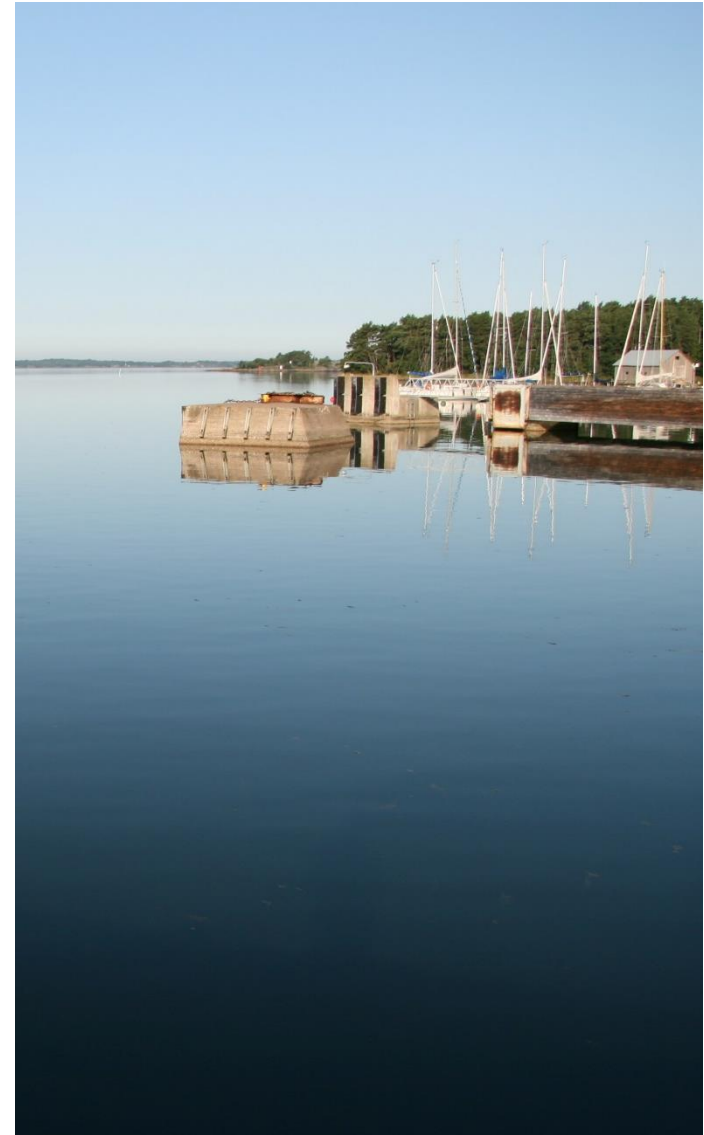
Data sources

- From **spatial data** perspective, a few preconditions are set:
  - Up-to-date information
  - Geographical coverage for the whole area
  - Uniform level of detail for the whole area
  - Uniform content (data types, languages etc.)
  - No restrictions for public use

- **Expert opinions** as basis for future scenarios
  - Development trends (non-spatial)
  - Locations (spatial!) of
    - Increasing activities
    - Decreasing or prohibited activities
  - Collected on-line and in workshops

Examples of spatial data sources

Table 1. Primary data providers (in alphabetical order) utilised for Plan4Blue background maps (see D.T3.5.1)

Provider	Coverage	Database	Web cite
IMO - International Maritime Organization	International	GISIS - Global Integrated Shipping Information System	https://gisis.imo.org/Public/Default.aspx
HELCOM - Baltic Marine Environment Protection Commission - Helsinki Commission	International	Baltic Sea data and map service	http://maps.helcom.fi/website/mapservice/index.html
EMODnet - The European Marine Observation and Data Network	International	EMODnet Data Portals	http://www.emodnet.eu/portals
Bureau van Dijk	International	Orbis	https://www.bvdinfo.com/en-gb/our-products/company-information/international-products/orbis
Estonian Land Board	Estonia	Estonian Geoportaal	http://inspire.maaamet.ee/home
Estonian Maritime Administration	Estonia	Estonian Geoportaal	http://inspire.maaamet.ee/home
Estonian Environment Agency	Estonia	Estonian Geoportaal	http://inspire.maaamet.ee/home
Statistics Estonia	Estonia	Statistical database	http://www.stat.ee/database
Estonian Environment Agency	Estonia	EELIS - Estonian Nature Information System - Estonian Environmental Register	http://loodus.keskkonnainfo.ee/eelis/default.aspx?state=1;-164545161;est;eelisand;;&lang=eng
Finnish Transport Agency	Finland	View & Download service of the Finnish Transport Agency	https://extranet.liikennevirasto.fi/extranet/web/public/latauspalvelu#
National Land Survey of Finland	Finland	NLS File service of open data	https://tiedostopalvelu.maanmittauslaitos.fi/tp/kartta?lang=en
Statistics Finland	Finland	Statistics Finland, open data and interfaces	http://tilastokeskus.fi/tup/tilastotietokannat/index_en.html

