

O BLUE MISSION BANOS

3rd MISSION ARENA

26-27 November 2024 | Amsterdam

Viable and scalable business models "Business for Blue Good"

Successful business model examples to protect and restore our seas and waters

27 November, 14:00-15:45 Hall 1





O
BLUE
MISSION
BANOS

3rd MISSION ARENA

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Alberto Terenzi

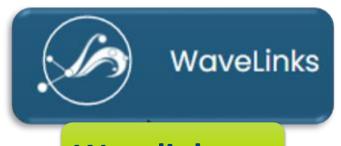
Team Lead Innovation Support and Blue Skills

SUBMARINER Network for Blue Growth EEIG





RESTORE OUR OCEAN & WATERS



Wavelinks.eu

Prep4Blue

Helpdesk



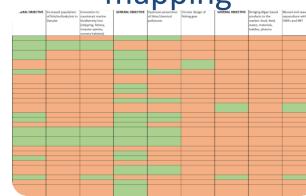
Toolbox for Citizen Engagement

> **PREP4BLUE** Engaging Citizens with Mission Ocean and Waters: A toolbox of approaches

participation levels and for rolling out a European wide network of

Policies & Regulations

mapping



#MissionOcean Social media **Toolkit**



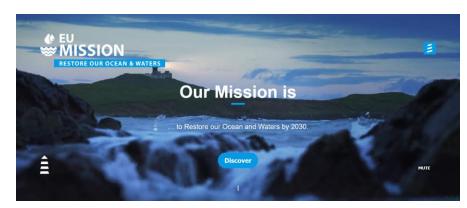
Deliverable D5.1

Critical assessment and key recommendations for Interregional financing

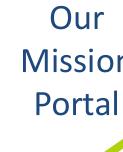
> Financing Recommendations



Prep4Blue Results



Our Mission



Citizen

Engagement

Webinar Series







Business Interaction Models for Mission Ocean Scale-Up

Silvia Tosatto
SUBMARINER Network for Blue Growth EEIG
Amsterdam, November 26, 2024 – Mission Arena 3







Funded by the European Union, through its Horizon Europe Program, Grant No. 101056957 (PREP4BLUE). Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or of the granting authority, the European Climate, Infrastructure and Environment Executive Agency (CINEA). Neither the European Union nor the granting authority can be held responsible for them.



Business Interaction Models for Mission Ocean Scale-Up



- 12 case studies analysed to showcase successful interactions between businesses, public entities, and other organisations contributing to the Mission's goals
- Recommendations were derived for businesses, policymakers, academia, and NGOs































MISSION RESTORE OUR OCEAN AND WATERS OBJECTIVES

 Protect and restore marine and freshwater ecosystems and biodiversity in line with the EU Biodiversity Strategy 2030



 Prevent and eliminate pollution of our ocean, seas and waters, in line with the EU Action Plan Towards Zero Pollution for Air, Water and Soil



 Make the sustainable blue economy carbon-neutral and circular, in line with the proposed European Climate Law and the holistic vision enshrined in the Sustainable Blue Economy Strategy





Elia



Provides a model for real-life

validation and knowledge sharing.

Background

- Belgium's electricity transmission system operator.
- Building the world's first artificial energy island in the North Sea.

Collaboration

- Consortium of ~15 stakeholders: NGOs, universities, and public/private institutions.
- A neutral process coordinator ensured effective cocreation.

Implementation

- Addressed challenges by aligning technical and biodiversity goals.
- Developed an ecosystem approach spanning the entire water column.

Project Goals Facilitate renewable energy transition. Integrate nature-positive measures to enhance marine biodiversity. IETHERLANDS **Existing capacity 2.2 GW Energy Island** PRINCESS ELISABETH ZONE **Increased capacity** from 2.2GW to 3.5GW UNITED KINGDOM **Outcomes FRANCE** Nature-inclusive design fosters marine habitats and biodiversity.



NextTuna - Sustainable Aquaculture for Atlantic Bluefin Tuna



Background

- Founded in Germany in 2020 to address ABT overfishing.
- Pioneering commercial-scale reproduction of ABT in captivity.
- Breakthrough in ABT spawning in land-based RAS systems. Developing Floating RAS-X system: scalable, cost-effective, eco-friendly.

Collaborations

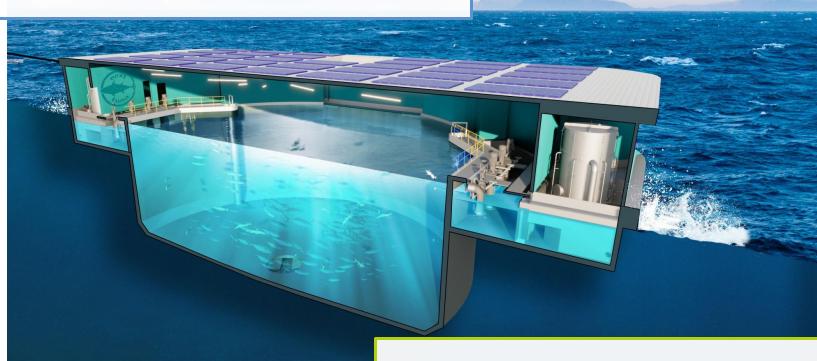
 Co-developing precision farming methodologies for ABT in partnership with Spanish Institute of Oceanography, Fraunhofer, and others.

Challenges & Implementation

- Addressing larvae feeding, reliable spawning, and infrastructure needs.
- Floating RAS-X system operational in 2024 (initial focus: Kingfish).

Key Achievements

Winner of BlueInvest Award 2023 (Sustainable Food & Feed category).
Recognition in EIT Food's Sustainable Aquaculture Competition.



Outcomes

Reduces reliance on wild ABT stocks, fostering marine biodiversity.

Advancing carbon-neutral, circular aquaculture practices.

Conclusions and Recommendations



For Businesses:

- **Invest in Partnerships:** Collaborate with universities, research institutions, and companies to drive innovation and sustainable solutions.
- Leverage Funding Opportunities: Seek opportunities offered through BlueInvest, SBEP, and EIT KICs programs.
- Focus on Market Readiness: Align innovations with market demands and environmental frameworks.
- Adopt Sustainable Technologies: Incorporate eco-friendly technologies for profitability and sustainability.

For Academia:

- Enhance Knowledge Transfer: Prioritise applied research with precise and critical business and market value.
- Align Education with Industry Needs: Develop programmes addressing skills gaps in blue economy sectors.

For Policymakers:

- Simplify Funding & Regulations: Work on simplifying and accelerating permitting and streamlining administrative processes for blue economy projects.
- Promote Place-Based Innovation through S3: Align regional strategies with innovation goals to support local economies.
- **Provide Sustainability Incentives:** Offer tax breaks, financial incentives, and public contract access to support startups and SMEs in entering the market, scaling their operations, and improving their competitiveness while adopting sustainable practices.

NGOs & Civil Society:

- Promote Community Engagement: Raise awareness and involve local communities in conservation efforts.
- Support Policy Advocacy: Advocate for policies supporting biodiversity restoration and pollution reduction.





The Sustainable Blue Economy Partnership:

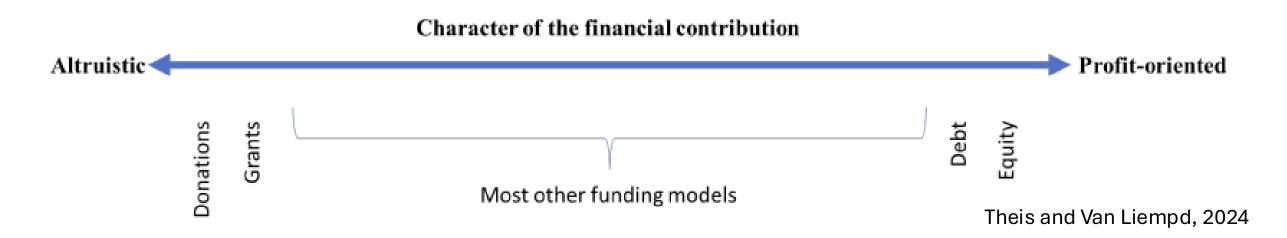
Ensuring market uptake of project results

Frode Dal Fjeldavli Research Council of Norway Mission Arena, Amsterdam, 26/11/2024



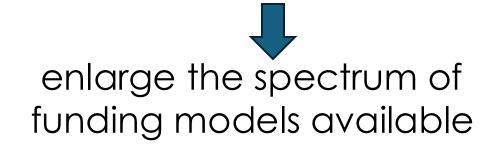


PREP4BLUE findings



- Relatively few funding models seem to match well with business models within the not-forprofit business model category
- Not-for profit funding models are predominant in the European public funding landscape
- Engage private funders in support of public policy goals









Arctic Ocean

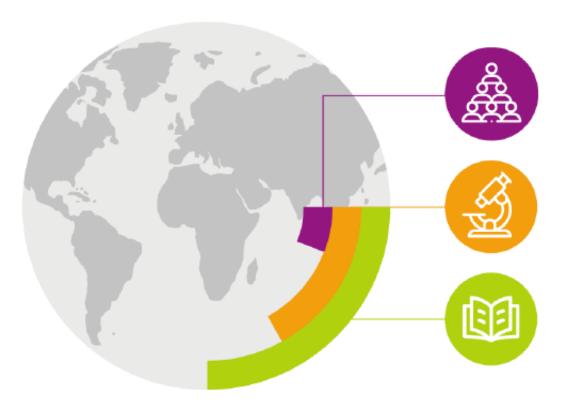
Sustainable Blue Economy Partnership

- a network of 74 partner institutions from 29 countries and the European Commission
- pooling research and innovation investments and aligning national programmes at pan-European scale
- taking into consideration the sea-basin
 (Mediterranean, Black Sea, Baltic and North Sea) and Atlantic Ocean dimension





While benefiting from world-class research and strong industries... Our knowledge and skills are our main resources

