Multi-method Assessment for Resilient Ecosystem Services and human-nature system integration (MARES)

Presentation of the main results

About BONUS MARES -project

- Sustainable management of the marine environment requires better understanding on the **socio-economic benefits** that ecosystems provide.

- Improved understanding is also needed on the **interactions between environmental change** and the **capability of ecosystems in providing** ecosystem services.

- MARES responded to the challenge by reviewing studies on ecosystem services and their valuation methods. A big step was developing an open access tool which brings this information available for decision making.

- Research was conducted during 2018-2020

- **Research Partners**

  Pellervo Economic Research PTT, Finland

  Estonian Marine Institute / University of Tartu, Estonia

  GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany

  e2 Research, Finland

What are ecosystem services?

Ecosystem services describe the numerous benefits that humans derive from ecosystems and which can translate into socio-economic benefits. They fall into three categories:

1 **PROVISIONING SERVICES** – the provision of habitat, food or raw material

2 **REGULATING SERVICES** – the regulation of nutrient or carbon storage

3 **CULTURAL SERVICES** – recreational, aesthetic and intellectual values
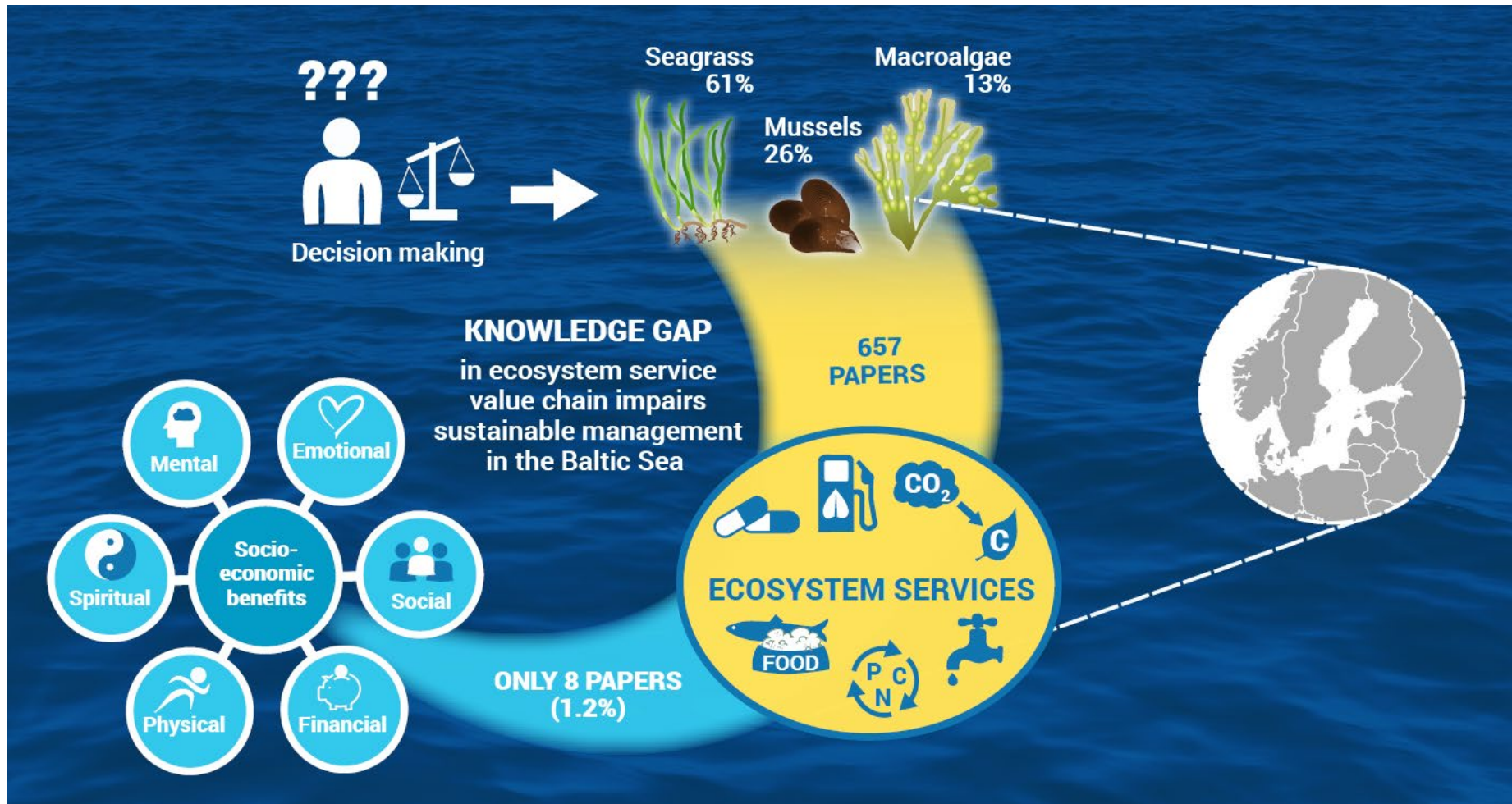
BONUS MARES –project

