Marine Strategy Framework Directive and MSP links module - ReMAP

A state of art

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MSP Data Tools and Guidance Workshop - Technical Expert Group (TEG) on Data for MSP
13th March 2024 – Brussels / Hybrid

CNR ISMAR ISTITUTO DI SCIENZE MARINE
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the ReMAP project

REVIEWING AND EVALUATING THE MONITORING AND ASSESSMENT OF MARITIME SPATIAL PLANNING

ReMAP 2022-2025

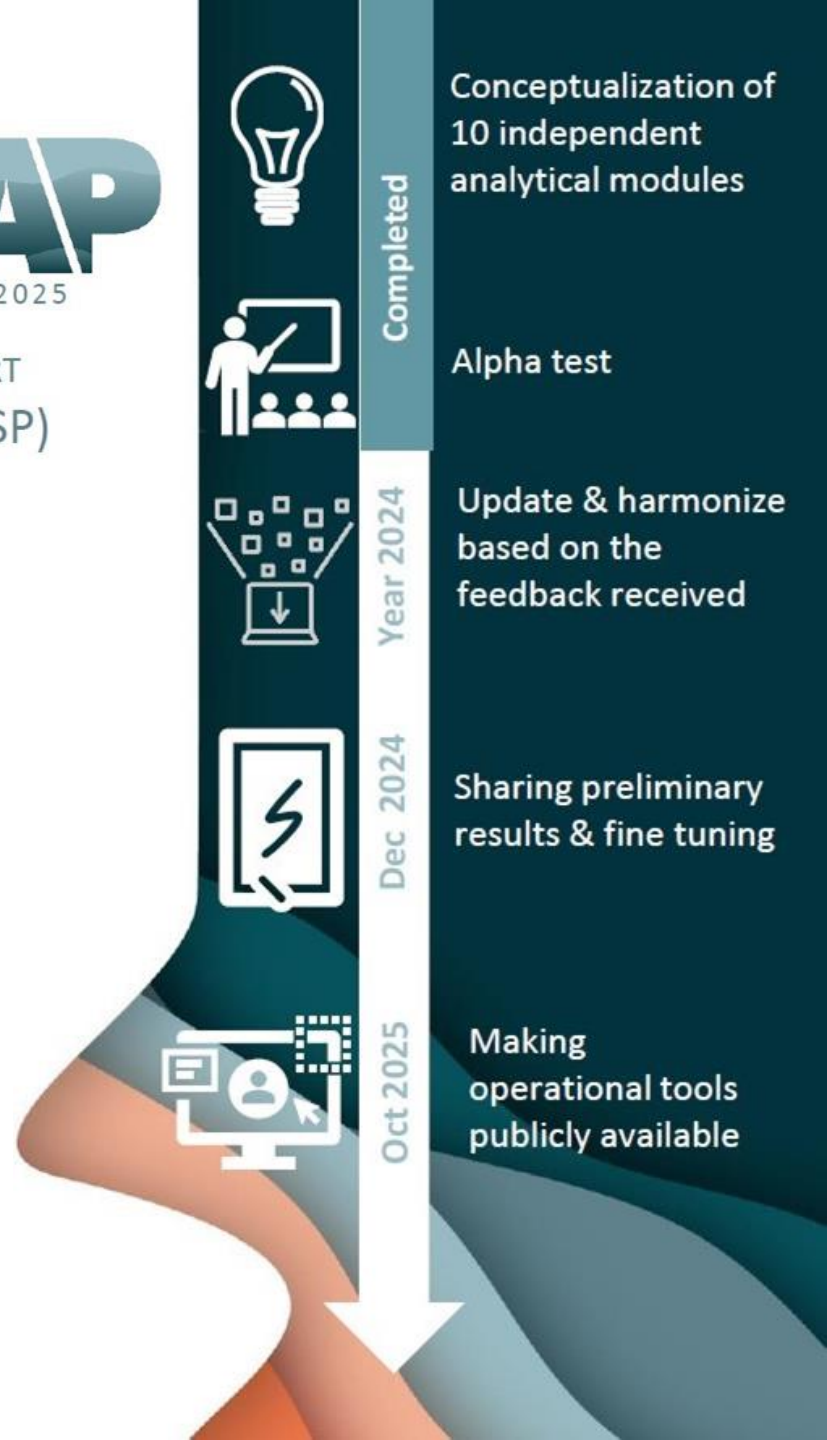
DESIGNING ONLINE TOOLS TO SUPPORT MARITIME SPATIAL PLANNING (MSP)

Rationale

"**reuse of <u>operational infrastructures</u>** allowing interoperability and enabling Member States to share MSP **data** and **assessment** information".

Main objective

to provide EU MS with an **innovative technical framework** for the **support of the European MSP process**, building on the recent developments of the Technical Expert Group on Data for MSP (TEG).



MSFD data into the MSP process

One of the main ***operational infrastructures*** of great importance for MSP is that established by the MSFD, the environmental pillar of the IMP.

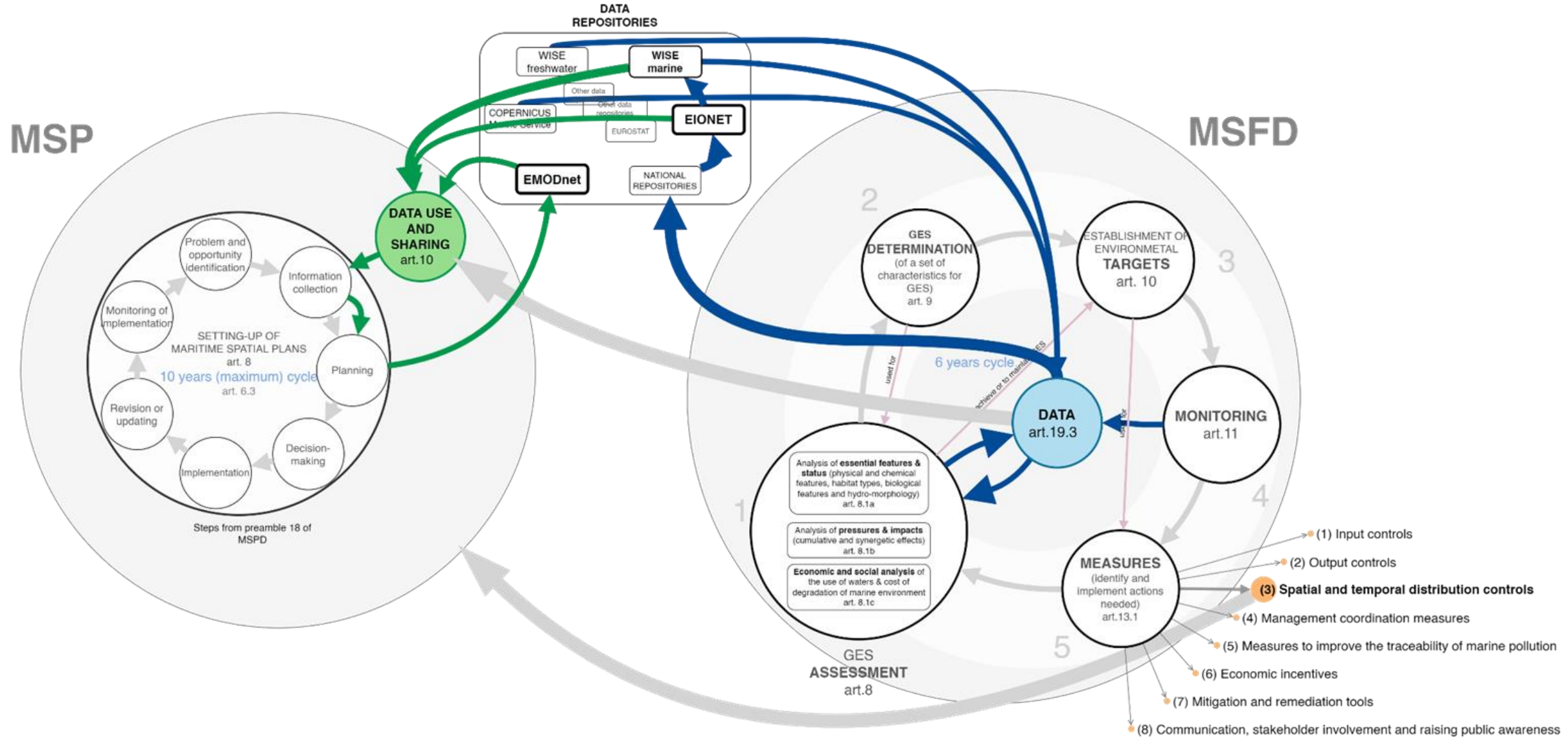
The ReMAP analytical module introduced here is precisely the:

“Marine Strategy Framework Directive (MSFD) and MSP links analytical module”

This module aims to explore and analyse relationships and interactions between **MSP input/output data** and the **spatially explicit MSFD reporting**.

- ➔ Relevant to facilitate the coherence between the two Directives.

Data flows between MSFD and MSPD



Spatially explicit MSFD reporting

We identified two (maybe three) main kinds of spatial data in the MSFD process:

- "**Indicators**":
  - Detailed data: datasets coming from the monitoring programmes.
  - Processed data: datasets underlying the indicators assessments that are generated using one or more detailed datasets.
- **Assessment results**:
  - status of marine waters, in reference to the **Good Environmental Status** or **GES**, and the predominant pressures and environmental impacts of human activities
  - status values derives from a complex assessment process based on quantitative data
  - status values are spatially associated to **Marine Reporting Units (MRUs)**.
- (Also **Meausures** in theory:
  - but there are some technical issues to be solved - we are working on it!)

Input form MSFD: which we are going to use

Assessment results, associated to each MRU will be used as input data:

- all available thorough WISE Marine
- standardised format across MS.

“Indicators”: would be highly beneficial for MSP, but their use is not feasible so far:

- not standardised, not harmonised across EU
- rarely directly available through the EIONET xml schema or WISE Marine.

Assessment data

Overall assessment data:

conclusion on whether the GES has been achieved or not yet, for each one of the **11 Descriptors,** represented by **52** "**features"** (e.g. species groups, habitat types, ecosystems, anthropogenic pressures, etc.).

Criteria assessment data:

conclusion on whether the different criteria assessed (as in the Commission Decision (EU) 2017/848) are in good status or not (for each one of the associated 'elements').

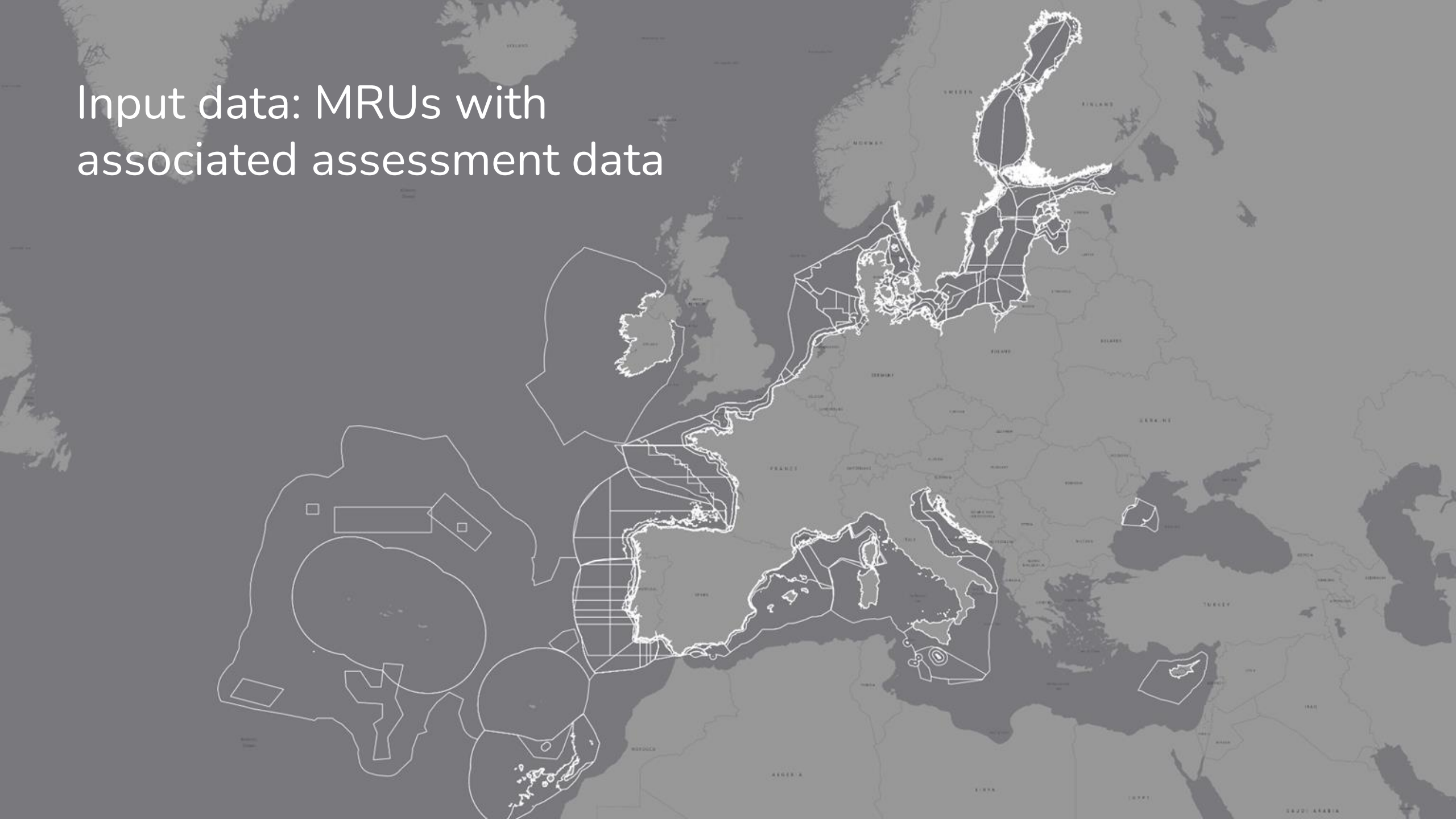
Element assessments data:

for each one of the GES Descriptors and features, conclusion on whether the different elements assessed (e.g. species, habitats, fish stocks, eutrophication elements, contaminants, etc) are in good status or not. (almost 3000 MSFD possible elements across EU waters).

