

BASEMAPS GUIDE

DETAILED INSTRUCTIONS ON HOW TO USE BASEMAPS



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What is BASEMAPS?

basemaps.helcom.fi

BASEMAPS is a map service to access Baltic Sea maritime spatial planning (MSP) data from the original source where it is stored.

The story of BASEMAPS (BALTic SEa MAP Service) dates back to 2012 when a project called BaltSeaPlan recommended building a tool to access Baltic Sea decentralized MSP data based on Marine Spatial Data Infrastructure (MSDI).

Planners realized there was a need to work with transboundary and up-to-date data that was reliable to make their own national MSP plans.

Working with centralized database solutions was (and still probably is) the best option to get a large amount of harmonized data from data providers.

However, these centralized databases do not guarantee that the data is up to date. Planners needed a solution to get data published and maintained by the original official source.

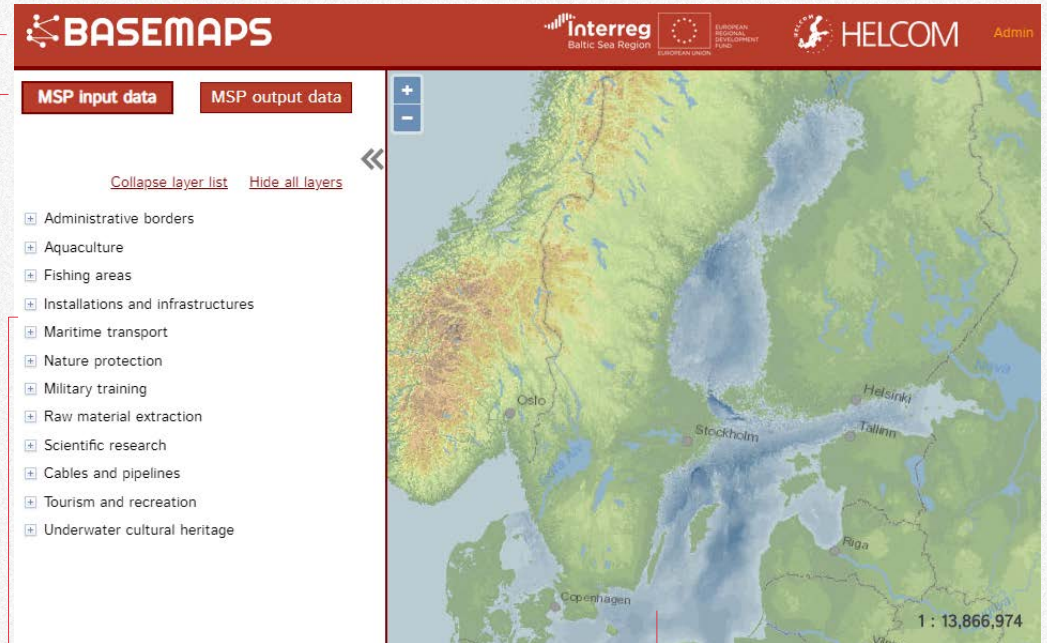
That solution is called BASEMAPS.

BASEMAPS allows users to view and download data/metadata published by national data providers through [OGC](#) open geospatial standards—[WMS](#) and [WFS](#). It is also possible to access downloadable services and ArcGIS REST Map layers.

It is aimed for planners, data providers and authorities dealing with maritime spatial planning in the Baltic Sea.

HELCOM led the development of BASEMAPS under the Interreg funded Baltic LINes project (2016-2019). This user guide is an output of the Interreg funded project platform Capacity4MSP (2019-2021) and was prepared by HELCOM.

BASEMAPS structure



BASEMAPS is organized in four parts:

1. The banner
2. The input / output data buttons
3. The layer list
4. The map viewer

The banner



- BASEMAPS: link to the map service (basemaps.helcom.fi). It is used to refresh the window if needed.
- Interreg: the funding programme. The link directs to the official Baltic LINes page hosted by VASAB.
- HELCOM: official home page of the Helsinki Commission that designed, developed and hosts BASEMAPS.
- Admin: Password protected administration panel where data providers can add and edit services. The administration rights are given by HELCOM.

