

# Multi-use in European seas – results from MUSES project with Baltic Sea in focus

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SmartSea Seminar Future of Gulf of Bothnia  
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# s.Pro-sustainable projects

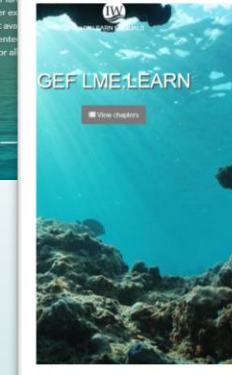
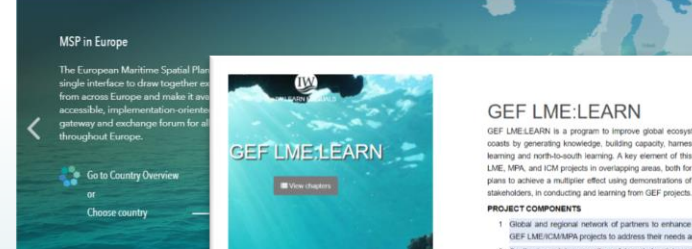


## Our Topics

- Maritime Spatial Planning .... since 2001
- Blue-green economy .... EU Blue Growth studies
- Regional development .... Smart Specialisation

## What do we do

- Project Development & Application .... INTERREG, Horizon, etc.
- Project & Platform Management .... MSP Platform, SUBMARINER
- Policy Advice, Strategy design, Roadmaps, Action Plans ....
- Capacity Building .... LME Learn, Blue Solutions, MARISMA
- Stakeholder processes and meetings .... Baltic Blue Growth Agenda
- Studies, Research, Reports, Publications .... MSP for Blue Growth



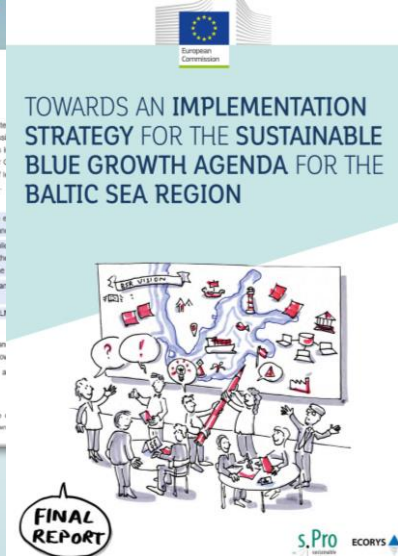
**GEF LME:LEARN**  
The GEF LME:LEARN is a program to improve global ecosystem services by generating knowledge, building capacity, harnessing learning and north-south learning. A key element of this LME, MPA, and ICM projects in overlapping areas, both for plans to achieve a multiplier effect using demonstrations of stakeholders, in conducting and learning from GEF projects.

**PROJECT COMPONENTS**

1. Global and regional network of partners to enhance GEF LME/ICM/MPA projects to address their needs
2. Synthesis and incorporation of knowledge into policy development of new methods and tools to enhance the MPA and climate variability and change, including the capacity and partnership building through training and similar initiatives.
3. Capacity and partnership building through training and similar initiatives.
4. Communication, dissemination and outreach of GEF LME:LEARN

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**Acknowledgements**  
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# SUBMARINER Network

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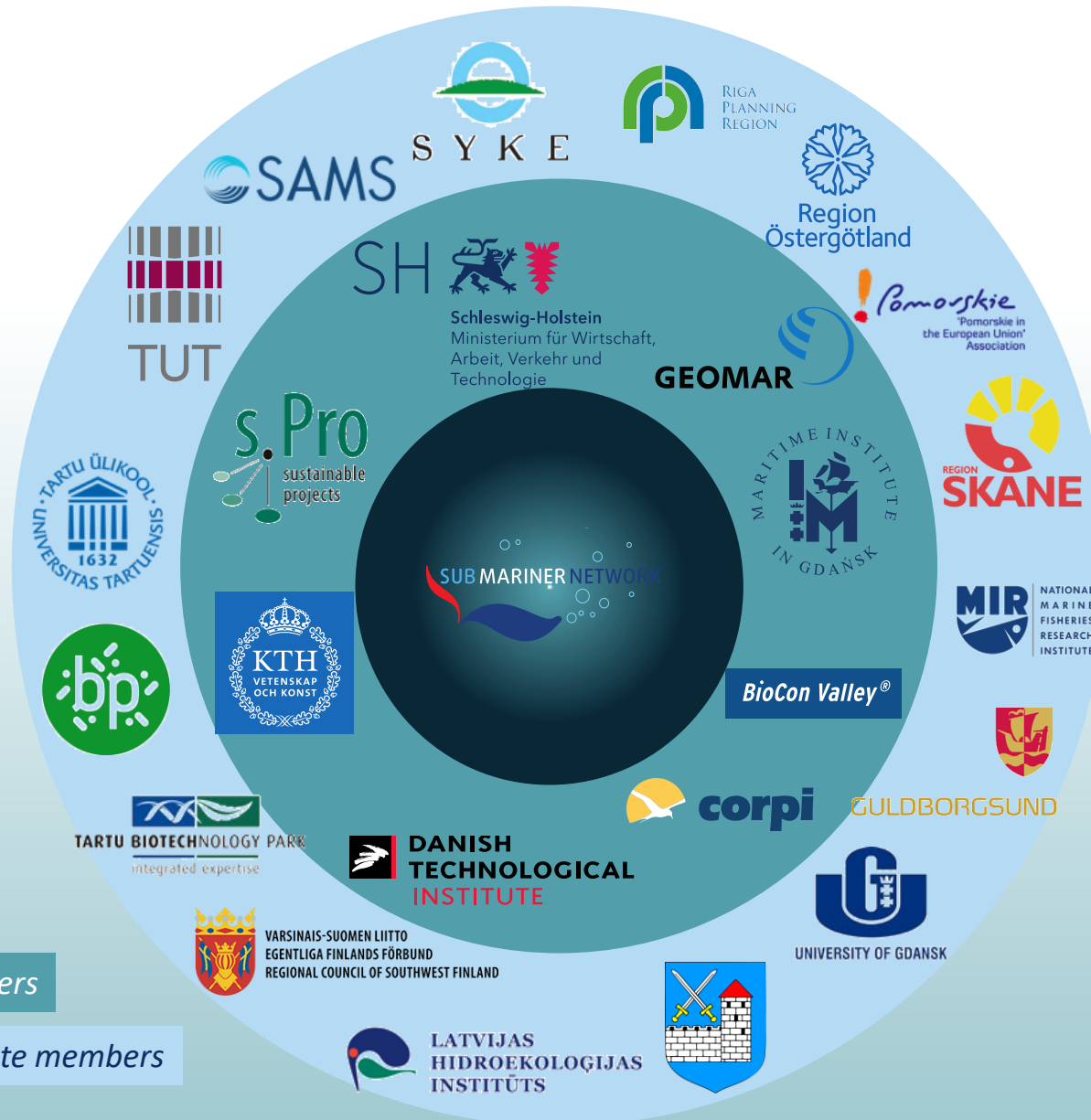
Connecting the blue-green economy throughout the Baltic Sea Region



