EU MISSIONS
RESTORE OUR OCEAN & WATERS

MISSION BANOS
SUSTAINABLE BLUE ECONOMY BALTIC FORUM
ECONOMY PARTNERSHIP

Patronat polskiej prezydencji w Radzie UE
Patronage of the Polish presidency of the Council of the EU
Patronage de la présidence polonaise du Conseil de l'UE

MISSION ARENA 4
28-29 April 2025 | Sopot, Poland

Integrating Blue in Green

Working with regional bioeconomy stakeholders to define the implementation of recommendations for the Blue and Green Bioeconomy

Theme: Governance

BLUE MISSION BANOS

#MissionArena4

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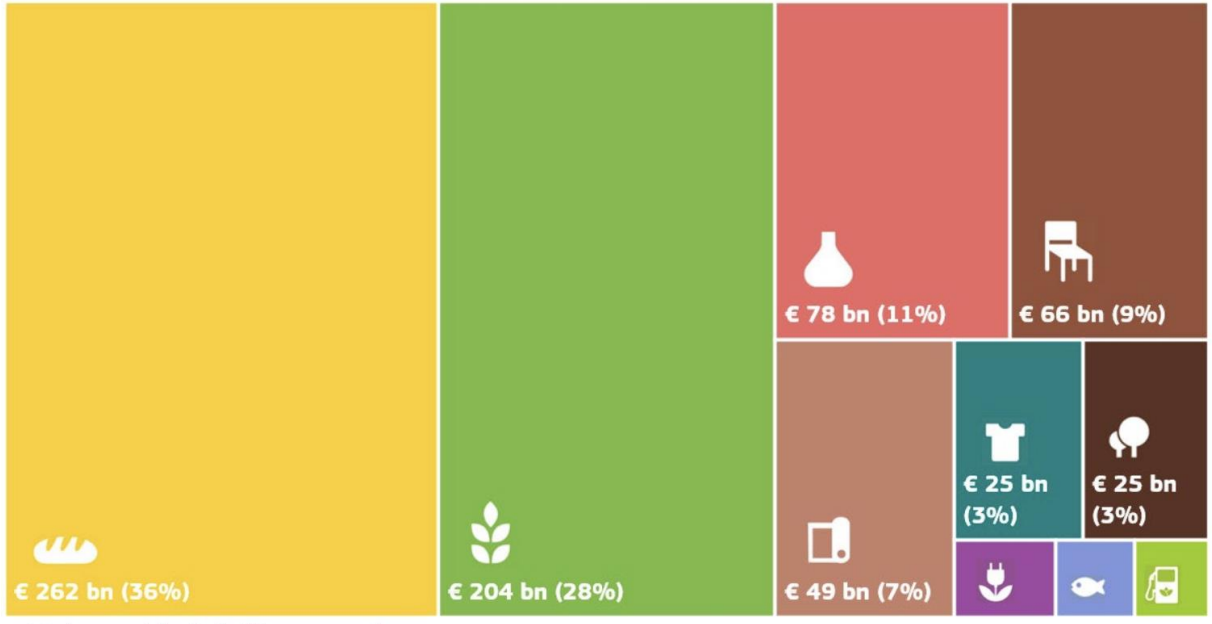
OUR PLAN FOR TODAY

- **A word from the ShapingBio project** on the recommendations its consortium drafted for the EU Bioeconomy
- A word from **Fredric Nilsson**, part of the Swedish Board of Agriculture, and the Coordination Unit of the **EU Baltic Sea Region's Bioeconomy Policy Area**
- A Q&A with **Tanel Ilmjärv**, CEO of **Vetik**, a company working on developing a **seaweed-based bio stimulant** and supporting the development of sustainable farming
- **An interactive exercise** based on the recommendations to draft action points for the short, medium, and long term.

