BIOEAST SRIA WORKSHOP SESSION

Gábor Király, Research Institute of Agricultural Economics, HU
Valéria Csonka, Research Institute of Organic Agriculture, HU
Balázs Imre, Budapest University of Technology , HU

BOOST4BIOEAST – GA nr. 101133398

Funded by the European Union

Highlights of Innovation Priorities from the ’BIOEAST AND BEYOND’ high-level conference

Gábor Király
conference rapporteur
Institute of Agricultural Economics (AKI) (HU)

5-6 December 2024

Budapest Hungary

HU Presidency Council of the Eropean Union

More than 30 speakers and panelists

More than 300 participants

The primary goal of the conference was to be a significant milestone on the BIOEAST initiative's journey toward the realization of the Vision.

What is that vision?

THE VISION

A **newly established Europe-wide research and innovation partnership** to enhance sustainable natural resource management, food systems security, and the bioeconomy's deployment that **utilizes the potential of Central and Eastern European, Western Balkan, and Eastern Partnership countries**.

The BIOEAST initiative, supported by its extensive organizational background, dedicated partners, and a wide network of stakeholders, can be a l**eading force in advancing a proposal for this long-term transformational agend**a.

This macro-regional research and innovation initiative would serve the **enhancement of Europe's sustainability and competitiveness.**

HU24EU

Hungarian Presidency of the Council of the EU 24

bioeast.eu

Rapporteur's Report

PARTNERING FOR THE FUTURE

'BIOEAST and Beyond' High-Level Conference on Central and Eastern European Research and Innovation Priorities in the Context of Sustainable Soil and Freshwater Resilience, Food Systems Security and Bioeconomy-Related Policies

4-6 December 2024, Budapest, Hungary

Rapporteurs:

Gábor Király (HU) – *INSTITUTE OF AGRICULTURAL ECONOMICS (AKI)*

Katalin Kujáni (HU) – *KISLEPTEK ASSOCIATION SME*

Maroun El Moujabber (IT) – CIHEAM Bari and PRIMA SAC

George Sakellaris (GR) - *BIOEAST HUB CZ*

Funded by the European Union

STRUCTURE OF THE REPORT

- The vision
- Overview of the Conference's thematic outcomes
  - → Carbon-Water Cycles
  - → Nutrition-Energy Cycles
- Conclusion: achievements and next steps

THEMATIC CYCLES & AREAS

Carbon-Water Cycles: The Link Between Healthy Soils and Freshwater Resilience

SOIL

FRESH WATER

Nutrition-Energy Cycles: Food System Security and Locally Valorised Biomass and Biowaste in the Bioeconomy

Food system

MODERN BIOMANUFACTURING

SOIL

The global natural cycles are insufficiently acknowledged and prioritized in strategic and policy dialogues concerning the sustainability transition of European food systems.

Natural and human-managed landscapes play a critical role, acting as transformation and distribution layers that sustain global natural cycles.

Unsustainable soil management practices are still being used leading to prolonged erosion, carbon loss, land-use changes, contamination, and, most critically, a weakened soil-water nexus. **A comprehensive knowledge base is needed to further assess and monitor these impacts**

A sister event: Budapest Soil Health Forum

Budapest Soil Health Forum	4 December 2024	250 participants	HUN REN ATK Institute for Soil Sciences I Institute of Advanced Studies I Pázmány Péter Catholic Universtiy I Institute of Agricultural Economics I HU Ministry of Agriculture

Conference on Artificial Intelligence for Soil Health

Conference on Improving Soil Health: Amendments, Monitoring, and Modeling

Workshop on Soil Organic Carbon and Soil Health

Soil-X-Change panel discussions on soil management innovations

A sister event: Budapest Soil Health Forum

Highlights of the Forum's Conclusion

Soil health indicators are necessary tools for assessing and monitoring the conditions of our soils but more advanced technology is needed

Climate change increases the threat of desertification

Institutional support that enforces supportive policies, funds research and creates conditions for adoption of sustainable soil management practices

Ensuring that farmers, land managers, and communities have access to the impartial expertise and knowledge

More resources for knowledge generation, information exchange, and facilitation of multi-stakeholder innovation partnerships.

FRESH WATER

Small water cycles are critically important for local water supply. These local cycles tirelessly preserve the continuous movement of water between land and air, supporting key ecosystem services.

A **rethink is needed** to make the EU's public policy frameworks able to reflect and acknowledge the importance of the water-soil nexus.

This should follow a **holistic approach** that recognizes the totality of water cycles, and European soil diversity, while reflecting on regional differences.