Examples of expert opinion data sources

Results and outputs

- Results of **thematic line 1**: Guideline documents about
  - MSP relevant cross-border data inventory
  - Data management
  - Spatial analysis
  - Map visualisation in MSP

- Results of **thematic line 2**: Spatial analyses and maps
  - Existing MSP spatial data into background information maps

Contemporary Gulf of Finland maps

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  - Existing MSP spatial data into background information maps
  - Interpretation of expert opinion input into map format

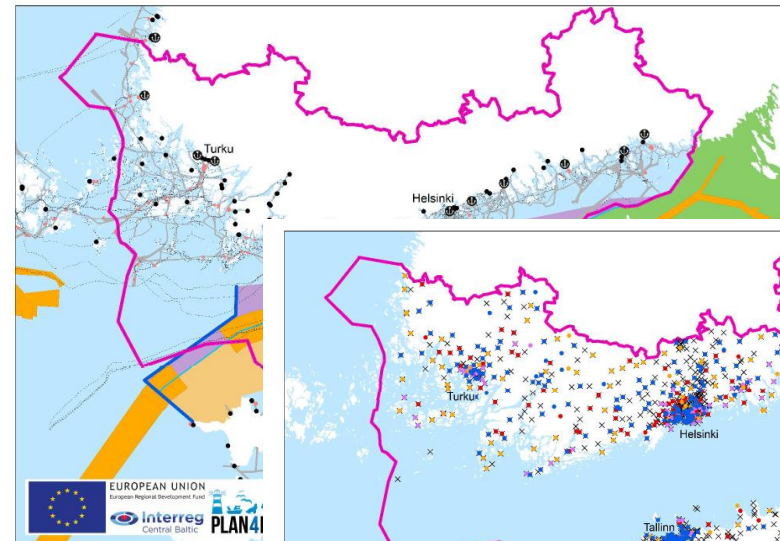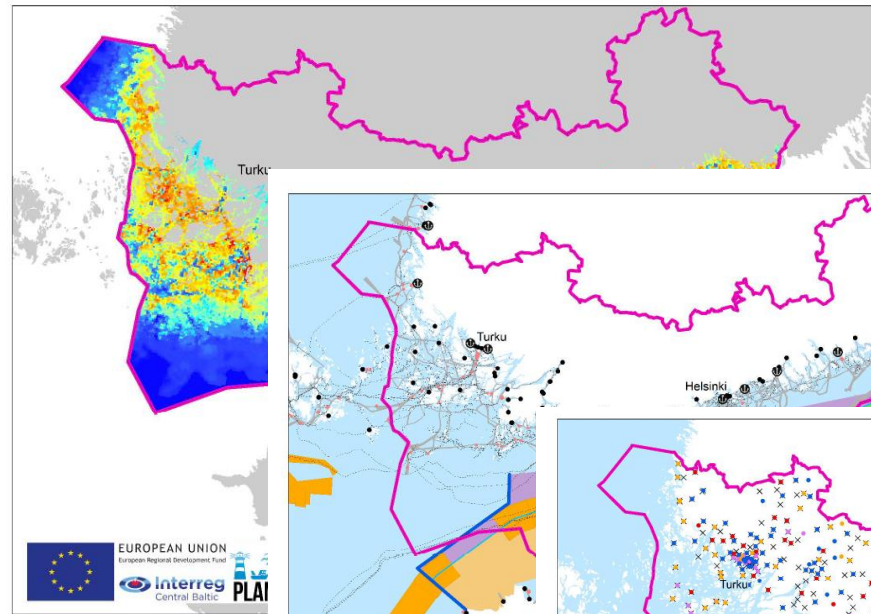Views of sea use 2050
Group: Riku, Hanna

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  - Filtering expert input data into sector-wise maps

