



15th International Seaweed Conference EU

Seagriculture

16 - 18 JUNE 2026
GOTHENBURG, SWEDEN



Advancing Europe's seaweed sector: SeaMark results and pathways to commercial exploitation



PhD Urd Grandorf Bak

Head of R&D Europe

urd@oceanrainforest.com



OCEAN RAINFOREST

SEAWEED FOR A BETTER LIFE

Why unlock the potential of algae for a thriving European blue bioeconomy*

* Call: HORIZON-CL6-2021-CIRCBIO-01-09

DELIVER BIOMASS & BOOST
EU COMPETITIVENESS

MITIGATE CLIMATE CHANGE
& OCEAN ACIDIFICATION

REDUCE BIODIVERSITY LOSS &
ECOSYSTEM DEGRADATION

PROTECT & RESTORE
OCEAN HEALTH

SUPPORT COASTAL &
ISLAND COMMUNITIES



EMD Limassol 21-23 May 2026 European Ocean Pact

The Ocean Pact is built around six priorities

1. Protecting and restoring ocean health
2. Boosting the competitiveness of the EU sustainable blue economy
3. Supporting coastal and island communities, and outermost regions
4. Advancing ocean research, knowledge, skills and innovation
5. Enhancing maritime security and defence
6. Strengthening EU ocean diplomacy and leadership



The triple planetary crisis refers to the three main interlinked issues that humanity currently faces: climate change, pollution and biodiversity loss.



The Coastal Ecosystem

Coastal Ecosystem Services



- 40% of the global population, 3.3 billion people, resides within 100 kilometers of a coast.
- Only 15% of the world's coastlines remains in their natural state.



Coastal regions offer a large number of coastal ecosystem services which encompass diverse benefits, supporting local communities, biodiversity, coastal protection, etc.

SeaMark

Seaweed-based market applications

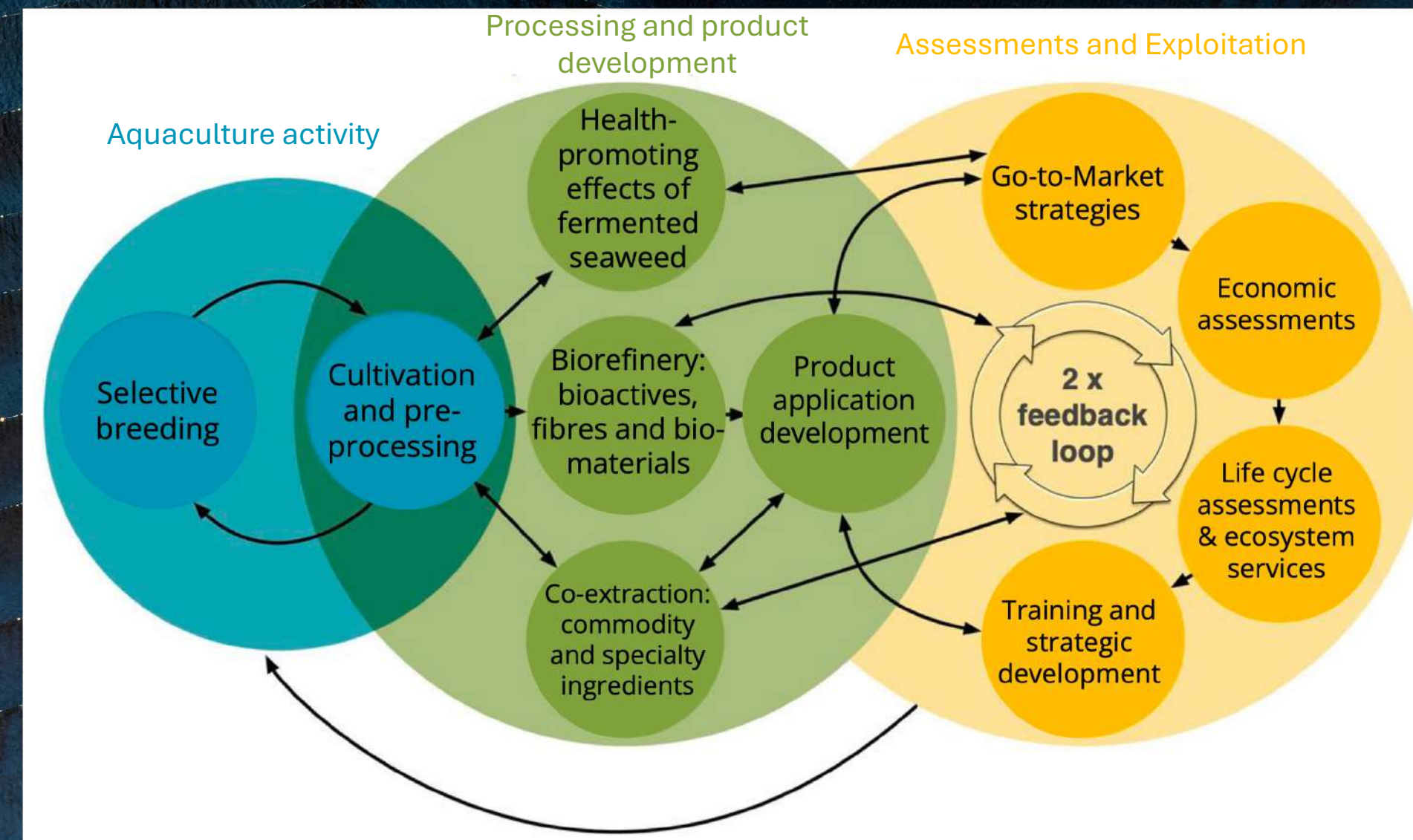


Project Objective:
SeaMark will demonstrate how to scale up innovative seaweed cultivation and processing into price-competitive product applications, making the entire supply chain attractive for commercial investments.