Prioritizing land users in this process will help them influence local water cycles through their practices, which will then have an impact on global water cycles.

MODERN BIOMANUFACTURING

The CEE macro-region is **currently missing the opportunity** to build a competitive future without **a modern bioeconomy sector**.

The valorization of the macro region's biomass potential and the **sustainable management of natural resources should happen locally**, but it is also **pivotal to rely on cutting-edge knowledge and technological innovation,** which is often generated mainly beyond the BIOEAST macro-region, in other European countries.

Research and innovation initiatives, multi-actor projects, living labs, and co-financing models can boost the currently insufficient manufacturing capacity.

Better valorisation of biomass allows **to improve the balance between harvested and non-harvested biomass.**

FOOD SYSTEM

Network science needs to be connected to **food system science** to enhance understanding of the interactions between food, genes, and health.

The **volume of data generated** in the fields of nutrition and food safety and security is **expected to grow exponentially** due to advancements in mass spectrometry technology and AI / ML capabilities.

Actors in these fields, including research labs, government entities, international agencies, and food producers, **must prepare for big data management and analytic capabilities**.

A **testbed case in the macro-region** (e.g. FOODOME project) can be implemented.

Sustainable and effective use of food waste

CONCLUSIONS OF THE REPORT

Fully harness the potential of existing policies, initiatives, and opportunities

Solid and diverse foundation & commitment to build on

Unutilised potential in biomass in the macro-region

Link to the EU's sustainability, competitiveness, and strategic autonomy objectives

Collaboration. Collaboration, collaboration!

Higher Level of Ambition is needed

The BIOEAST Manifesto needs support

Regions have specific priorities. We need to identify them!

The society should be engaged, including future generations' view

Integrated R&I approach

Public procurement is an unused tool with great potential

Investments are essential for progress

ACTION-ORIENTED CONCLUSIONS

Pivotal year ahead

Discussions on post-2027 CAP and…

…the next Framework Programme (FP10) have begun

Close collaboration is needed with Polish and Danish Council Presidencies

Thank you for your attention!

Gábor Király (AKI): kiraly.gabor@aki.gov.hu

Updating the BIOEAST SRIA

BOOST4BIOEAST 2025 Annual Meeting

Balázs Imre (BME / TTK)

Bucharest, 9 April 2025

Funded by the European Union

What is the BIOEAST SRIA?

- A research and innovation **masterplan** **to realise** the **BIOEAST Vision** – to unlock the sustainable bioeconomy potential and address the generally low level of bioeconomy maturity in the BIOEAST countries
- Aims to highlight the **common research and innovation needs & priorities** of the BIOEAST macro-region
- Organised into **7 core themes** corresponding to the 7 thematic BIOAST **Thematic Working Groups** (TWGs)
- Defines the intended **impact**, the envisaged **portfolio of activities**, measurable expected **outcomes**, **resources**, **deliverables** and **milestones** within a **defined timeframe**
- A **living document**, and there is a need to be **updated every 3 years**, with more frequent updates welcome and

Funded by
the European Union

CORE THEME 5:
ADVANCED BIOCHEMICAL AND BIOMATERIALS

Strategic Thematic Areas:

- TA1: Assessment and valorisation of sustainable feedstocks for the chemical industry
- TA2: Blue economy in the production of bio-based chemicals and materials
- TA3: Chemical and enzymatic transformation of biomass
- TA4: Production of bioactive and functional compounds
- TA5: Production of bio-based materials and platform chemicals
- TA6: Innovative high-value bio-based products for demanding applications

TA1: ASSESSMENT OF SUSTAINABLE FEEDSTOCKS FOR THE CHEMICAL INDUSTRY

CHALLENGES

Bioeconomy is a broad concept that aims to achieve the valorisation of bio-based resources in various ways. Large amounts of primary and secondary biomass are produced in CEE (e.g., in agriculture, forestry and the food industry) that could serve as raw materials for biotechnological conversion. The relevant value chains, however, are not yet fully developed. Several challenges need to be addressed to achieve the transition of the chemical industry from fossil-based feedstocks to renewable ones. These involve the availability of biomass and industry side streams, technological challenges, as well as the necessity of avoiding competition with food and feed applications.