Input and output data

MSP input data

Input and output data are the terms used to differentiate between data to create plans and the plans

MSP input data opens by default and includes various thematic data layers which have been considered relevant for MSP purposes.

The section contains both national data harvested from national data providers (when available) as well as centralized dataset provided by HELCOM.

MSP planners can use input data if they want to access transboundary data.

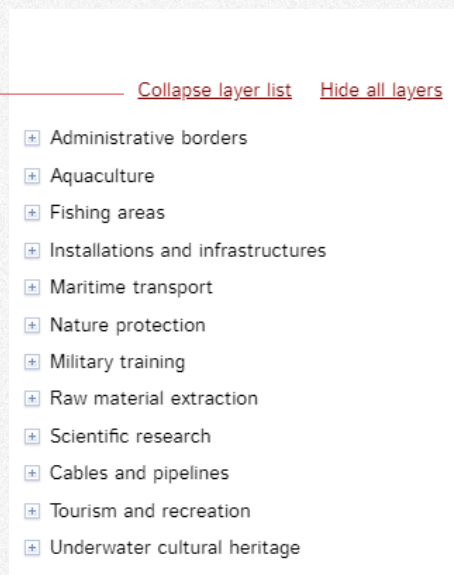
MSP output data

MSP output data, on the other hand, contains national MSP plans harmonized according to HELCOM-VASAB guidelines on transboundary MSP output data structure.

These plans were created based on various input data. MSP planners can use output data to check what other countries in the Baltic Sea have already planned.

The MSP output data section is still under development.

Layer list

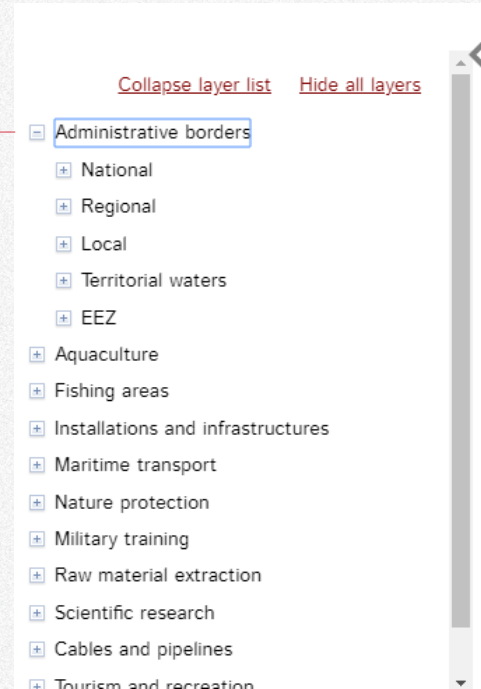


All services are stored in the layer list. The layer list is divided in thematic categories that are relevant for MSP. There are a couple of buttons to help users navigate through all categories:

Collapse layer list: it closes all the opened categories. This is useful if users have opened a lot of them and want to return to the original state.

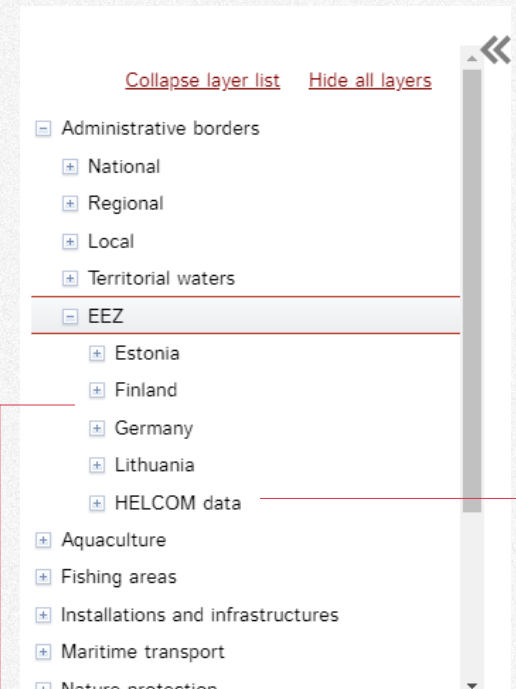
Hide all layers: it hides all the layers that users have activated. It is useful if they have activated many layers and want to see an empty map.