Energy sector future use
combination map of Delphi panel and workshops

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Nordstream

Energy sector related activities/businesses

- Smart energy system
- Wind energy site
- Main pipeline
- Powercabels
- Biofuel
- Fossil fuel
- Underwater thermal energy
- Wave energy
- Power-, pipelines
- Nuclear energy
- Solar energy
- LNG
- Decrease/ total ban

Background map
- Project area
- Military area
- Conservation area
- Deep water navigation
- HELCOM_Sea

0   50   100 Kilometers

Data sources: Estonian Environment Agency, HELCOM, National Land Survey of Finland

Maritime sector future use
combination map of Delphi panel and workshops

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Maritime sector related activities/businesses

- Passenger port
- Other large port
- Key fairway area
- Shipping Routes
- Shipyard, uncertain importance
- "Clean tech", puhdas tekniikka ja kalusto merikuljetuksiin
- Laivanrakennus
- Laivojen purkaminen
- Merikuljetukset, kauppamerenkulku, luotsaus, hinaus
- Ruoppaus, väylien ylläpito
- Vapaa-ajan ja urheiluveneiden valmistus
- Vapaa-ajan veneiden säilytys
- Vedenpäällinen rakentaminen, pohjaan kiinnitetyt/kelluvat rakenteet

Background map
- Project area
- Military area
- Conservation area
- Deep water navigation
- HELCOM_Sea

0   50   100 Kilometers

Data sources: Estonian Environment Agency, HELCOM, National Land Survey of Finland

Bio and subsea sector future use
combination map of Delphi panel and workshops

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Blue bioeconomy and subsea sector related activities/businesses

- Key fishing area
- Mineral extraction
- Restored Finnish fish river
- Ammattikalastus
- Kalankasvatus
- Merenpohjan kaivostoiminta, hiekka, sora, mineraalit
- Sininen biotalous ja vedenalaisten luonnonvarojen hyödyntäminen
- Vesiviljely

Background map
- Project area
- Military area
- Conservation area
- Deep water navigation
- HELCOM_Sea

0   50   100 Kilometers

Data sources: Estonian Environment Agency, HELCOM, National Land Survey of Finland

Tourism sector future use
combination map of Delphi panel and workshops

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Tourism sector related activities/businesses

- Elämysmatkailu maa-alueilla (esim telttailu, metsästys, kansallispuistot)
- Majoituspalvelut ja vapaa-ajan asuntojen vuokraus rannikko- ja saaristoalueilla
- Elämysmatkailu merialueilla (mm. melonta, surffaus, vesihiihto, vesijeteillä ajaminen)
- Vedenalainen matkailu, sukellus
- Kulttuuripalvelut/kohteet rannikko- ja saaristoalueilla
- Urheilukalastus
- Vierasvenesatamat/palvelut pienveneilylle
- Ecologically sensitive area
- Ecotourism, valuable area
- Coastal cruises, watertaxi services
- Growing touristic area
- Main touristic area
- BioSub_Fishing_group2
- Main car ferry route
- Coastal cruise route
- Underwater cultural heritage