Partners: 25 Partners, 11 countries,
50% commercial partners

Project period: July 2022 – June 2026

Total budget: € 11.5 Mio (~8 Mio EU Grant)



SeaMark

Seaweed-based market applications



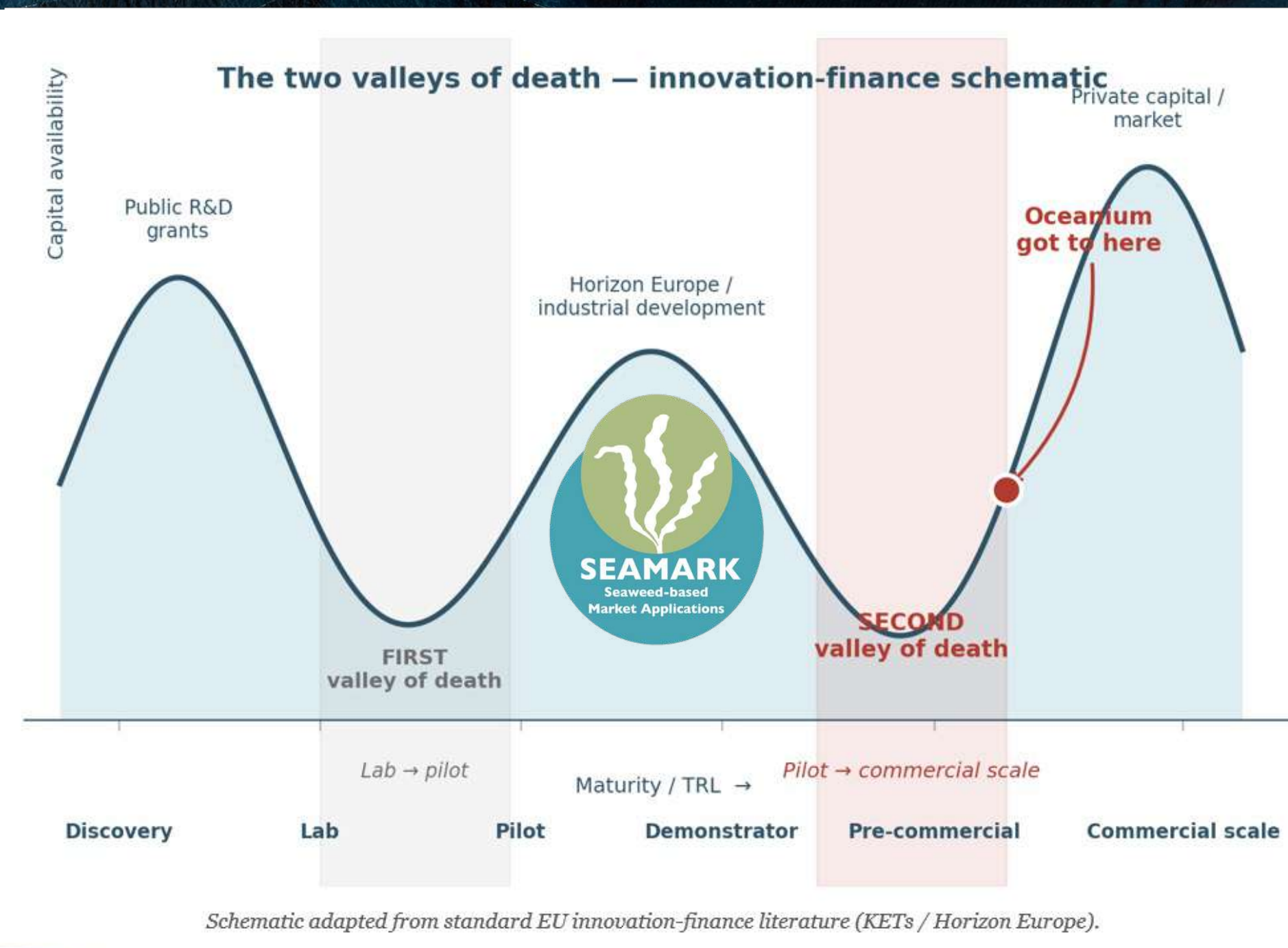
Project Objective:

SeaMark demonstrated how to scale up innovative seaweed cultivation and processing into reduced cost product applications, making the entire supply chain attractive for commercial investments. ! (?)

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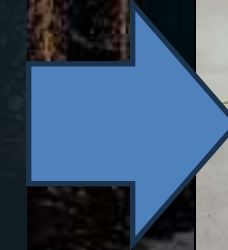
Cultivation breakthroughs



Offshore *Saccharina*:
increased yield,
improved processing
& automation



TRL 5 →
7-9



IMTA land-based
Ulva: automated
production, year-
round supply



TRL 5 → 7



Selective breeding breakthroughs



Genetic gains achieved for both *Ulva lacinulata* and *Saccharina latissima*

TRL 5 → 7



Mutation protocol & FIND-IT screening established

TRL 3-4 → 7

Selective breeding breakthroughs



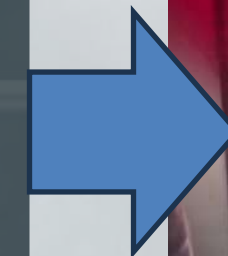
Genetic gains achieved for both *Ulva lacinulata* and *Saccharina latissima*