Categories



A tree is opened by clicking on the cross button +

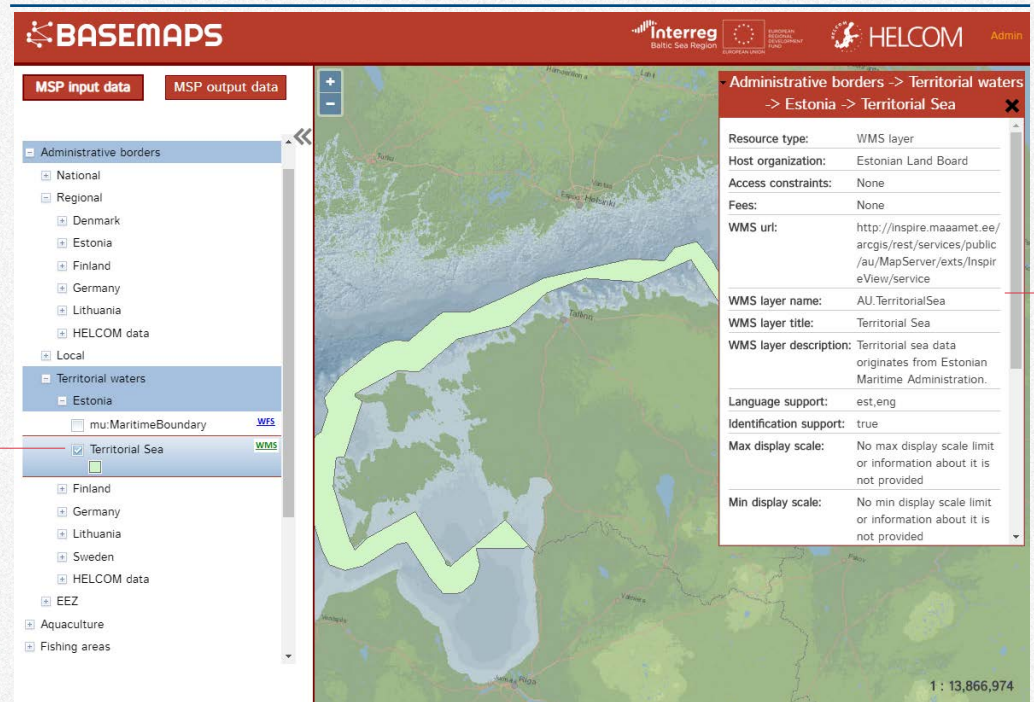
Most root categories, the ones users see when BASEMAPS is opened, contain subcategories as in the case of Administrative borders.



When users open those subcategories they see the countries that have provided data to BASEMAPS.

HELCOM data contains links to services from its centralized and harmonized database. It is useful in case there are gaps in the data.

Types or services



There can be up to four types of services available in BASEMAPS. A small icon is displayed besides the layer name: WMS, WFS, AGS or DLD.

To view a layer users click on the WMS checkbox ☒ which also opens the metadata window.