Figure 1. *Value added (billion euro, on top) and employment (million people, on bottom) the biomass producing and converting sectors of the EU-27 in 2021.*



Source: Lasarte-López, J. and M'barek, R., Brief on jobs and growth in the EU bioeconomy 2012-2021, Borzacchiello, M. T., editor, European Commission, 2024, JRC137187

Source: Vincent, A., Stanley, A. and Ring, J., "Hidden champion of the ocean: Seaweed as a growth engine for a sustainable European future", Seaweed for Europe, 2020

3.
Most EU bioeconomy strategies fully integrate both land-based and marine-based activities equally.

Source: [ProFuture project]

5.
Baltic Sea region countries have some of the most advanced cross-sector bioeconomy collaborations.

ShapingBio Aims

"to promote **innovation in the European bioeconomy** (BE) across **sectoral, governmental and geographical** levels by providing evidence-based **information** and **recommendations for better policy alignment** as well as **supporting** and **integrating stakeholders** in the bio-based sectors."

ShapingBio
The bioeconomy of the future

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Project details

- **Project period:** 1 September 2022 to 31 August 2025
- **Consortium**: 10 partners from Germany, Spain, Italy, Denmark, Ireland, France, Belgium, Bulgaria and Czech Republic
- **Project coordinator:** Fraunhofer Institute for Systems and Innovation Research ISI (Dr. Sven Wydra)

36 months

€ 3 999 412.50

10 partners

9 countries

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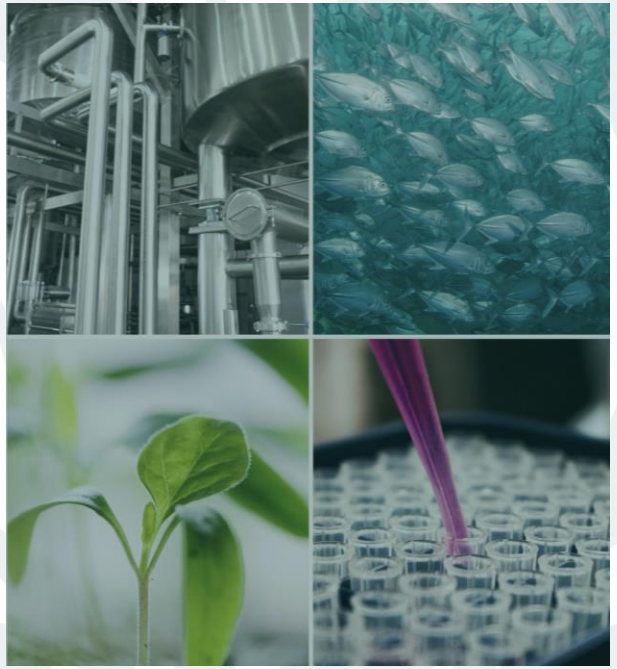
ShapingBio Aims

Going beyond the **blue**...

- Providing mappings and analysis of initiatives, policy instruments and key gaps related to:
  - Policy and governance
  - Applied R&D and technology transfer
  - Collaboration (cross-sectoral)
  - Financing
  - Market Creation and Demand Side Policies



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Work conducted in ShapingBio

Analysis and recommendations are derived from intensive research and stakeholder consultation

- **40 project workshops and events** with more than 1500 participants
- Intensive mapping based on **desk research, interviews, and indicators**
- Participation in **events and joint activities with other projects**