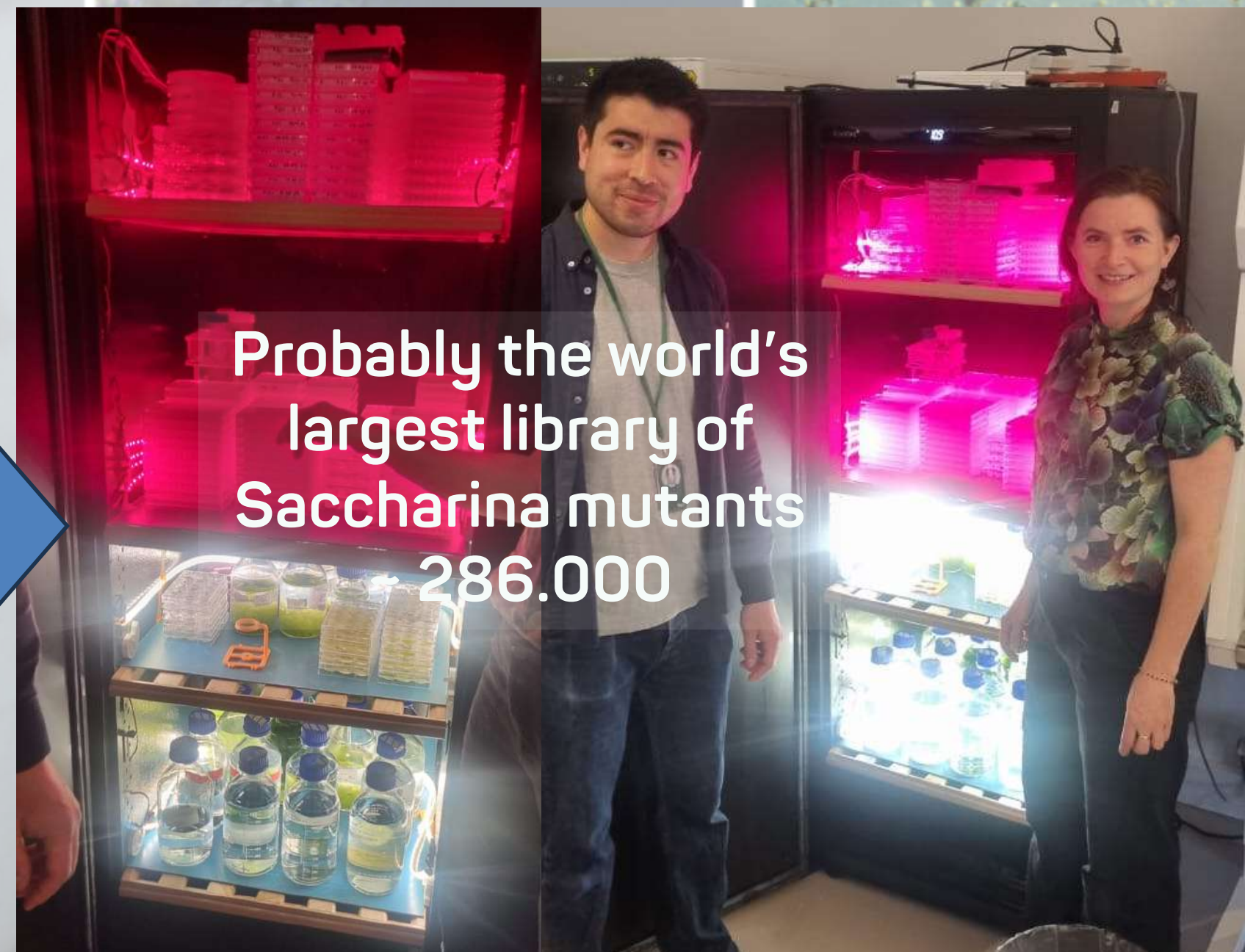
Mutation protocol & FIND-IT screening established



TRL 3-4
→ 7



Probably the world's largest library of *Saccharina* mutants
286.000



Biorefinery & co-extraction



Single step, co-extraction and benchmarking of green alginate and bioactive fucoidan



TRL 5 → 8



Biorefinery processes demonstrated, and bioactive fucoidan, fibres and biomaterials products validated



TRL 6 → 7-8



Biorefinery & co-

Single step, co-extraction
and benchmarking of green
alginate and bioactive
fucoidan

Biorefinery processes
demonstrated, and bioactive
fucoidan, fibres and
biomaterials products
validated



OCEANIUM®



TRL 6 →
7-8



In vitro testing

Elastase inhibition
For protection against skin damage

>77%

High Antioxidant Activity
Protects the skin from everyday
pollutants to reduce signs of skin
ageing, comparative to leading plant-
based ingredients, goji berry and
pomegranate

4016
μmol
TE
/100g

Restores & Enhances Skin Barrier
Increases Keratin 10 expression by 400%
to restore and enhance the skin barrier

400%



0%

Safety testing (HRIPT)

Non-irritant - For all skin types including sensitive skin

Clinical testing

Chemical-induced redness (SLS)
96% restoration of skin treated at day 11*
- compared to non-treated skin (60%)

96%

UV-induced redness
92% restoration of skin treated at day 11*
- compared to non-treated skin (50%)