- **WMS (Web Map Service):** it shows the georeferenced image published through a standard OGC WMS

- **WFS (Web Feature Services):** These services provide data in GML format.
- **AGS (ArcGIS REST services):** data providers might want to publish ArcGIS Rest services instead of or in addition to WMS
- **DLD (Downloadable services):** there is also the option for data providers to publish download services instead of WFS

Metadata

Administrative borders -> Territorial waters -> Estonia -> Territorial Sea	
Resource type:	WMS layer
Host organization:	Estonian Land Board
Access constraints:	None
Fees:	None
WMS url:	http://inspire.maaamet.ee/arcgis/rest/services/public/au/MapServer/exprts/InspireView/service
WMS layer name:	AU.TerritorialSea
WMS layer title:	Territorial Sea
WMS layer description:	Territorial sea data originates from Estonian Maritime Administration.
Language support:	est,eng
Identification support:	true
Max display scale:	No max display scale limit or information about it is not provided
Min display scale:	No min display scale limit or information about it is not provided
Metadata:	
Metadata format:	XML
URL:	http://inspire.maaamet.ee/geoportal/csw/discovey?service=CSW&version=2.0.2&request=GetRecordByid&outputschema=http://www.isotc211.org/2005/gmd&elementsetname=full&id=%7B051244FB-709F-4268-B565-7A0A10B0F633%7D

Metadata information comes from GetCapabilities and contains the following information:

Type of service (WMS, WFS, AGS or DLD)

Data provider

Any kind of rights restrictions

Possible fees to access data

Link to the layer's link. To view GetCapabilities in browser users must paste the URL and add this string at the end: *?request=GetCapabilities&service=WMS*

Name of layer as the data provider has published it

Title of layer

A short description of layer

All languages supported by the service

(Only for WMS) If *true* users can click on the map and get information

(Only for WMS) Above this scale the layer will not be displayed

(Only for WMS) Below this scale the layer will not be displayed

Link to metadata. It may come from GetCapabilities or be provided by data provider

Tag translation

The screenshot shows the BASEMAPS web application. The top navigation bar includes logos for Interreg Baltic Sea Region, European Union, HELCOM, and an Admin link. The main interface is divided into three sections: a left sidebar for layer management, a central map, and a right sidebar for metadata.

Left Sidebar (MSP input data):

- Administrative borders
- Aquaculture
- Fishing areas
- Installations and infrastructures
- Maritime transport
- Nature protection
 - Natura 2000
 - Denmark
 - Finland
 - ☒ Natura2000 Erityinen suojelualue (SPA) [WMS](#)
 - ☐ Erityisten suojelutoimien alue (SAC) [WMS](#)
 - ☐ Ehdotus erityisten suojelutoimien alueeksi (SCI) [WMS](#)
 - ☐ Ehdotus erityiseksi suojelualueeksi (SPA) [WMS](#)
 - ☐ Erityisten suojelutoimien alue (SAC), viivamainen [WMS](#)
 - Latvia
 - Poland
 - Sweden

Central Map: A map of Finland showing the Natura 2000 Special Protection Areas (SPA) as dark grey patches. A red rectangle highlights a specific area in the southern part of the country.

Right Sidebar (Metadata):

Nature protection -> Natura 2000 -> Finland -> Natura2000 Erityinen suojelualue (SPA)

Resource type: WMS layer
Host organization: Suomen ympäristökeskus
Access constraints: [License](#)
Fees: [Free](#)
WMS url: http://paikkatieto.ymparisto.fi/arcgis/services/INSPIRE/SYKE_SuojellutAlueet/MapServer/WmsServer
WMS layer name: PS.ProtectedSitesSpecialProtectionArea
WMS layer title: [Natura2000 Special Protection Area \(SPA\)](#)
WMS layer description: [Natura2000 Special Protection Area \(SPA\)](#)

Language support: [Original text:](#)
Identification support: [Natura2000 Erityinen suojelualue \(SPA\)](#)
Max display scale: [Translated by Microsoft](#)
Min display scale: [Translated by Microsoft](#)

Metadata:

Some data providers publish data in their original language which makes it difficult to understand for users from other countries.