**SUBMARINER  
Network**  
a hub for promoting  
a sustainable marine  
bioeconomy  
in the BSR

# Current SUBMARINER network members ....

the hub  
for promoting  
a sustainable  
marine (bio)  
economy in the  
Baltic Sea Region  
and beyond



Member of:



Flagship of:



# SUBMARINER Network projects

1<sup>st</sup> Gen 2015-2019

**Baltic Blue Biotechnology Alliance**

*Advancing marine bio-based product development*





**InnoAquaTech**

*Cross-border development & transfer of innovative and sustainable aquaculture technologies*





2<sup>nd</sup> Gen 2018-2021

**Blue Platform**

*Bioeconomy for blue growth*





**Baltic Blue Growth**

*Initiating full scale mussel farming in the Baltic Sea*





**Baltic RIM**

*Baltic Sea Region Integrated Maritime Cultural Heritage Management*





**SmartBlue REGIONS**

*Smart Specialisation and Blue Growth in the Baltic Sea Region*





**MUSES Multi-Use in European Seas**

*Multi-use of European seas*





# And more projects to come .....

- **GRASS:** macroalgae
- **Operational Pilots:** monitoring technologies
- **BalticPROBLUE:** promoting blue-bio based products
- **Blue Forest:** introducing an entrepreneurial discovery process for the blue bioeconomy



But mixed finance ....

membership, ‚freemium‘, services, direct EU tenders,  
H2020, BONUS, foundations, private money



# The MUSES project

- ❑ EU Horizon 2020
- ❑ 2 Mio €
- ❑ 24 Months (Nov 2016 – Oct 2018)
- ❑ 10 partners from 7 countries

30  
RESEARCHERS  
AT WORK

marinescotland



Scottish  
Government  
gov.scot

Azores



EASTERN ATLANTIC OCEAN



ECORYS



Portugal

Scotland

NORTH SEA

BALTIC SEA

Netherlands

Germany

Poland

Italy

BLACK SEA

Greece

MEDITERRANEAN SEA

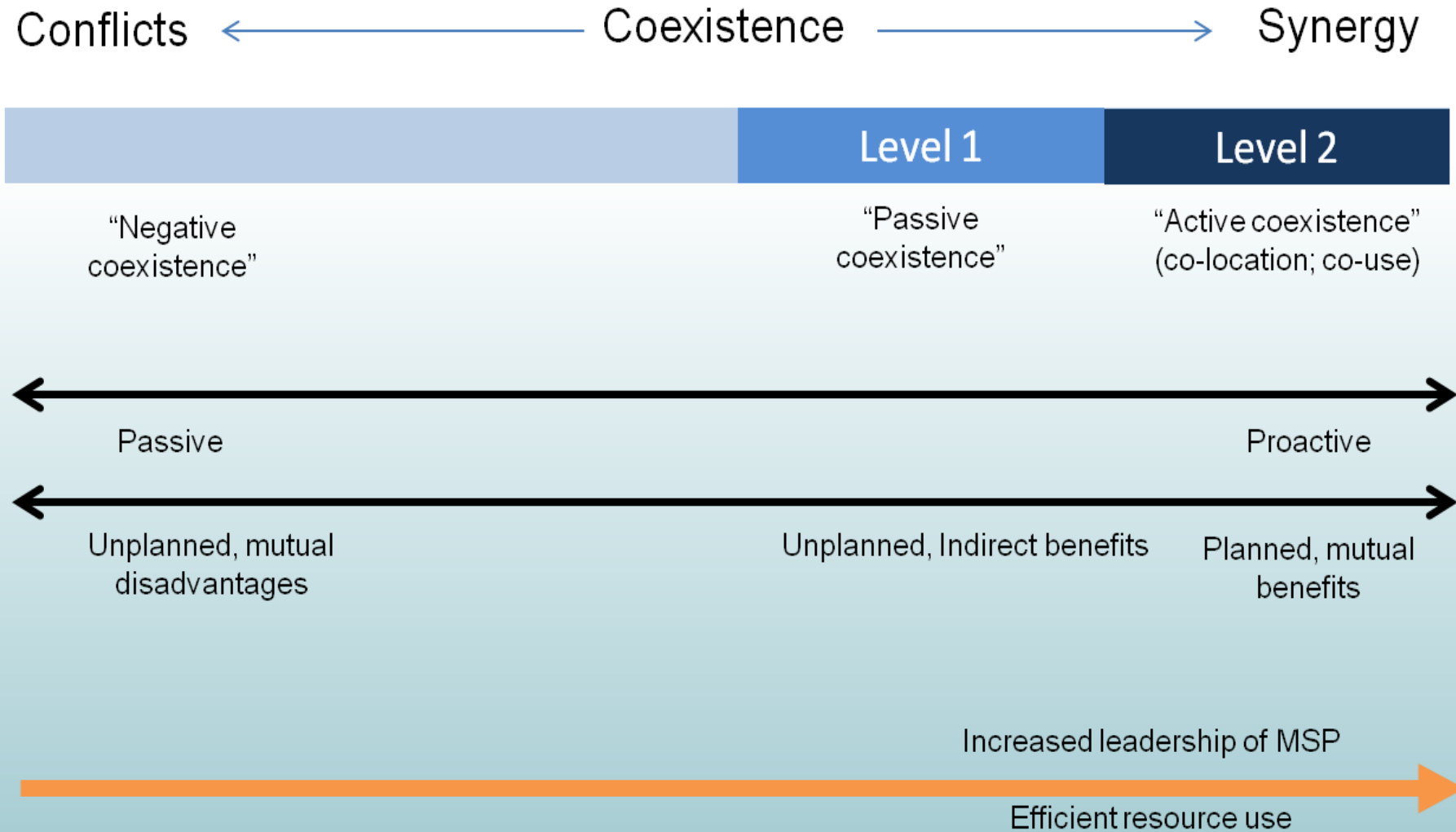
# Definition

Multi-Use - in the realm of marine resource utilization –  
is understood as the **intentional joint resource** use  
by two or more users