92%

Reduces redness over 2.5x faster
than non-treated UV damaged skin

2.5X

*when tested in a face cream
1% OCEAN ACTIVES®



OCEAN ACTIVES® H+

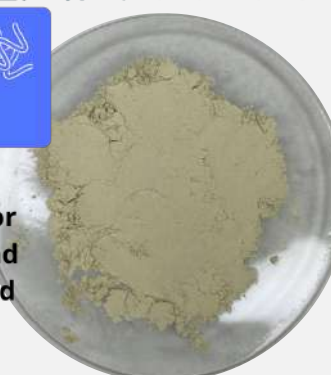


P2
Bioactive
fucoidan

OCEANIUM PET
OCEAN HEALTH



P4
Fibre for
food and
pet food



OCEAN ACTIVES® C+



P2
Bioactive
fucoidan



OCEAN INK®

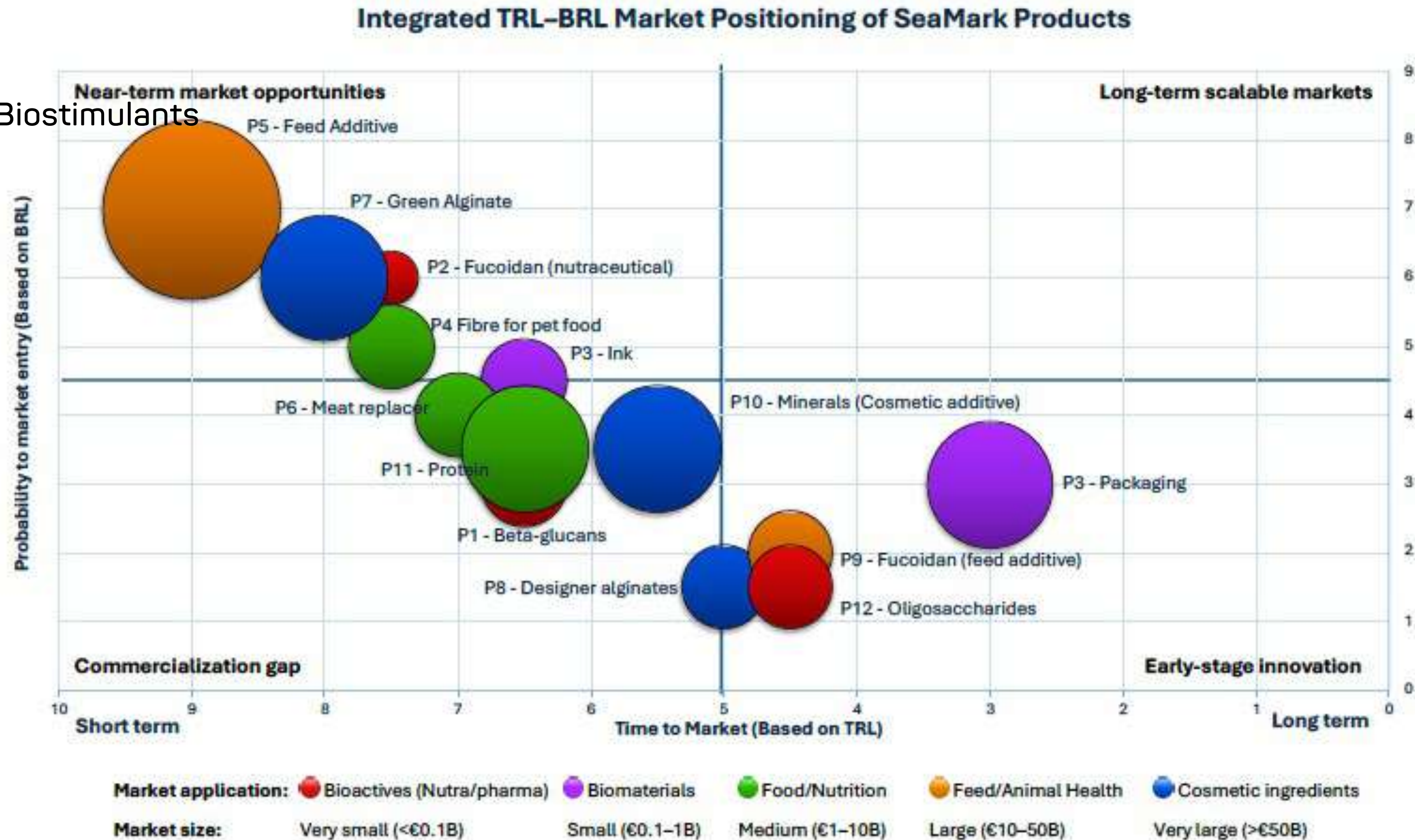


P3
Bio-materials



Product application & end-users

Biostimulants



 **sjókovin**
blue resource

 **Nofima**



Product application & end-users



sjókovin
blue resource

Nofima



Environmental assessments



Ecosystem services assessment and monetisation

sjókovin
blue resource

WAGENINGEN
UNIVERSITY & RESEARCH

Open access reports



Doctoral dissertation - Sophie Koch

The sustainable expansion of seaweed as a restorative aquaculture: using a carrying capacity framework that integrates barriers to expansion and ecosystem services

Sophie J. I. Koch
Berlin, 2025

DISSERTATION

For the academic degree Doctor rerum naturalium (Dr. rer. Nat.) at the faculty of Mathematics and Natural Sciences of the Christian-Albrechts-University of Kiel