- Enhanced science integration in the field of ecosystem services
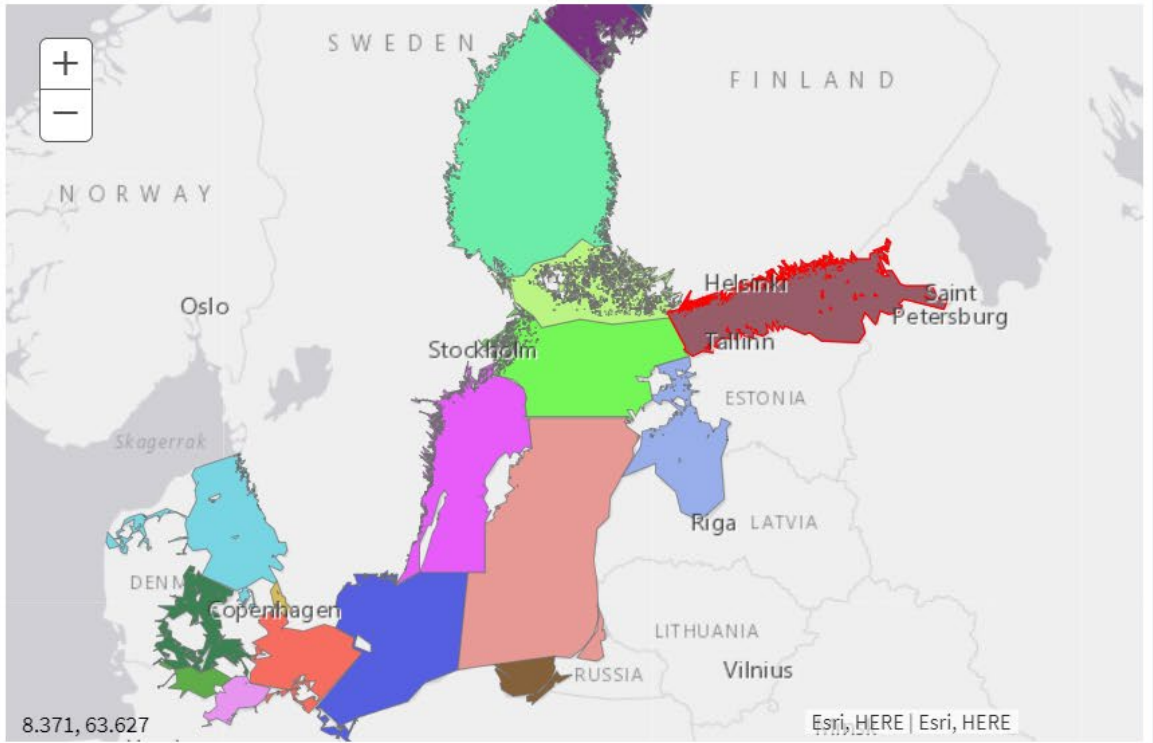- Created an interactive web-based tool to support decision making

Main outputs:

1. Systematic Literature Review
2. Geospatial Toolkit

Systematic literature review revealed a knowledge gap

Geospatial toolkit facilitates exploration of the review results...