Therefore, some tags in the metadata are automatically translated by BASEMAPS. They are displayed in underlined blue text:

- Access constraints
- Fees

- WMS layer name
- WMS layer description

When the user hovers over the translated tag a small window shows the original text.

Legend (only for WMS)

The screenshot shows the BASEMAPS web application interface. The top header includes logos for Interreg Baltic Sea Region, the European Union, HELCOM, and an Admin link. The main interface is divided into three sections: a legend on the left, a map in the center, and a metadata panel on the right.

Legend (left panel):

- MSP input data
- MSP output data
- Shipping traffic density
- IMO routes
 - Estonia
 - Finland
 - Germany
 - Latvia
 - HELCOM data
- Restricted areas for shipping
- Ports
- Fairways
- Ferry lines / routes / Motorways of the seas
- Roadsteads / port raid protection zones
- Anchorage
- Dredging**
 - Lithuania**
 - Grunto_savarta** (WMS)
- HELCOM data
- Dumping
- Nature protection
- Military training
- Raw material extraction

Map (center): A map of the Baltic Sea region showing the coastline of Lithuania and the location of the Grunto_savarta area. The map scale is 1 : 866,686.

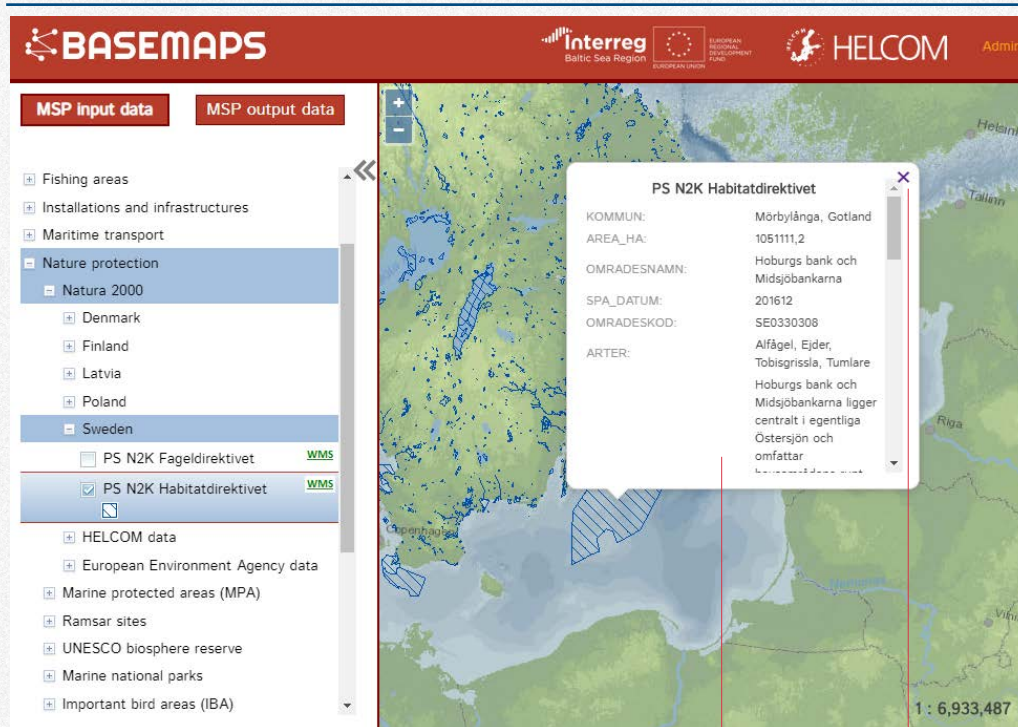
Metadata panel (right):

Maritime transport -> Dredging -> Lithuania -> Grunto_savarta

Resource type:	WMS layer
Host organization:	No information
WMS url:	https://www.geoportal.lt/ar/cgis/services/geoportal_public/Corpi/MapServer/WMS/Server
WMS layer name:	9
WMS layer title:	Grunto_savarta
Language support:	No information
Identification support:	true
Max display scale:	No max display scale limit or information about it is not provided
Min display scale:	No min display scale limit or information about it is not provided
Metadata:	No metadata provided

The legend of the layer is available only for WMS services and it is below the layer name. It comes from the provided GetCapabilities.