PhD thesis
Sophie Koch,
2025

Good practice recommendations on Life Cycle Assessments

WAGENINGEN
UNIVERSITY & RESEARCH

Open access reports

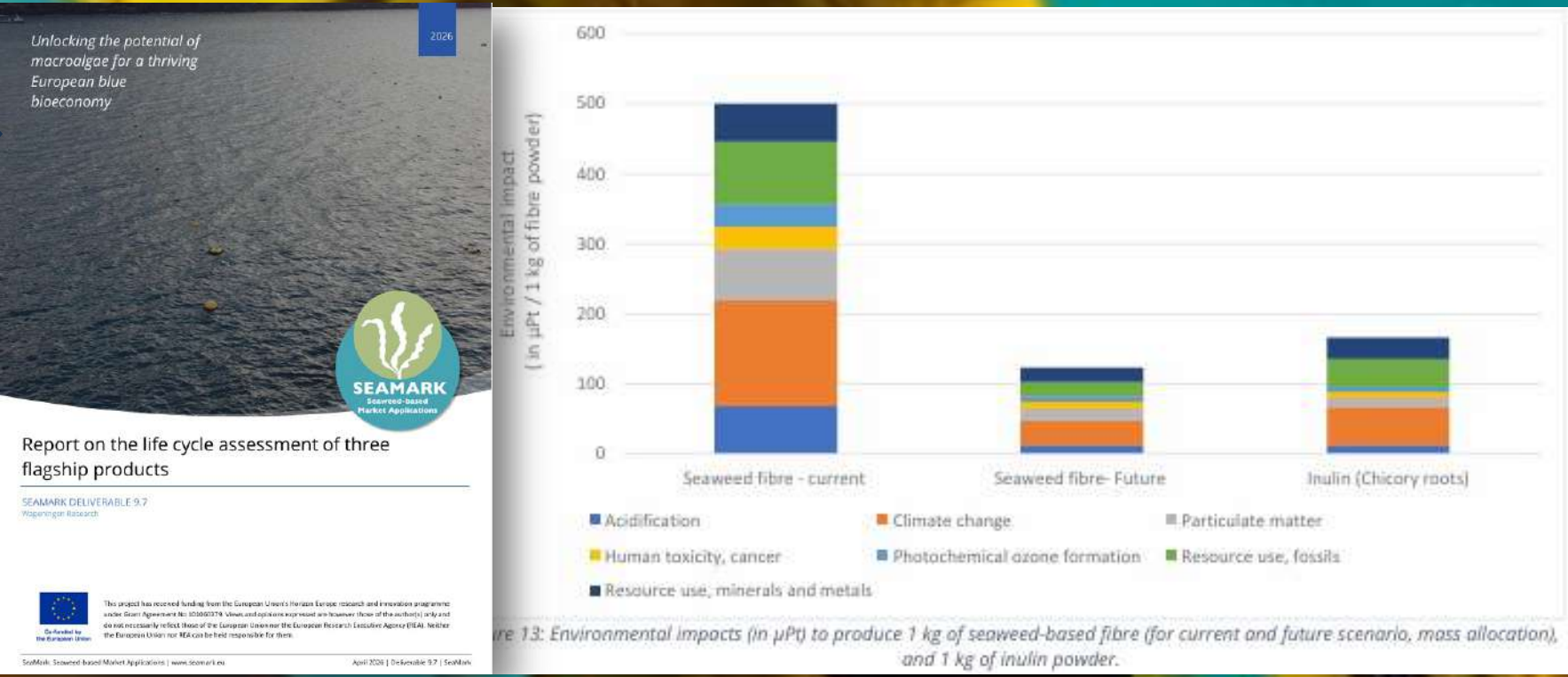
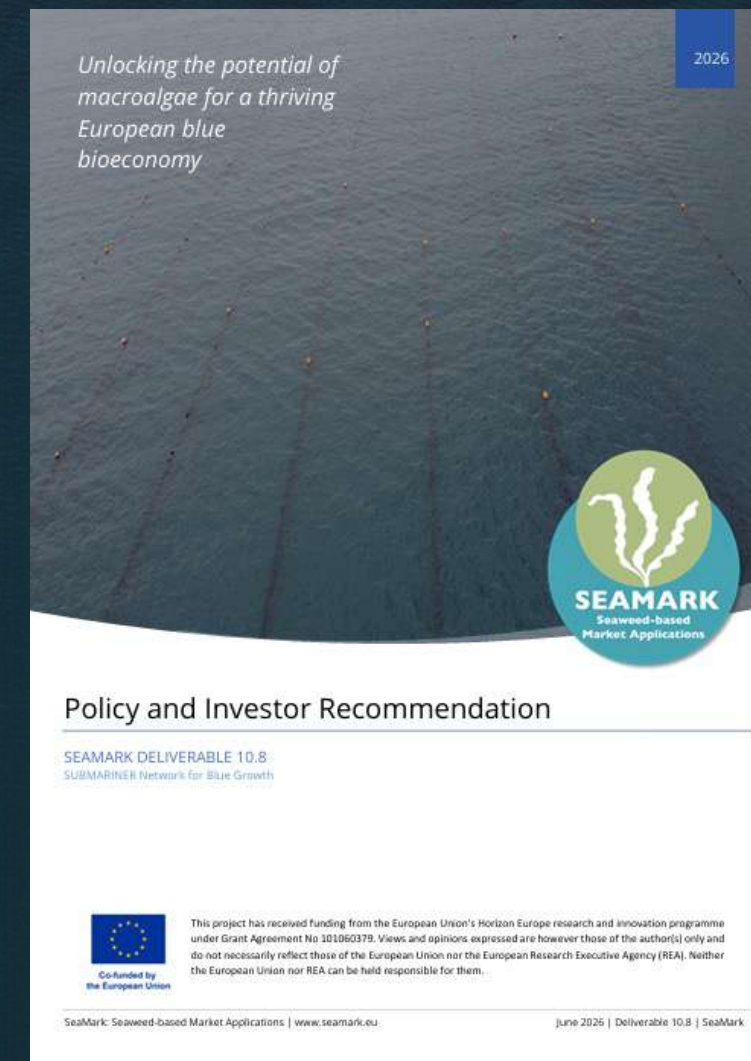


Figure 13: Environmental impacts (in µPt) to produce 1 kg of seaweed-based fibre (for current and future scenario, mass allocation), and 1 kg of inulin powder.

Regulatory & policy engagement

- **Enable sales in the EU**; fast product registration & certification alignment, including new feedstocks.
- **Reducing unfair competition**; accelerated product validation & support offtake partnerships.
- **Develop financing mechanisms** recognising the transition from pilot systems to industrial maturity.
- Reduce production costs and strengthen breeding through **continued R&D & IA grants**.
- Find pathways to allow for the **valorisation of ecosystem services** & sustainability provisions from algae cultivation.



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Flash document for the European Commission – June 1, 2026 – Page 1/2

Outcome of the European Maritime Day Workshop: Algae Solutions for a Thriving Blue Economy

Organised by



Algae cultivation produces measurable environmental value while supporting new bio-based products and industrial applications

Why has scaling not occurred despite technological progress and policy ambition?

The European ambition is clear: through the Ocean Pact and other EU initiatives the Commission aims to boost the competitiveness of the blue bioeconomy and support prioritisation of aquatic biomass. More than 650 million euro has already gone into developing the algae sector in the past years through 250+ research and innovation grants. The technology and methodologies for cultivation and refinery processes are now mature to scale, and there is data available to support implementation of ecosystem service valorisation. New products with high production, reduce the use of chemical from both industry and academia can be developed. Yet, the public investment is at risk of being lost in the process of scaling. To fulfil the European ambition, allowing algae to take the place it deserves in the blue economy is essential.

The Horizon Europe funded projects SI-MACROALGAE and MICROALGAE are accelerating the cultivation of macroalgae and microalgae side-streams from traditional algal extraction across 18 countries from industry, research and academia. These projects are accelerating biorefinery circularity, reducing costs. The most actionable solutions identified in the EU, and providing algal value streams as non-EU countries.

¹ Integrated Multi-Trophic Aquaculture



This project has received funding from the European Union's Horizon Europe research and innovation programme under Grant Agreement No 101019037. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union nor the European Research Executive Agency (REA).



