



ICA-CoP Bio-Edu Workshop 2024  
*Zagreb 23-24 October*

# BioBEC Education Centers

George Sakellaris



Bio-based Industries  
Consortium



This project has received funding from the Bio Based Industries Joint Undertaking (JU) under the European Union's Horizon 2020 research and innovation programme under grant agreement No 101023381.

# The BIOBec Project

„Preparing the creation of Bio-Based Education Centers to meet industry needs and boost the contribution of the bioeconomy to societal challenges”

**Start date:** 1 September 2021

**End date:** 29 February 2024

**Funded under:** BBI – JU; H2020 (H2020-BBI-JTI-2020)

- **Development of a comprehensive framework for multilevel bioeconomy education centers (BBECs)** flexible enough to respond to the present and future needs of industry and its surrounding ecosystem at local, regional and / or national level
- **Creation of 6 centers covering various regions in Europe** with their diversity of the value chain and institutional context
- The project will be developed in collaboration with a wide network of stakeholders at EU and local level. **It will be ready for implementation and duplication** to increase the contribution of education to the development of the bioeconomy

# The Consortium



UNIVERSITY OF  
HOHENHEIM



UNIVERSITY OF  
EASTERN FINLAND



**MTU**

Ollscoil Teicneolaíochta na Mumhan  
Munster Technological University

**CTA**



Consiglio Nazionale  
delle Ricerche



**Food & Bio Cluster**  
Denmark

**AgroParisTech**  
Talents for a sustainable planet

**UAB**  
Universitat Autònoma  
de Barcelona

**Pro Civis**  
Fundacja Edukacji  
i Dialogu Społecznego



Sustainable  
INNOVATIONS



**IHE  
DELFT**

**WAGENINGEN**  
UNIVERSITY & RESEARCH



FVA NEW MEDIA RESEARCH



**IBE**



INSTYTUT  
BADAN  
EDUKACYJNYCH



**ZVT** | Agricultural Research,  
Ltd. Troubsko



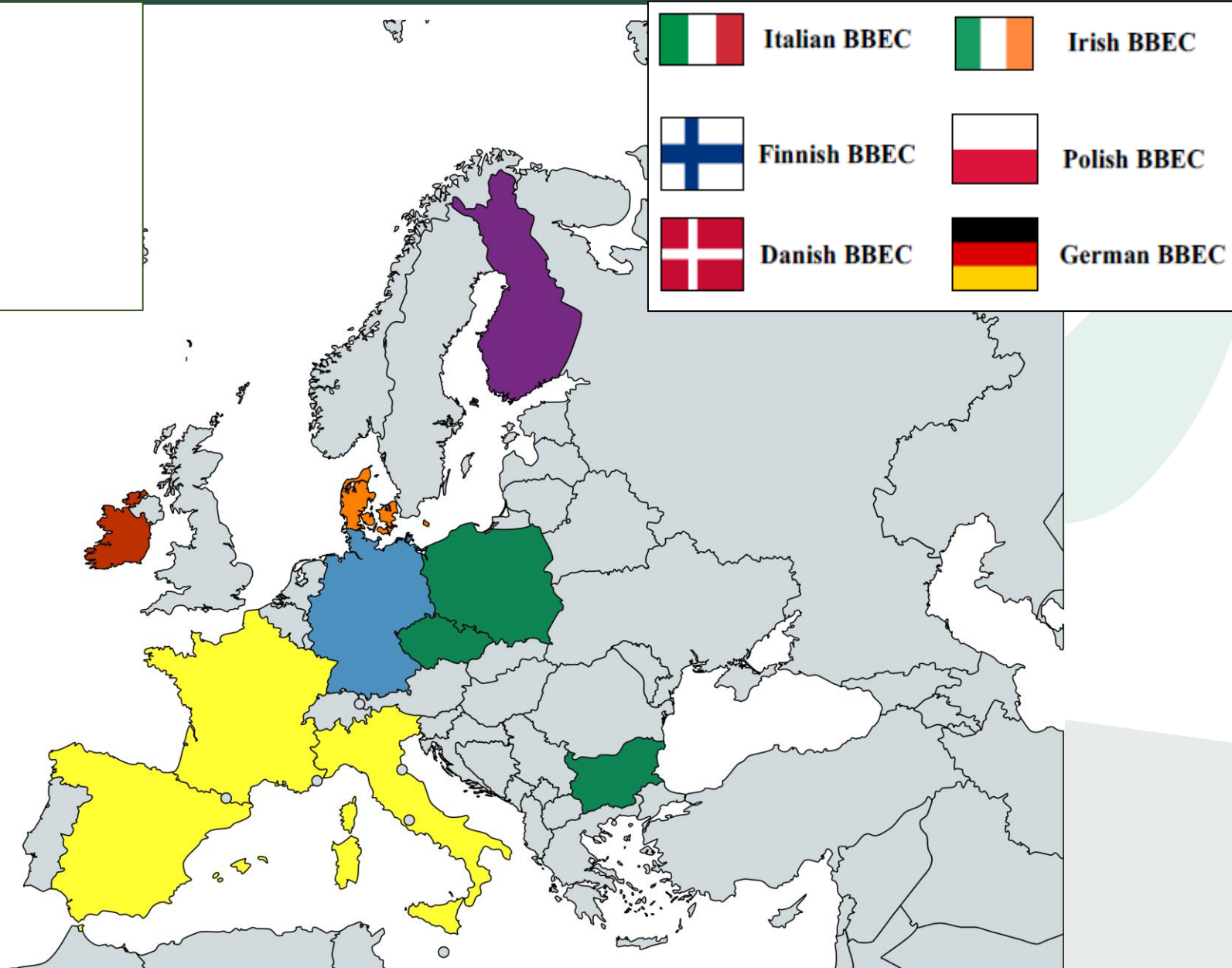
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# Bioeconomy Education Centers (BBEC's)



Created with mapchart.net



# BBEC Central-Eastern Europe-East



Created with mapchart.net

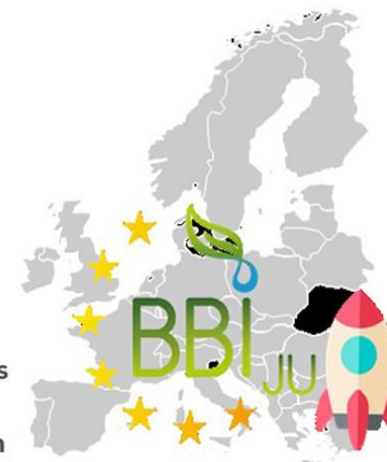
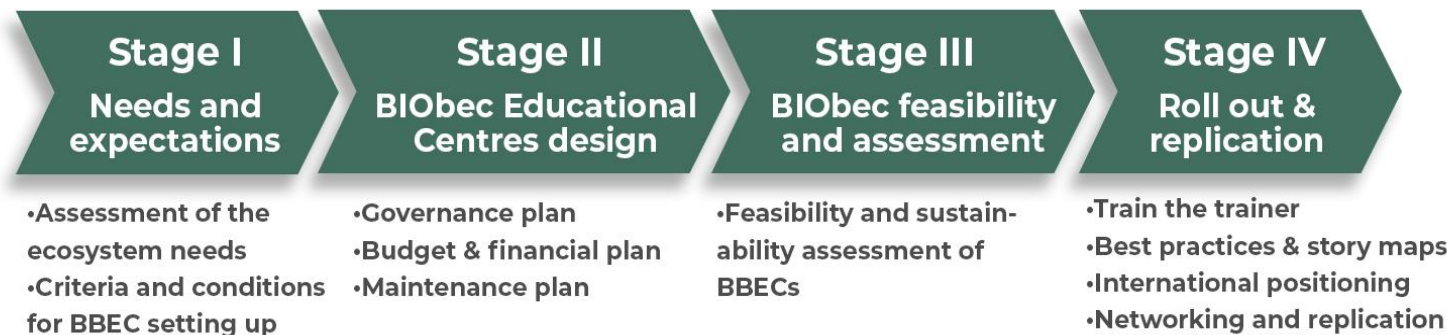