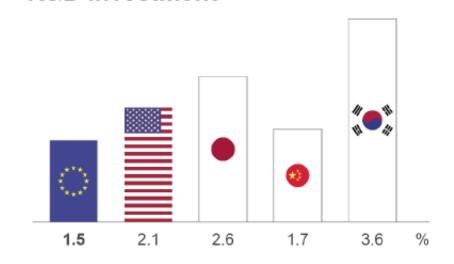


6% of the world's population

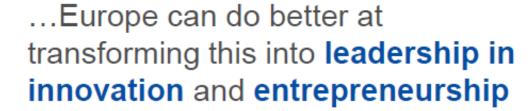
17% of global R&D

25% of all high-quality scientific publications

1.5% EU business R&D investment

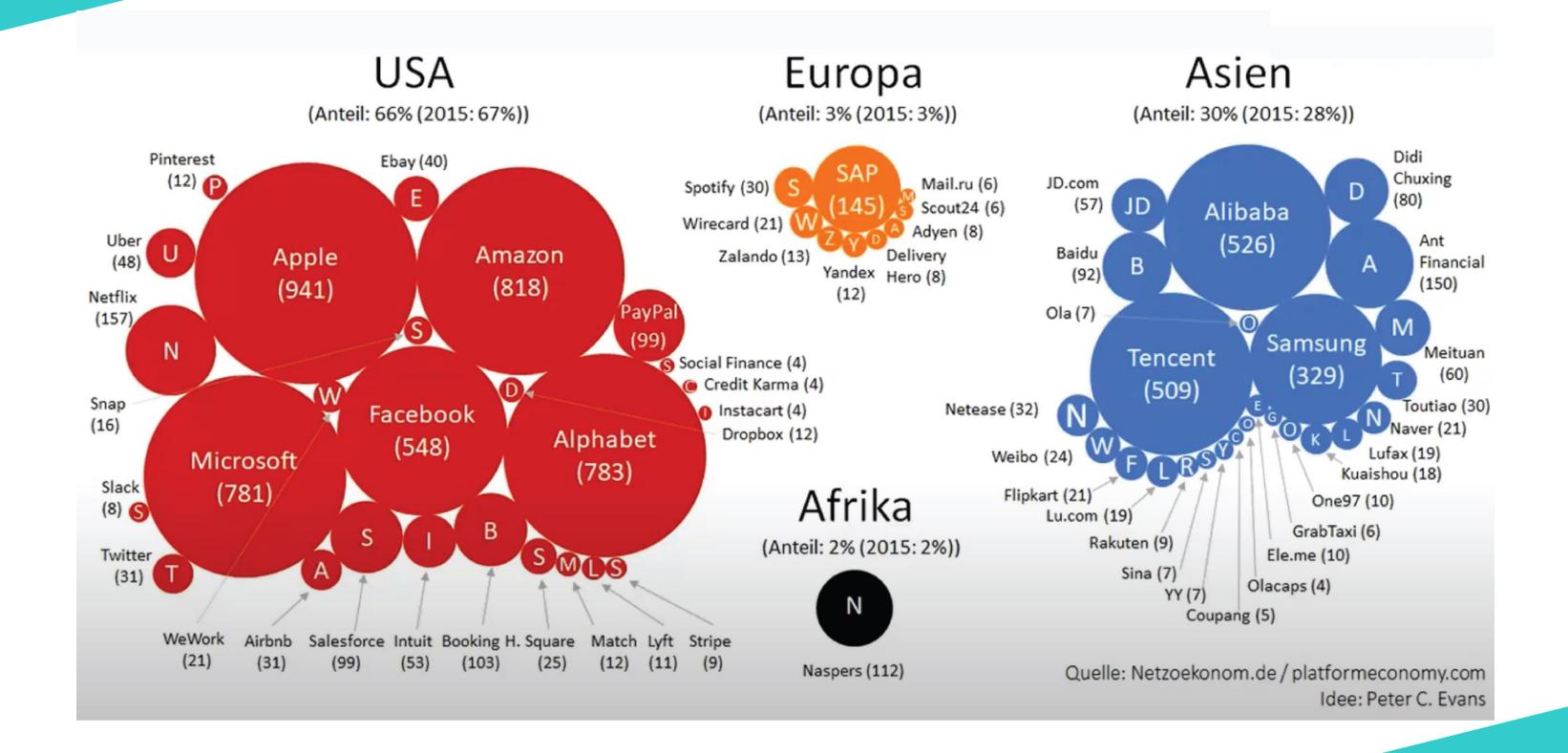


EU figure is for 2019 Figures for USA, Japan, China and South Korea are for 2018. Figures represent R&D as % of GDP











Horizon Europe legislation defines three types of impact tracked through **Key Impact Pathways**

- 1. Creating high-quality new knowledge
- 2. Strengthening human capital in R&I
- 3. Fostering diffusion of knowledge and Open Science

Scientific Impact



- 4. Addressing EU policy priorities & global challenges through R&I
- 5. Delivering benefits & impact via R&I missions
- 6. Strengthening the uptake of R&I in society

Societal Impact



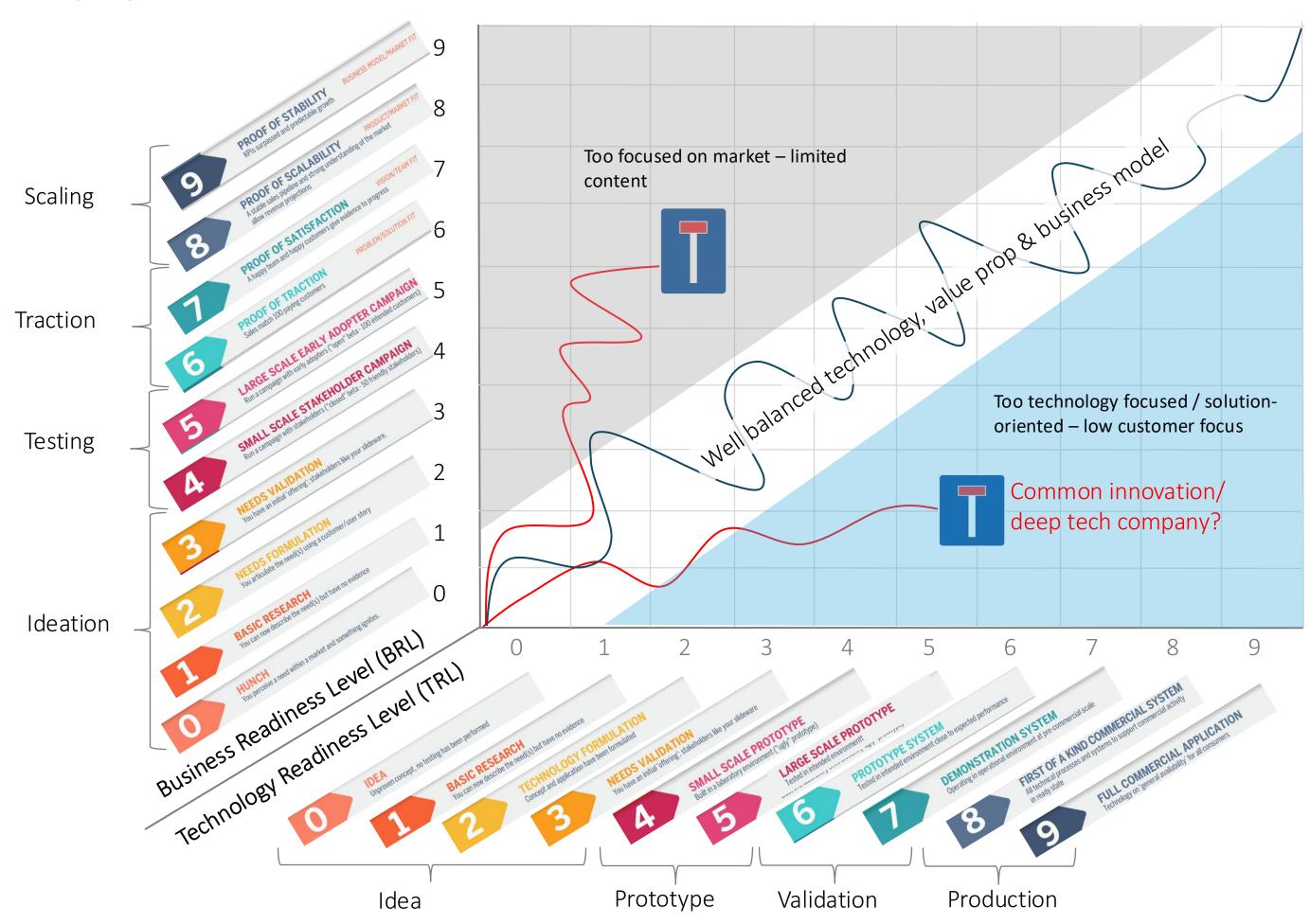
- 7. Generating innovation-based growth
- 8. Creating more and better jobs
- 9. Leveraging investments in R&I

Economic Impact



Balance between TRL and BRL

- TRL / BRL Balance
 ensures success and
 avoid Vally of Death
- High-TRL funds evaluates
 prospective candidates
 with these criteria
- Enable sensible activities
- Visualise developmental trends, and necessary next steps





Important BRL aspects





Thank you for your attention!

www.bluepartnership.eu @BlueEconomyEU fdf@rcn.no



Innovation cluster "Bioeconomy at Marine Sites"

-BaMS-

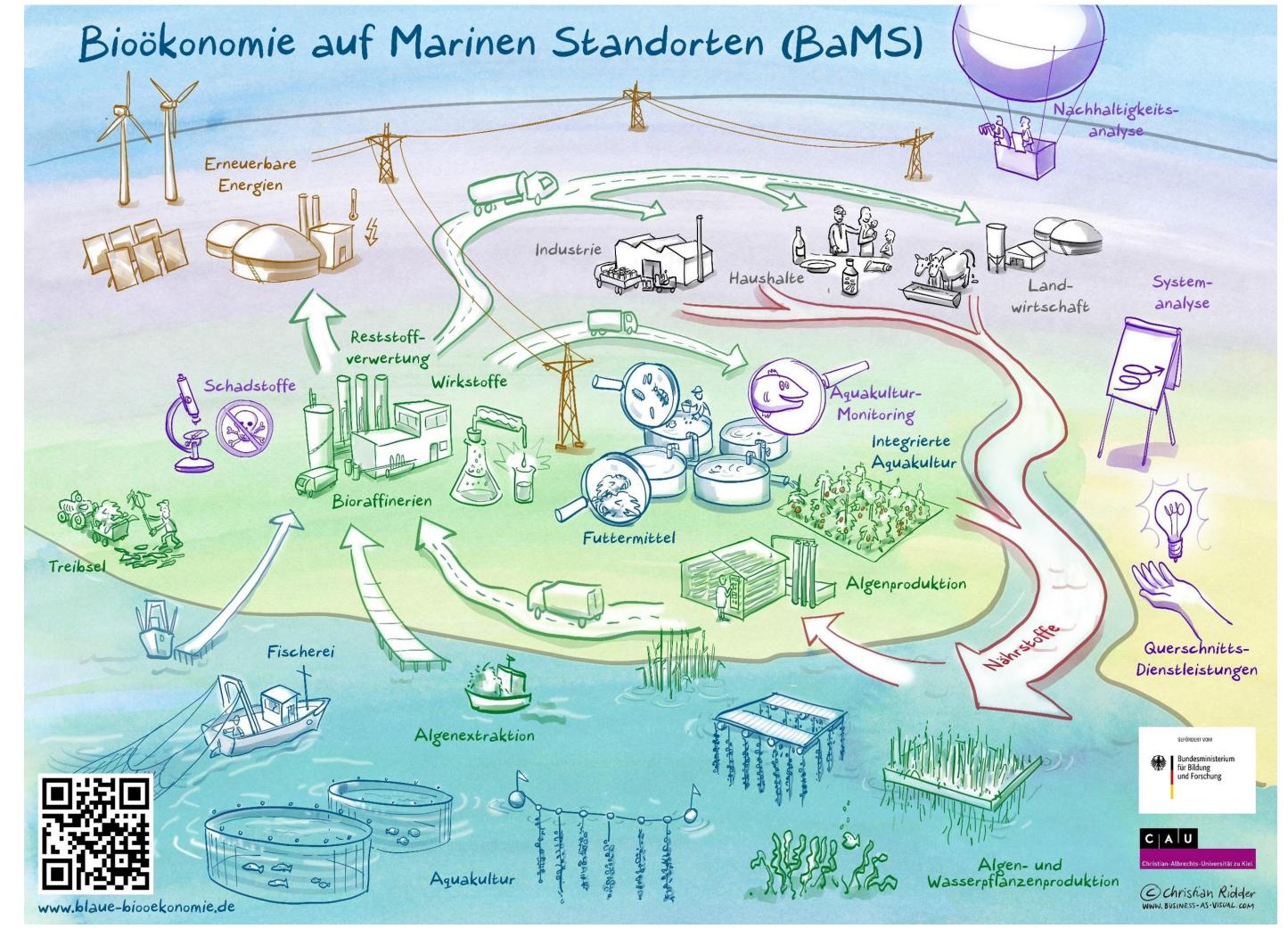
Julia Lange hosted by CAU - University Kiel, Germany