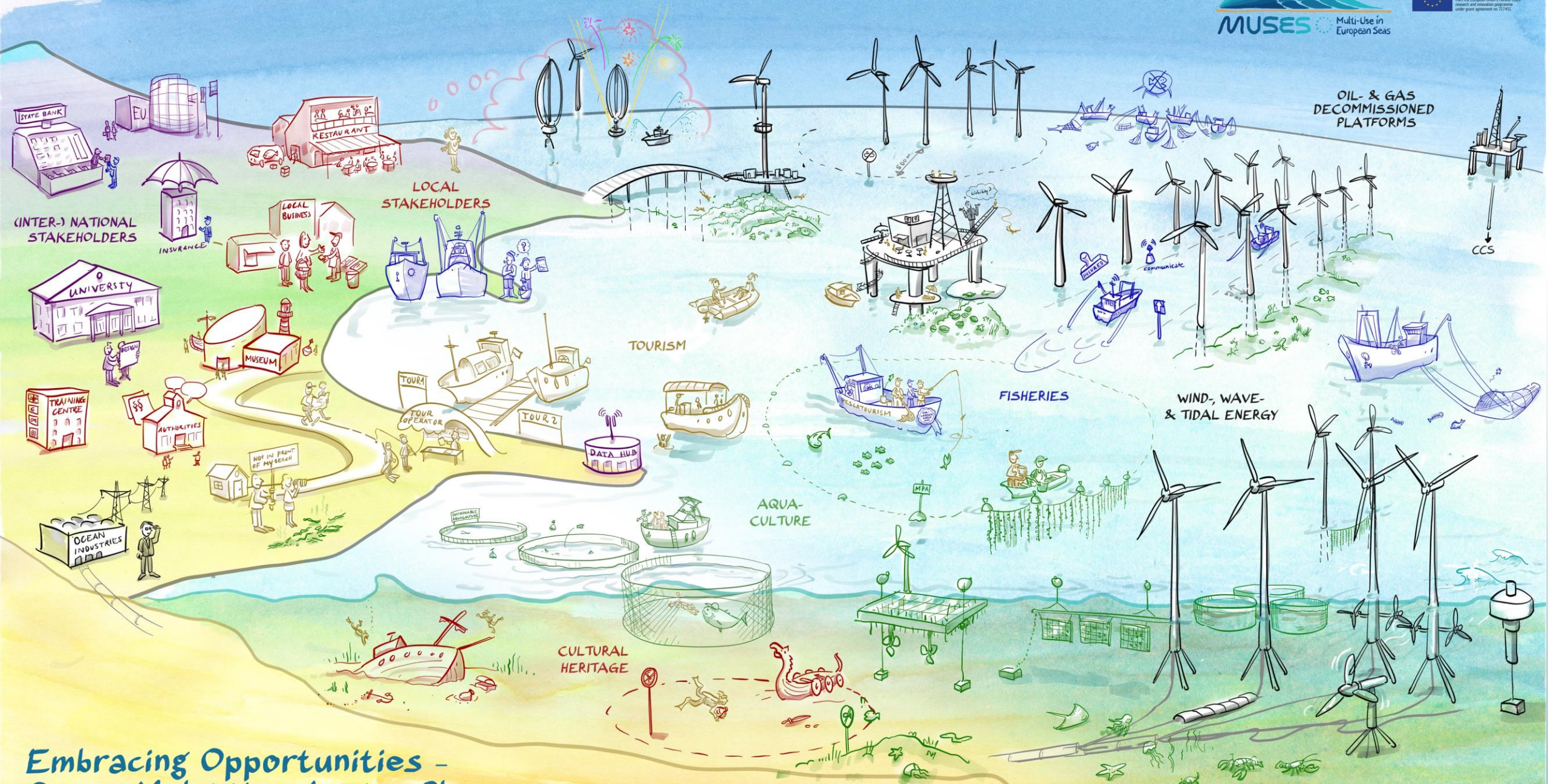
**A radical change from the concept of exclusive resource rights to  
the inclusive sharing of resources by two or more users.**



# What's the difference?







# Embracing Opportunities - Ocean Multi-Use Action Plan



# Multi-Use Typology

## Primary + Secondary Use/ Staggered Development

MU where existing primary use (i.e. offshore wind) is being combined with the new secondary use (i.e. shellfish aquaculture)

## Joint MU development

MU where two (or more) combined uses are applying for licenses and developing in the same time