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# Methodology



**Focus groups**

- 12 countries
- 19 groups
- 104 stakeholders

**Surveys**

- 17 countries
- 213 surveys

**Desk research**

- 26 projects

## NEEDS AND EXPECTATIONS



## Expectations

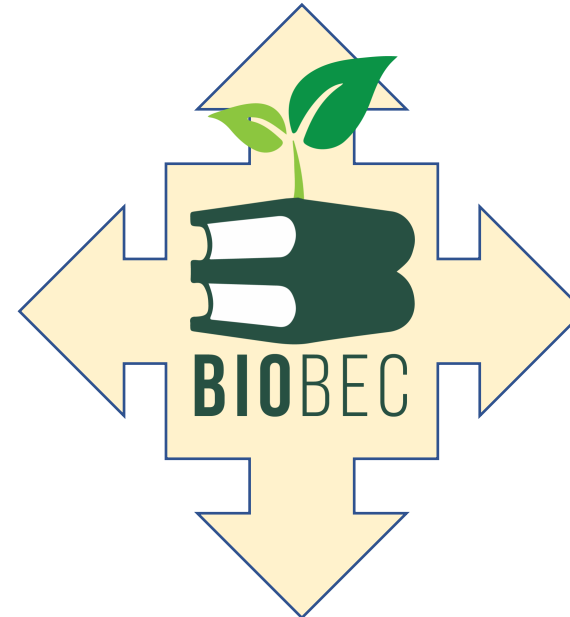
Academia and industry regularly exchange knowledge via established formats and channels.

Universities and companies have designed and implemented joint training programs.

Raises awareness, provides information about international funding opportunities and supports creating of project consortiums.

Provides consulting in preparing applications for funding in the area of bioeconomy and consults new business models

Map of valuable and promising companies, especially SME, that operate in the field of bioeconomy.



List of all education providers in the bioeconomy to better orient students, scientists, and qualified workforce.

Provides information about training entities in the field of bioeconomy. It has database with training possibilities and can point valuable training offer.

Is able to give certificates for training institutions and qualified work force.

Supports international mobility of students and science staff in the field of bioeconomy.

Provides tools, didactical resources, contents, expertise, etc. to educational institutions.

Supports international cooperation with other countries which have a higher awareness in bioeconomy.

Is a place for expertise in the field of economy and law regulations connected the bioeconomy.

Is a place where public administration establishes connections with science and industry.



# CENTRES DESIGN - BEST PRACTICES



D2.1 [M5]

T2.1 Inventory of Best Practice - 29 case studies from education and/or industry. Bioeconomy and non-bioeconomy related. Across all learner profiles.

Secondary &  
Primary

Under  
Graduate

Post  
Graduate

Industry  
Professionals

Vocational/  
Apprentices

CPD &  
Lifelong  
Learners

## Case Study Thematic Areas

Pedagogies	21	Research & Development Supports	2
University collaboration with industry	17	Enterprise Development Supports	1
Lifelong Learning & CPD	7	Mentoring Programmes (academic or industry)	3
Funding & Investment networks	3	Digital Technologies AR/VR Integrations	1
Clusters - Networks - Partnerships	7	Engagement with civic society and communities	4