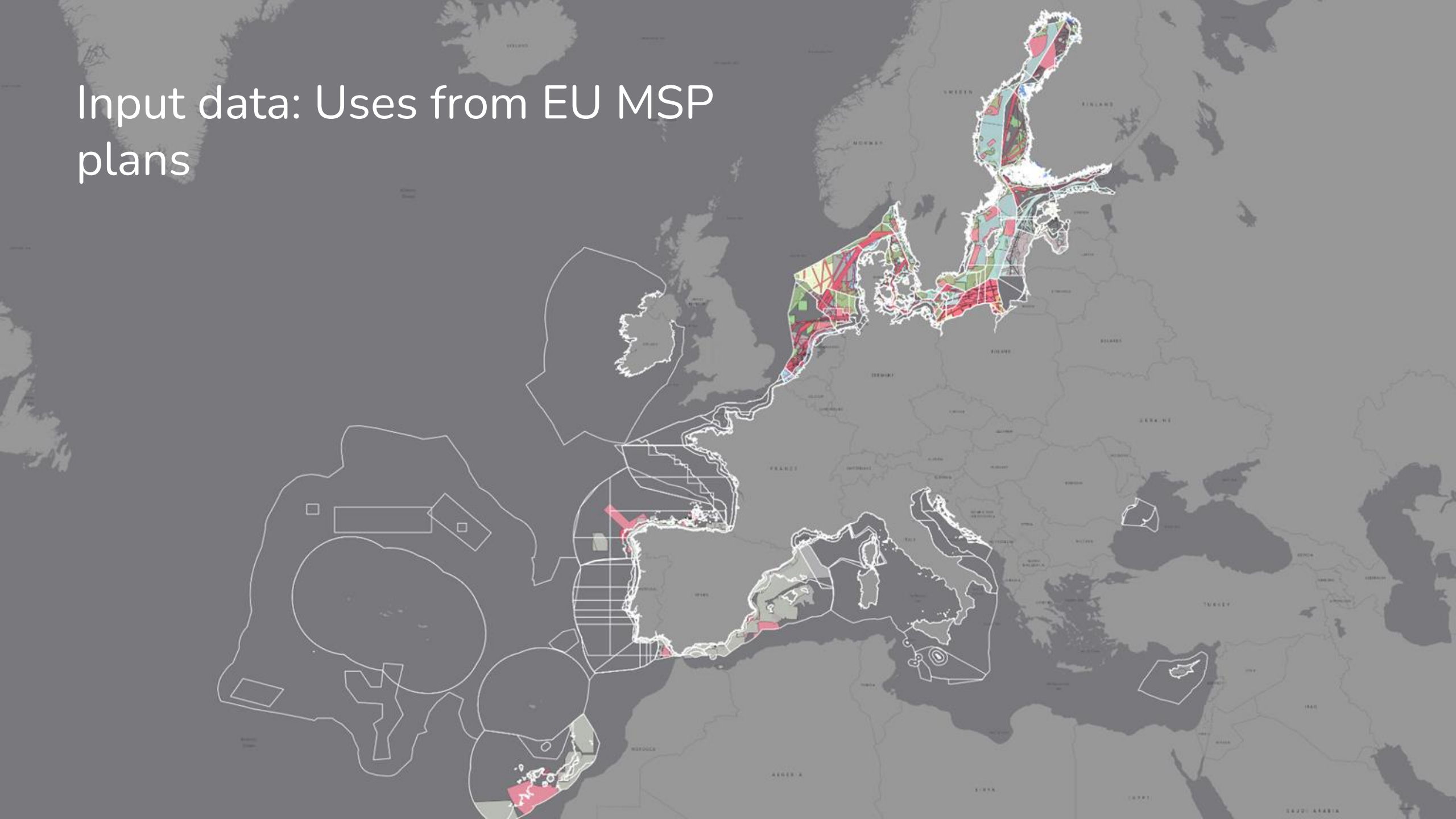
Parameter assessment data:

for each one of the elements and criteria used, conclusion on whether the different parameters assessed (e.g. concentration in water, sediment or biota) has achieved the threshold values or not, as well as the trends (>8000 parameters assessed in 2018).

Input data: MRUs with associated assessment data



Input data: Uses from EU MSP plans



Conceptual model

Input data

EMODnet WFS services

Custom data of draft plans

MSP

Planned uses (zoning elements)

Eionet/ Wise Marine

MSFD

Status (GES) per Marine Reporting Units (Features, Elements, Criteria, Parameters)