Policy and Investor Recommendation

SEAMARK DELIVERABLE 10.8
SUBMARINER Network for Blue Growth



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Seamark: Seaweed-based Market Applications | www.seamark.eu

June 2026 | DRAFT



Date: 10 June 2026

To the European Commission

ADDRESSING CERTIFICATION BARRIER FOR CULTIVATED MACROALGAE BIOSTIMULANTS

Executive summary

Europe's ambition to lead in biotechnology and the bioeconomy is constrained by regulatory barriers linked to the implementation of the REACH Regulation within the Fertilising Products Regulation. These barriers disproportionately affect low-tonnage, bio-based, and naturally derived substances, including sustainable cultivated seaweed-based biostimulants. This paper outlines how current regulatory requirements create unnecessary costs, regulatory uncertainty, and market exclusion for new biobased and sustainable products. We propose targeted regulatory clarification and proportionality measures under the upcoming Biotech Act II.

The issue is not safety, but proportionality. Targeted clarification can maintain high protection standards while reducing unnecessary regulatory burden, unlocking investment, enabling scale-up of domestic fertiliser alternatives, and keeping innovation and jobs within the EU.

Targeted group

This document was asked for by the Commissioner for Fisheries and Oceans and architect of the European Ocean Pact, Costas Kadis, who are well placed to champion this case across the College, bringing together DG MARE, DG GROW, DG ENV, DG RTD and DG AGRI to enable a proportionate pathway and prioritise cultivated algal biostimulants under both the Fertiliser Action Plan and the Ocean Pact.

Background

The EU REACH Regulation (EC 1907/2006) was established to ensure a high level of protection for human health and the environment. The Fertilising Products Regulation (EU 2019/1009) introduced extended REACH requirements ('REACH+') for fertilising products including biostimulants, creating unintended regulatory burdens for low-tonnage and naturally derived substances.

Industrial potential?



Industrial potential?

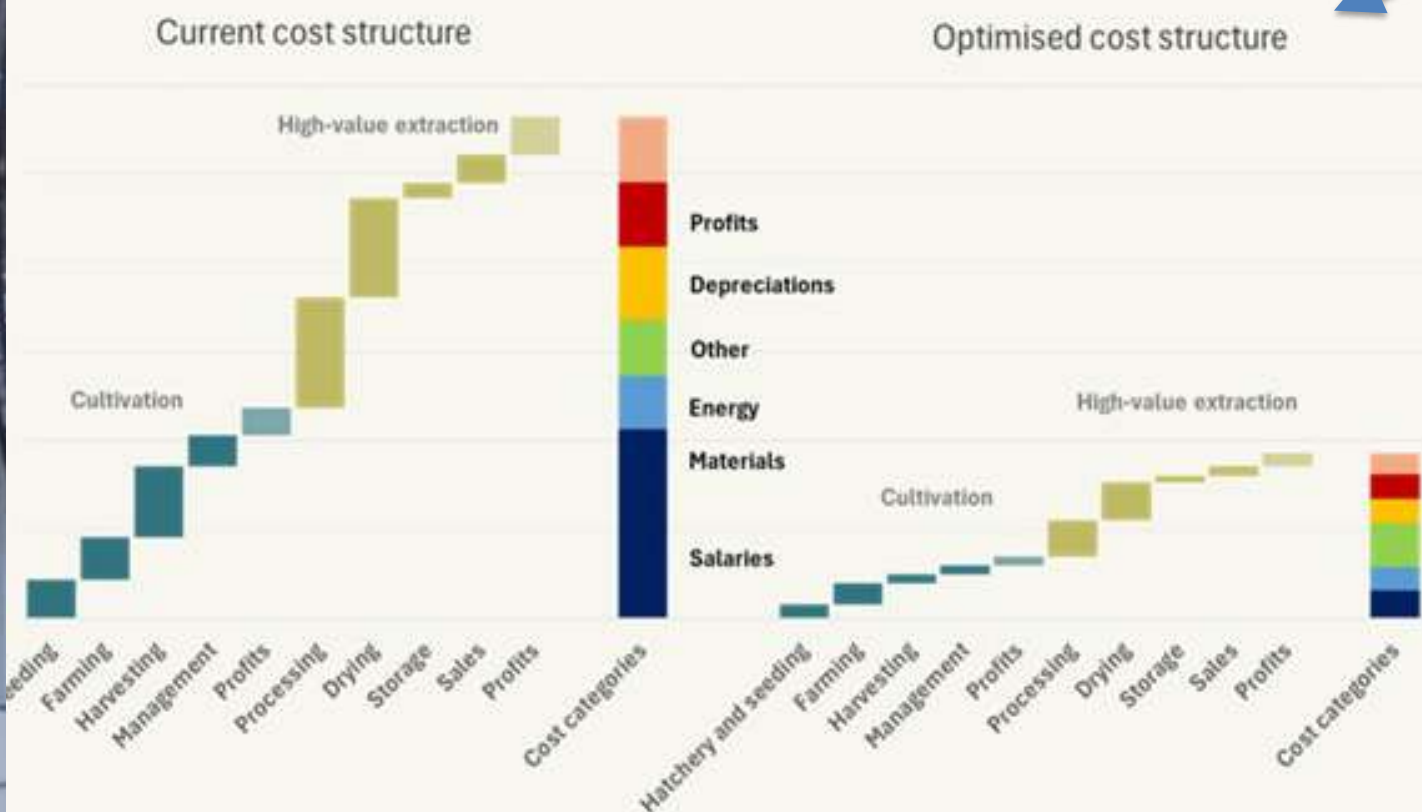


Regenerative industries are emerging within markets that still largely price products as if environmental degradation were free