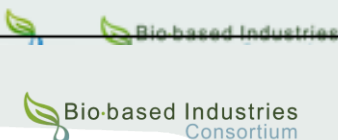


# CENTRES DESIGN - BUSINESS MODEL CANVAS



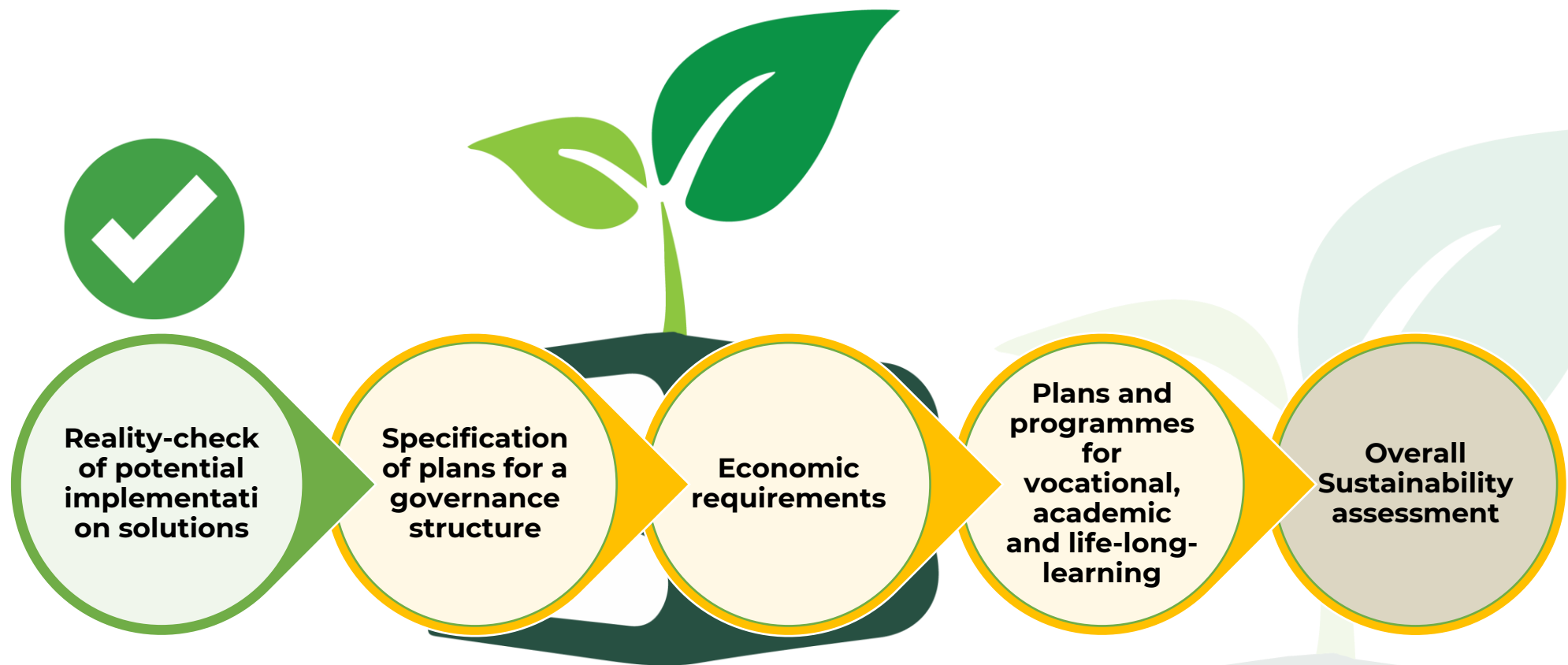
## Business Model Canvas: BBEC Central-Eastern Europe-East