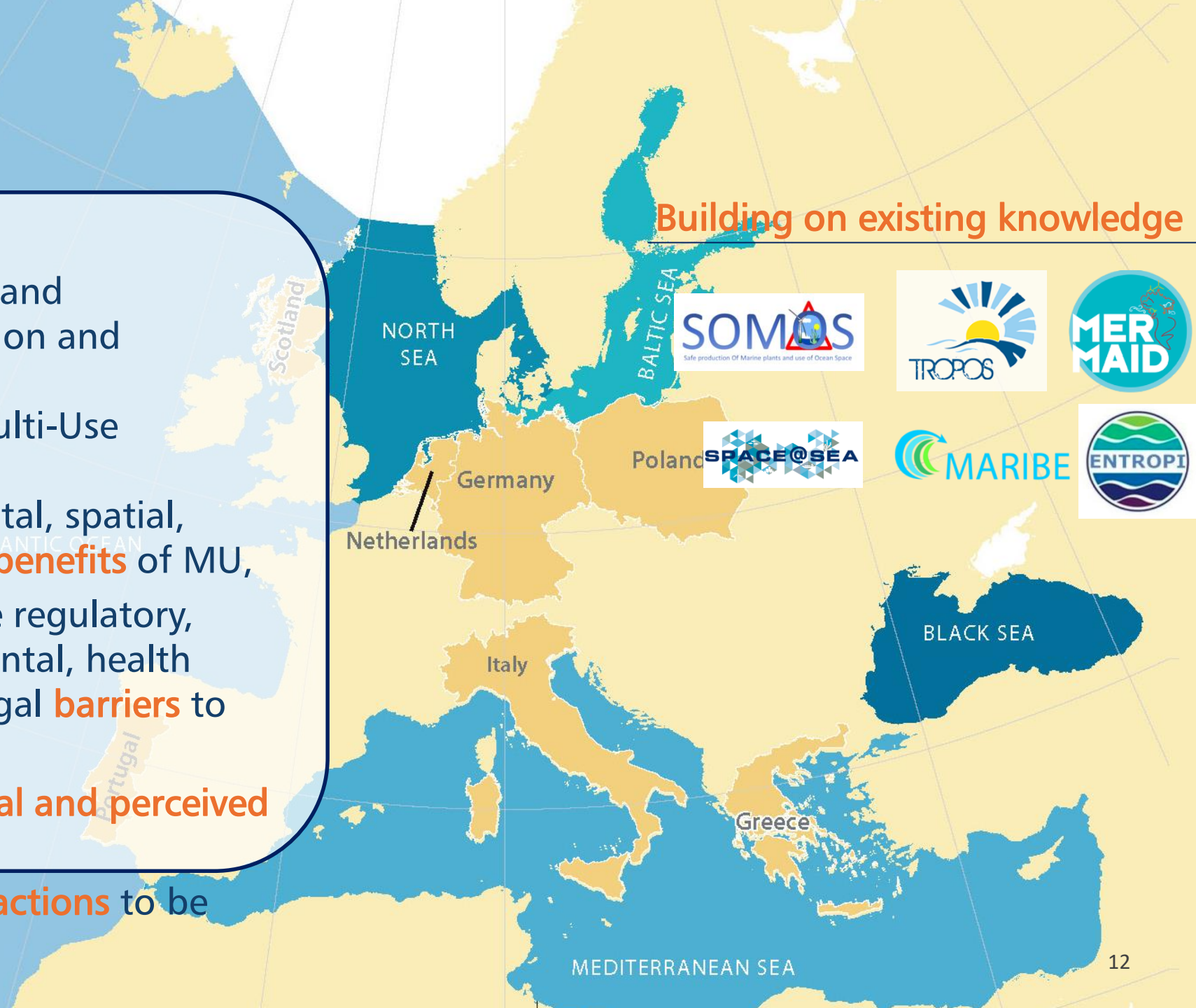
Type	Dimensions				Description	Examples
	Spatial	Temporal	Provisioning	Functional		
Type 1	✓	✓	✓	✓	Takes place in same exact place and time, with shared services and core infrastructure	German FINO Platforms, PLOCAN, Scottish Floating Power Plant (FPP)
Type 2	✓	✓	✓		Peripheral infrastructure or services on sea or land are shared	Proposed aquaculture in OWF in the Germany and Scotland
Type 3	✓	✓			Takes place in same ocean space at the same time	Fisheries in Offshore Windfarms in the UK
Type 4	✓				Takes place in the same ocean space but subsequently	Repurposing of offshore structures for new uses like recreational fishing, tourism, aquaculture or environmental conservation (Italy)

# Project aims

Contribute to **policy, legal** and **administrative** harmonization and improvement to overcome barriers to Multi-Use

- ✓ Investigate environmental, spatial, economic and societal **benefits** of MU,
- ✓ Highlight inappropriate regulatory, operational, environmental, health & safety, societal and legal **barriers** to Multi-Use
- ✓ Distinguish between **real and perceived** barriers;
- ✓ Propose solutions and **actions** to be taken.

Building on existing knowledge



## 10 PARTNERS

- Scotland (2)
- Poland (1)
- Germany (2)
- Italy (2)
- Netherlands (1)
- Greece (1)
- Azores (1)

## 5 SEA BASINS

- Baltic Sea
- North Sea
- Eastern Atlantic Ocean
- Mediterranean Sea
- Black Sea

## WORK PACKAGE 2

Multi-use sea basins analysis

## WORK PACKAGE 3

Multi-use case studies analysis

## WORK PACKAGE 4

### Action Plan

Identify real multi-use opportunities, actors and specific actions needed to advance development of multi-use in European Seas

Present practical solutions to overcome existing barriers and minimize risks associated with multi-use development whilst maximising common benefits.

## CASE STUDIES

- 1 NORTH SEA: North Coast of Scotland, East Coast of Scotland & Southern North Sea
- 2 NORTHERN ATLANTIC SEA: West Coast of Scotland
- 3 SOUTHERN ATLANTIC SEA: South Coast of mainland Portugal, Azores archipelago
- 4 BALTIC SEA: Island of Gotland (Sweden)
- 5 BALTIC SEA: Southeast Denmark
- 6 MEDITERRANEAN SEA: Northern Adriatic
- 7 MEDITERRANEAN SEA: Aegean Sea / Cyclades



- Offshore wind energy
- Wave energy
- Tidal energy
- Fisheries
- Aquaculture - Fish/Shellfish
- Aquaculture - Seaweed
- Oil and gas
- Marine Protected Areas (MPA)
- Marine transport
- Tourism
- Underwater cultural heritage