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- HELCOM_Sea

0   50   100 Kilometers

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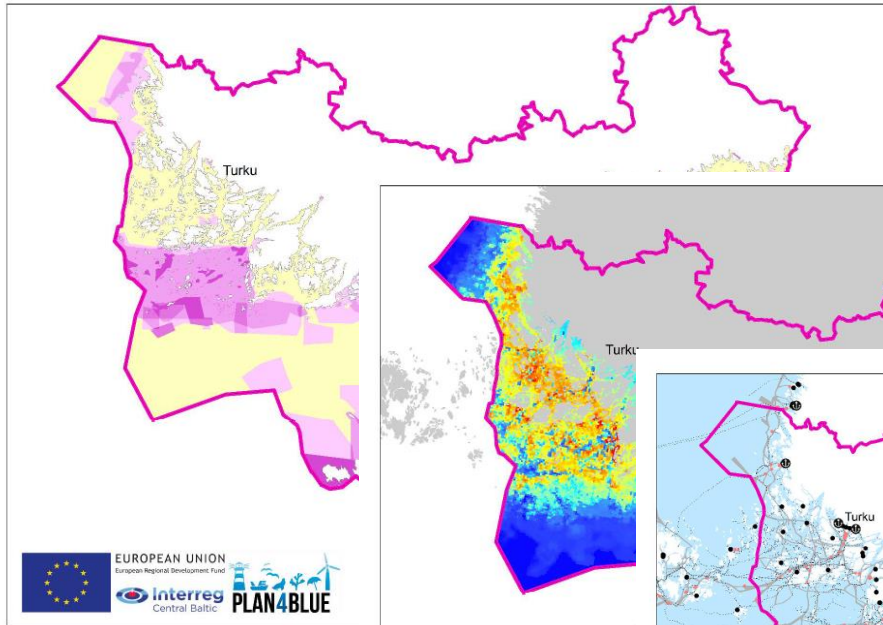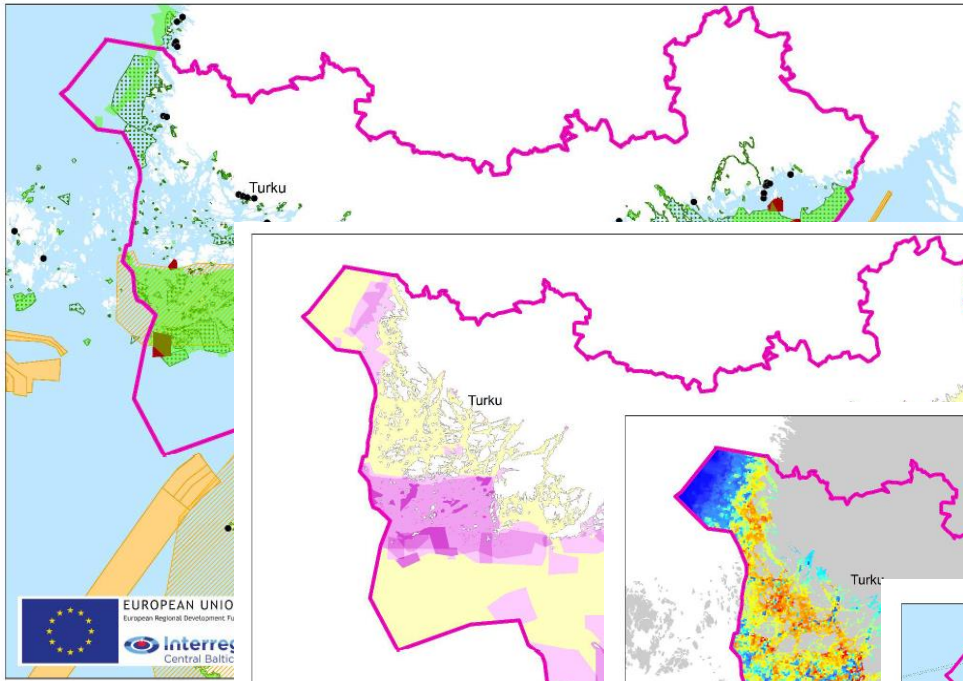