Key partners	Key activities	Value Propositions	Customer relationships	Customer segments
<p><b>Academia</b> Trakia University, Stara Zagora, BG Institute for sustainable transition and development (TrU, BG) Agricultural University in Cracow Warsaw University of Life Sciences – SGGW University of Pannonia, HU Canakkale University, TR Balikesir University, TR MENDEL University CZ</p> <p><b>Government</b> Stara Zagora Municipality, BG Ministry of Agriculture CZ Governmental and regional agencies Regional economic development agency - BG</p> <p><b>NGO</b> PRO CIVIS Bulgarian industrial association – BIA, BG FORTES, IT Phasegrowth, EE BIOEAST HUB CZ Association of Research Organisation CZ GO-UP business incubator IDEAM cluster, Ireland Spatium, BG Foundation Master Lifescience Kraków</p> <p><b>SME's / industry</b> Zemědělský výzkum (ART) Agroconsult Engineering, BG Emerald European Ventures, IT EPRD PL</p>	<ul style="list-style-type: none"><li>Supports the exchange of knowledge between science / academia, industry, other actors</li><li>Provides information about education and training providers with valuable offer in the field of Bioeconomy</li><li>Information about VET and education providers that certificates skills in bioeconomy</li><li>Provides tools, didactical materials, contents, expertise, etc.</li><li>Supports international mobility of students and science staff in the field of bioeconomy</li><li>Consulting: creating project consortiums, applications for funds</li><li>Events, Workshops</li></ul>	<ul style="list-style-type: none"><li>Raising awareness and basic knowledge about bioeconomy</li><li>Anticipation of industry needs in the field of training, more flexible education offer, experience trainers with practical skills</li><li>Boosting cooperation between stakeholders and already existing institutions: knowledge, exchange of good practices, networks of partners</li><li>Expertise in the field of bioeconomy (bioeconomy specializations, which are connected to the region) and external funding</li><li>Partners matching for joint projects and technology transfer</li><li>Matching bioeconomy start-ups with investors and science</li><li>Regional infrastructure development for bioeconomy in transition</li></ul>	<ul style="list-style-type: none"><li>Open cooperation platform</li><li>Project/case-based relationship (not very formal cooperation at the initial stage)</li><li>Mapping needs and requirements</li><li>Establishing stakeholder groups (not formal) to commit to regular communication and interaction</li></ul>	<ul style="list-style-type: none"><li>Bioeconomy companies (SME, large)</li><li>Research institutes</li><li>Education institutes</li><li>Business development organisations</li><li>Regional public admin. Actors</li><li>Global political actors</li><li>Clusters, Networks and Associations</li><li>Private Investors</li><li>Start-ups</li></ul>
	<p><b>Key resources</b></p> <ul style="list-style-type: none"><li>Knowledge about bioeconomy in the region (valuable partners map, resources, technology, tools, didactical materials etc.)</li><li>Network of already existing educational institutions, universities, science institutes</li><li>Platforms and cooperation schemes for the stakeholders established during other projects</li><li>Experienced staff willing to take part in training courses as lecturers</li><li>R&amp;D Infrastructure</li><li>Funding</li><li>Project management</li><li>Consulting</li><li>Initiatives on Vocational Training</li></ul>		<p><b>Channels</b></p> <ul style="list-style-type: none"><li>Social media</li><li>Direct contact</li><li>Events/workshops/meetings</li><li>Website</li><li>Existing platforms (network of members)</li><li>Professional networks and associations</li></ul>	
<p><b>Cost structure</b></p> <ul style="list-style-type: none"><li>Creating materials for rising awareness actions.</li><li>Costs of management and coordination.</li><li>Costs of organization of events and workshops</li><li>Costs of expertise and consulting.</li><li>Platform maintenance and development.</li><li>Costs of participation in conferences and events</li><li>Costs of communications activities (staff creating content, advertising)</li><li>Costs related to legalization and taxes in the case of BBEC becomes a legal entity</li></ul>		<p><b>Revenue streams</b></p> <ul style="list-style-type: none"><li>Payments for BBEC for specific services. (including consultation, advisory)</li><li>External funding (national, European)</li><li>Membership fee from Members</li><li>Contract payments</li><li>An in-kind contribution from Partners and members</li></ul>		
<p><b>Governance</b></p> <ul style="list-style-type: none"><li>Steering group: representatives of each Partner from BBEC Central Eastern East Europe</li><li>Advisory Board to communicate with other BBEC's</li><li>Members – membership based on letter of intent (stakeholders creating content, providing expertise etc.) or joining after paying membership fee</li><li>Creation of Internal Operating Regulation</li></ul>				