Module

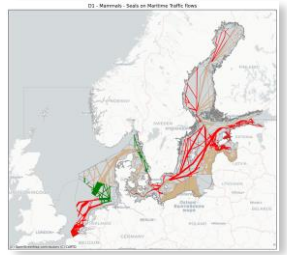
Spatial overlay analysis

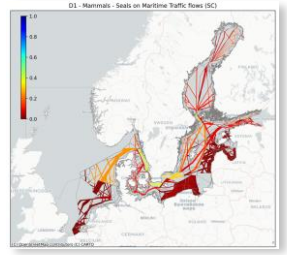
Output data

Planners, Decision Makers

MSFD to inform MSP

Uses / GES maps
Uses / GES statistics per Zoning Elements

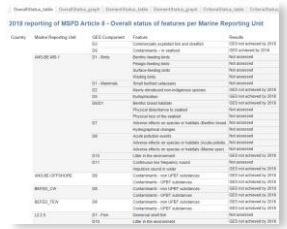


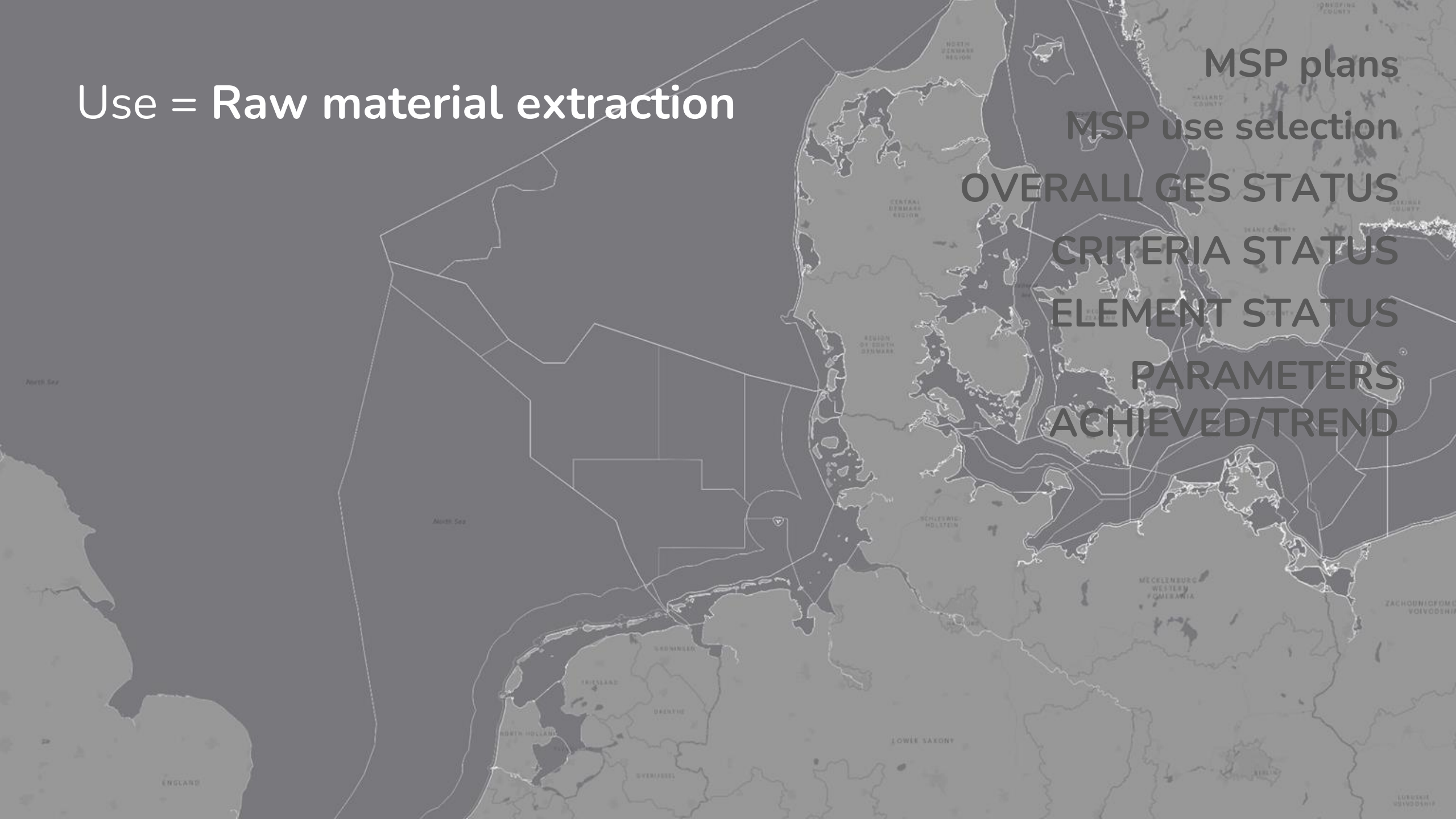


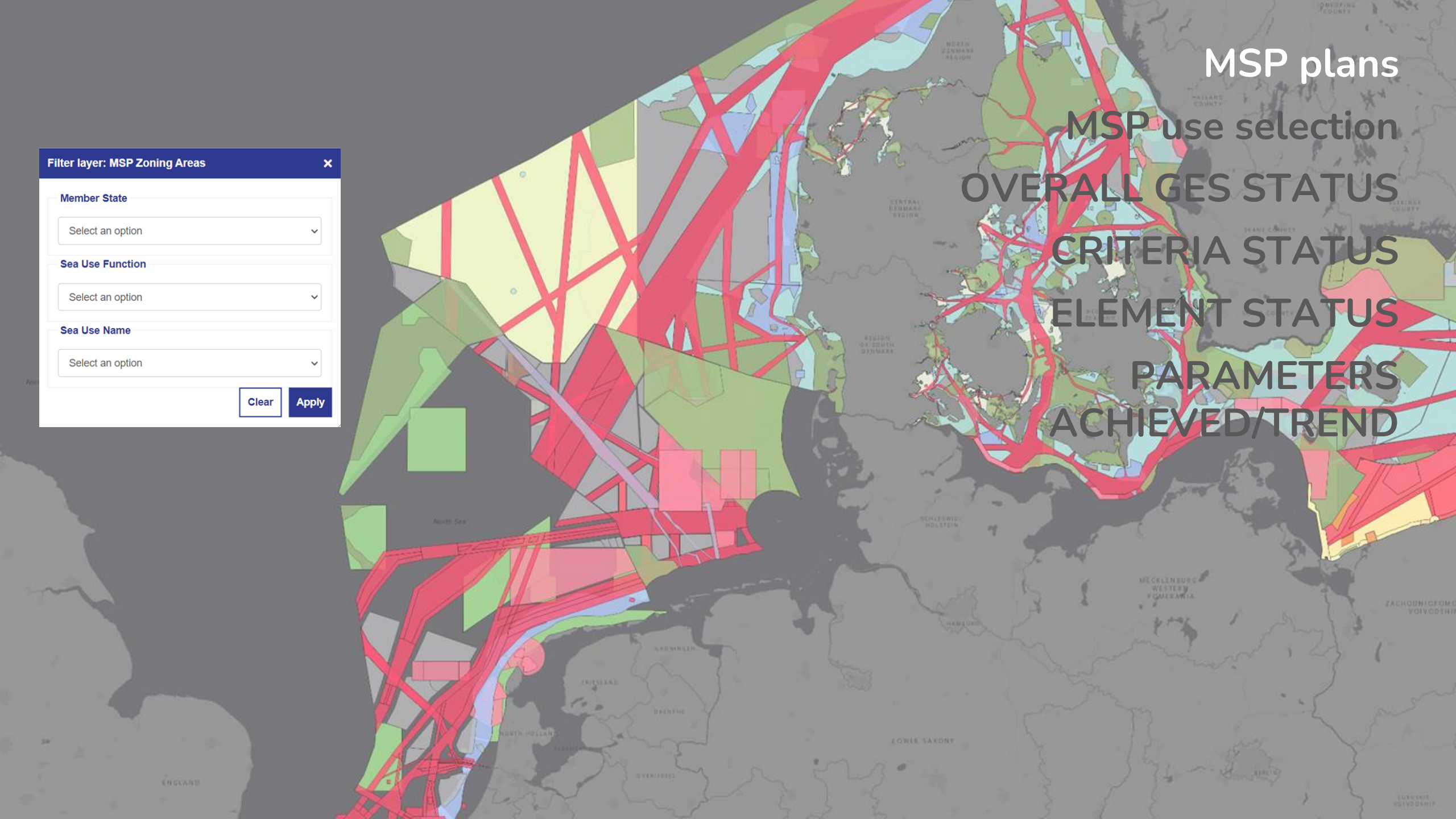
MSFD users

MSP to support MSFD (GES achievement)