Identification (only for WMS)



Users can click on the displayed layer to see its attributes.

A pop-up window will display all features' attributes. When the list of attributes is long users can scroll it down using the scroll bar.

The pop-up window can be closed either by clicking on the cross on the top-right corner or clicking somewhere else on the screen.

The displayed information may be in national language.

WFS

The screenshot shows the BASEMAPS web application interface. On the left, there is a sidebar with a tree view of data layers. The 'Territorial waters' category is expanded, and the 'mu:MaritimeBoundary' layer is selected, indicated by a red line pointing to its checkbox. The main map area displays a map of the Baltic Sea region. On the right, a metadata window is open for the selected layer, showing details such as the resource type, host organization, WFS URL, and metadata format (XML).

To get the data from WFS services users click on the checkbox corresponding to that service.

No layer is displayed. Instead, users get data by clicking on the link in the metadata window “Get features of WFS feature type”

The metadata is similar to WMS. Only the fields about identification and scale are missing.

Downloading can be time-consuming depending on the size of the layer and the internet connection.

ArcGIS REST services

BASEMAPS

Interreg Baltic Sea Region
EUROPEAN UNION
EUROPEAN REGIONAL DEVELOPMENT FUND
HELCOM Admin

MSP input data MSP output data

Administrative borders
National
Regional
Denmark
Estonia
Finland
Germany
Lithuania
HELCOM data
Administrative boundaries **AGS**
Administrative boundaries **DLD**
Administrative boundaries **WMS**
Local
Territorial waters
EEZ
Aquaculture
Fishing areas
Installations and infrastructures
Maritime transport
Nature protection
Military training
Raw material extraction

Administrative borders -> Regional -> HELCOM data -> Administrative boundaries

Resource type: ArcGIS REST MapServer layer

ArcGIS MapServer url: <https://maps.helcom.fi/arcgis/rest/services/MADS/Background/MapServer/2>

Metadata:
Metadata format: HTML
URL: <http://metadata.helcom.fi/geonetwork/srv/en/catalog.search#/metadata/b58b0b56-1a98-41d9-9bf4-5dc76f5069d3>

1 : 13,866,974

BASEMAPS allows users to view ArcGIS REST mapserver layers. Data providers might want to publish this type of services if WMS services are not available.

The metadata contains:

- Resource type: to check that it's a REST service.
- ArcGIS MapServer url: link to the REST url

- Metadata format: the format can be HTML or XLM
- URL: link to metadata

Download services

The screenshot shows the BASEMAPS web application interface. The main map displays the Baltic Sea region with administrative boundaries. The left sidebar contains a layer list with 'Administrative borders' expanded, showing 'Regional' and 'HELCOM data' sub-categories. The 'HELCOM data' category is selected, and 'Administrative boundaries' is checked. The right sidebar shows a 'Download this resource' dialog box with a 'Downloadable resource' section containing a REST URL and a 'Metadata' section with a 'Metadata format' dropdown set to 'HTML' and a corresponding URL.

Data providers might want to publish download services in addition to or instead of WFS. Download services contain a link to the layer usually as zip file.

