

The Copernicus Marine Environment Monitoring Service as a platform to map marine ecosystem services: a Lithuanian case study

Miguel Inácio*, Marius Kalinauskas, Katarzyna Miksa, Eduardo Gomes, and Paulo Pereira

Mykolas Romeris University, Environmental Management Center (Lithuania)

*rinacio.miguel@gmail.com

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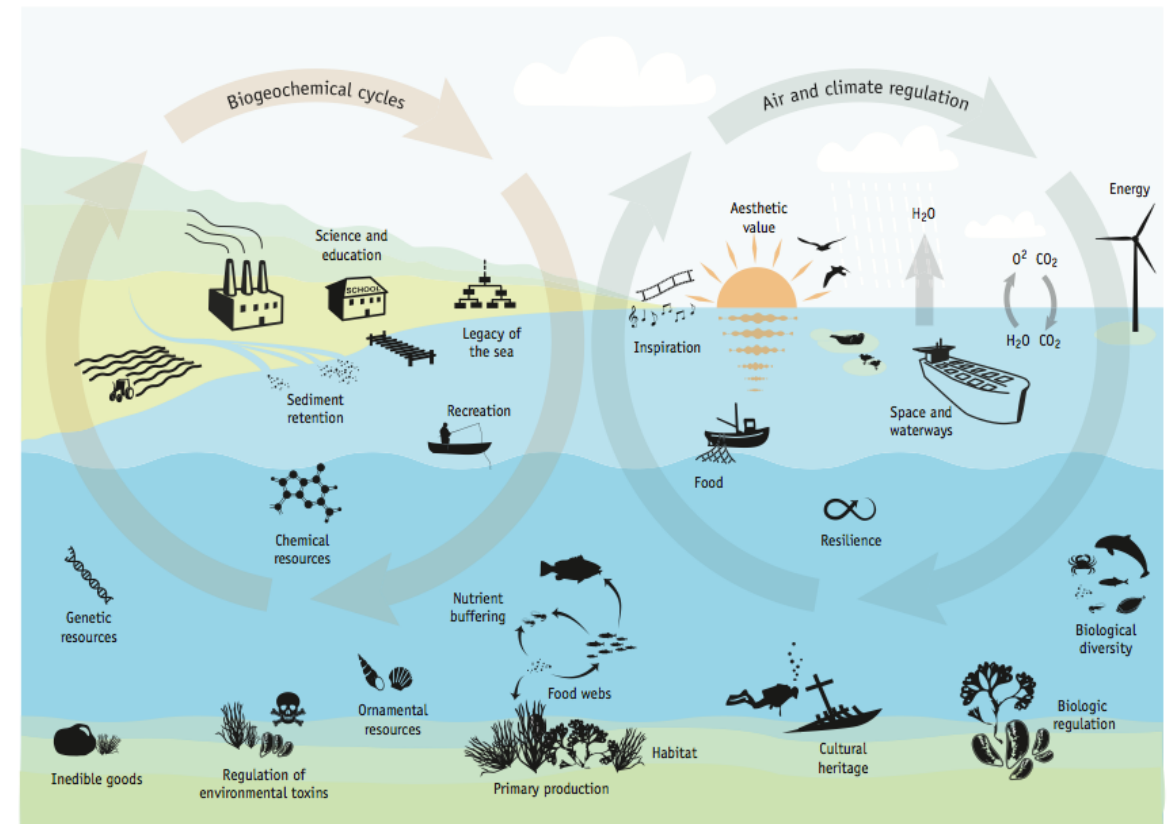
Lithuanian National Ecosystem Services Assessment and Mapping (LINESAM)

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Background information

What are ecosystem services and why is necessary to assess and map them?