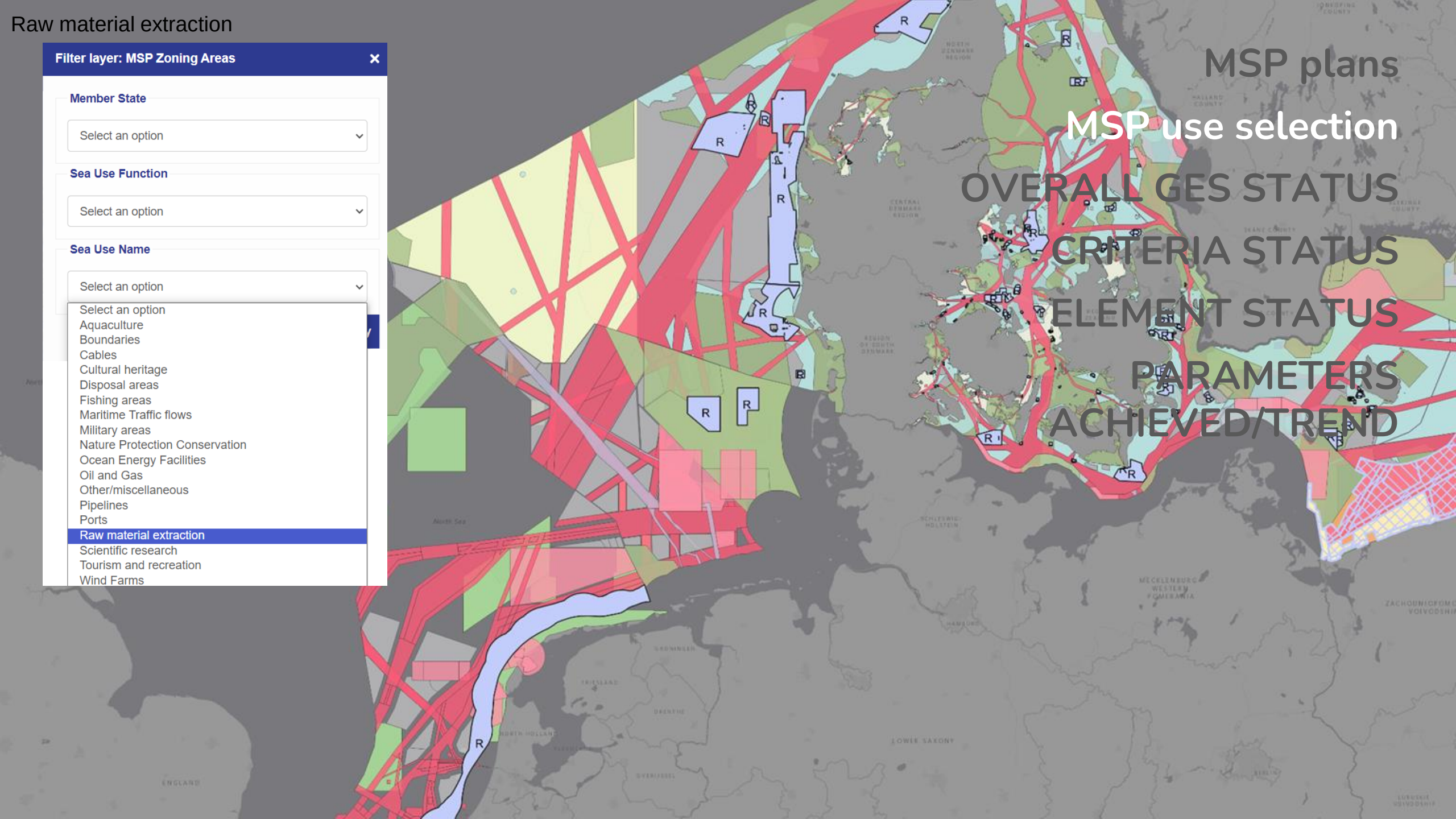
GES - use statistics per Marine Reporting Unit



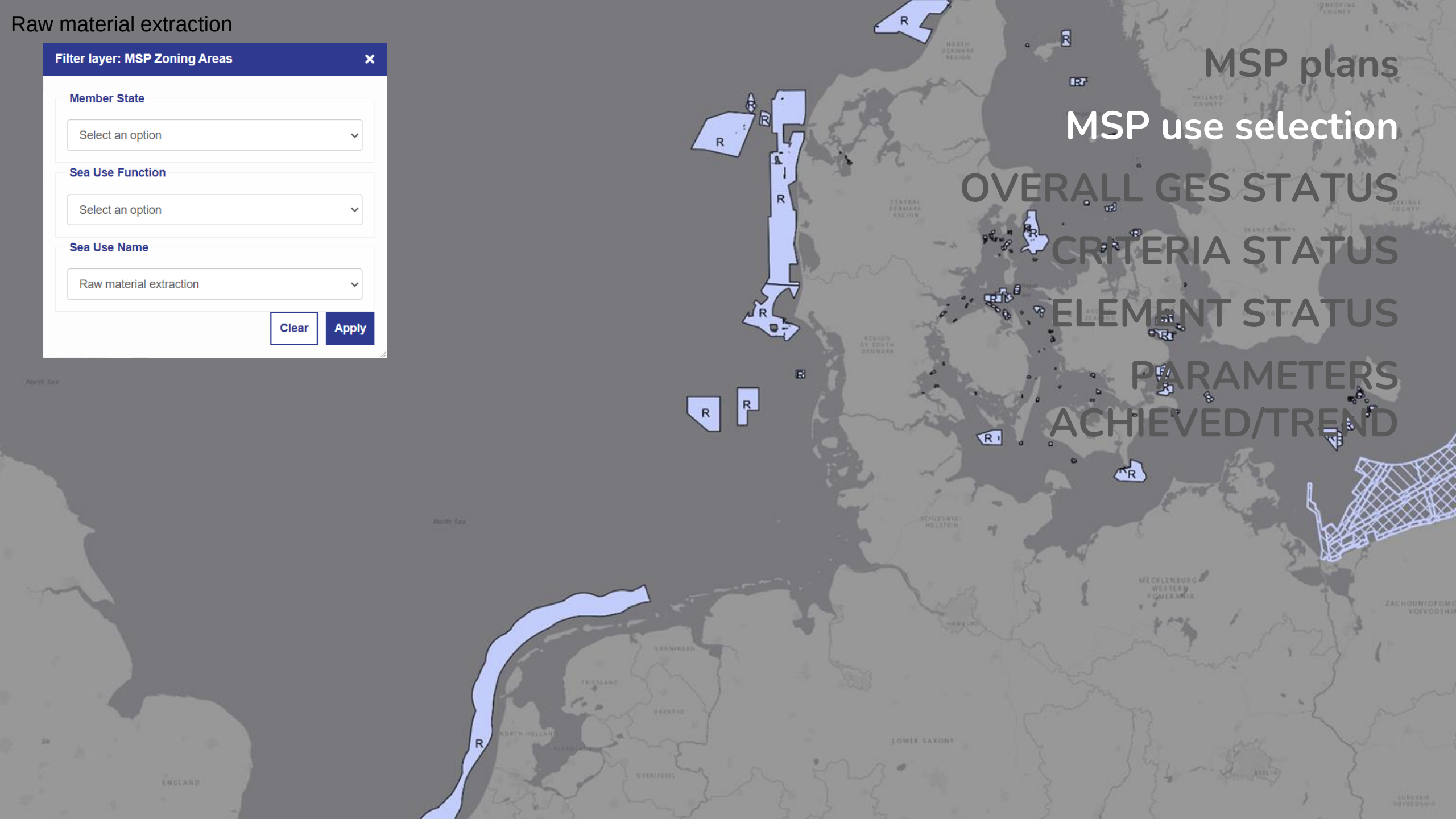

Use = **Raw material extraction**
MSP plans
MSP use selection
OVERALL GES STATUS
CRITERIA STATUS
ELEMENT STATUS
PARAMETERS
ACHIEVED/TREND