MAIN RESEARCH TOPICS

RT 1.1: Mapping available biomass supplies for valorisation in the chemical industry

RT 1.2: Boosting the formation of bioeconomy clusters along promising value chains

RT 1.3: Analysing the generation of food waste along the whole value chain

RT 1.4: Exploring value chains based on non-wood forest products

RT 1.5: Development of new varieties of fibre and oil plants for industrial applications

RT 1.6: Improved medicinal plant varieties to produce bioactive compounds

RT 1.7: Implementing effective microorganisms for the stimulation of growth in industrially relevant plants

EXPECTED OUTCOME AND IMPACT

Sustainable indicators and monitoring systems for the whole biomass value chain will be developed and implemented. Currently available value chains will be improved, while new ones will also be created, with respect to the 'food first' and 'cascading use' principles. Biomass or waste streams that

Core Theme
7 core themes – 7 TWGs
sectoral division, broad themes

Thematic Area
4-7 more prioritized focus areas
per Core Theme

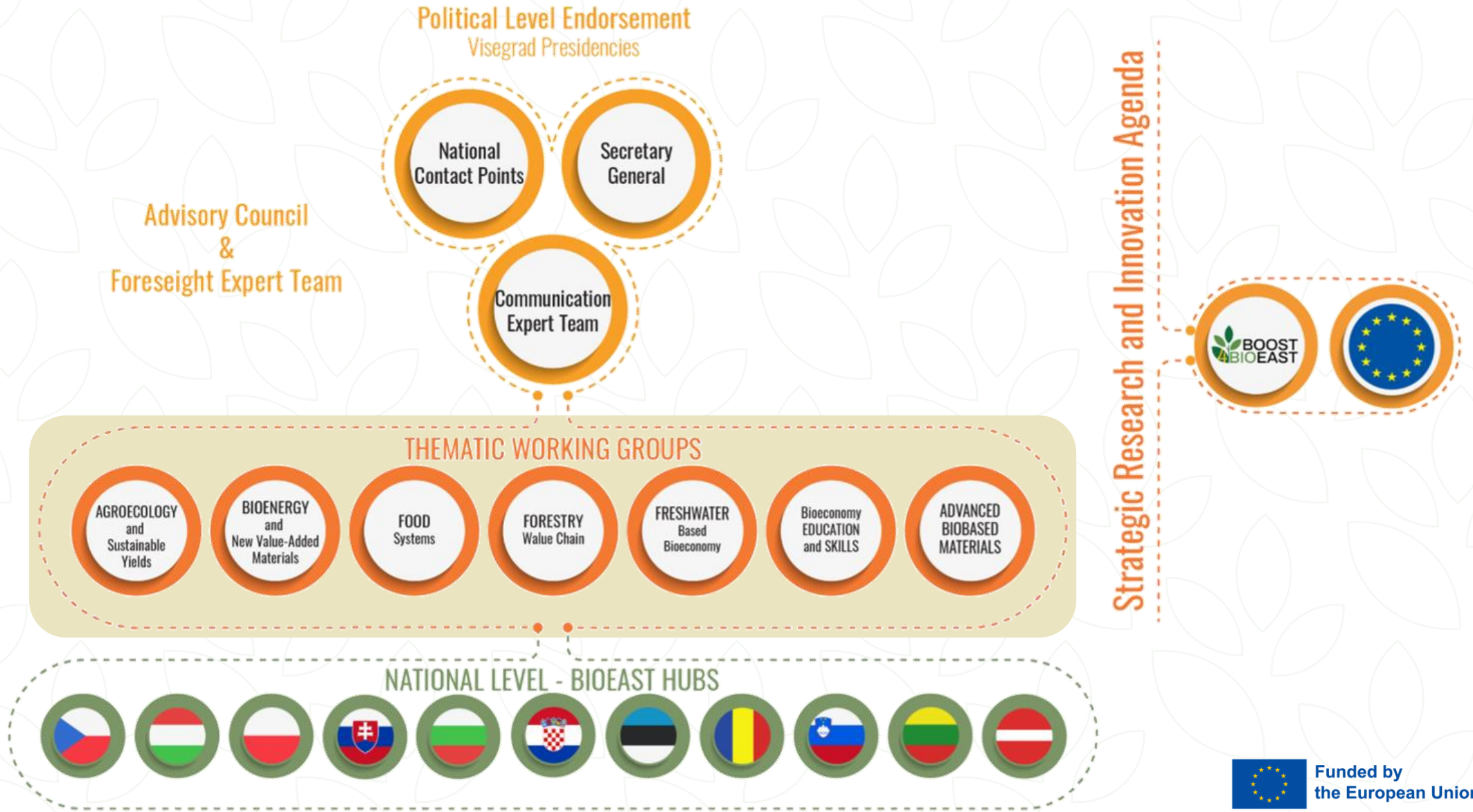
Challenges formulated

Research Topics
5-20 specific R&I topics of interest
per Thematic Area

Outcome & impact

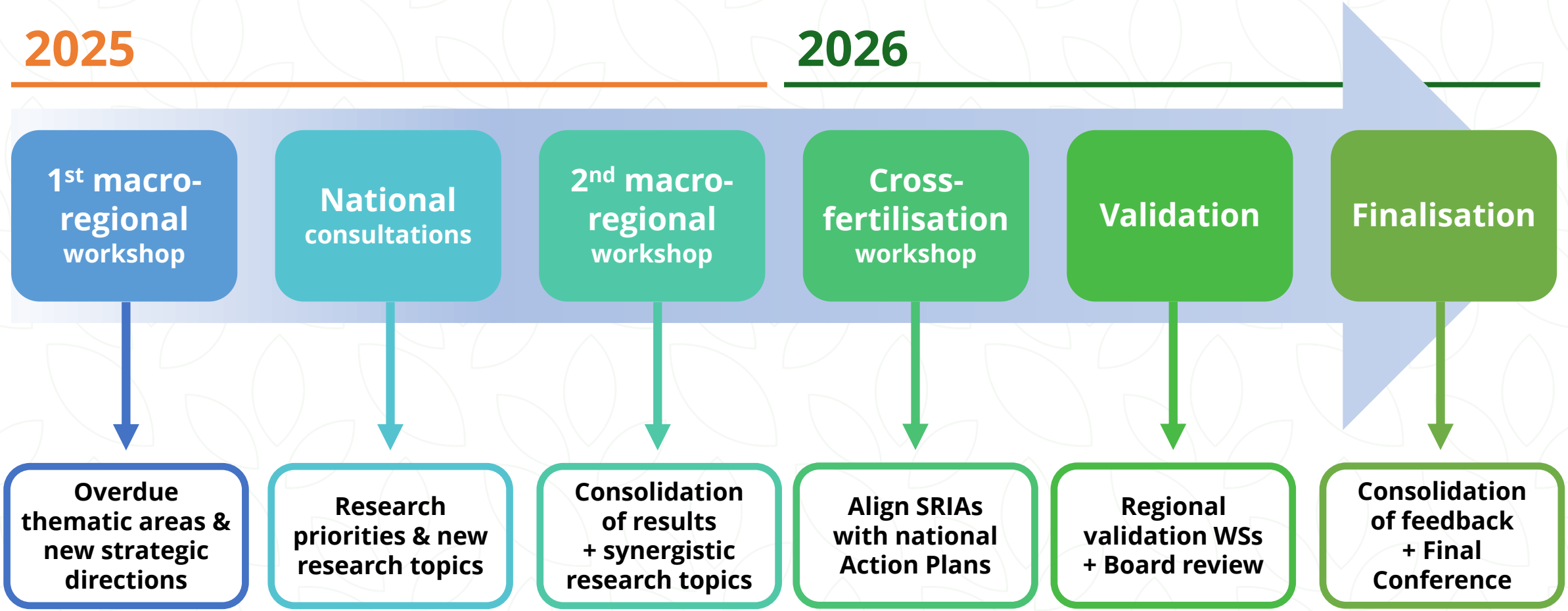
Funded by the European Union

The Governance Structure of BIOEAST



Funded by
the European Union