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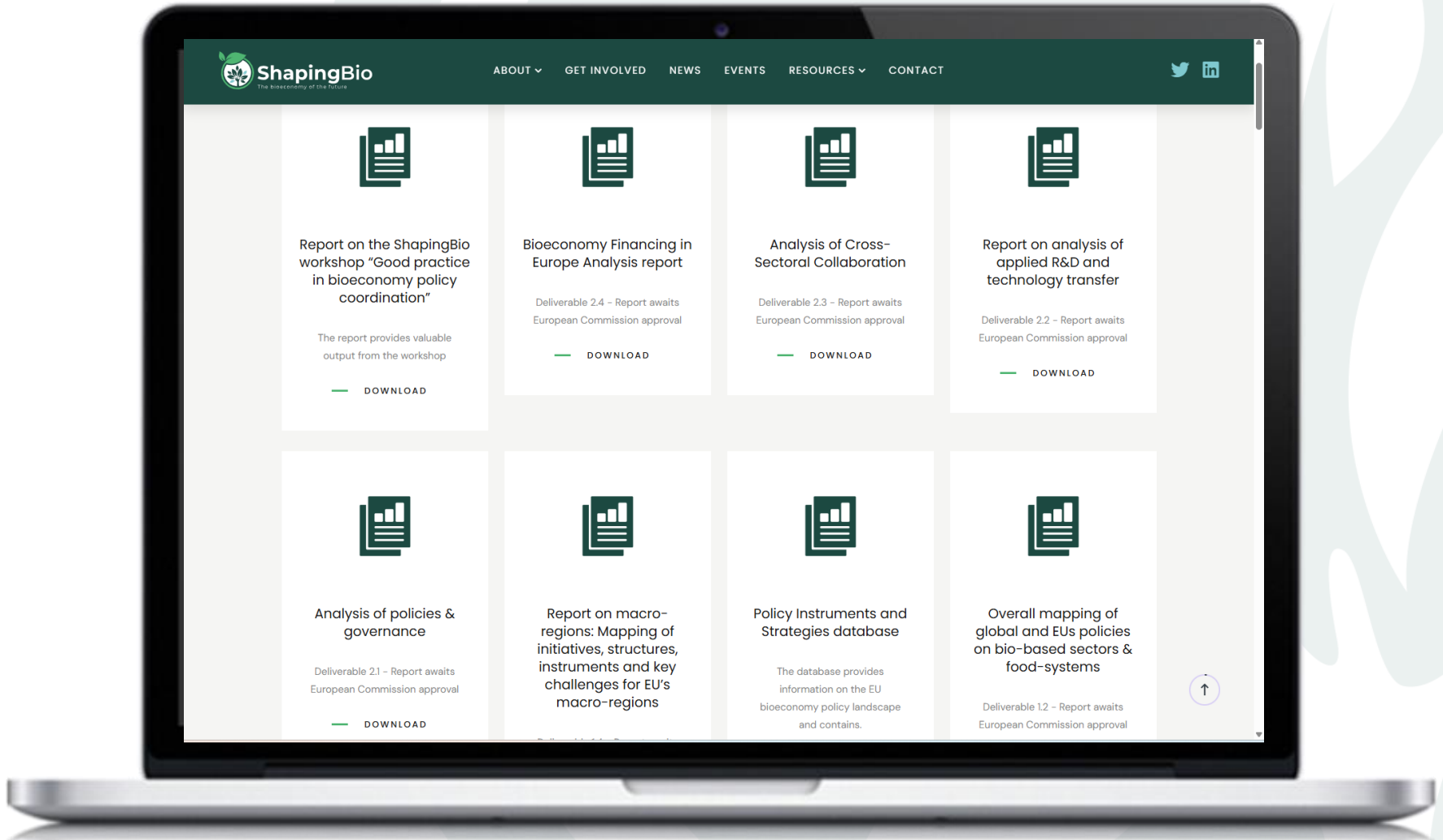
Work conducted in ShapingBio



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Support for Open Access Pilot and Demonstration Infrastructures (PDIs) for the Bioeconomy

- Europe boasts a well-established network of open-access pilot/demo infrastructures
- PDIS have significantly expanded in recent years (2022- 2024), driven by increased demand (2021) from startups and SMEs.
- This expansion ensures some capacity to handle current and future scale-up needs.