Filter layer: MSP Zoning Areas
Member State
Select an option
Sea Use Function
Select an option
Sea Use Name
Select an option
Clear
Apply
MSP plans
MSP use selection
OVERALL GES STATUS
CRITERIA STATUS
ELEMENT STATUS
PARAMETERS ACHIEVED/TREND

Raw material extraction



Raw material extraction



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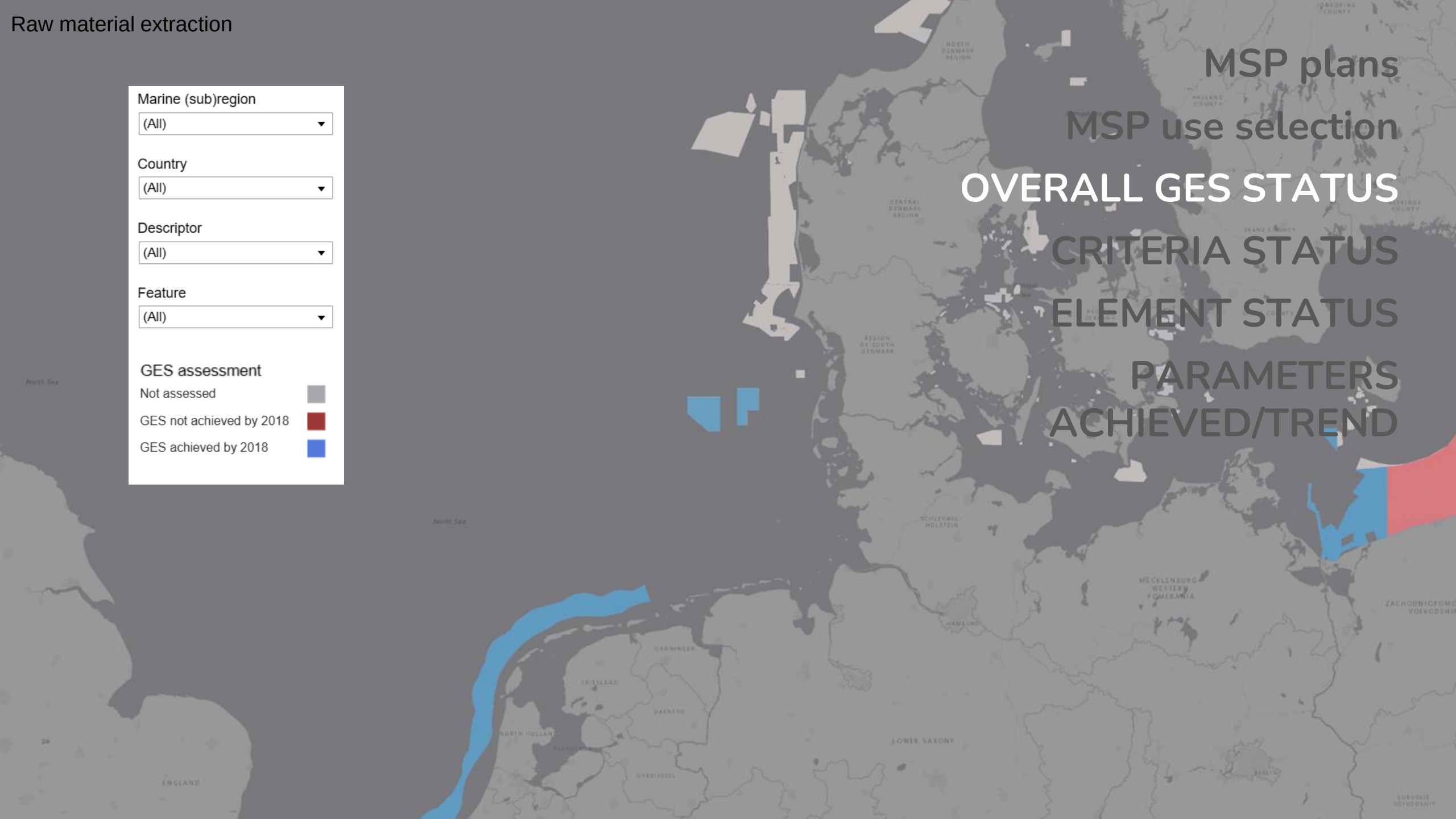