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  - Producing sector-wise intensity maps of the expert opinions
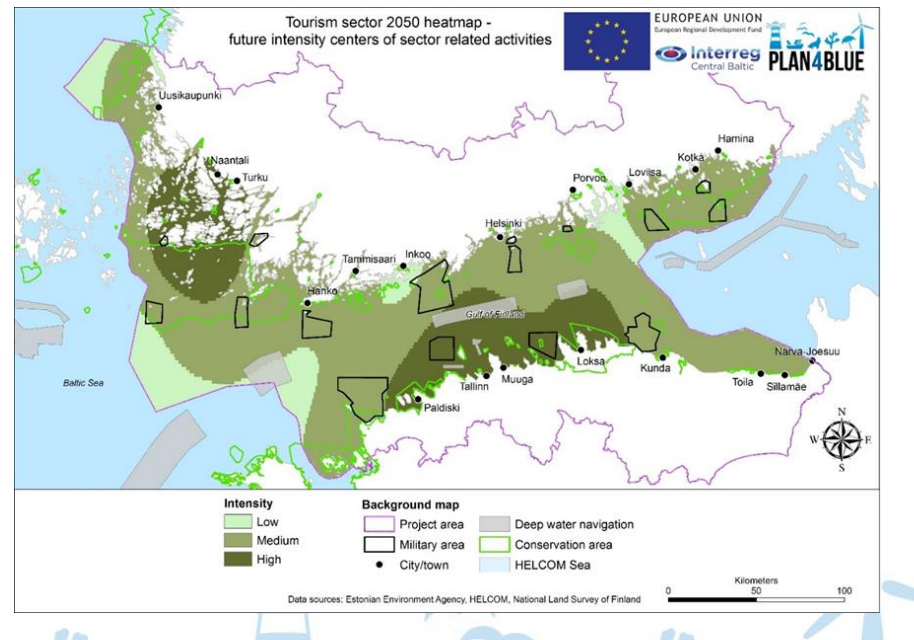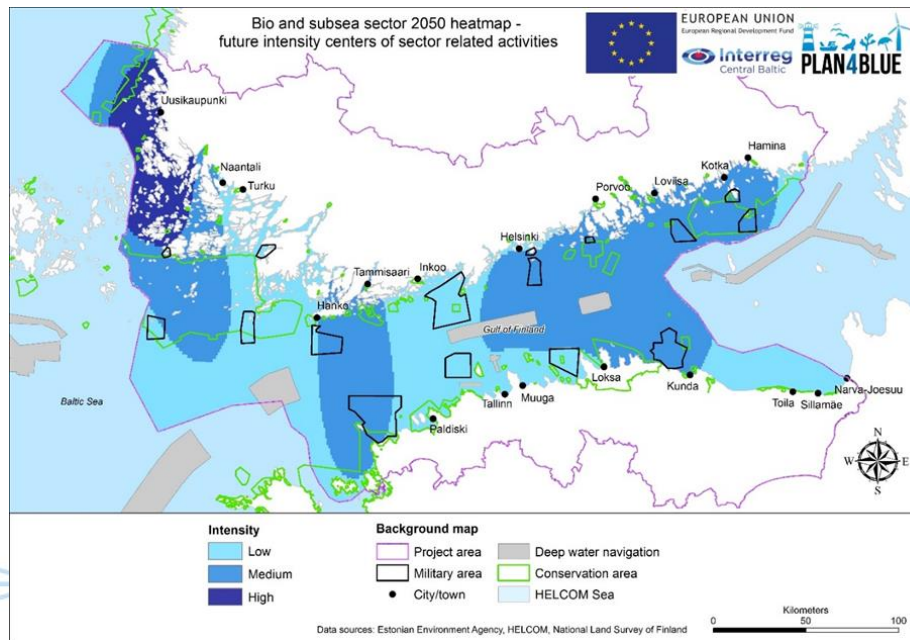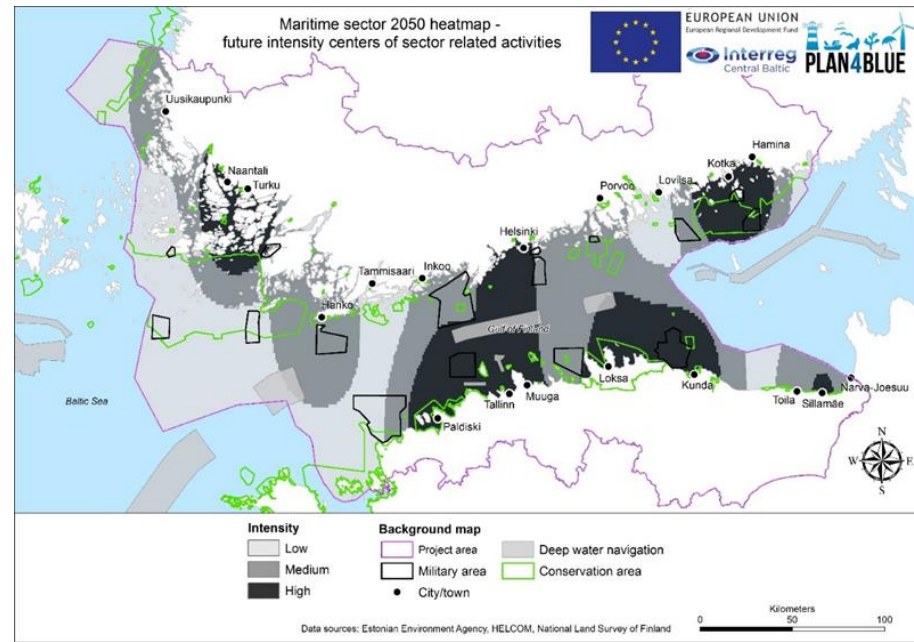