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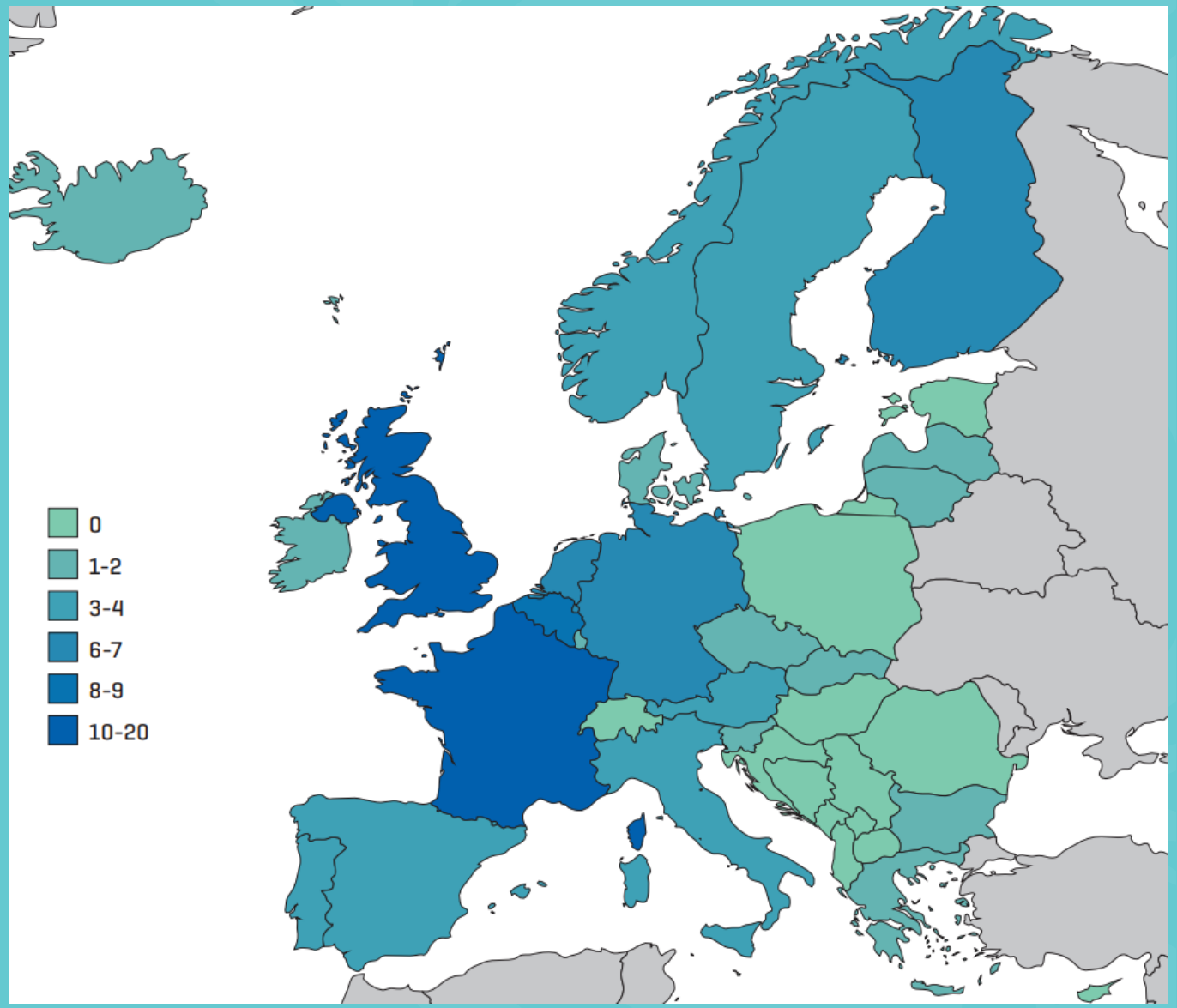
ShapingBio
The bioeconomy of the future

Pilots4U
120+ pilot and demo facilities for the bioeconomy

multipurpose

open access

state-of-the-art



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Policy Recommendation:

Improve access to Piloting and Demonstration Infrastructures: Enhancing connections between innovators especially in CEE countries, and existing bioeconomy infrastructures outside the CEE region.