Blaue

Bioökonomie



Blaue Bioökonomie































KS VTCtech Standwirtschaft Michelli Gruber Landwirtschaft Monttorfish MRI Max Rubner-Institut







Sea & Sun Technology Technology





ENERGY MINER

ADS





















































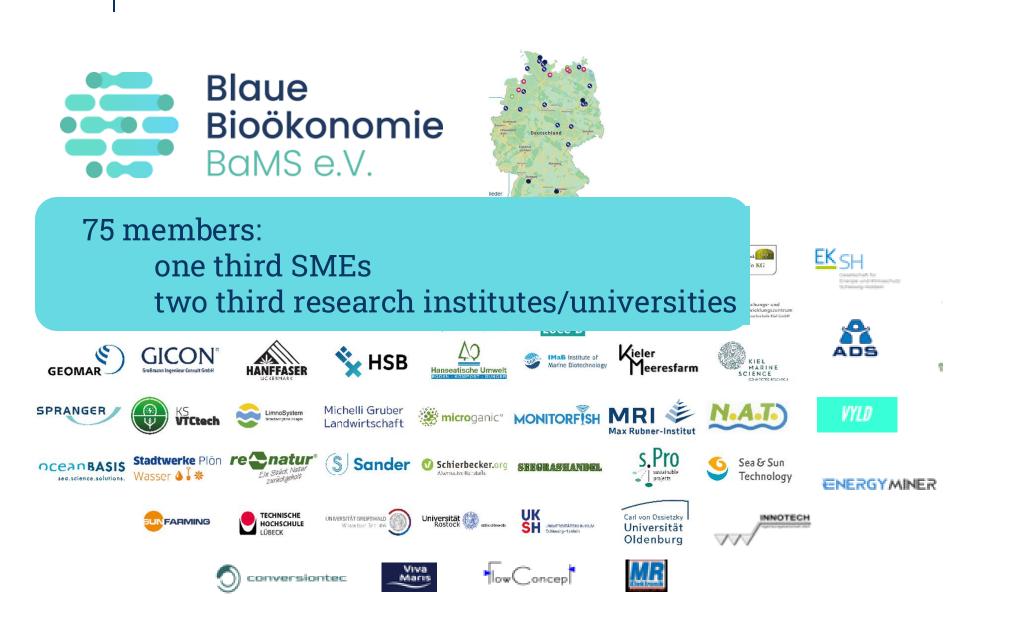


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ADS

ENERGY MINER









Cluster Management Excellence

STRIVING FOR CLUSTER EXCELLENCE











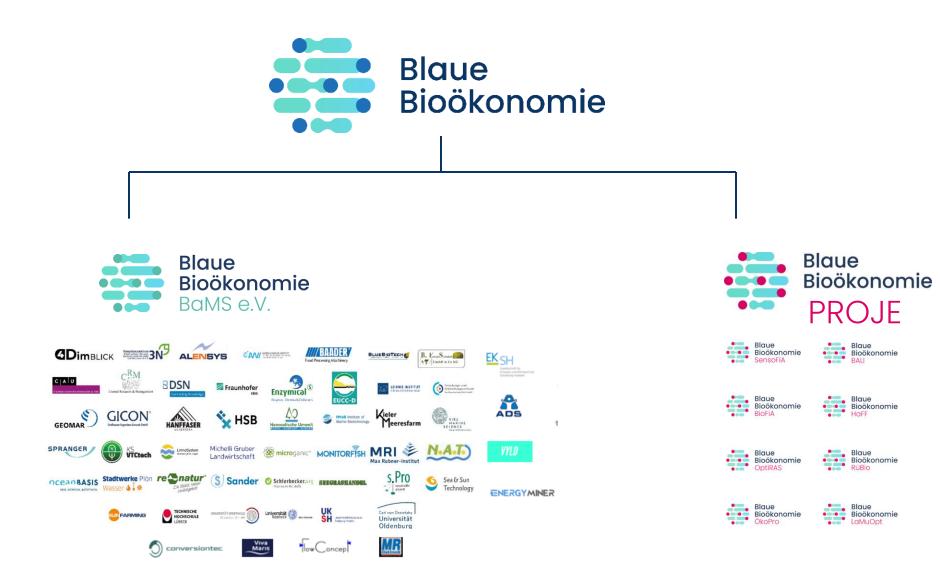




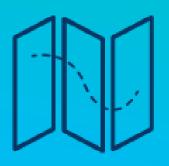
BRONZE













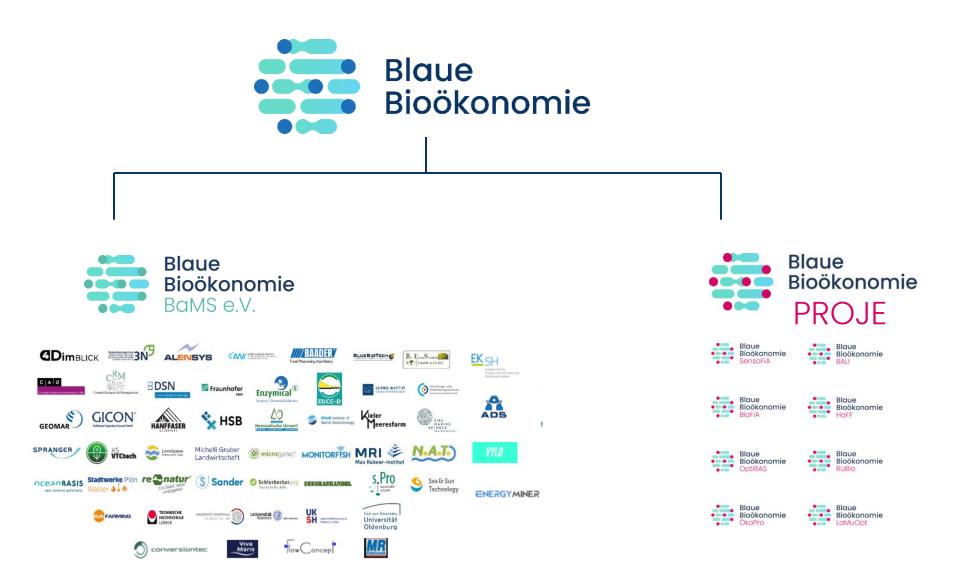












annual BB conference match-makings webinars site visites faires, networking events...