...with varying illustrations
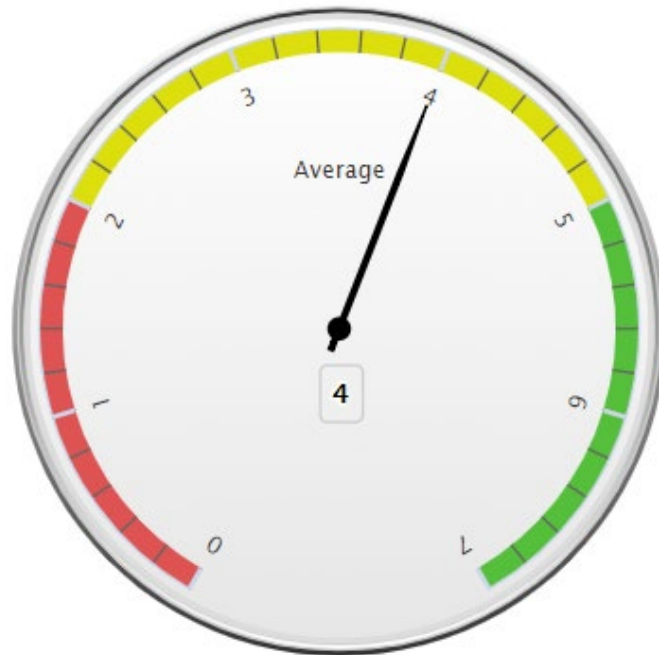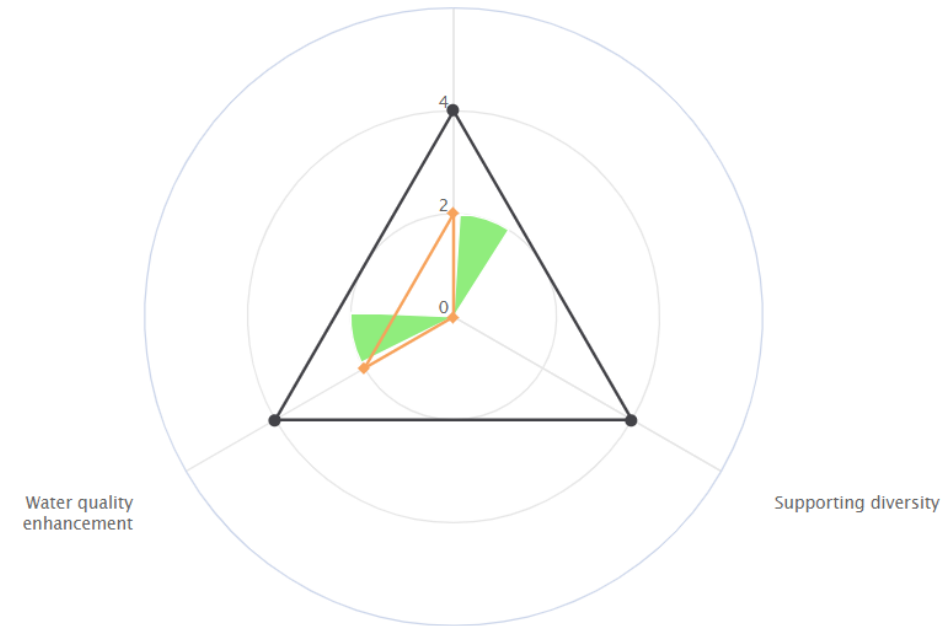
… as well as adding your information on ecosystem service and their valuation methods

Add your feedback

Ecosystem service *

Description of ecosystem service

Habitat

Species

Region

Reference *

Multidimension method

Economic dimension methods

➕ Market price (Economic)

Natural dimension methods

➕ Spatial proxy methods (Biophysical)

Human and social dimensions methods

➕ Preference assessment (Socio-cultural)