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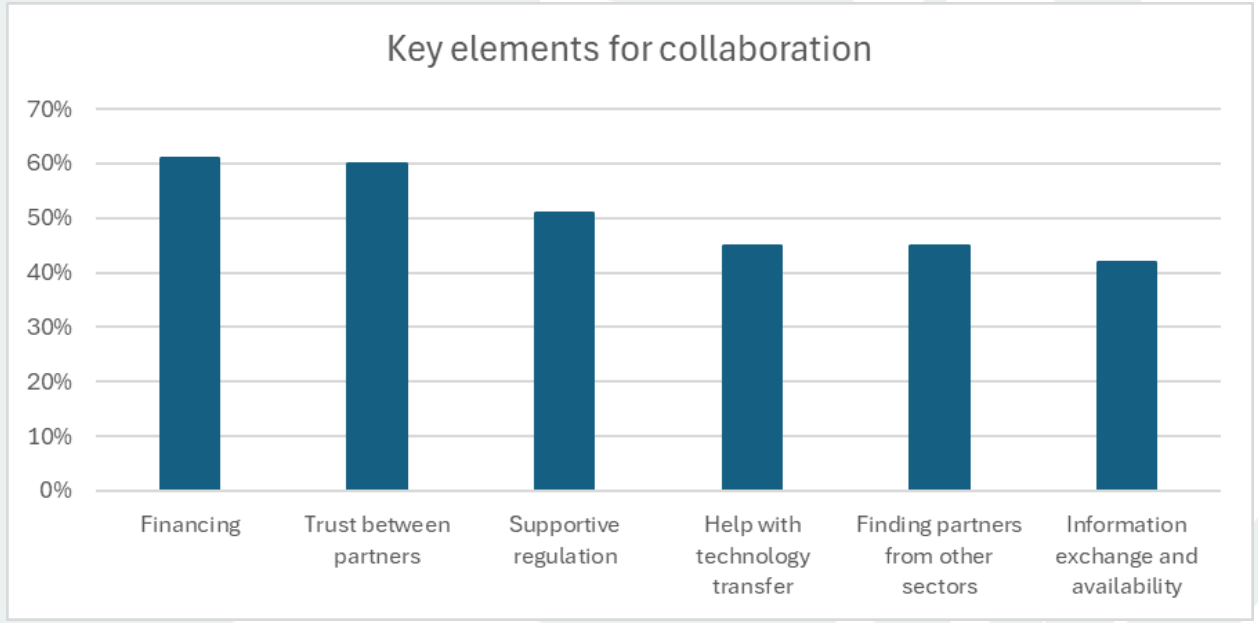
Key elements needed to support collaboration

- Financing and supportive policy/regulation are considered important elements for collaboration
- Information availability on partners, collaboration opportunities, and building trust between partners is crucial for collaboration

-> Intermediaries are key in bringing collaborative stakeholders together



Source: ShapingBio stakeholder survey

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Policy Recommendation

Cross-sectoral collaboration: Support the development of a coherent, measurable bioeconomy policy framework across sectors, especially for blue bioeconomy by harmonising indicators, classifications, and terminology.

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Role of intermediaries – Innovation Chain Creation

- **Broaden stakeholder involvement** in bioeconomy innovation, especially for collaborative activities *(MS level policy makers, intermediaries)*
  - Connect **Primary Producers**
  - **Foster Regional Innovation Hubs**
    - Regional hubs should support bioeconomy industries, offering networking, resource sharing, and collaboration (can be also virtual)
    - Expand (mostly virtual) hubs to physical investment, facilities activities in low-innovation countries (e.g. PDIs)
  - **Support Cross-Border Partnerships**
    - Foster international partnerships to expand perspectives and access growth resources.

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Policy Recommendation

Role of Intermediaries: Strengthen intermediaries and regional innovation hubs to foster collaboration across borders, and support bioeconomy development through networking, resource sharing, and targeted investment, especially in low-innovation countries.

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Applied R&D: Key Insights

- **Applied R&D** in bioeconomy is at the forefront of developing innovative solutions to solve the most pressing global issues - > enables to create **high-value products, opening new markets** and therefore boosting Europe's **economic growth, resilience** and environmental stewardship.

- In the ShapingBio project, applied R&D was defined as **covering TRL 3-4**.

- This is the key to **bridging the gap** between **basic research and scientific discoveries into practical/industrial applications in the EU.**

- There is a need to:
  - Improve **knowledge exchange between academia and industry**.
  - **Create more favourable conditions for research and collaboration** between academia and industry.
    - i.e. Improve the quality of services of technology transfer offices (TTOs), and need for highly qualified staff and interdisciplinary teams.