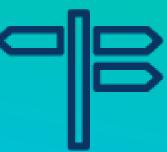




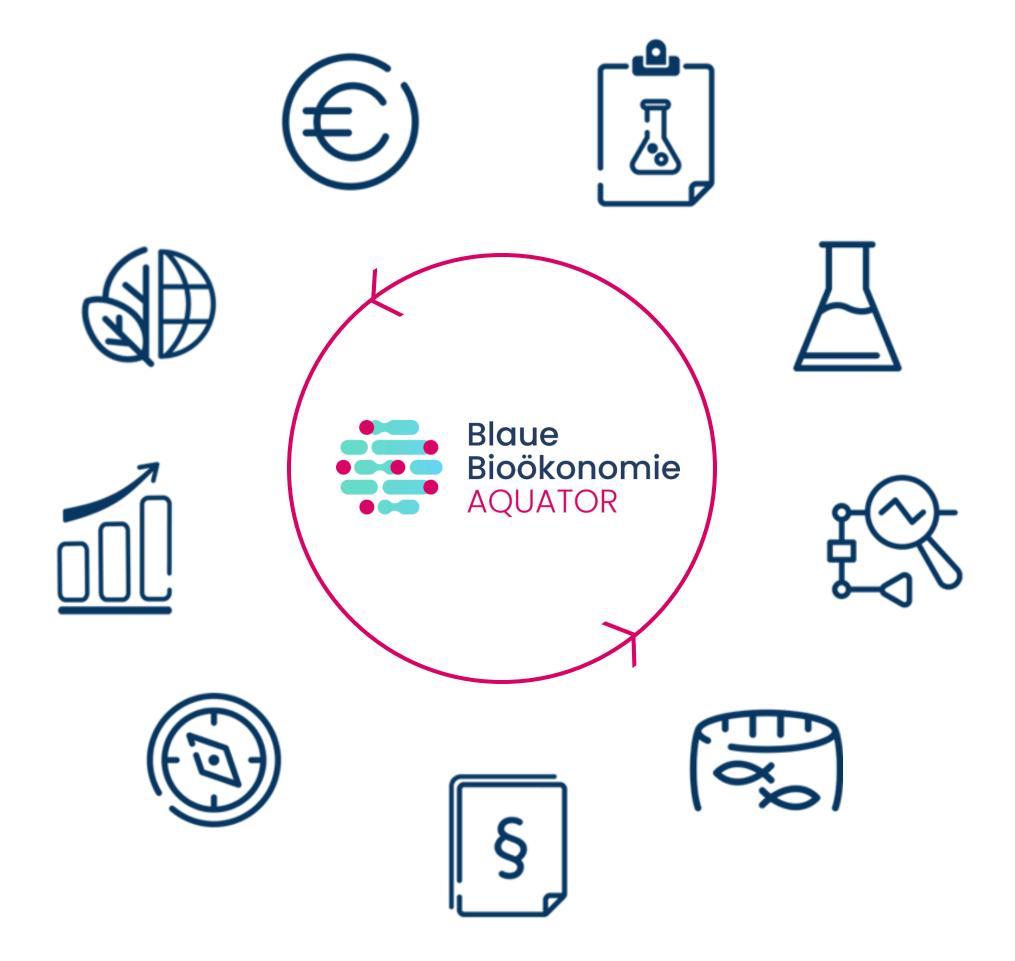










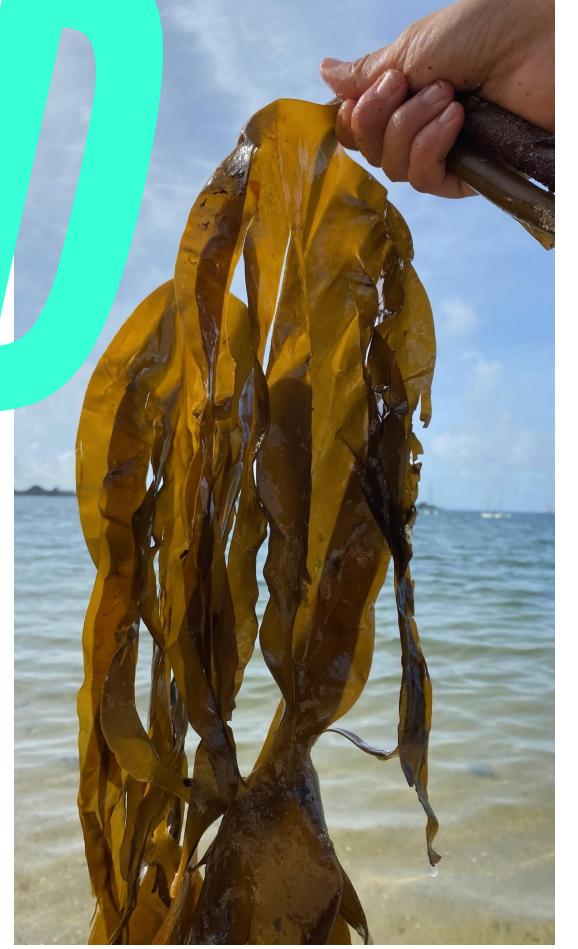






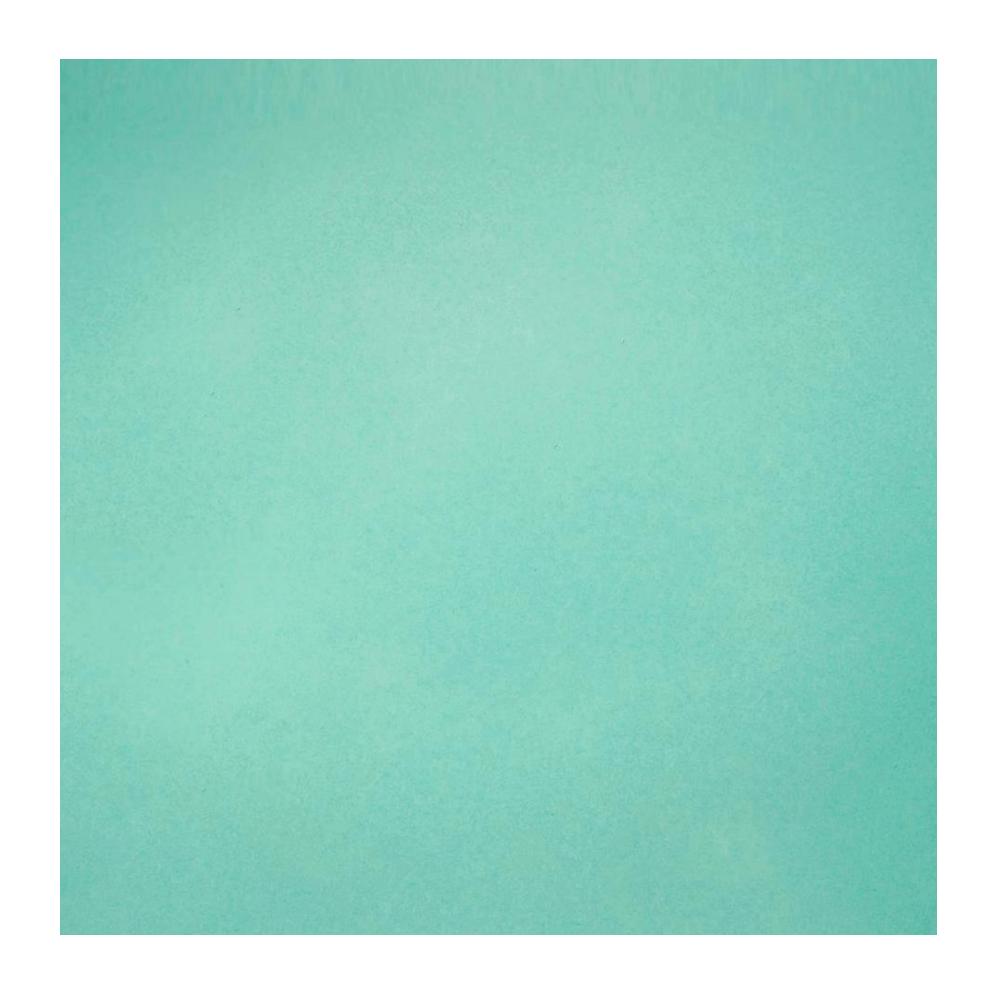






Blaue Bioökonomie TangPon

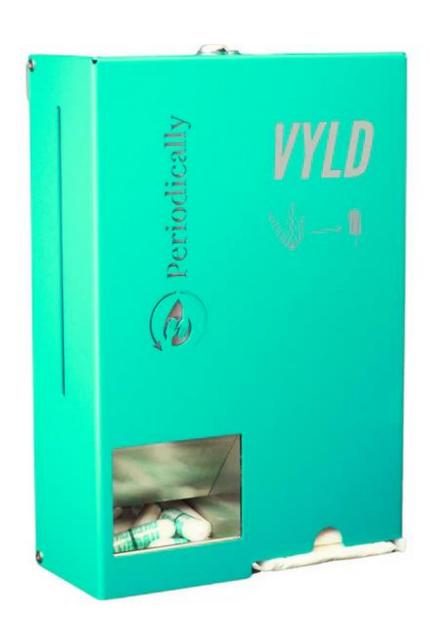






Blaue Bioökonomie TangPon

Seeking Partner



aus rostfreiem Edelstahl made of stainless steel

Made in Germany















products are available from dealers and in webshop



Starter-Kit

Everything that is needed to start 149,95 €



Cookbook

Cookbook for fresh spirulina

29,95 €

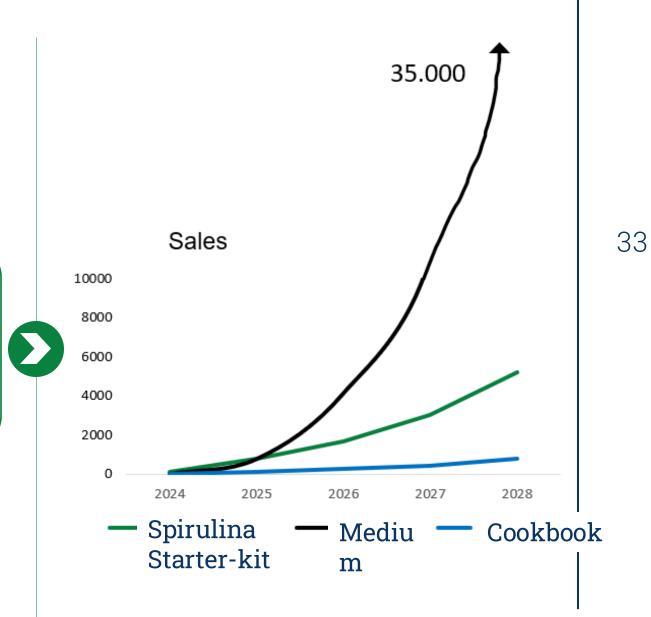


Culture medium

Subscription 15,95 €

No 18,95 €

subscription

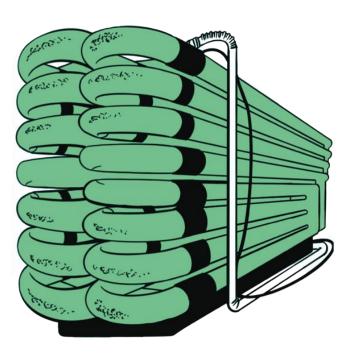












POWER2FOOD PUEVIT







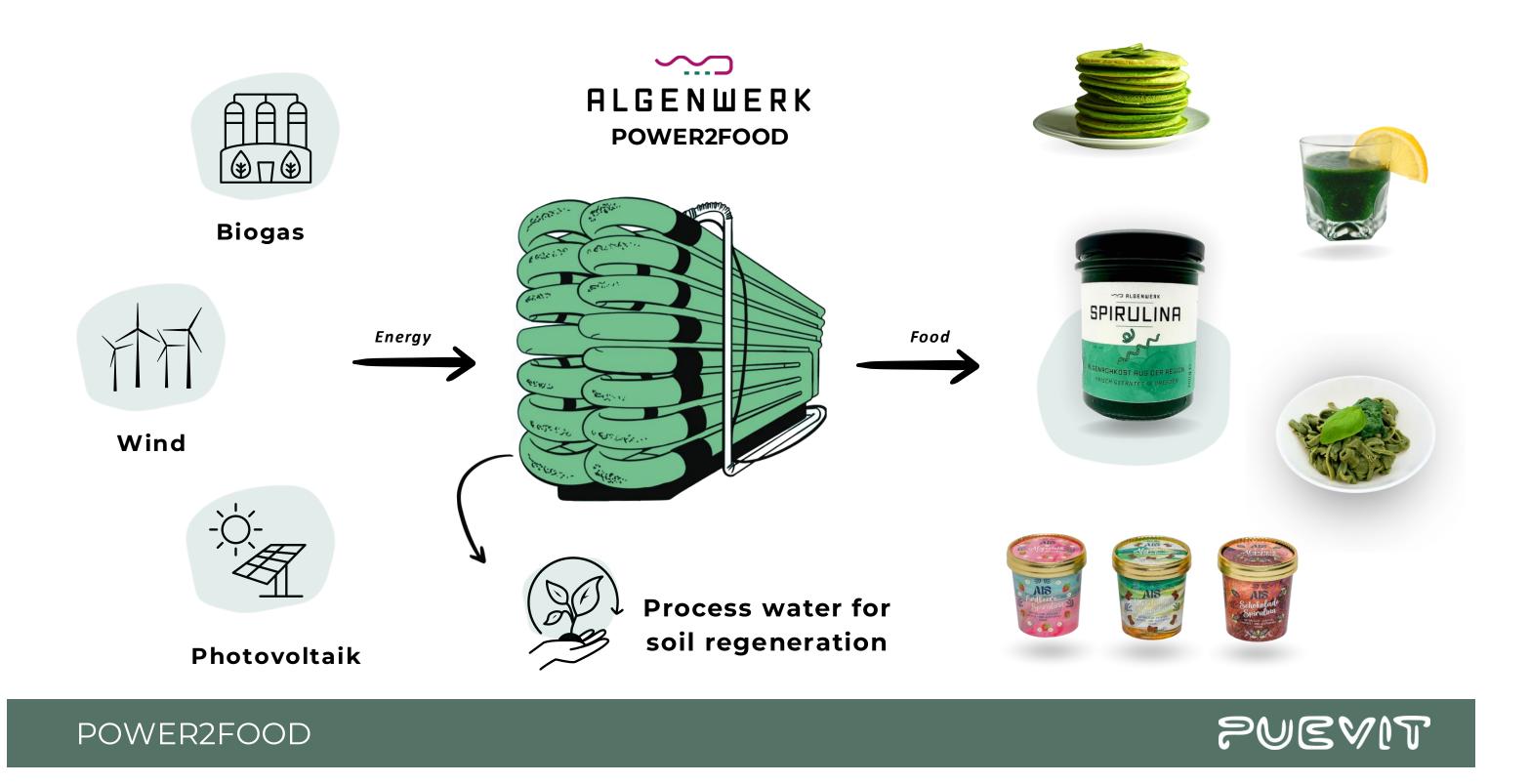


POWER2FOOD

PUEVIT





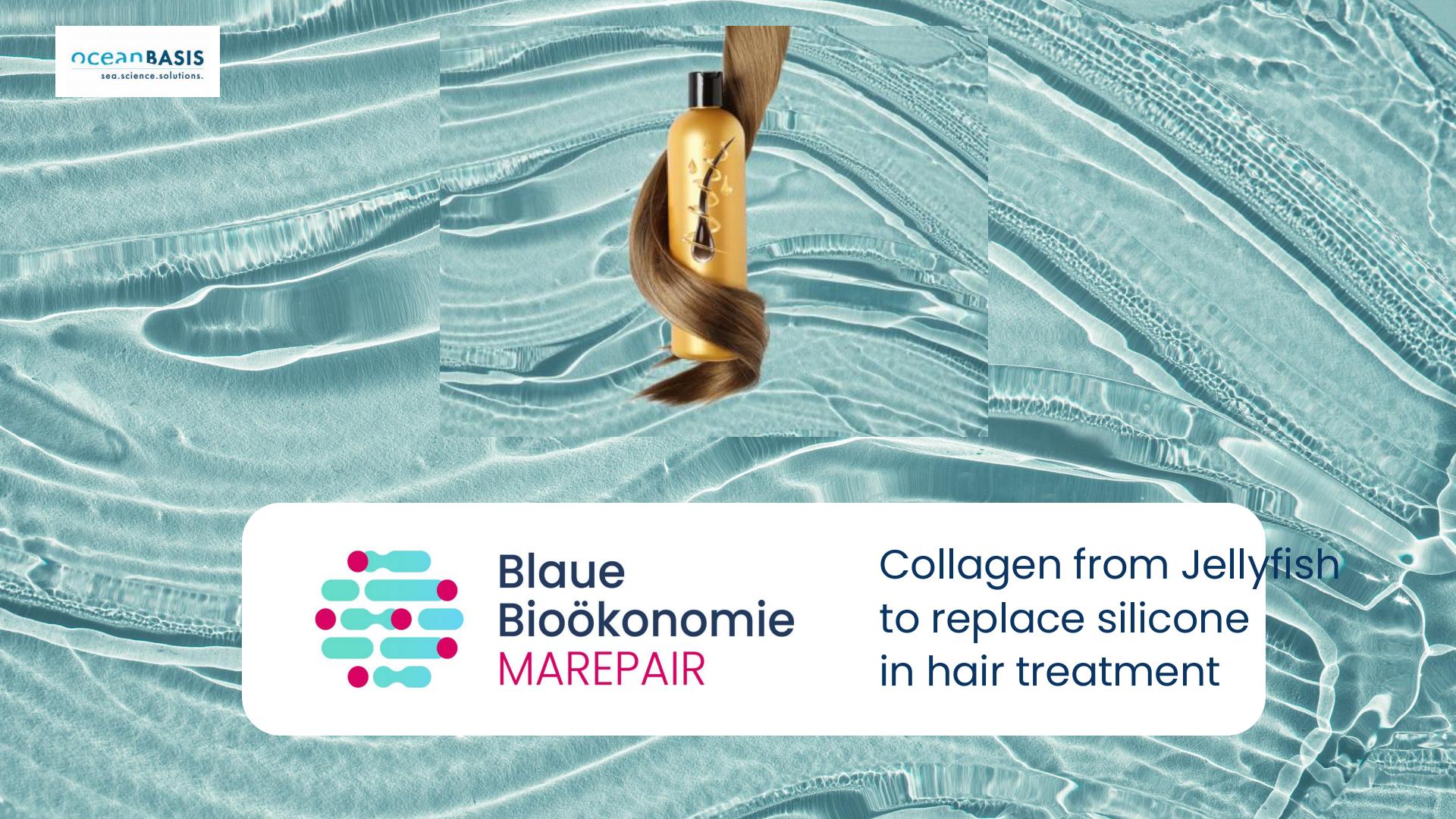






Seed coating with algae, bio-char, and







39









Carsten Schulz 1st chairman



Rüdiger Schulz 2nd chairman



Carsten Schultz treasurer



Stephanie Schütze Finances



Julia Lange Koordination



Nadine Sydow PR

jlange@...
info@bams.uni-kiel.de
blaue-biooekonomie.de