- **Ecosystem services (ES)** are described as the **benefits people obtain from the environment** (Millennium Ecosystem Assessment, 2005)
- Coastal and marine ecosystems are one of the most important providers of ES, contributing to human wellbeing on a **regional, national, international and global scale**
- However, these areas are also among the **most fustigated by anthropogenic impacts**
- **Assessing and mapping ES** can contribute to **highlight the importance of coastal and marine ecosystems** and to support the achievement of environmental policies (WFD, MSFD, MSFD)

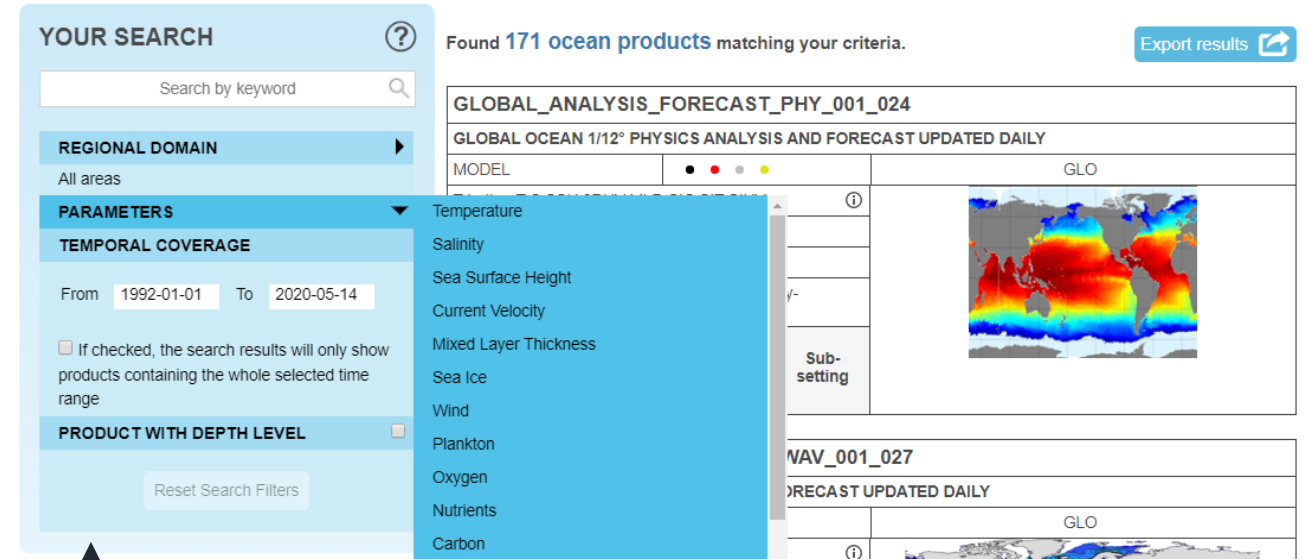


Challenges of mapping marine ES

- **ES research has grown exponentially** in the last decades. However, **there is a significant gap between land and marine realms**
- While one of the objectives is to **reduce this gap by assessing and mapping marine ES**; most scholars, planners, stakeholders and decision makers still face **various challenges** (e.g. Townsend et al. 2018, Liqueette et al. 2013):
 - Lack of **sufficient understanding** on the ecological processes and functions in the marine environment, leading to the **provision of ES**
 - **Lack of understanding** on the **trade-offs and synergies** between ES in the marine environment
 - **Lack of spatio-temporal data availability**
(especially regulating & maintenance ES)



The Copernicus Marine Environment Monitoring Service



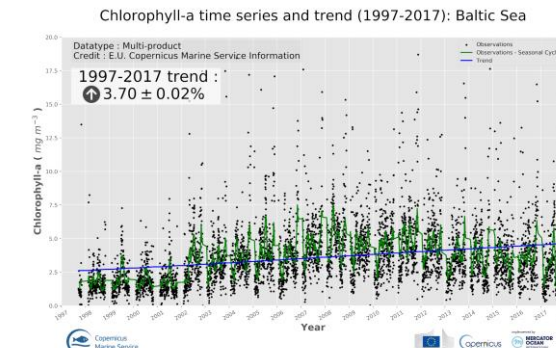
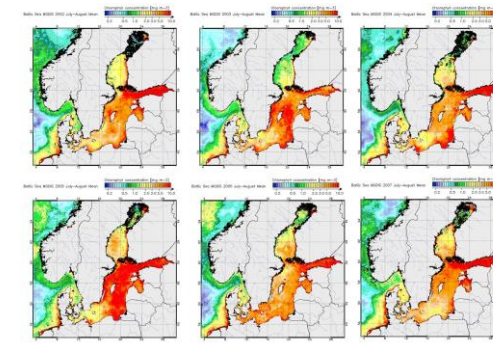
Ecosystem Services