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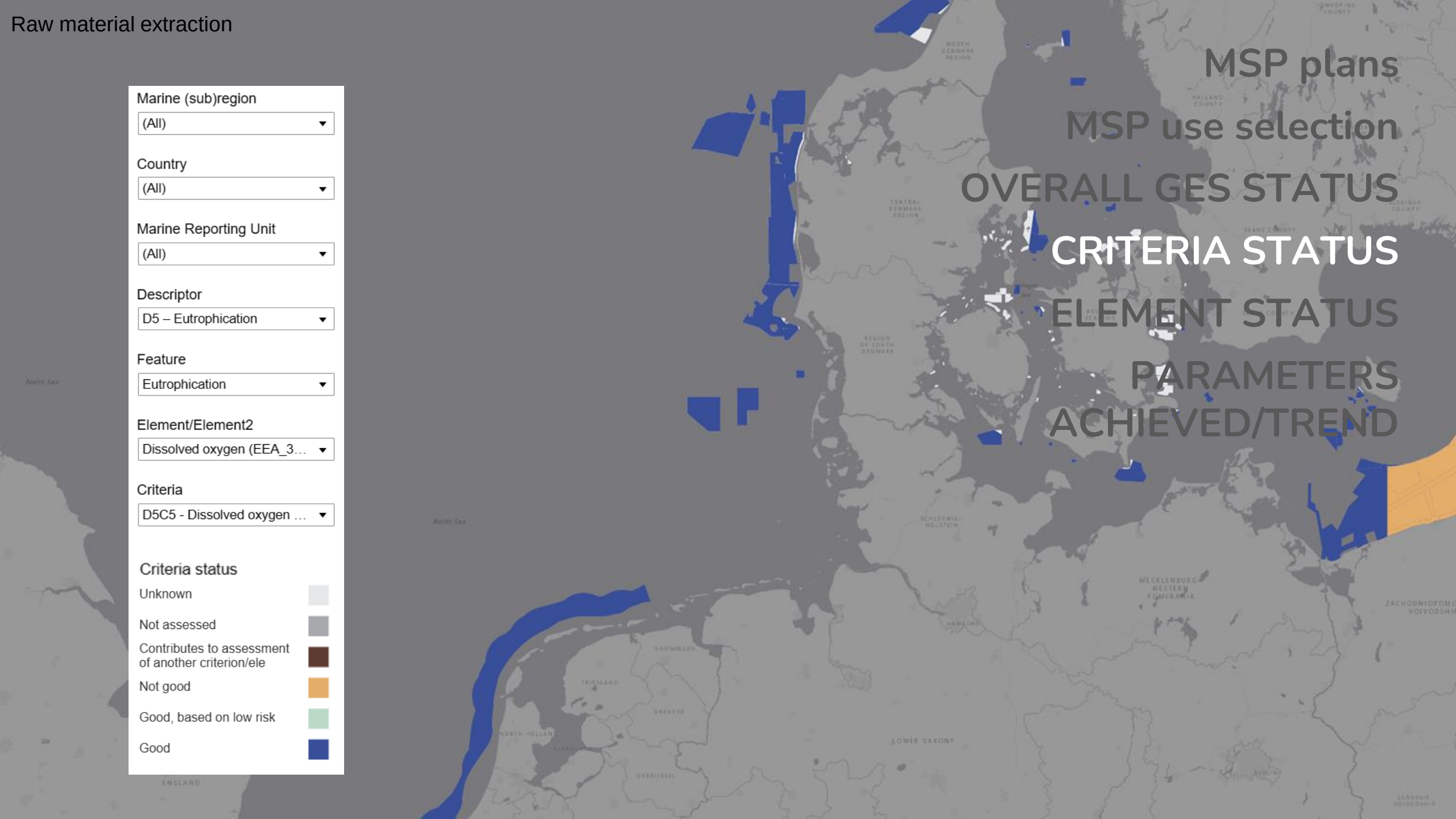
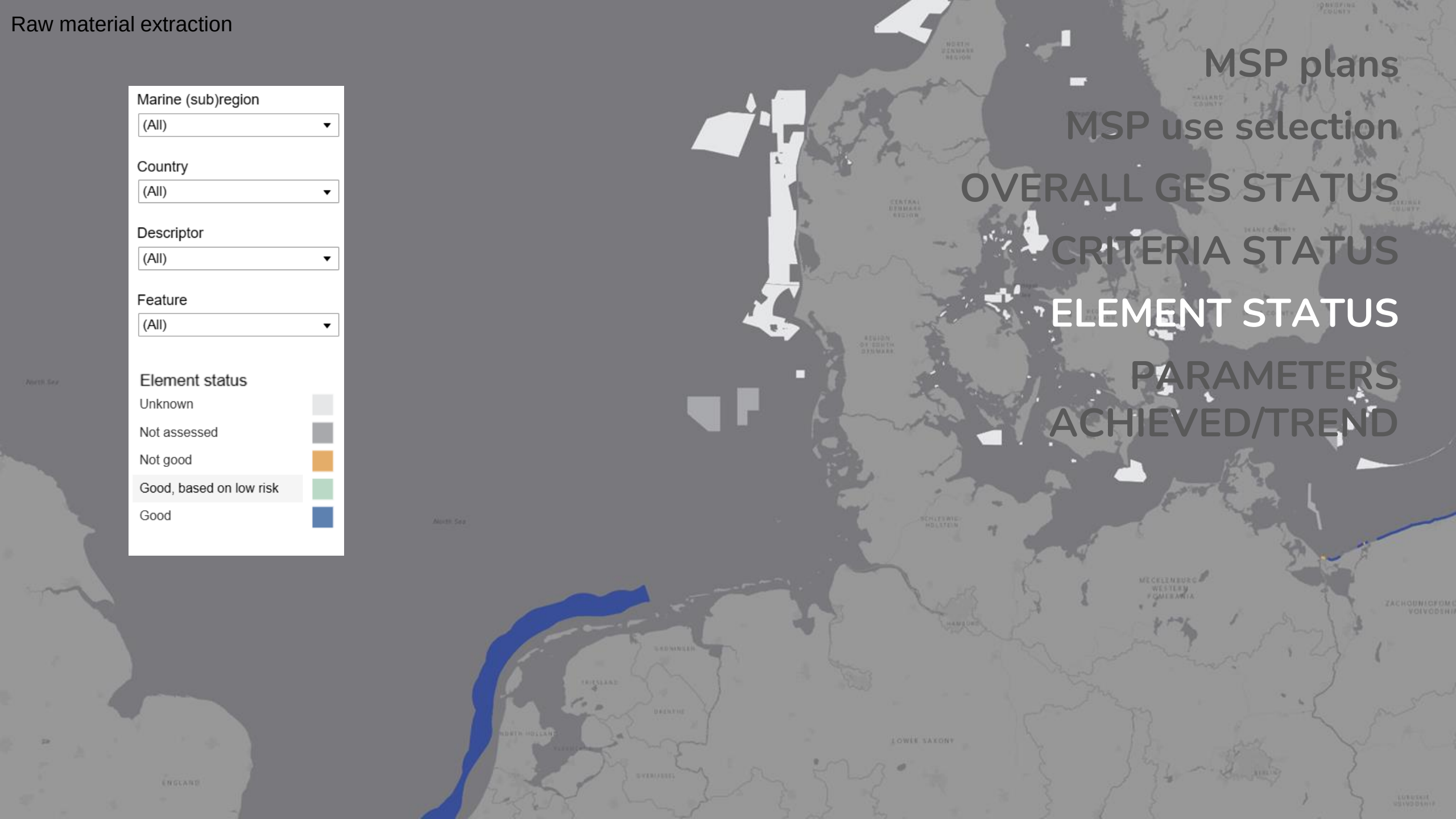
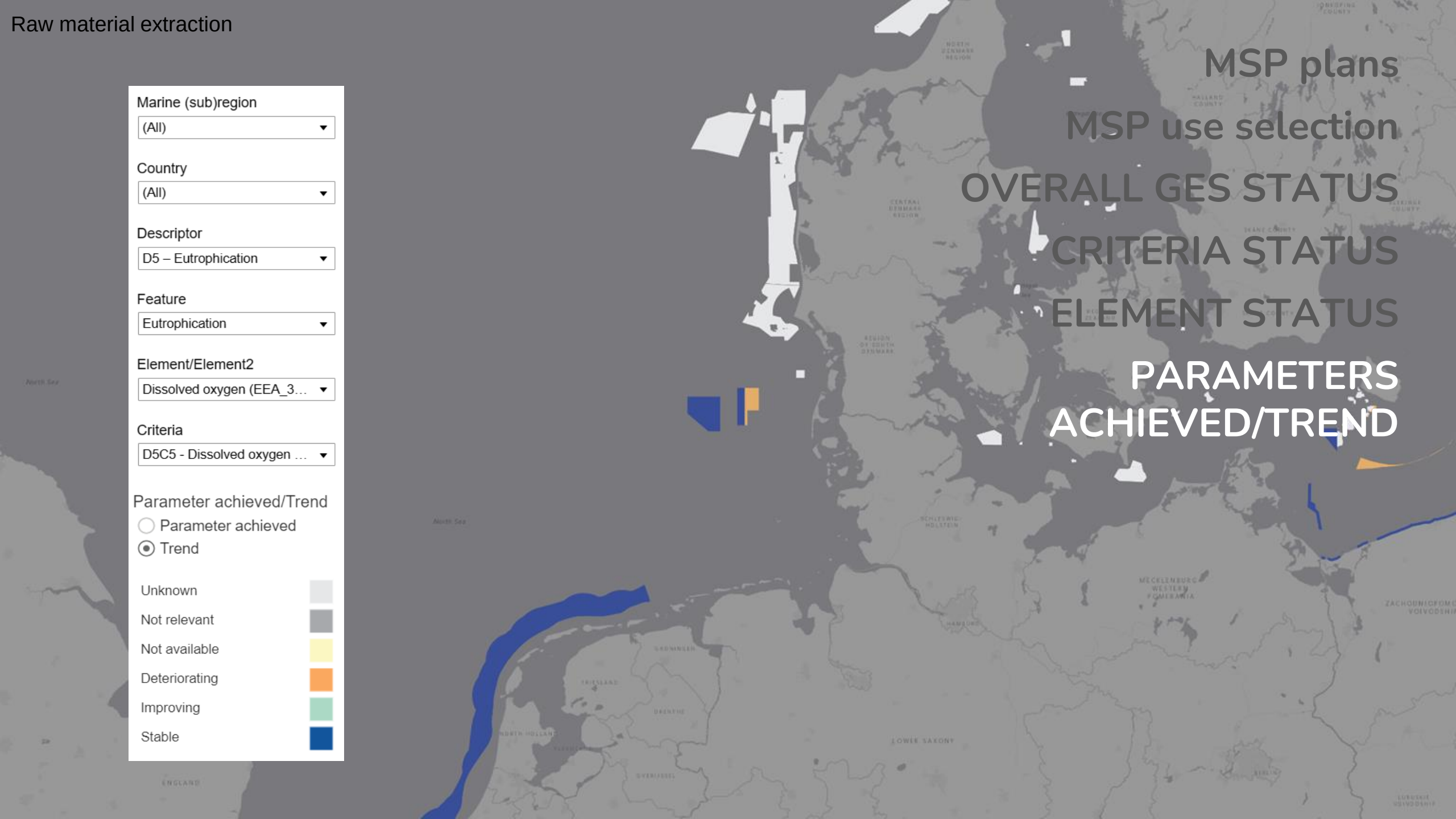