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Policy Recommendation

R&D: Fostering applied R&D partnerships between academia and industry to advance low-TRL blue bioeconomy solutions and accelerate their uptake/scale-up across blue bioeconomy value chains.

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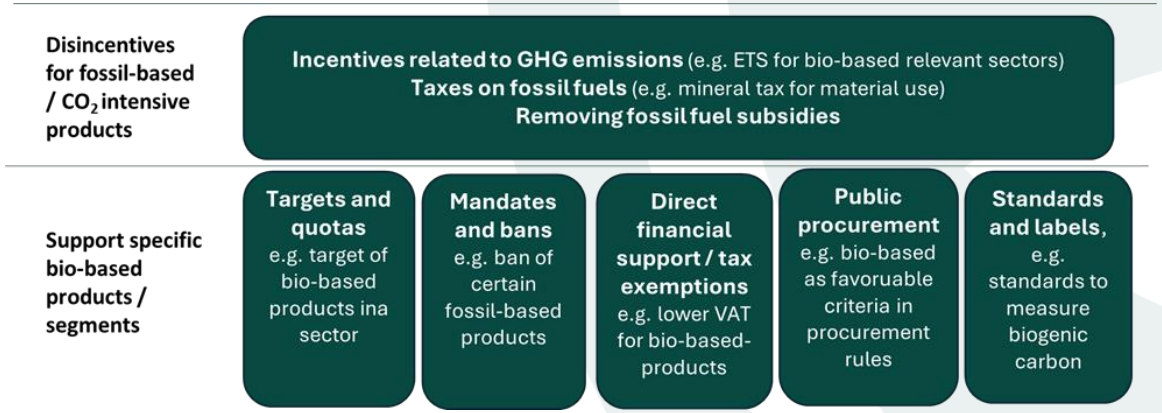
Demand-Side Policies

- Bio-based products with potential to contribute **solving big societal challenges, but market barriers exist**

- A range of potential demand-side policies does exist
  - But it is **hardly implemented** at EU, national and regional levels yet

Potential Instruments



Examples of existing ones

Member State	Instrument	Measure
	Incentives Related to GHG Emissions	**EU Emissions Trading System (EU ETS)** increases the cost of carbon emissions *=> yet hardly covers relevant bio-based sectors*
	Targets and Quotas	**Renewable Energy Directive (RED III)**, target: >5% advanced biofuels by 2030 *=> no bio-based materials*
	Targets and Quotas	Italy establishes quotas, e.g. **60% minimum share of bio- based** content in plastic bags in markets
	Targets and Quotas	From 2030, the use **of bio-sourced or low-carbon materials will represent at least 25%** of major renovations and constructions covered by public procurement.
	Mandates and Bans	**Mandatory use of compostable plastics bags** in Italian supermarkets
	Mandates and Bans	Austrian legislation **prohibiting certain lubricant additives** and chainsaw oils components that are harmful to the environment
	Direct financial support / Tax exemptions	**French tax break** encourages employment of more energy efficient houses and heating systems *=> not bioeconomy specific*
	Public Procurement	**Dutch National Biobased Products Procurement Database (BBPD)**
	Standards and Labels	**Blue Angel eco-label** certifies bio-based products like furniture and cleaning agents as environmentally friendly

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Policy Recommendation

Demand Side: Promote synergies with strategic policy tools such as green public procurement to create demand for sustainable blue bio-based products and bolster cross-sector market development.

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EUSBSR
EU STRATEGY FOR THE BALTIC SEA REGION

PA Bioeconomy

Fredric Nilsson
PA Bioeconomy
2025-04-29

Interreg Baltic Sea Region
Co-funded by the European Union

- The EU Strategy for the Baltic Sea Region is an agreement between the European Commission and the EU member states bordering the Baltic Sea. It fosters cooperation and finds common solutions to joint challenges on a macro-regional level.

- **The Strategy has three objectives:**
- Save the Sea
- Connect the Region
- Increase Prosperity

The Policy Areas

Policy Areas (PAs) represent the expertise in their respective areas of activity.

They are managed operationally by one or more Policy Area Coordinators (PACs) coming from a Member States' official authority of the national or regional government.