Indicators

Proxies

*e.g Maintenance of
nursery conditions*

e.g Productivity



Application of CMES to map ES

Lithuanian National Ecosystem Services Assessment and Mapping

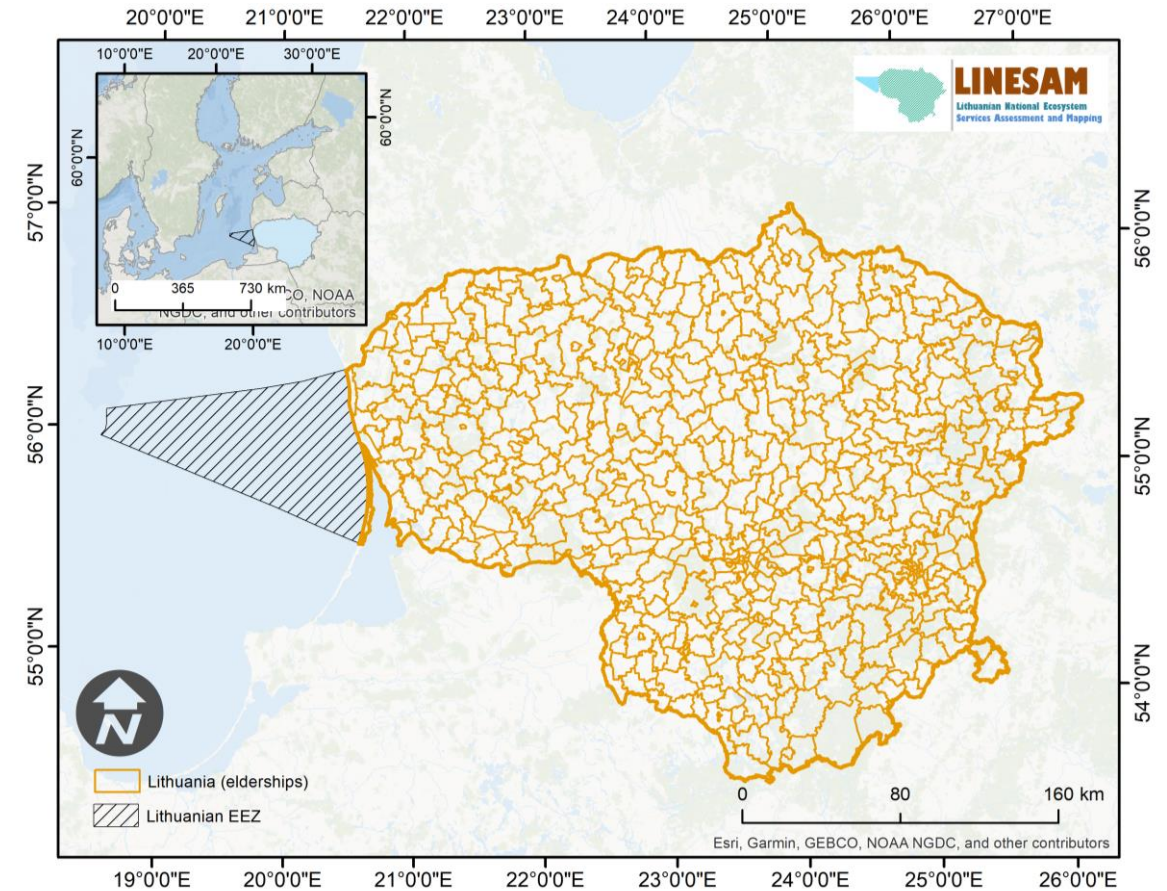


LINESAM

Lithuanian National Ecosystem
Services Assessment and Mapping

Aim: assess and map ES in Lithuania,
inserted in the Mapping and Assessment
of Ecosystems and Their Services (MAES)
EU project