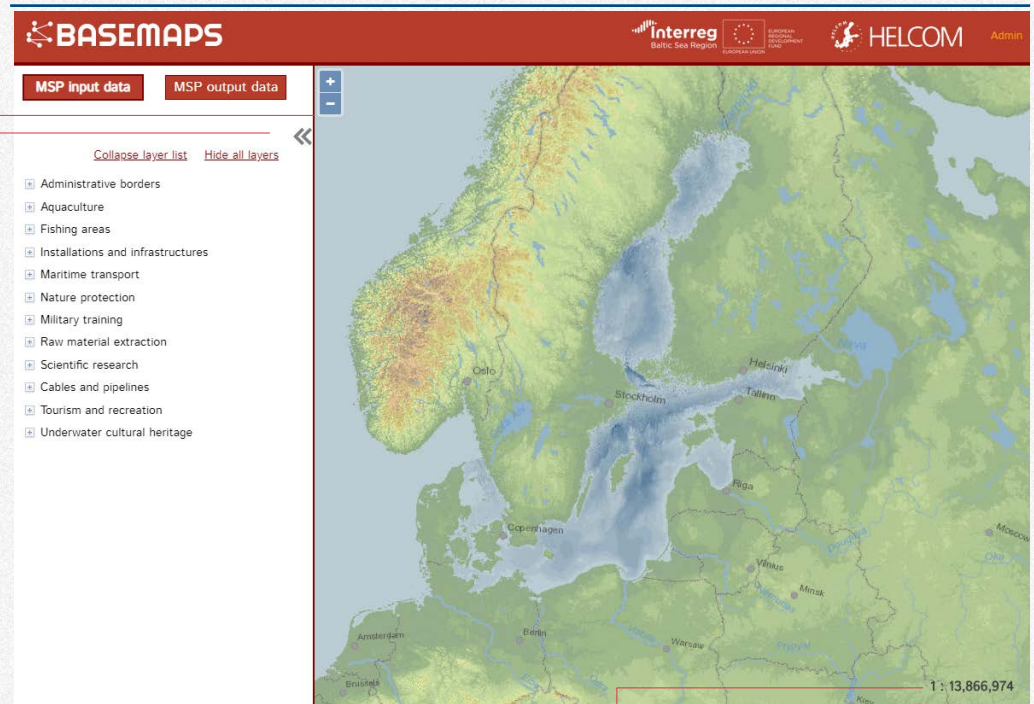
BASEMAPS does not display the layer when clicking on the checkbox. Instead, a link is provided to download the file.

The metadata contains:

- Resource type: to check that it's a REST service.

- Downloadable resource url: link to the REST url
- Metadata format: the format can be HTML or XLM
- URL: link to metadata

Map viewer



The map viewer shows a map in Lambert projection where all layers are displayed.

There are three elements to help users view data:

- Collapse tree to close the tree categories and make the map bigger.
- Zoom buttons to zoom in and out. Also the wheel mouse is supported.

- Scale: some layers have scale restrictions so users can check here and in the layer's metadata in case they are not displayed.

The maximum scale is almost 1:450.000.000 and the minimum 1:2

Frequently Asked Questions

Why are there empty categories?

Some categories are empty because no country has provided data.

Why is the layer not showing?

Check that you have ticked the WMS or ArcGIS REST services checkbox ☒ as they are the only services that are displayed. Also, be sure that the layer does not have any maximum or minimum display scale (check Max and Min display scale in metadata). If so, zoom in or out accordingly with the help of the scale at the bottom-right map corner.

Some tags are weirdly translated, why?

BASEMAPS uses a translator service that can occasionally output a not so accurate translation.

Why is the layer name not in English?

All services in BASEMAPS come from national data providers who may want to publish data in their language. BASEMAPS only translates some tags in the metadata (see page 11)

What kind of services are available in BASEMAPS?

BASEMAPS can display WMS and ArcGIS REST services. Datasets can be downloaded through WFS and download services.

Contact information and credits

For support about BASEMAPS
functionality and getting users rights:
data@helcom.fi

For support about national data
contact the national provider whose
contact information can be found in
the host organization tag in the
metadata.

BASEMAPS has been developed by
HELCOM during the Interreg funded
Baltic LINES project (2016-2019).
This user guide is an output of the
Interreg funded project platform
Capacity4MSP (2019-2021) and was
prepared by HELCOM.

The code is open source and is
available in [GitHub](#).