Raw material extraction



Raw material extraction



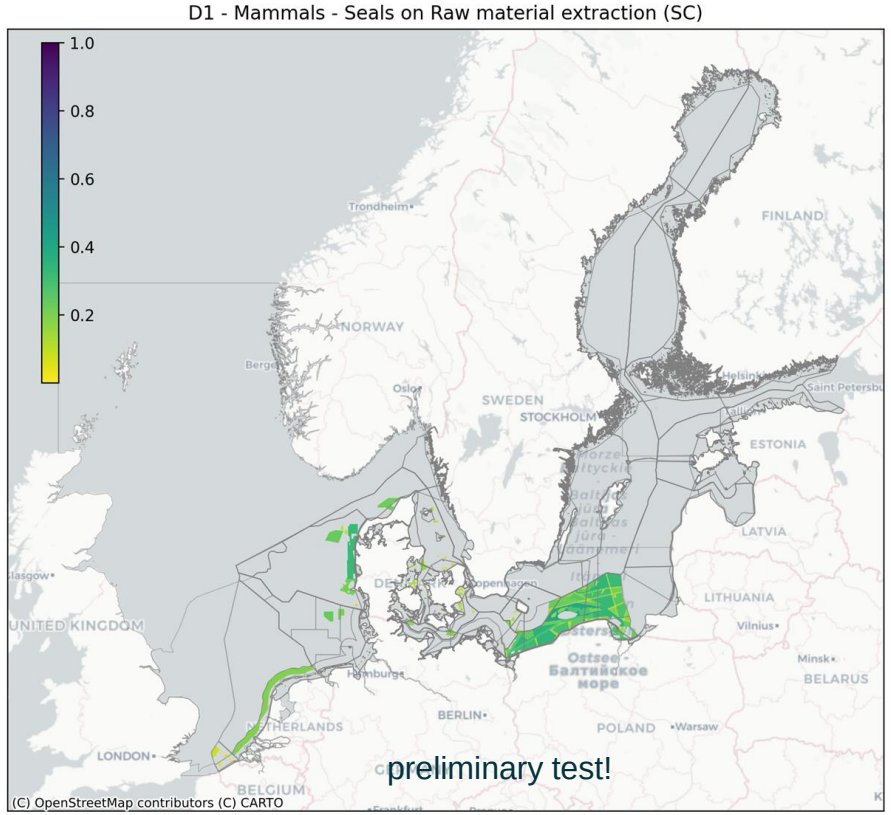
Spatial coherence index

In both perspectives (for MSP and MSFD users), the findings are supported by a **spatial coherence analysis**:

a **spatially explicit indicator** that provides the **degree of alignment and consistency between the Use Zoning elements and the Marine Reporting Units**.

The more similar the planned areas are to the MRUs, the greater the spatial coherence and therefore the reliability of the data connected to them.

Index ranges between 0 (min coherence) and 1 (total coherence)



Guided analysis

For a given USE, relevant (or priority) status components can be suggested first by the module, based on a predefined use-pressure-impact chain:

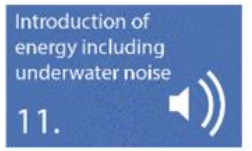
use	pressures	Impacted environmental receptors
example: **Raw Material Extraction:**	➔ Physical disturbance to seabed ➔ Physical loss of seabed ➔ Continuous low frequency sound	➔ Benthic broad habitats, Other habitats ➔ Ecosystems, including food webs ➔ Shelf ecosystem ➔ D6C1, D6C2, D6C3, D6C4, D6C5, D4C1, D4C2, D4C3, D4C4, D11C1, D11C2 ➔ all related elements (max 164)

Relevant MSFD Descriptors

Descriptor 1: Biodiversity is maintained

Descriptor 4: Elements of food webs ensure long-term abundance and reproduction

Descriptor 6: The sea floor integrity ensures functioning of the ecosystem



Descriptor 11: Energy including Underwater Noise

Element completeness check

Based on the latter assumption,

i.e. that each use generates more relevant pressures and impact to target environmental receptors than others,

an ‘Element completeness check’ of the priority assessment data available can provide a level of reliability of the analysis the user is performing.

This check combined with the coherence index may provide a measure of the reliability of the analysis performed.

Key messages: limitations

1. Need to have harmonised data from monitoring across EU (“indicators” spatial data).
2. Many data gaps in 2018 (not all criteria have been assessed by MS).
3. The Marine Reporting Units are too heterogeneous across EU.
4. (The MRUs concept itself limits the potential for a full intertwining between MSPD and MSFD and maybe it needs to be revised to take full advantage of the geospatial data management possibilities offered today)

Key messages: strength

1. The module can be useful not only for marine spatial planners, but also for people involved in the marine strategy implementation.
2. Reliable data quality check, embedded in the module, supports users in evaluating the analysis results. Additionally, gaps highlighted by the planner can provide valuable feedback to MSFD officers, and vice-versa.
3. After the alpha tests, we received precious feedbacks: there is still room for improvements,
4. WISE Marine is steadily improving its capacity to provide access to MSFD data. The module will use the same graphic approach to facilitate understandability and spreading of a common language.
5. The module facilitates information exchange between **MSPD** and **MSFD** national authorities. These authorities sometimes operate in parallel with minimal interaction. By enabling this exchange, the module represents a positive step toward achieving coherence and better coordination

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Possible improvements