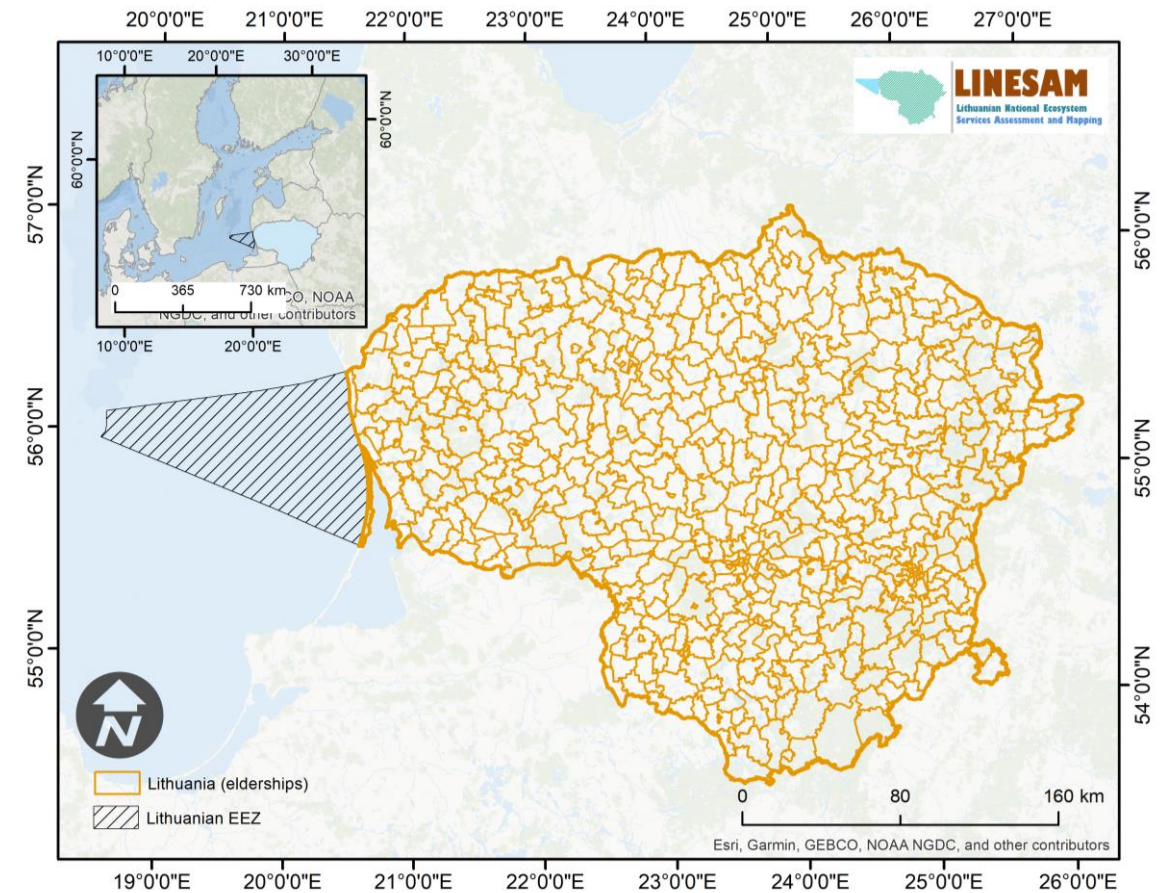
Terrestrial and
Marine



Study Area: Lithuanian Exclusive Economic Zone (EEZ)

Lithuanian EEZ:

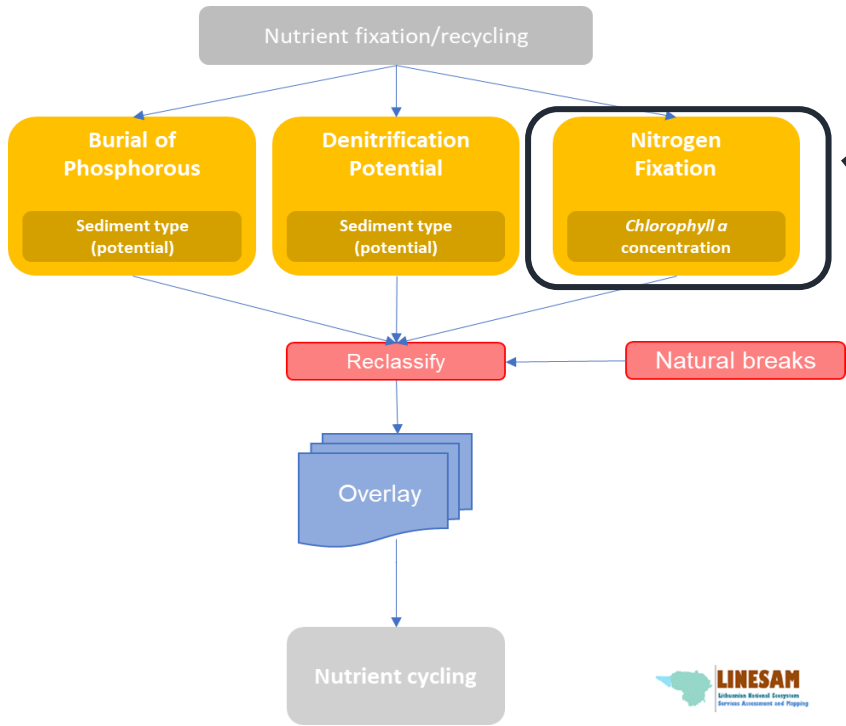
- 4560 km²
- 90 km coastline
- Average depth of 51 meters
- 1 port, 3 small harbours
- Multiple protection levels (Natura 2000, HELCOM, etc)