The work of the Policy Area and of the Policy Area Coordinator is supported and guided strategically by their respective by a respective Steering Group (SG).

Funding

- The Strategy itself does not have its own funding by principle.

- The European Social Fund Plus, European Regional Development Fund, Cohesion Fund, European Agricultural Fund for Rural Development and European Maritime and Fisheries Fund are key funding sources of the Strategy.

- However, the actions and projects under the Strategy and its Action Plan can be funded by many other financial sources like Horizon Europe, the LIFE programme, Education and Culture programmes, or numerous cross-border and regional programmes such as the Interreg Baltic Sea Region Programme as well as national, regional, private sources.

PA-Bioeconomy - who are we?

PA-Bioeconomy covers the following priority areas:

- **Bioeconomy, Food and Forestry**
  (Nordic Council of Ministers)
- **Agriculture – primarily nutrient run-off**
  (The Ministry of Agriculture and Forestry, Finland)
- **Rural Development**
  (The Ministry of Agriculture of the Republic of Lithuania)
- **Fisheries and aquaculture**
  (The Swedish Board of Agriculture)

Proposed Actions in the revised Action Plan

- Enhance food system resilience and rural cohesion in the BSR
- Reduce nutrient run-off and increase resilience in agriculture and forestry
- Increase blue and green sustainable resilient, resource efficient and competitive bioeconomy in the BSR

Source: Espon.eu

Action 1: Enhance food system resilience and rural cohesion in the BSR

The challenge lies in developing a sustainable and circular bioeconomy, securing food systems, and fostering resilient rural livelihoods in the Baltic Sea Region (BSR) within the limits of available resources, while avoiding undue strain on natural ecosystems and the climate.

Resource Use:
Sustainable resource management is essential to maintain ecological balance, economic stability, and energy independence. This includes adopting circular economy principles, respecting ecological boundaries, preserving soil health in agriculture and forestry, and minimizing waste.

Climate Change:
The bioeconomy is both a driver and a victim of climate change. Land-use changes contribute to greenhouse gas emissions but can also create carbon sinks.

Rural Economy:
Rural areas depend heavily on bio-based industries, including agriculture, sustainable food systems, fisheries, and forestry, all of which rely on healthy ecosystems. However, these areas face challenges like demographic decline, low wages, and limited opportunities for young people. Developing short food supply chains in rural areas can enhance the production and consumption of sustainable, high-quality local food. This approach not only creates new job opportunities but also strengthens rural resilience and promotes greener, more sustainable development.

Action 2: Reduce nutrient run-off and increase resilience in agriculture and forestry

Eutrophication remains a significant issue in the Baltic Sea, despite extensive efforts to address it. Climate change will exacerbate this challenge, while the changing geopolitical landscape highlights the need to improve the resilience of agricultural production.

Developing and implementing sustainable farming methods, improving nutrient recycling, ensuring the security of supply in fertilizers and energy, and adapting farming practices to economic and ecological changes.

Forestry significantly impacts water systems, influencing nutrient leakage, mercury, organic material, and mineral particles.

Integrated catchment-based planning, combining agriculture and forestry, can help achieve sustainability goals, manage synergies, and improve impact and cost-effectiveness.

Action 3: Increase blue and green sustainable resilient, resource efficient and competitive bioeconomy in the BSR.

The Baltic Sea Region (BSR) faces challenges in increasing the added value of blue and green biomass. The primary issues include inefficient resource utilization, environmental impacts, and complex policy and regulatory landscapes

Enhancing biomass valorisation promotes **sustainable economic growth** by creating new jobs, fostering innovation, and developing new markets for bio-based products.