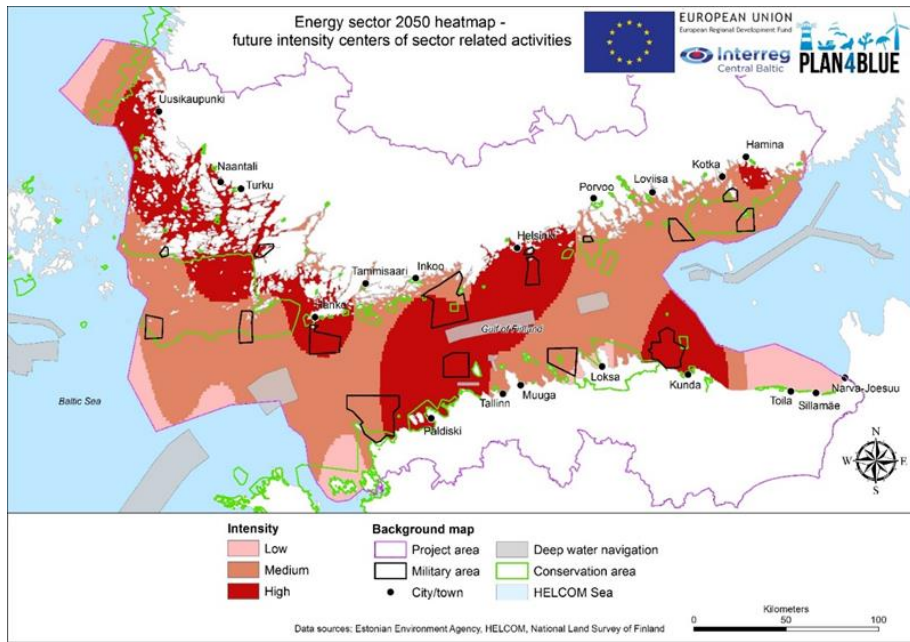
Timeline
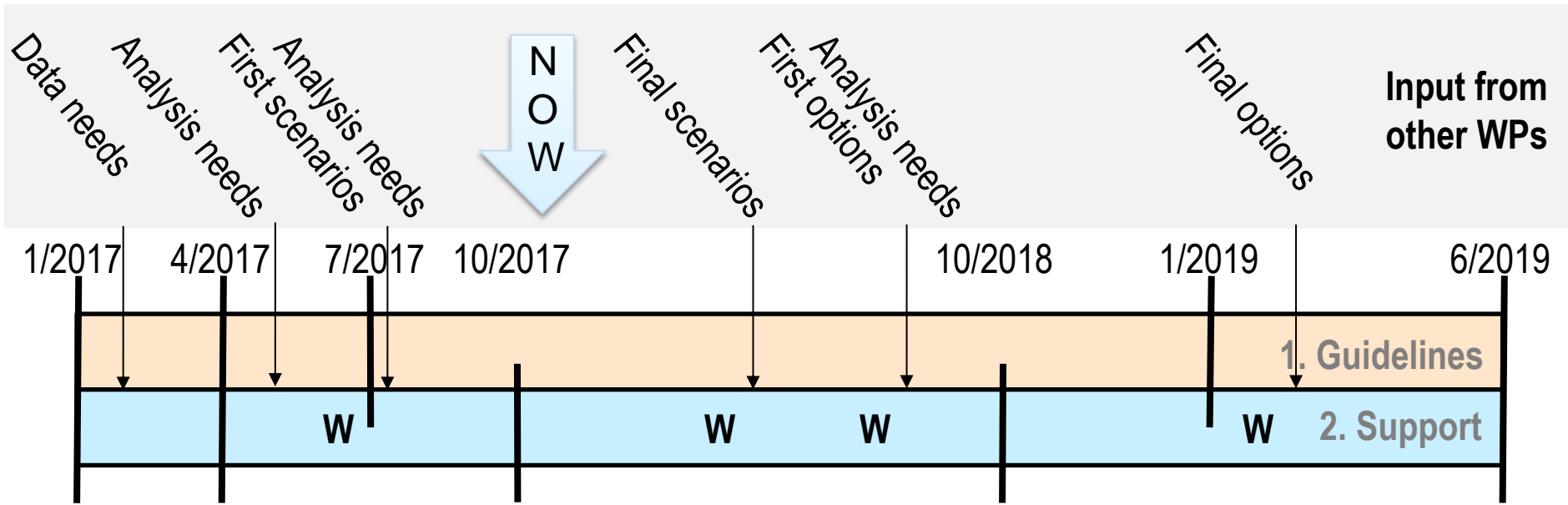
2 minutes for questions

Partners

Thank you!

MORE INFORMATION
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