Mikko Koskinen



Co-founder, Chair & Business development

Serial entrepreneur with skills in branding, storytelling and engineering.

Magnus Hanstén



Co-founder, CEO & operations

Natural resource specialist, a Baltic Sea enthusiast with an explorer's mindset.

Olli Laaksonen



Co-founder, design & technology

Entrepreneur.
Versatile experience in R&D and design. Born and raised in Kustavi on his family's fish farm.

ELGO Seafarms

We strive to create healthy businesses and healthy ecosystems.

Active marine ecosystem restoration

ONSHORE



- Hatchery
- Seaweed Cultivation

COASTAL



- Active restoration services
- Seaweed Cultivation

OFFSHORE



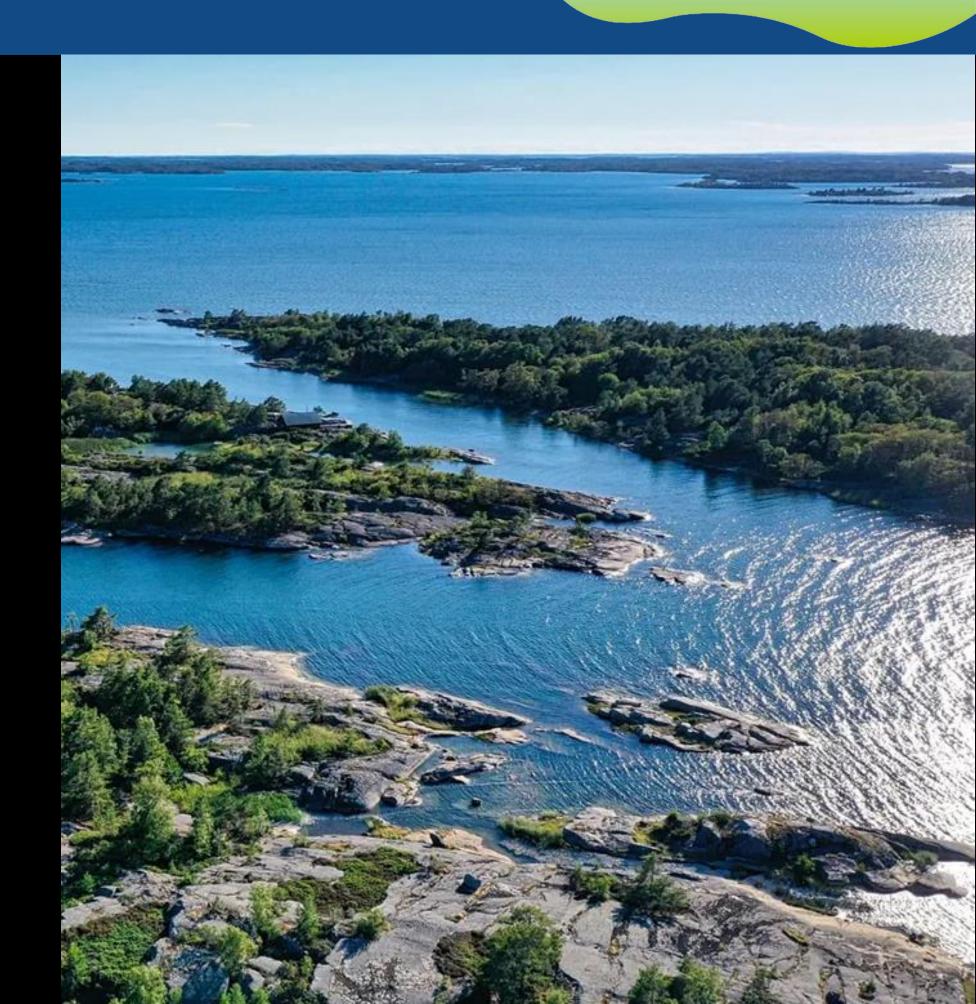
- Ecosystem & biodiversity enhancing services
- Seaweed Cultivation





Nordic BioBuz:

"Working with large wind offshore operators and ecosystem services for multiuse offshore platforms"



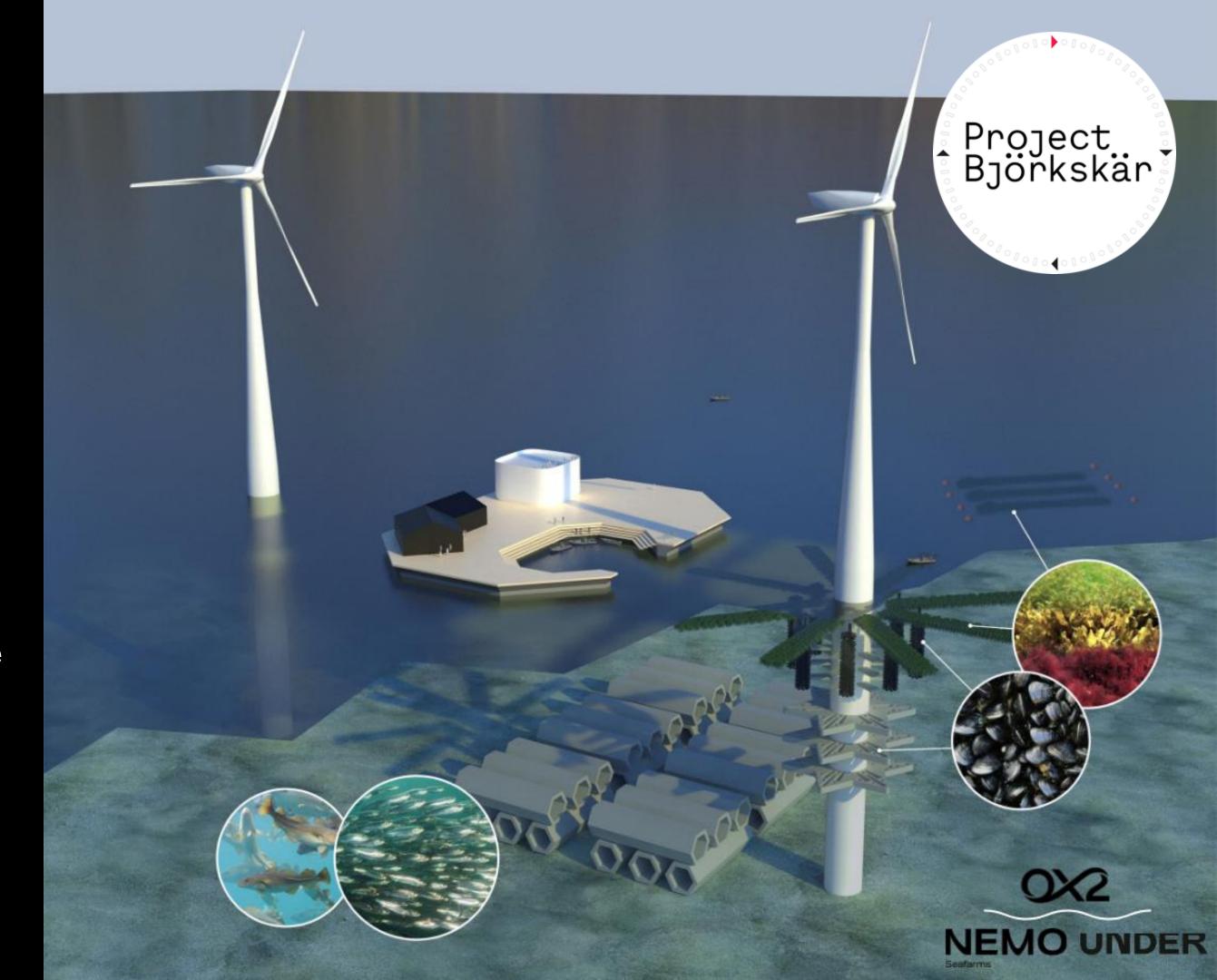


PROJECT BJÖRKSKÄR

- Started in March 2023
- OX2, Under Ytan & Nemo Seafarms
- Focus areas:
 - Biodiversity and ecosystem enhancing services
 - Low trophic aquaculture
- Baltic Sea area