# Sea basin analysis

5 EU Sea  
BASINS  
ANALYSED

23 EU  
COUNTRIES  
REVIEWED

195  
STAKEHOLDER  
INTERVIEWS

14 MU  
COMBINATIONS  
ANALYSED

Azores

EASTERN ATLANTIC OCEAN

Scotland

NORTH SEA

BALTIC SEA

Germany

Poland

Netherlands

Italy

BLACK SEA

Greece

MEDITERRANEAN SEA

# Case studies

## ENGAGEMENT:

117 INTERVIEWS  
1 WORKSHOP  
1 FOCUS GROUP  
EXTENDED NETWORKING

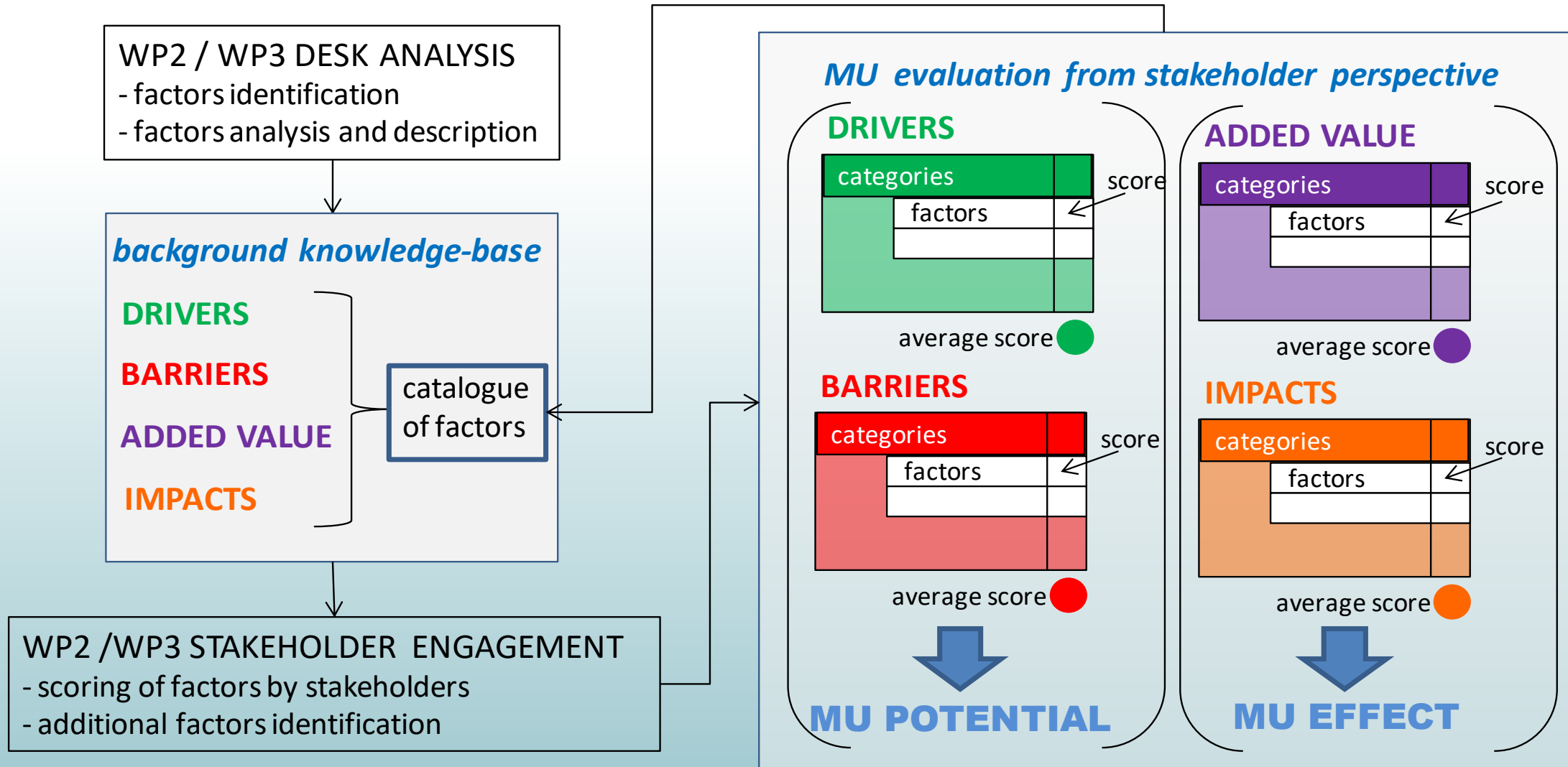
15 MOST PROMISING MULTI-USE COMBINATIONS IDENTIFIED

MORE THAN 90 ACTIONS SUGGESTED

- Offshore wind energy
- Wave energy
- Tidal energy
- Fisheries
- Aquaculture - Fish/Shellfish
- Aquaculture - Seaweed
- Oil and gas
- MPA Marine Protected Areas
- Marine transport
- Tourism
- Underwater cultural heritage



# Evaluating MU





# MU drivers & barriers

- More efficient use of ocean space and resources

- Enable certain use to happen at all

- Economic benefits to marine users

- Reduce Conflicts

- Alternative source of revenue

- Funding for UCH and MPA management

- Diversification of sectors

- Ease the environmental pressures

- Lack of information about cumulative impacts

- Permitting regime

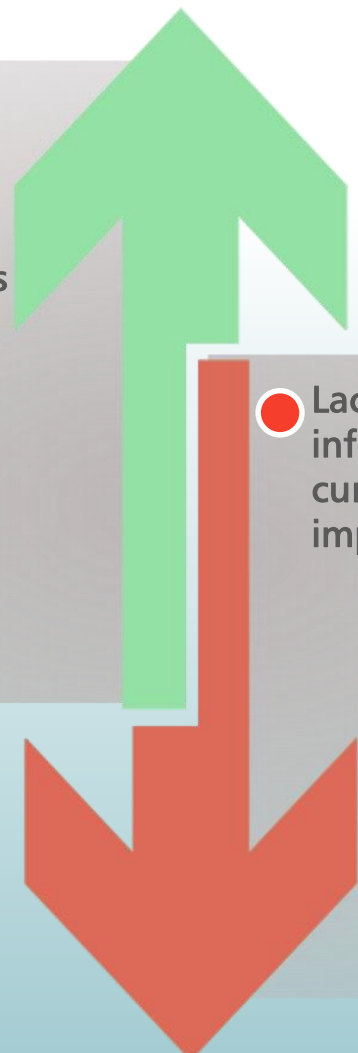
- Different priorities among sectors

- different 'space' preferences / offshore 'not' hot

- High risk/value ratio

- Low investment capacity of some users

- Really 'win-win' ? macro vs micro



# Why an Action Plan?

- provide **orientation** and **recommendations** on
  - what should be done
  - by whom and
  - where
 in order to further develop the MU concept.
- comes at **right time** ....
  - MSP Directive
  - Blue Investment
  - SDGs 14
- Address barriers **not only** in relation **to technology**:
  - regulatory
  - financing
  - liability issues
  - environmental concerns
  - stakeholder perceptions
  - lack of skills