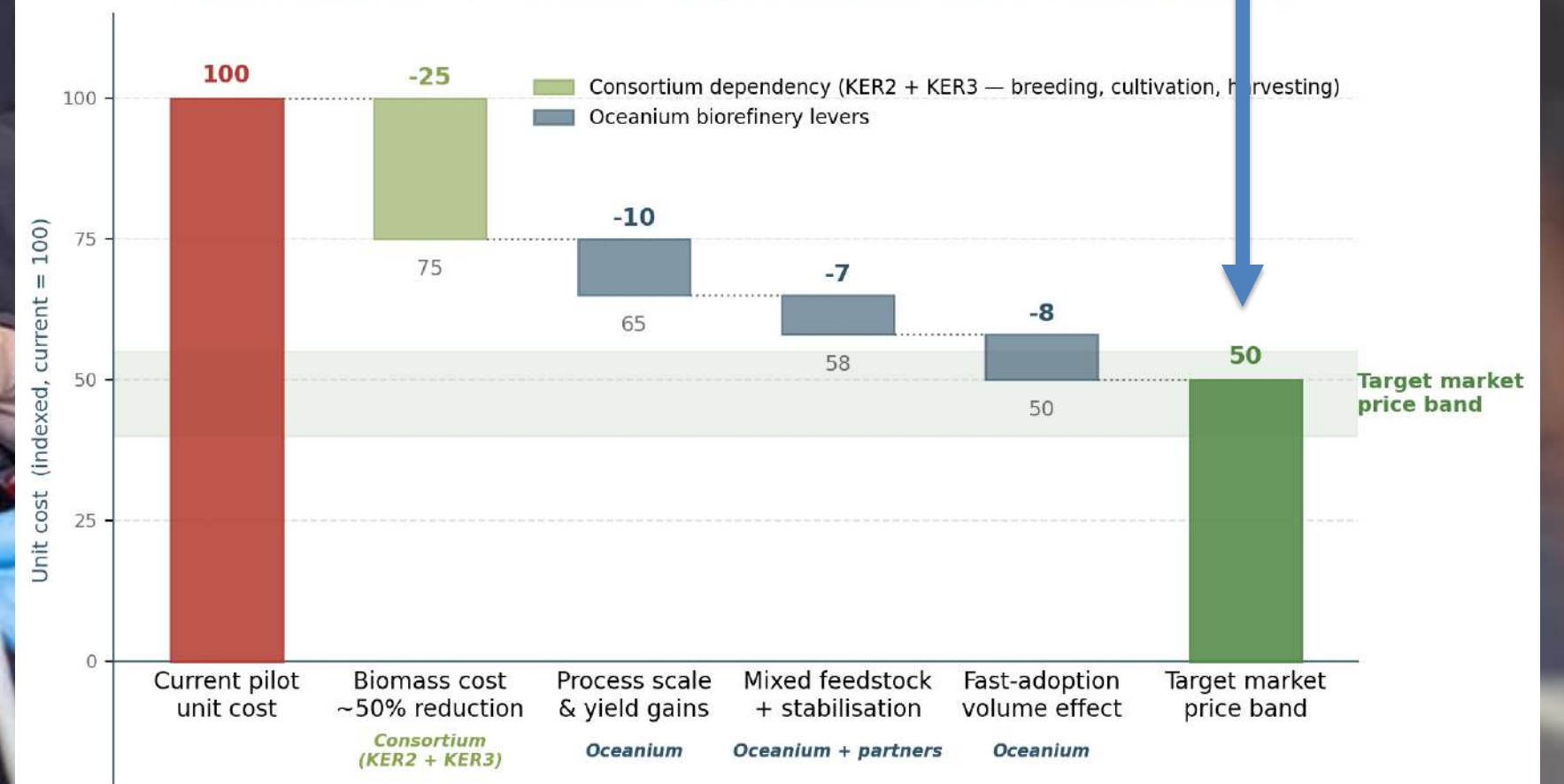
"Decide on the price first"
Robert Carleke, yesterday