The SRIA Update process – timeline



Funded by the European Union

The SRIA Update process – activities

	2025											2026				
	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
Conceptualisation	Continuous process providing **theoretical foundation** and support to the SRIA update (**Core Team**: TTK, BME, ÖMKI, MKGP)															
Update Thematic Areas		**SRIA Workshop** + integrate inputs	TWG				Integration of national inputs + update **thematic SRIAs**			TWG						
Map national R&I priorities			**National Surveys** (EN/local l.) + consolidation of results + **HUB internal workshops**			HUB				TWG						
Find Synergies across Thematic SRIAs								**Macro-regional WS** with TWG members + process results + find **synergies**			HUB					
Align SRIAs with Action Plans									**Cross-fertilisation workshop:** Harmonize APs & thematic SRIAs + identify common objectives, synergies, interlinkages, gaps, discrepancies		TWG					
Validate Updated Thematic SRIAs												**Regional validation** workshops + **BIOEAST Board** review				

Mulţumesc!

https://bioeast.eu

imre.balazs@edu.bme.hu

Funded by
the European Union

BREAK-OUT SESSIONS

Agroecology and sustainable yields
Bioenergy & new value-added materials
Food systems
Forestry value chain
Freshwater based bioeconomy
Bioeconomy education
Advanced biobased materials

Funded by
the European Union