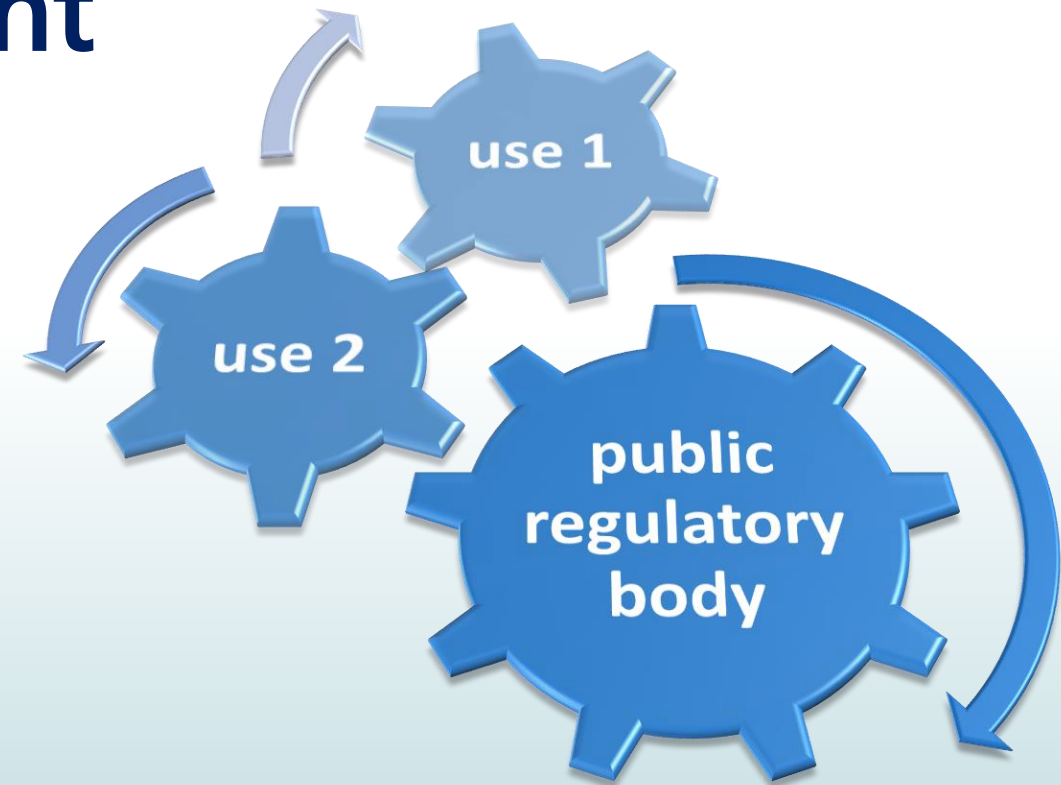
## Focus on 9 MU combinations

MU	Eastern Atlantic	North Sea	Baltic Sea	Mediterranean Sea	Black Sea
OWF & Fisheries		✓			
OWF & Aquaculture		✓	✓	✓	
OWF & Tourism		✓	✓		
OWF & Wave energy		✓			
Wave energy & Aquaculture	✓	✓		✓	
Tourism & Aquaculture	✓			✓	
Tourism & Fisheries	✓			✓	✓
Tourism & UCH & Environmental protection	✓		✓	✓	✓
Re-use of O&G decommissioned installations		✓		✓	



# Actors for MU Development

A MU does NOT only involve TWO sectors ....  
e.g. commercial enterprises BUT  
regulatory body / bodies ...  
and ..... Insurance, finance, stakeholders !



For a MU to happen, interest needs to come from at least **two**  
**sides: both uses**  
or  
**one use and the regulatory body**

# Action Plan Targeted actors/institutions



# MUSES Action Plan

- **Definition/Scope of the MU**
- **State of Development / Potentials...**
- **Drivers / Benefits .... Barriers / Negative Impacts**
- **Objectives**
- **Action/Recommendations**

→ priority steps - easy targets as 'low hanging fruits' ?

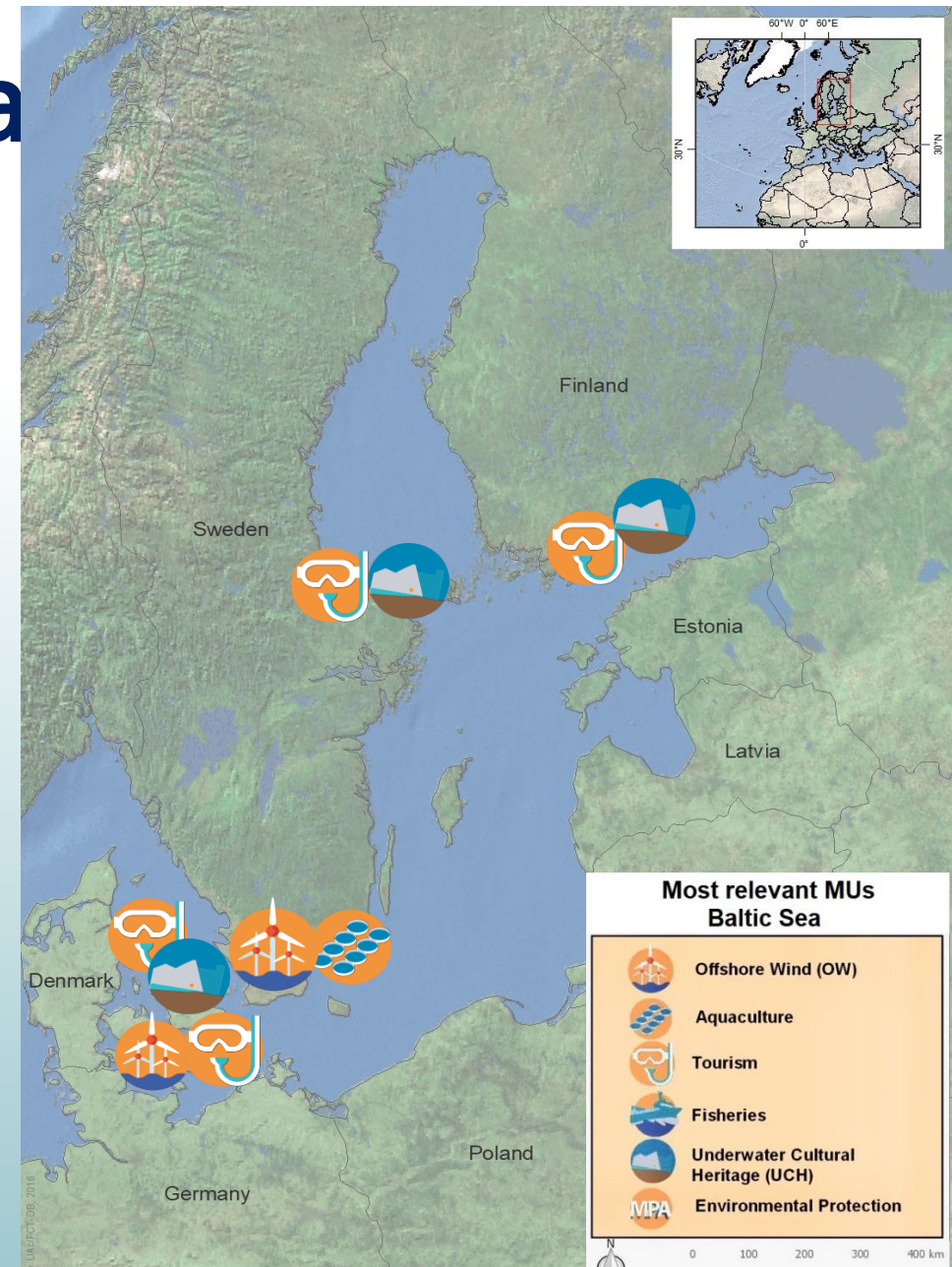
→ Who are the relevant actors ?