Corporate - Start-up collaboration

- Opportunity
 - Impact
 - Mitigation → Net positive







- Biodiversity and ecosystem enhancing services
- Multi-use concept

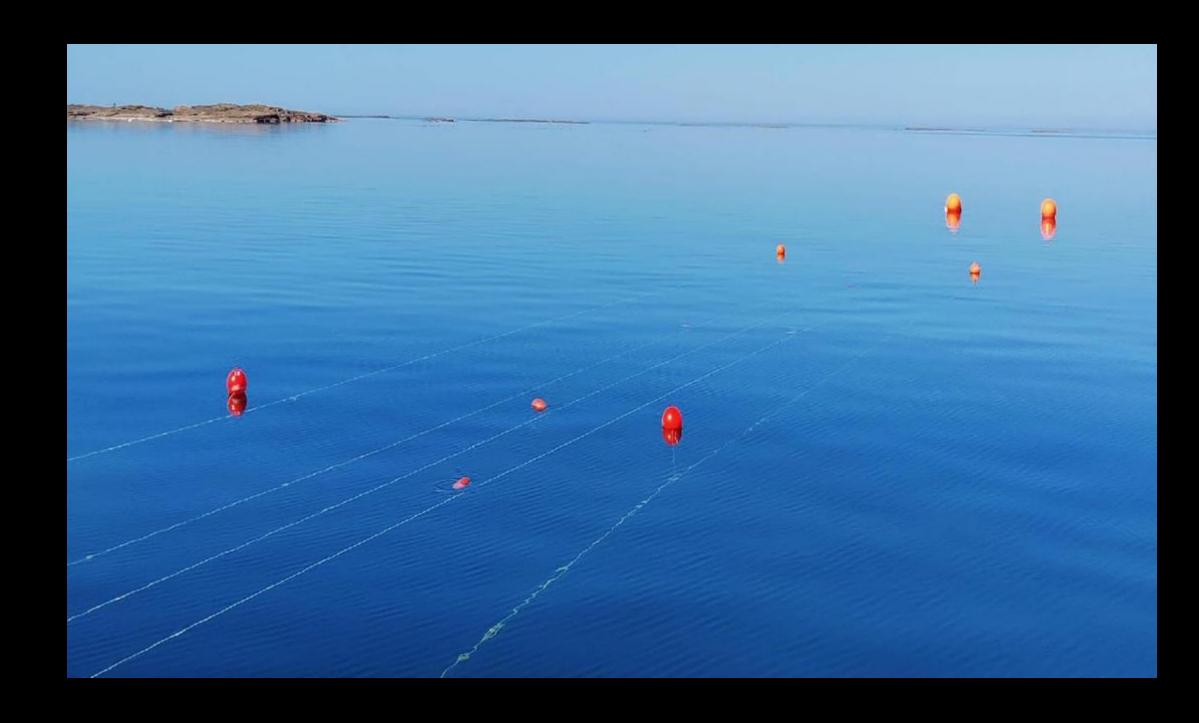






Project development

- Corporate Start-up
 - Innovation
 - Resources
- Aligned interests
 - Common goal
- Committed team
 - o Not just part of the budget
- Communication & dialogs
- Partnership year three...
 - Scale-up & Business model



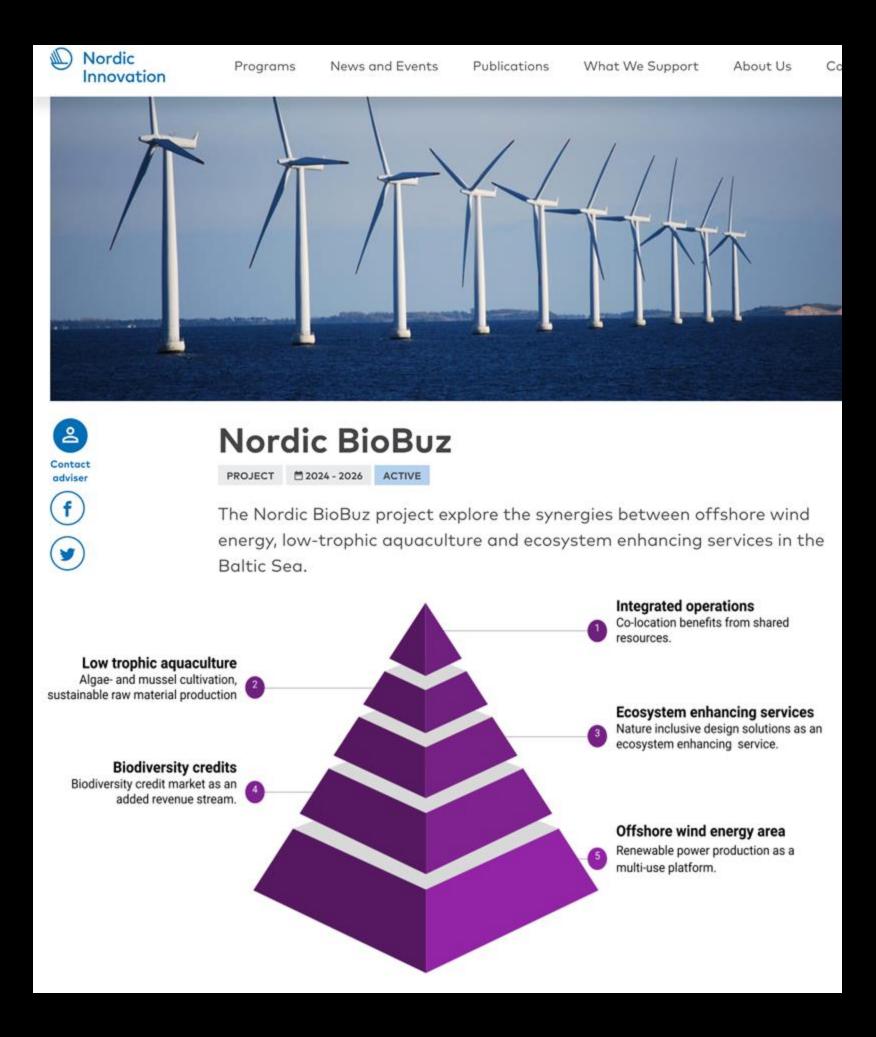


"NORDIC BIOBUZ"

- Synergies between offshore wind energy, lowtrophic aquaculture and ecosystem enhancing services in the Baltic Sea.
- Main objectives
 - framework for a multi-use business model for offshore wind establishments.
 - **o** develop a system for biodiversity credits

In collaboration with: RISE, SLU, OX2, Under Ytan

Co-financed by Nordic Innovation







PREP4BLUE Knowledge Transfer Online **Showcasing Module Demonstration**

Presenter:

Caecilia Managò, ERINN Innovation Ltd. (ERINN) Alexander Dernild, Southern Denmark University (SDU)









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PREP4BLUE Objectives

PREP4BLUE's objective is to support the R&I goals of the 'Mission: Restore our Ocean & Waters' and facilitate its successful implementation, especially during this first phase (2022-2025). Through a series of pilots at the Mission's demonstrator or 'Lighthouse' sites, PREP4BLUE will develop tools, guidelines and methodologies to be used by stakeholders on all Mission funded projects. This co-creation approach will optimise and create synthesis across Mission activities and solutions, ensuring cohesion and connectivity across sectors, and between European citizens and stakeholders.



Programme:

HORIZON-MISS-2021-OCEAN-01



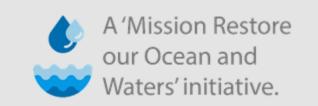
Duration:

June 2022 - May 2025



Budget:







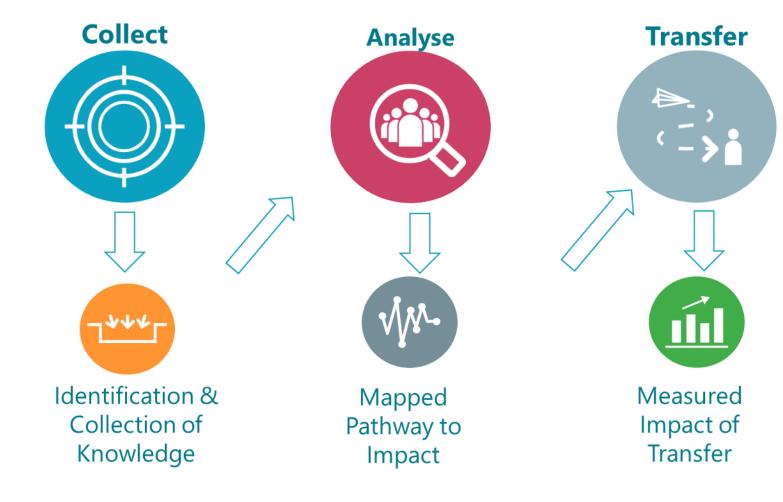


PREP4BLUE Knowledge Management

Knowledge Management in PREP4BLUE

WP3 WP4 KNOWLEDGE MANAGEMENT WP5 BUSINESS AND REGULATIONS WP6 STAKEHOLDERS

Knowledge Transfer Methodology by ERINN Innovation



© Image courtesy of ERINN Innovation











Knowledge Transfer Online Showcasing Module

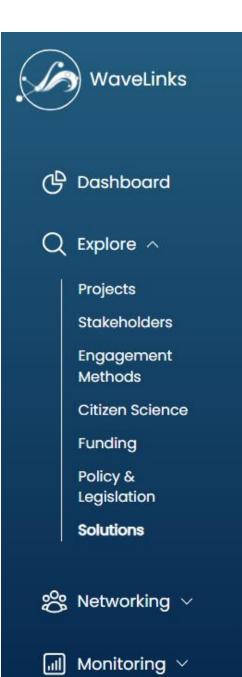


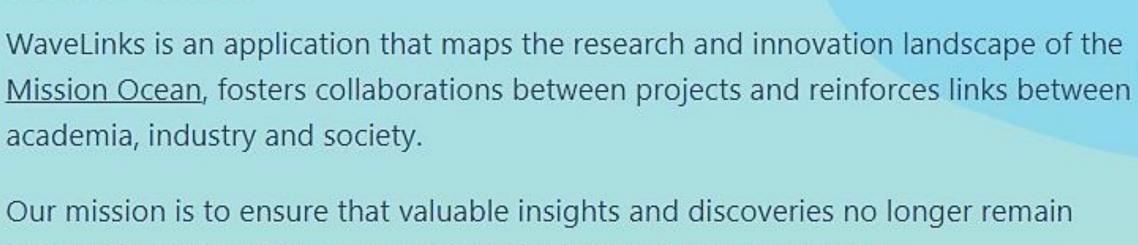


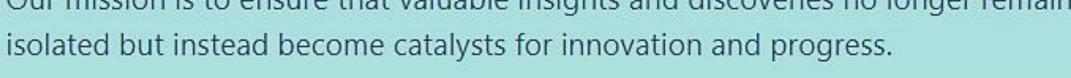
Mapped Pathway to Impact



Measured Impact of Transfer













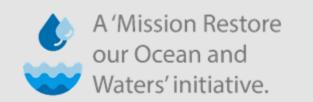


Collaborate with other projects

Connect with stakeholders Explore citizen science initiatives Discover engagement methods CHECK OUT wavelinks.eu





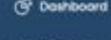




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Q Explore





5 Back

PREP4BLUE Knowledge Transfer Online Showcasing Module

Cystoseira meadows mapping in the Mediterranean Sea: comprehensive georeferenced database.