Economic score *

Do not know

Natural score *

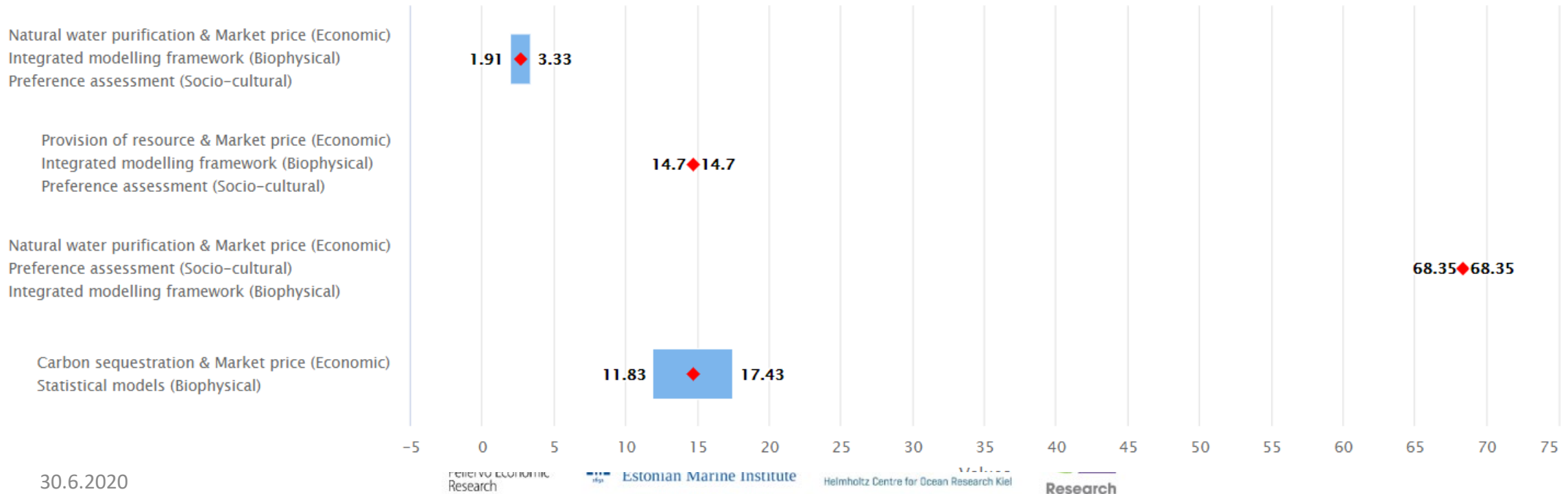Do not know

Human score *

Do not know

Social score *

Do not know

...and exploring the current status of knowledge on ecosystem services' valuation methods based on the Eco-GAME matrix

Eco-GAME index of different Ecosystem services & Methods combinations

Natural water purification & Market price (Economic)
Integrated modelling framework (Biophysical)
Preference assessment (Socio-cultural)
1.91 ◆ 3.33

Provision of resource & Market price (Economic)
Integrated modelling framework (Biophysical)
Preference assessment (Socio-cultural)
14.7◆14.7

Natural water purification & Market price (Economic)
Preference assessment (Socio-cultural)
Integrated modelling framework (Biophysical)
68.35◆68.35

Carbon sequestration & Market price (Economic)
Statistical models (Biophysical)
11.83 ◆ 17.43

Everything is captured in 3 Policy Briefs

ECOSYSTEM SERVICES AND THEIR
SOCIOECONOMIC BENEFITS TO HUMANS
– improved understanding for
sustainable management of the Baltic Sea

BONUS MARES - Policy Brief I • 2020

PLAYING AN ECO-GAME TO ASSESS THE QUALITY
OF SCIENTIFIC KNOWLEDGE FOR EVIDENCE-
BASED DECISION MAKING

BONUS MARES – Policy Brief 2 • 2020

TRANSFERRING KNOWLEDGE ON ECOSYSTEMS
AND THEIR BENEFITS IN THE BALTIC SEA REGION

A Geospatial toolkit to support decision making

BONUS MARES - Policy Brief 3 • 2020

- **MARES Website and Publications**
  https://sisu.ut.ee/mares/about-mares

- **MARES Geospatial Toolkit**
  http://www.sea.ee/esq/review/main#
  http://www.sea.ee/esq/participatory/tool