→ What are the interdependencies ?

# MU Opportunities: Baltic Sea

## Offshore wind related MU UCH and Tourism, pescatourism ....

- Combinations with the OWF sector e.g. Aquaculture & Tourism:  
an opportunity to reduce conflicts, save space, 'open' space, combat eutrophication
- UCH/Tourism: Most well preserved wooden shipwrecks in Europe
- Short tourism season in the Baltic : MU combinations can contribute to prolong tourism season and possibility of diversifying fishing



# Baltic Sea in focus: MU in policy ?

Country	MU at national policy level	MU at individual administrative decision level	Economic incentives for MU	MU at MSP level - explicit reference to MU in National Marine Plans
FI	NO	NO	NO	YES (not explicitly MU, but other terms)
EE	NO	NO	NO	YES (not explicitly MU, but other terms)
LT	NO	NO	NO	NO
LV	NO	NO	NO	NO (rather based on avoiding conflicts)
PL	NO	?	NO	YES (MSP under development, incl. key sea areas with assigned priorities and secondary functions)
SE		YES	NO	Yes (Swedish MSP Roadmap Marine Spatial Planning – Current Status, 2016)
DK	YES The Act on MSP, 2016	YES (for individual themes such as fishing)	NO	YES
DE	NO	YES (endorsement of MU, referring to specific MU combinations)	NO	YES/NO (rather integrative planning in order to co-ordinate growing spatial conflicts of maritime uses)



# Tourism and UCH in Finland

## Benefits:

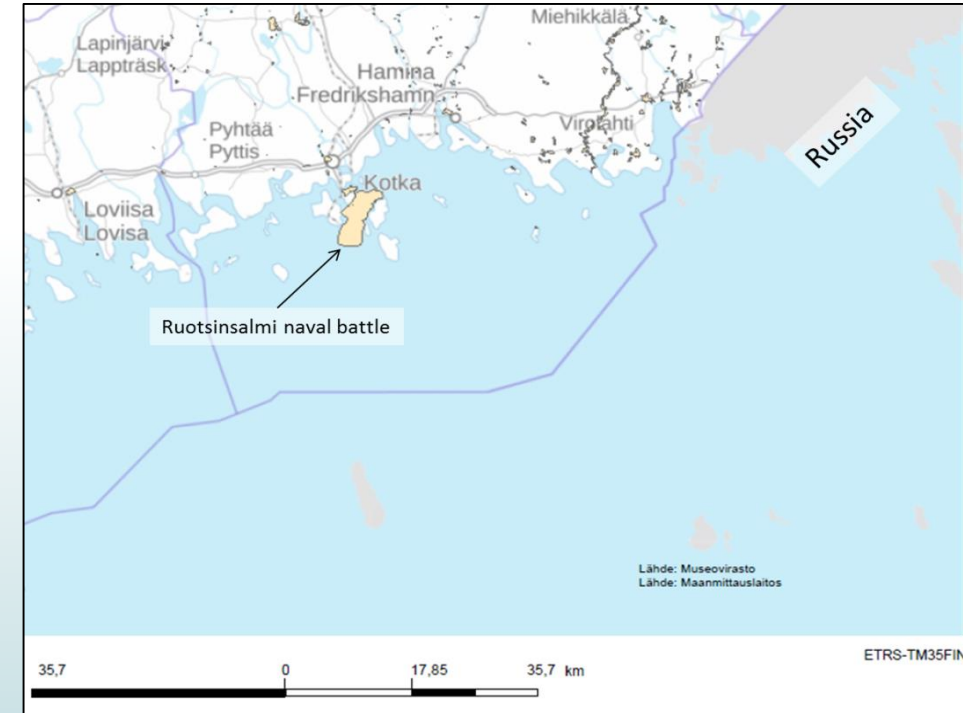
- |   |  |   |   |
|---|--|---|---|
| 1. Public access increases appreciation of the UCH value & significance | 2. Tourist access to UCH sites serves as a source of revenue for the management of UCH | 3. UCH sites benefit, in most cases, from the conservation measures of environmental protection | 4. Shapes cultural identity and fosters interaction between the community and their history |
|---|--|---|---|

## Existing Examples:

- Ruotsinsalmi naval battle area (Kymenlaakso),
- The Story of Vrouw Maria (3D virtual available)
- The Kronprins Gustav Adolf underwater park (1<sup>st</sup> maritime historical underwater park)

## Projects:

- Nordic Blue Parks project in Denmark, Finland and Sweden (Dalarö Blue Park)
- BalticRIM project



# Barriers → Recommendations

## Barriers:

- Strict protection and limited access
- Systematic approach to UCH management: which sites can be opened? Which should be strictly closed?
- Low visibility of the sectors involved and associated services, low individual funding power
- Short season limiting suitable sites and economic sustainability throughout the year.

## Recommendation/Best Practices

- Clear information resulting management policy
- Other options for 'dry foot' access to UCH sites can be explored for areas where there is low visibility and strict protection e.g virtual tours and walking cultural trails.
- Projects should involve the business community /regional development => innovative financing methods
- The Finnish Heritage Agency shares information with the public on UCH diving permitted areas. Led to better coordination with diving clubs