Project website

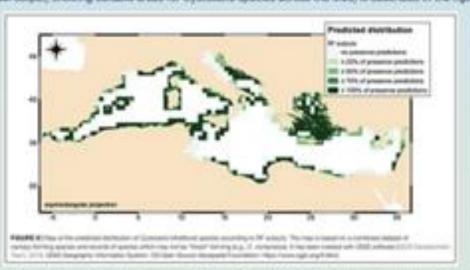
ACRIMED

Background Description

Cystopetts sensu lato assemblages are being considered as habitats of critical importance for the EU (Directive \$2)42/EEC, Annex I, included in "Rocky reafts") and as indicators to assess ecological status in the context of the Water Framework Directive (WFD; Directive 2000/60/EC). There is a growing focus on the status of macrosligal Torsetti from both a concervation (Armex II of the Barcelona Conversion, COM/2009/0585/FBC and a restoration (with MERCES and AFRIMED projects) perspective to better understand the possibilities for reversing current declining tendencies through active restoration in the Mediterranean Sea. However, there is a lack of quantitative and standardised information on the distribution and temporal trends of the state of Mediterranean communities, due to the scarcity of available data flew studies have been conducted) and the use of different approaches for the various works conducted, which make it difficult to compare them.

Technical Description

The georeferenced database of Cystosairs was produced embedding catalogued prey Renature, systematic review papers. EDDNet (Surspean Marine Observation and Data Network1, previous database produced by FP7 EU project CoCohet (Grant agreement no: 287844) and new data suggested from CARLIT (CARsography of LITtoral and upper-sublittoral benthic communities) monitoring program; however, data are missing for some areas (east and south). To evercome the lack of information, a Hisbital Sultability Model (HSM) was developed by means of 55 predictor variables (peomorphologic, environmental and anthropogenic) using the Random Forest Machine Learning technique (769059 AFRIMED RDc). This database goes beyond the state of the art as it collects various datasets and improves them with a new predicting model (HSM, 789059 AFRIMED KDc) to identify suitable areas for 20 Cystoseira species (here the list) where data were not available as well as the above mentioned predictor variables that include, among others, factors related to anthropogenic pressures e.g. Artisanal fishing, Human impact to marine ecosystems and pollutants. The Habitat Suitability Model output, showing suitable areas for Cystoseira species across the Med, is described in the figure below.

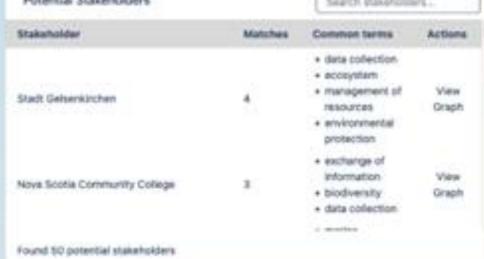


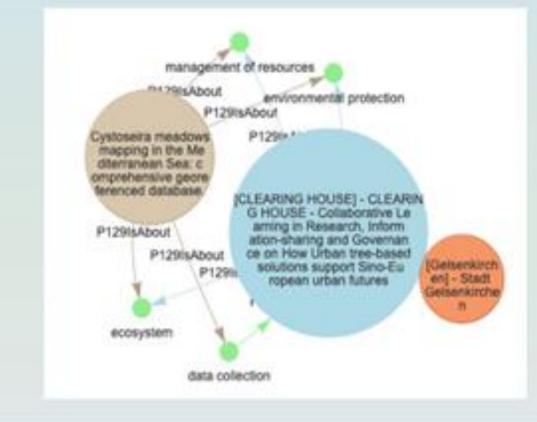
The georeferenced map is accessible to all and has been used for restoration actions (TRL 9) also usettle through the "Business clubs" organized by the AFRIMED. project. The georeferenced map is contained in a scientific paper.

Potential Impact And Applications

The database has potential commercial expicitation in that it may be uptaken by enterprises operating in marine restoration to determine which areas satisfy the requirements for restoration measures based on historical data and prediction model according to geomorphological features. Other than that, the main use that can be made is to provide policymakers with an overview of areas both for restoration activity but also to implement new protected areas since reportalized forest provide several key ecosystem functions (nursery, feeding, etc.) and services (fishing, leisure, etc.) that enhance biodiversity in the area in which they are located. Other possible applications include pre-assessments on carrying out restoration measures and assessments related to spatial planning. The map was created by considering geomorphological variables such as soil type, environmental variables such as temperature or pH, and anthropogenic variables such as distance from ports or the presence of touristic it thus provides us with information on the different characteristics that describe the areas of the Mediterranean Sea. It is therefore possible to know where stress factors are present that can be removed or mitigated, to make the area suitable for restorative actions, suggesting to interested parties where to act and in

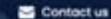
Readiness level TRL 9 - Actual system proven in operational environment Potential Stakeholders Search stakeholders.

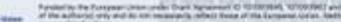
















Ontology and Semantic Network

Ontology

generalised representation knowledge in a particular domain

Concepts
Properties
Relations

Semantic Network

a way to implement an ontology

Ontology with real Data





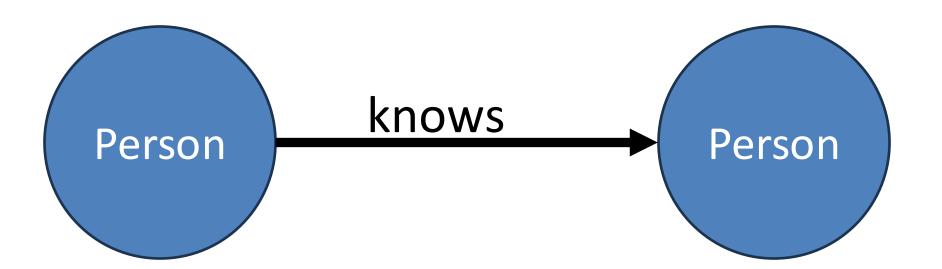




Example: FOAF



FOAF (an acronym of friend of a friend) is a machine-readable ontology describing persons, their activities and their relations to other people and objects. Anyone can use FOAF to describe themselves. FOAF allows groups of people to describe social networks without the need for a centralised database.









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Precision model to map chlorophyll-a concentration in shallow water for the shellfish aquaculture industry.

Project website

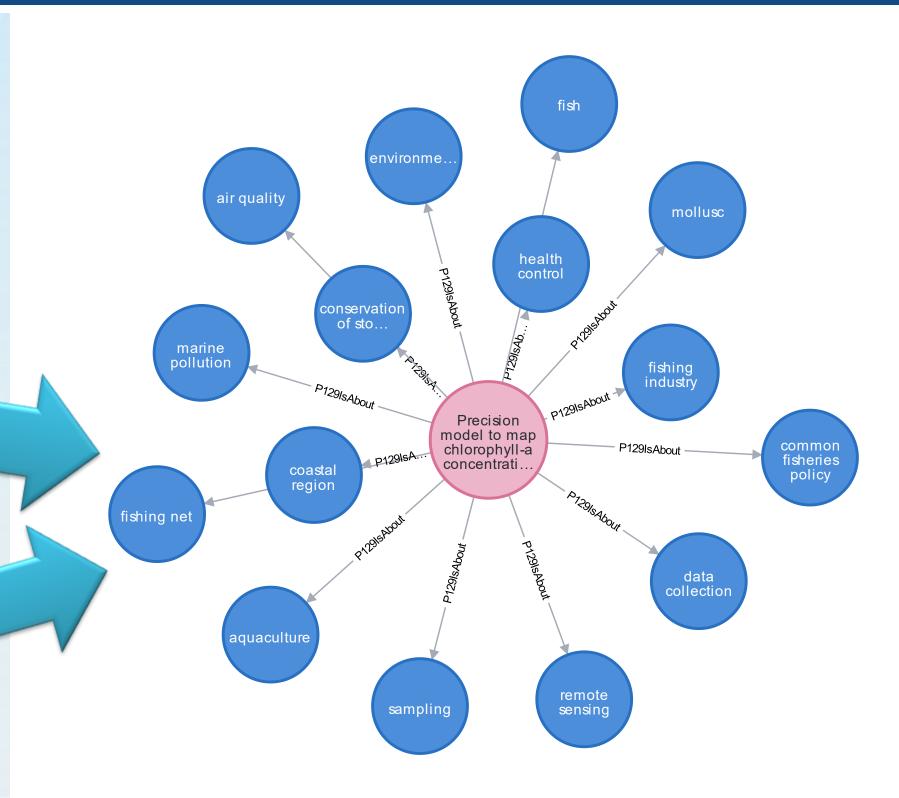
Background Description NewTechAqua

The estimation of chlorophyll-a (Chl-a) concentration in coastal waters still has some difficulties in comparison to oceanic waters due to the more complex optical properties and to the high spatial variability of the coastal environment. Atmospheric and scale corrections are necessary to remotely and accurately estimate Chl-a concentration in coastal waters, which is of main importance to evaluate the viability (based on the environmental status of water masses) of integrating bivalve (i.e., mussel) aquaculture systems in marine spatial plans; the objective of these carrying capacity models is to adapt the production to the ecological conditions of the area.

Technical Description

A shellfish farm may exceed the ecological carrying capacity when the removal of phytoplankton biomass exceeds the renewal, resulting in a phytoplankton depleted water mass. To comply with the Aquaculture Stewardship Council (ASC) on bivalve aquaculture standards, the renewal time of each area has to be shorter than the clearance rate time. Thus, NewTechAqua, through a series of sampling cruises (n=17) for over a year (September 2020 to October 2021) in the northern (n=9) and southern (n=8) embayment of the Ebro Delta (eastern Iberian Peninsula), developed a highly innovative methodology to increase the accuracy of forecasting Chlorophyll-a concentration models to estimate

Readiness level Project NewTechAqua EuroVoc Keyword Extraction EuroVoc Keyword Extraction









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Sensors for LArge scale HydrodynaMic Imaging of ocean floor

What?