Environmental protection by reducing reliance on fossil fuels, lowering greenhouse gas emissions, and promoting the circular economy

Collaborative efforts in biomass valorisation strengthen regional cooperation, leading to more effective and harmonized approaches across the BSR

Outputs

- **Workshops:** Conducting educational and training workshops for stakeholders to enhance food system resilience and promote sustainable practices.
- **Seminars:** Organizing seminars to share knowledge and best practices on reducing nutrient run-off and improving agricultural resilience.
- **Webinars:** Hosting online webinars to reach a wider audience and disseminate information on biomass valorisation and sustainable bioeconomy.
- **Stakeholder Events:** Bringing together stakeholders to discuss and collaborate on innovative solutions for biomass valorisation and nutrient management.
- **Project Generation:** Initiating and supporting projects aimed at improving food system resilience, reducing nutrient run-off, and increasing biomass valorisation.
- **Policy Recommendations:** Developing and advocating for policy changes to support sustainable food systems, nutrient management, and biomass valorisation.

Obstacles

- **Action 1: Enhance Food System Resilience**
  - Conflicting Interests: Different stakeholders may have varying priorities, leading to conflicts.
  - Policy Gaps: Gaps in existing policies can hinder the implementation of sustainable measures.
- **Action 2: Reduce Nutrient Run-off**
  - Wide-ranging Problem: Eutrophication is a complex issue that requires coordinated efforts across multiple sectors.
  - Legislative Differences: Differences in legislation between countries can complicate the implementation of joint measures.
- **Action 3: Increase Biomass Valorisation**
  - Policy Gaps: Gaps in existing policies can hinder the implementation of sustainable measures.
  - Implementation Inefficiencies: Effective implementation of policies and projects is crucial to achieve desired outcomes.


EUSBSR
EU STRATEGY
FOR THE BALTIC
SEA REGION

Tanel Ilmjärv

CEO of Vetik

BREAKOUT SESSION

- Suggest some concrete action points to implement the recommendations
- Give concrete best-practice cases and examples.

- You will get a chance to switch tables once.

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QUESTIONS

- What are some **critical steps that should be taken in the next 5 years** to make this happen?
- What **strategic actions need to be implemented in the next 10 years** to ensure progress toward achieving this goal?
- What **fundamental changes or innovations are needed in the next 15 years** to fully realise the recommendation?

RECOMMENDATIONS:

- **Improve access to Piloting and Demonstration Infrastructures:** Enhancing connections between innovators, especially in CEE countries, and existing bioeconomy infrastructures outside the region. — Maya
- **Support the development of a coherent, measurable bioeconomy policy framework across sectors**, especially for blue bioeconomy by harmonising indicators, classifications, and terminology. — Fredric
- **Promote synergies with strategic policy tools such as green public procurement** to create demand for sustainable blue bio-based products and bolster cross-sector market development. — Alberto
- **Fostering applied R&D partnerships between academia and industry** to advance low-TRL blue bioeconomy solutions and accelerate their uptake/scale-up across blue bioeconomy value chains. — Tanel
- **Strengthen intermediaries and regional innovation hubs** to foster collaboration across borders, and support bioeconomy development through networking, resource sharing, and targeted investment, especially in low-innovation countries — Katharina

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RECOMMENDATIONS:

- **Improve access to Piloting and Demonstration Infrastructures:** Enhancing connections between innovators, especially in CEE countries, and existing bioeconomy infrastructures outside the region. — **Konstantinos**
- **Support the development of a coherent, measurable bioeconomy policy framework across sectors**, especially for blue bioeconomy by harmonising indicators, classifications, and terminology. — **Fredric**
- **Promote synergies with strategic policy tools such as green public procurement** to create demand for sustainable blue bio-based products and bolster cross-sector market development. — **Alberto**
- **Fostering applied R&D partnerships between academia and industry** to advance low-TRL blue bioeconomy solutions and accelerate their uptake/scale-up across green bioeconomy value chains. — **Tanel**
- **Strengthen intermediaries and regional innovation hubs** to foster collaboration across borders, and support bioeconomy development through networking, resource sharing, and targeted investment, especially in low-innovation countries — **Katharina**

Recommendations Overview

- **Improve access to Piloting and Demonstration Infrastructures:** Enhancing connections between innovators, especially in CEE countries, and existing bioeconomy infrastructures outside the CEE region. — Konstantinos
- **Support the development of a coherent, measurable bioeconomy policy framework across sectors**, especially for blue bioeconomy by harmonising indicators, classifications, and terminology. — Fredric
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