# MUs with offshore wind farms



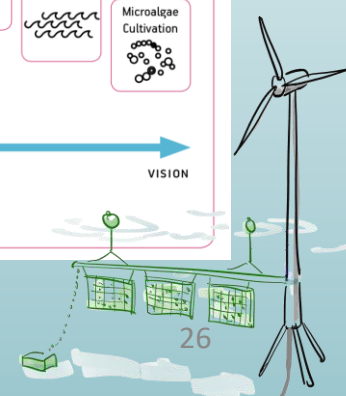
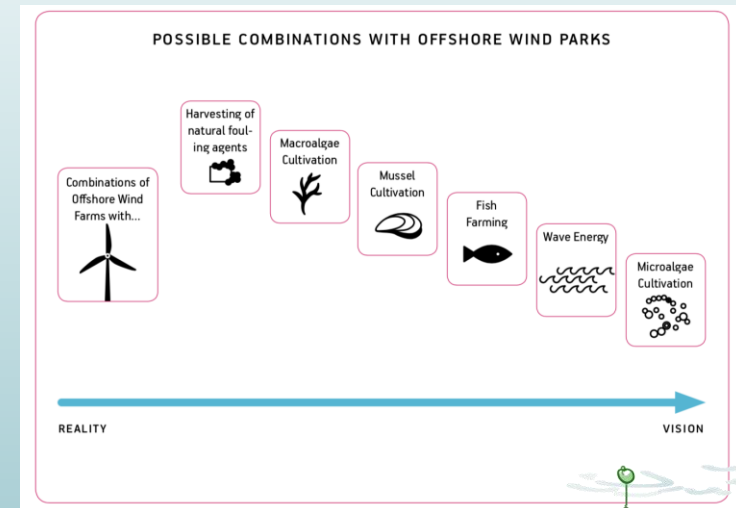
© Elena von Sperber

## Benefits:

<p><b>1.</b> Mitigation of potential conflict &amp; increased acceptance of the OWF project</p>	<p><b>2.</b> Socio economic benefits to local economy: aquaculture/ tourism actors/OWF sector</p>	<p><b>3.</b> Opportunity to move aquaculture offshore to further exposed sites</p>	<p><b>4.</b> Potentially ensure green credentials for energy/aquaculture products to be marketed at a premium.</p>	<p><b>5.</b> Costs saving through joint development and shared operations and maintenance.</p>
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## Existing Examples:

- **OFW and aquaculture:** explored in **Kriegers Flak**, Sweden (MERMAID project) and tests around the **Rødsand 2** OWP in Lolland, Denmark (SUBMARINER project)
- **OFW and Tourism:** in **Middelgrunden OWF** (Denmark)
- EU projects such as **4POWER**, **OFF.E.R** and **Baltic InteGrid** are exploring OWE development from tourism perspectives



# Barriers → Recommendations

## Barriers

- Primary & secondary user issue: OWF more power vs individual aquaculture & tourism operators
- Negative perceptions about financial viability (resulting from the high insurance premiums, distance to shore)
- Lack of legal and planning incentives to promote MU of OWFs with other activities
- Difficulty obtaining necessary environmental permits due to environmental impact uncertainties and varying perceptions.

## Recommendation/Best Practices

- Early engagement of local communities to discuss site selection, layout/design, relevant regulations, funding and ownership of an OWF
- Positive incentives in MSP & licenses; make MU a condition
- Entrepreneurial guidance, financial support and wider promotion for local tour operator activities is necessary, E.g in Germany, the new Arkona wind farm and tourism
- Site specific studies/pilots in the real environment will be needed to assess cumulative impacts and identify profitable sites
- Cooperative ownership used in the Middelgrunden OWF case.

# Diversification of Fisheries in Finland

## Benefits:

<p><b>1.</b>Extra and guaranteed income for fishers &amp; suppliers</p>	<p><b>2.</b>Improves livelihood of fishers: reduced physical risk/ less hours on board</p>	<p><b>3.</b>Contributes to sustainability: reduced fishing effort/ impacts on the environment</p>	<p><b>4.</b>Improves image of the profession: maintaining workforce/attracting young people</p>	<p><b>5.</b> External benefits and added value: marketing the products and culture of local fisheries</p>
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## Existing Examples:

- Fishers in Lapland (Municipality of Sodankylä).
- Fishers developed 7 marketable products on facebook/website.
- Tourist can join fishing trips in both summer and winter organised by fishers



© Pro Fishing Lapland



© Pro Fishing Lapland



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# Barriers → Recommendations

## Barriers

- Unclear legislation about diversifying fishing activities into tourism e.g refitting fishing vessels to conform to tourism requirement, specific tax regime, safety issues etc
- Low capacity and skills of fishers in service oriented business and limited comprehensive training manuals/courses
- Limited knowledge about its demand and benefits

## Recommendation/Best Practices

- Create and align legislative and regulatory frameworks on pescatourism by undertaking comprehensive assessment of existing legal framework for the relevant sectors.
- Cost-benefit analyses at local and national level to inform policy recommendations
- Training and capacity building initiatives such as in the Lapland case must be encouraged
- Good experience and practices in the Southern European countries such Italy, France, Greece and Spain to learn from

# Cross Cutting Issues and Actions

**Integration & Coordination**  
 between different sectoral structures, institutions and actors through cross sectoral platforms

**Regulation & Policy**  
 clarity of licensing and planning processes, harmonization; implementation of EU policies

**Marketing & Dissemination**  
 integrated platform to market good practices and benefits of MU

**Capacity building**  
 training and knowledge exchange

**Funding**  
 innovative and technological solutions

**Maritime Spatial Planning** – suitable areas and comprehensive policies promoting MU especially for new joint developments.

**Research and pilot studies** – informs business models, understanding of the value chain



# Actors to drive MU in the Baltic

<p><b>BASREC</b> Baltic Sea Region Energy Cooperation</p>	<p><b>BALTFISH FORUM</b></p>	<p><b>BDF</b> Baltic Development Forum</p>	<p><b>BSAG</b> The Baltic Sea Action Group</p>
<p><b>BSSSC</b> Baltic Sea States Sub Regional Co-operation</p>	<p><b>CBSS</b> Council of the Baltic Sea States (Monitoring Group on (underwater) cultural heritage)</p>	<p><b>CCB</b> Coalition Clean Baltic</p>	<p><b>CPMR BSC</b> CPMR Baltic Sea Commission</p>
<p><b>HELCOM</b> Baltic Marine Environment Protection Commission</p>	<p><b>NCM</b> Nordic Council of Ministers</p>	<p><b>SUBMARINER</b> SUBMARINER Network for Blue Growth EEIG</p>	<p><b>Interreg BSR</b> EU Strategy for the Baltic Sea Region (array of instances participating in the coordination and implementation)</p>
	<p><b>VASAB</b> Vision and Strategies Around the Baltic Sea</p>	<p><b>WWF – Baltic</b> World Wildlife Fund</p>	

# Thank you!

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*Join us at the MUSES Final Conference  
in Brussels on 10<sup>th</sup> October 2018 !*