LAkHsMI will develop a new bio-inspired technology to make continuous and cost-Summary

> effective measurements of the near-field, large-scale hydrodynamic situation, for environmental monitoring in cabled ocean observatories, marine renewable energy and port/harbor security. We will design, manufacture, and field test prototype

smart sensor cables that measure differential pressure and temperature on the

ocean floor and enable high resolution imaging of the surroughling volume in space EuroVoc Keyword and time, is simple, inexpensive and has very low power cons

can be connecting with existing cabled ocean observatories. inspired by the biophysics of fish hydrodynamic sensing. The technology is scalable

from motors to nossibly hundrods of kilomotors and allows a high campling

635568 Project Id

RIA **Funding Source**

H2020 Programme





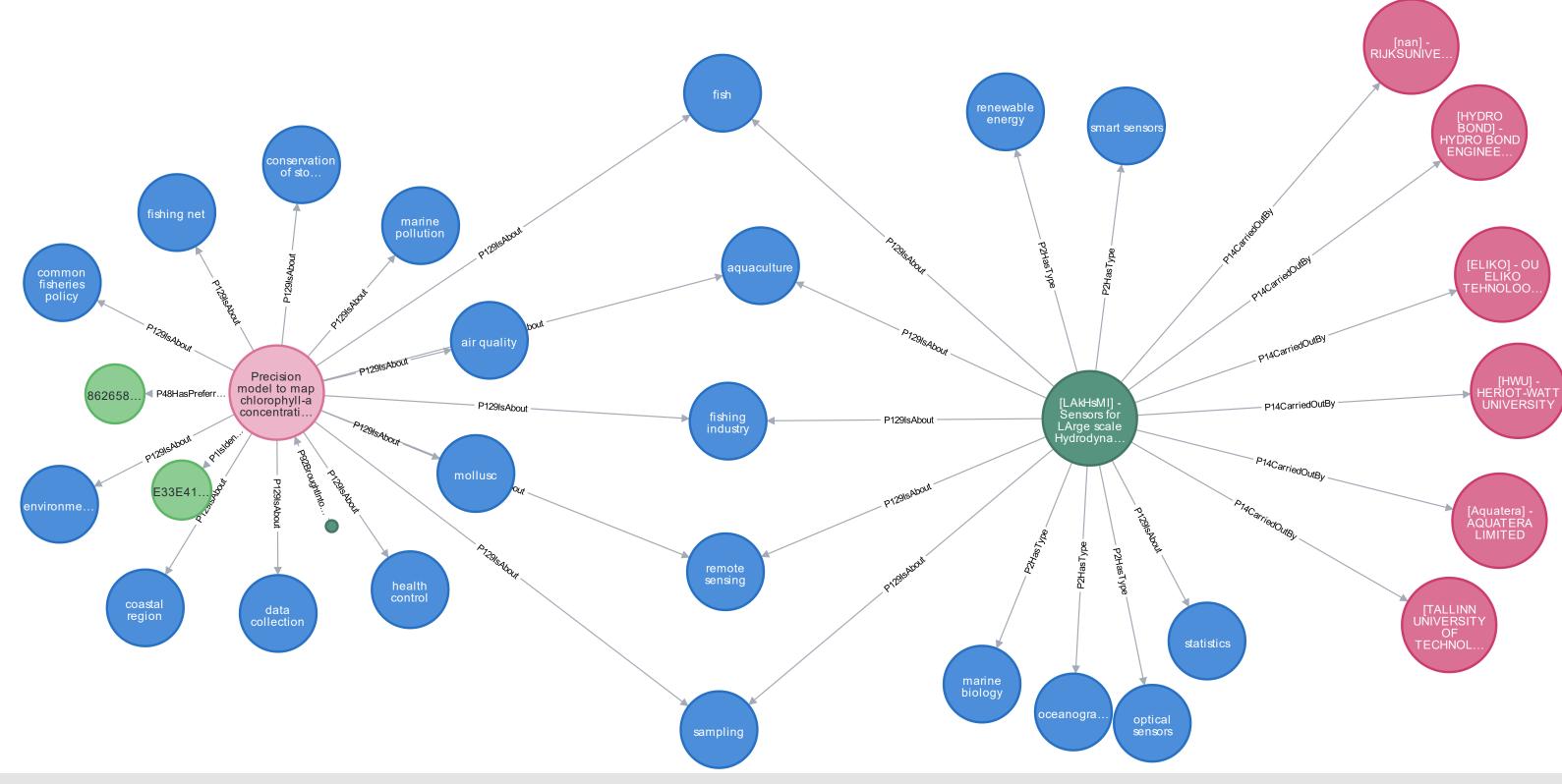


Extraction



26-27 November 2024 | Amsterdam





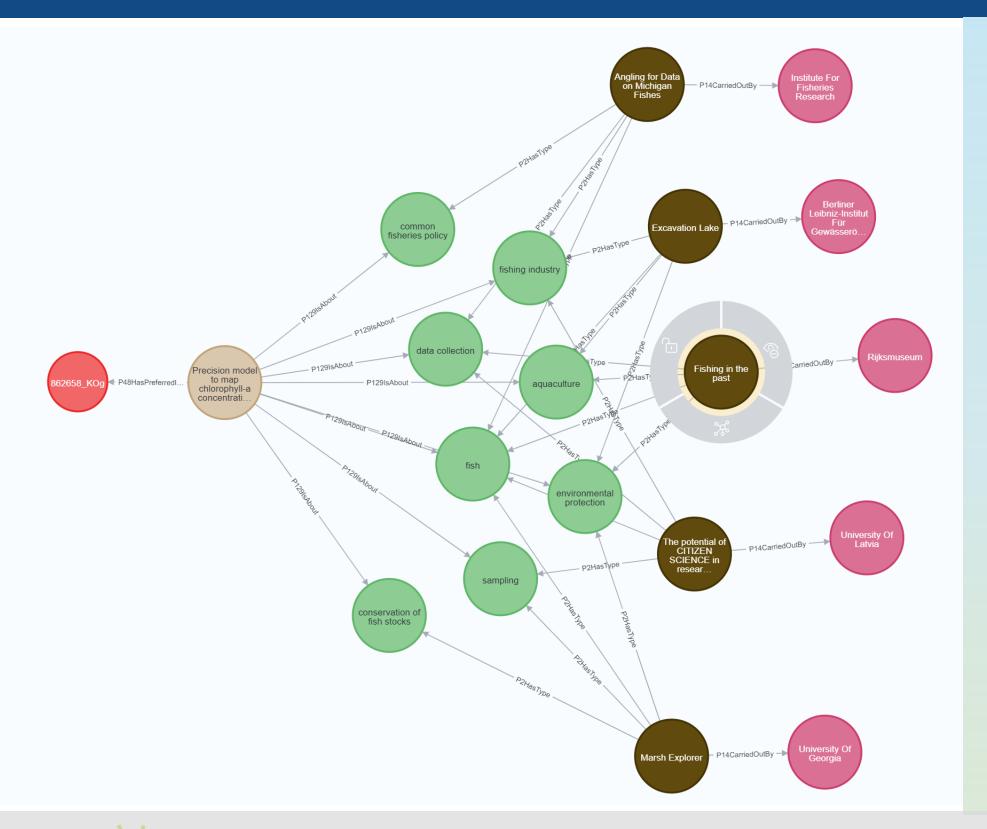






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Fishing in the past

What?

Genera	l Aim	Performance
OCHCIA	. / \	

Aim Identify fish species on paintings, to gain information on biodiversity

and commercial use of fish species.

Description Identify fish species on paintings, to gain information on biodiversity

and commercial use of fish species.

Number Of > 1000

Participants

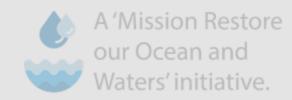
Level Of Distributed intelligence

Participation

Category History

Topic Identifying Fish In Historical Catch

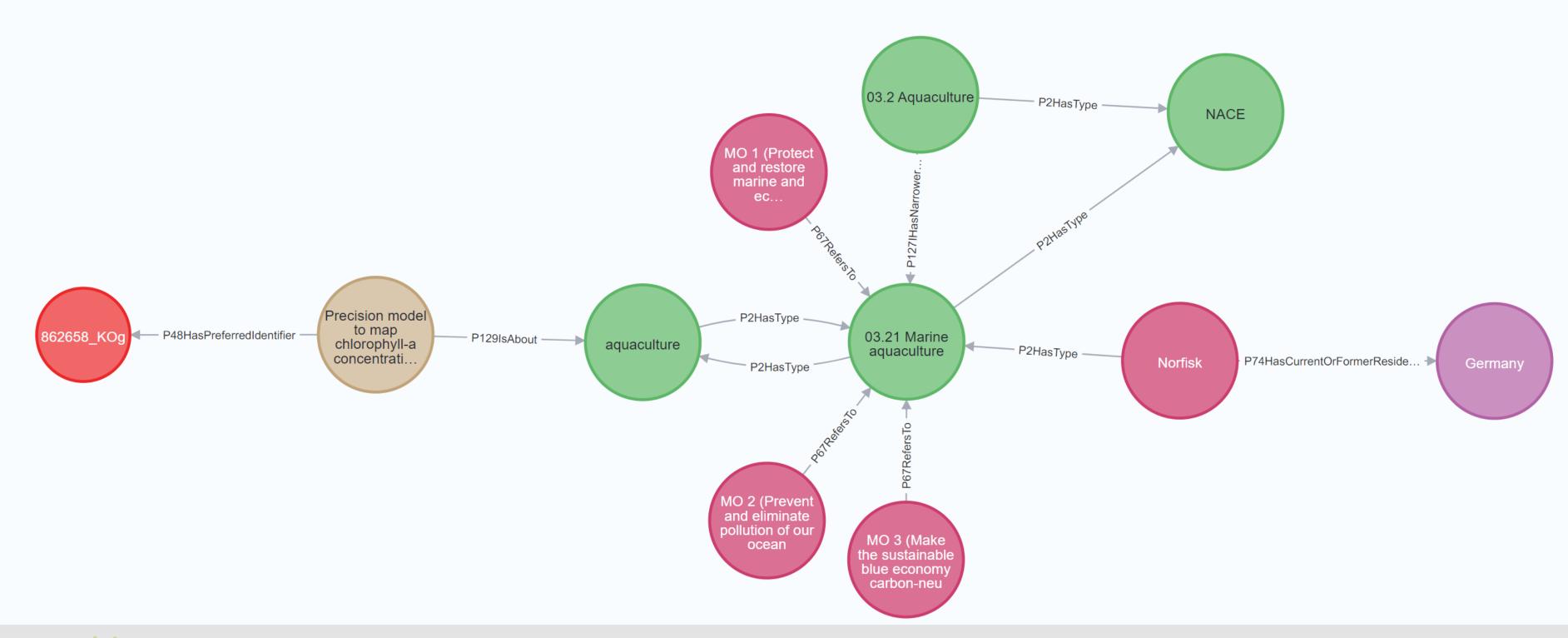




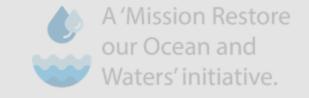


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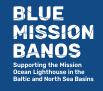














INTERACTIVE SESSION

Table discussions:

Please join one of these 4 discussion tables:

- 1) How can EU and national authorities support the development of innovative business models? (Frode Dal Fjeldavli, Silvia Tosatto)
- 2) How can local administrations and organisations support companies in developing innovative business models? (Julia Lange, Katharina Kurzweil)
- 3) How can startups do business with large enterprises to support Ocean restoration? (Magnus Hanstén, Alberto Terenzi)
- 4) Testing WaveLinks together: How can we help you find knowledge on business models and more? What would you like to see added? (Caecilia Manago, Alexander Dernild)

Discuss for 20 minutes, then you will be asked to <u>switch tables</u> and discuss for another 20 minutes on a new topic. We will wrap up with a short summary at the end.