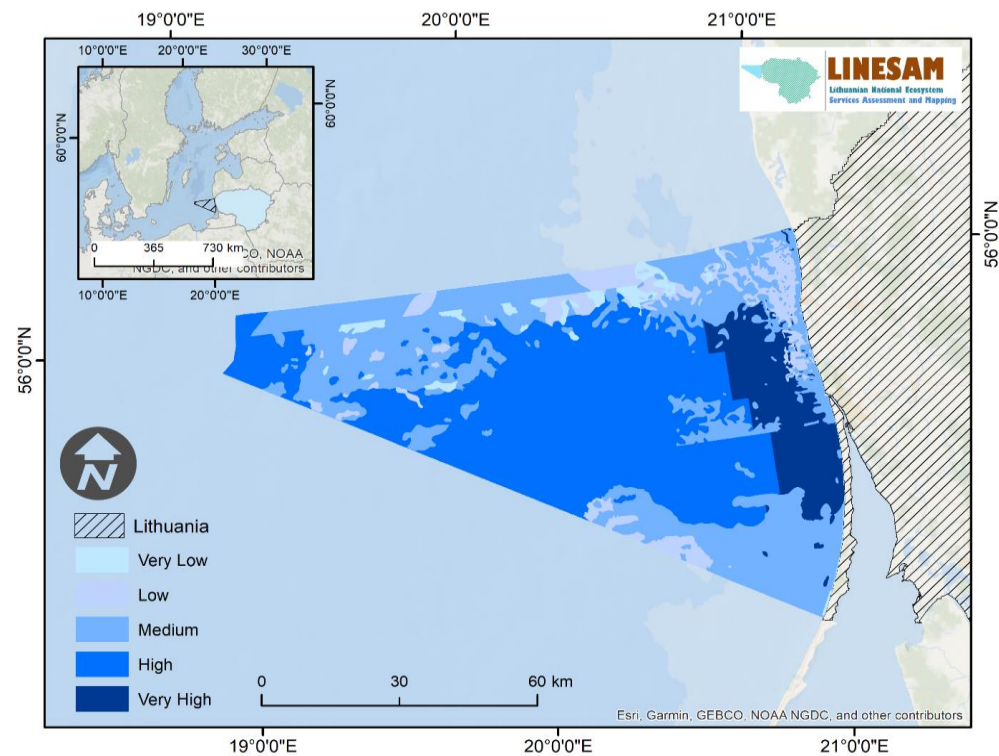
Methodological approach: Mapping Marine ES (example)

Regulating & Maintenance ES

Nutrient cycling



Marine Copernicus, 2019. Baltic Sea
Biogeochemistry Reanalysis
(BALTICSEA_REANALYSIS_BIO_003_012)
(marine.copernicus.eu/)



Summary

The role of CMES as a platform to map and assess marine ES?

- **The CMES**, bridges two gaps in relation to mapping and assessing marine ES:
 - **Provides data for different spatial and temporal scales**
 - **Is a scientifically reliable and sound data source**
- It allows users to **get processed model results** and applied them into their ES models
- Assessment and mapping can **be done in a quantitative way**, which is majorly lacking in the marine ES realm
- Utilizing scientifically sound data, **increases the acceptance and relevance** of mapping results **by stakeholders and decision-makers**

Thank you!

For further questions
rinacio.miguel@gmail.com