Comparison of current and optimised cost structure of high-value extraction



Path to price parity — biomass cost reduction is the largest single lever



Expanding the European seaweed cultivation industry

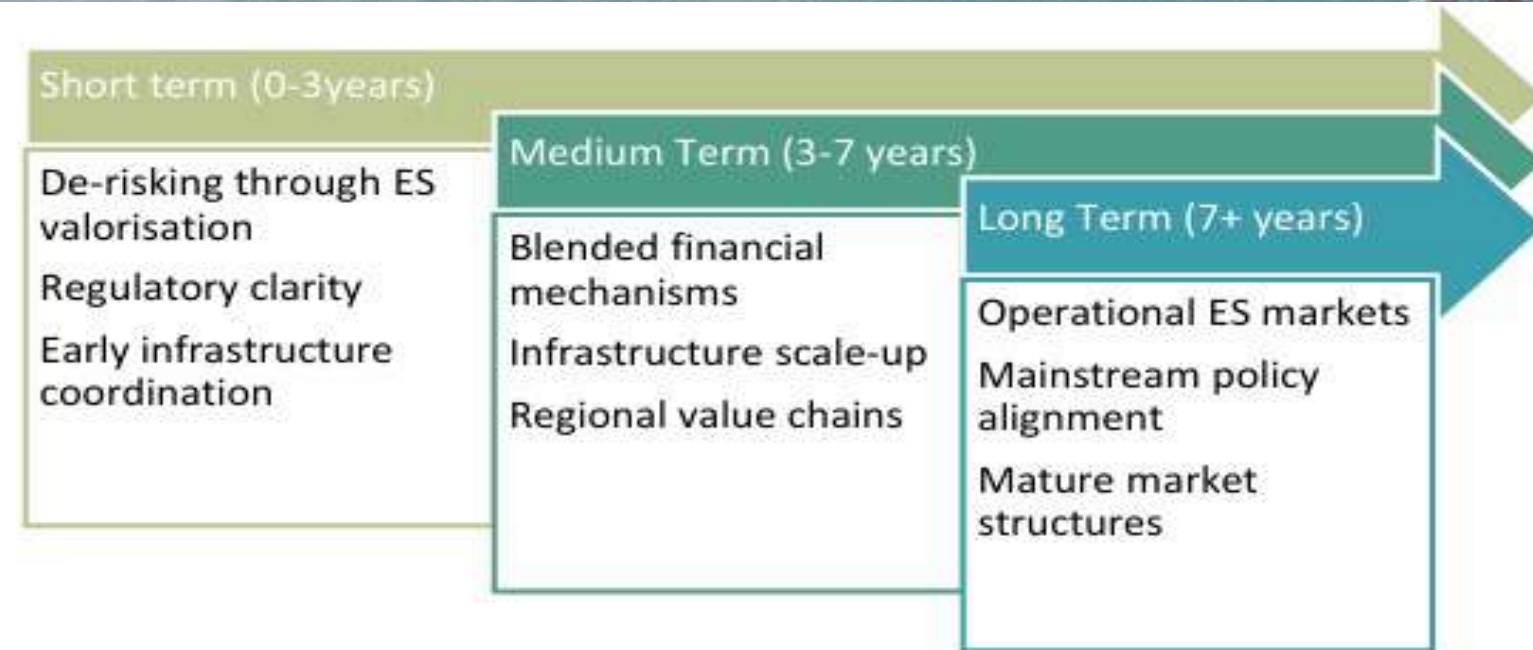
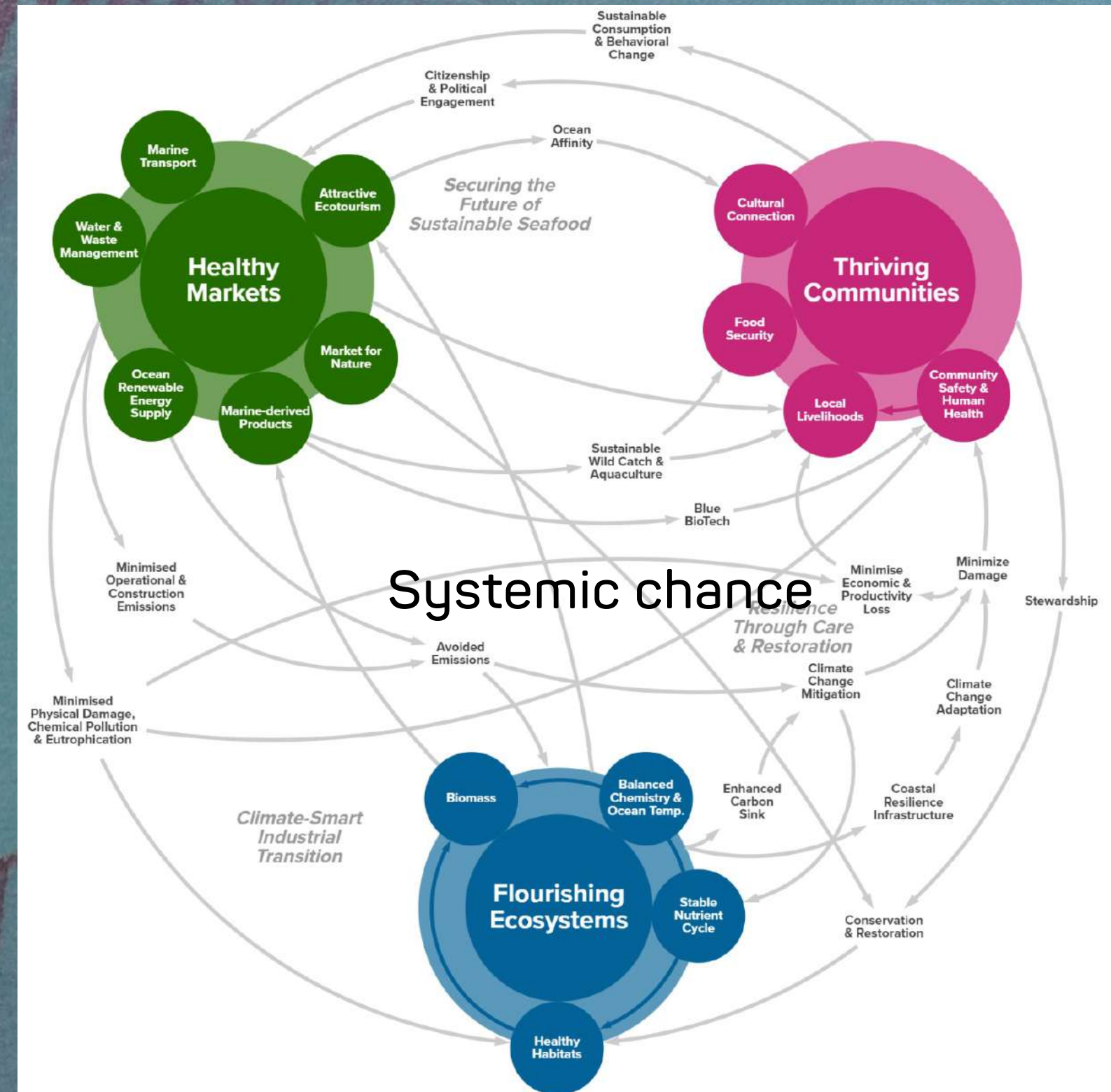


Figure 5. Illustration of parallel actions needed to support an expanding seaweed sector in Europe.

*The European Seaweed Industry
has not failed to scale.
The system has not yet adapted to
value it.*



Next R&D step



Continued selective breeding programs



Aim: Double *Saccharina* and *Macrocystis* yield and increase target compounds through improved local strains through a fast-focused breeding program

Seaweed-to-market Intelligence Systems



Aim: a data-driven system that can synthesise and analyse information to predict key factors across the entire production chain from sea cultivation to market-ready applications.

Biostimulant efficacy & product registration



Aim: A suite of agricultural products with a demonstrated mode of action and scientifically validated efficacy.

Acknowledgement



Contact SeaMark

info@seamark.eu
www.seamark.eu

*"A local Ocean
Rainforest around
the world.."*



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RAINFOREST

Thank you



Urd Grandorf Bak
Head of R&D Europe &
SeaMark Project Manager
urd@oceanrainforest.com

US, California

US, Maine

Mexico, Ensenada

Faroe Islands

Denmark

*"A local Ocean
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