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## FEASIBILITY ASSESSMENT







Input  
conditions

## REALITY CHECK

- ✓ **Knowledge about bioeconomy** in the region
- ✓ **Network of already existing** educational institutions, universities, science institutes
- ✓ **Platforms and cooperation** schemes for the stakeholders established during other projects
- ✓ **Experienced staff** willing to take part in training courses as lecturers
- ✓ **R&D Infrastructure**
- ✓ **Funding** resources and priorities areas
- ✓ Macro region is **rich in biomass and other resources**





Demand  
conditions

## REALITY CHECK

- ✓ Implementation of **EU Bioeconomy Strategy**
- ✓ Growing demand for **skilled workforce in Bioeconomy**
- ✓ Growing demand for **flexible education**
- ✓ **Low awareness** of the meaning of bioeconomy
- ✓ Developing **circular economy**
- ✓ Protection of the **environment and natural resources**



## THE GOVERNANCE PLAN

- ✓ **Hub for knowledge exchange**, education, cooperation and providing services related to Bioeconomy
- ✓ **Flexibility and openness** in order to integrate and use the existing potential of a scientific network, business, education partners
- ✓ Create **international consortia** to apply for EC funds and as individual entities applying for national and regional funds
- ✓ **Concrete dynamics and actions**





## THE MISSION AND VISION

- **Facilitation of the joint initiatives** in the sphere of bioeconomy education and development
- **Improvement of the cooperation** in key areas
- **Mapping of valuable education and training opportunities** that will respond to the needs of the industry and other actors in the field of bioeconomy
- **Rise of awareness to improve the quality of education** and training providers in the field of bioeconomy
- **Rise of awareness about the importance of bioeconomy** in the modern world at all levels of education and the general public and articulating the potential of bioeconomy in the Central and Eastern Europe



## THE MISSION AND VISION

- **Support the international exchange** of knowledge, students and staff between different countries with a higher level of awareness and development of bioeconomy which will contribute to development of regions
- **Support to governments and decision-makers** in developing and implementing policy in the field of bioeconomy (i.e. Strategies, Road Maps etc.)
- **Implementation of closer cooperation between industry and universities/scientific** institutes and better use of their personal and technical resources
- **Enhancement the possibilities for private investment in the bioeconomy**, enlarging the market opportunities, aligning with the general European tendencies, supporting companies willing to capitalize on the business potential of the bioeconomy.
- **Development of future skills** for staff working in sectors related to bioeconomy





# Vision of the BBEC CE

## HUB for knowledge exchange

that supports development of flexible education and cooperation between the stakeholders in the macroregion which will answer the present needs and future trends in the Bioeconomy



**raise awareness** about bioeconomy in the Central – Eastern Europe



**develop education offer** in this area, enhance and **facilitate the cooperation** between various regional actors with particular emphasis on cooperation between industry and science



**support to governments and decision-makers** in developing and implementing policy in the field of bioeconomy



**enhance the possibilities for private investment** in the bioeconomy, enlarging the market opportunities, supporting companies willing to capitalize on the business potential of the bioeconomy



**cooperate with BIObec network** and other bioeconomy initiatives

# Value proposition of the BBEC CE



**Access to the network** of the bioeconomy stakeholders operating in the Central Eastern Europe



**Opportunities to cooperate and create partnerships** aimed at creating joint national and international projects



**Connect industry actors with academia and science** and to facilitate various types of cooperation: flexible education for employees, tailored curricula, knowledge and technology transfer, staff exchange



**Platform for meetings and events** to promote development of bioeconomy education, educational and scientific offer and scientific achievements

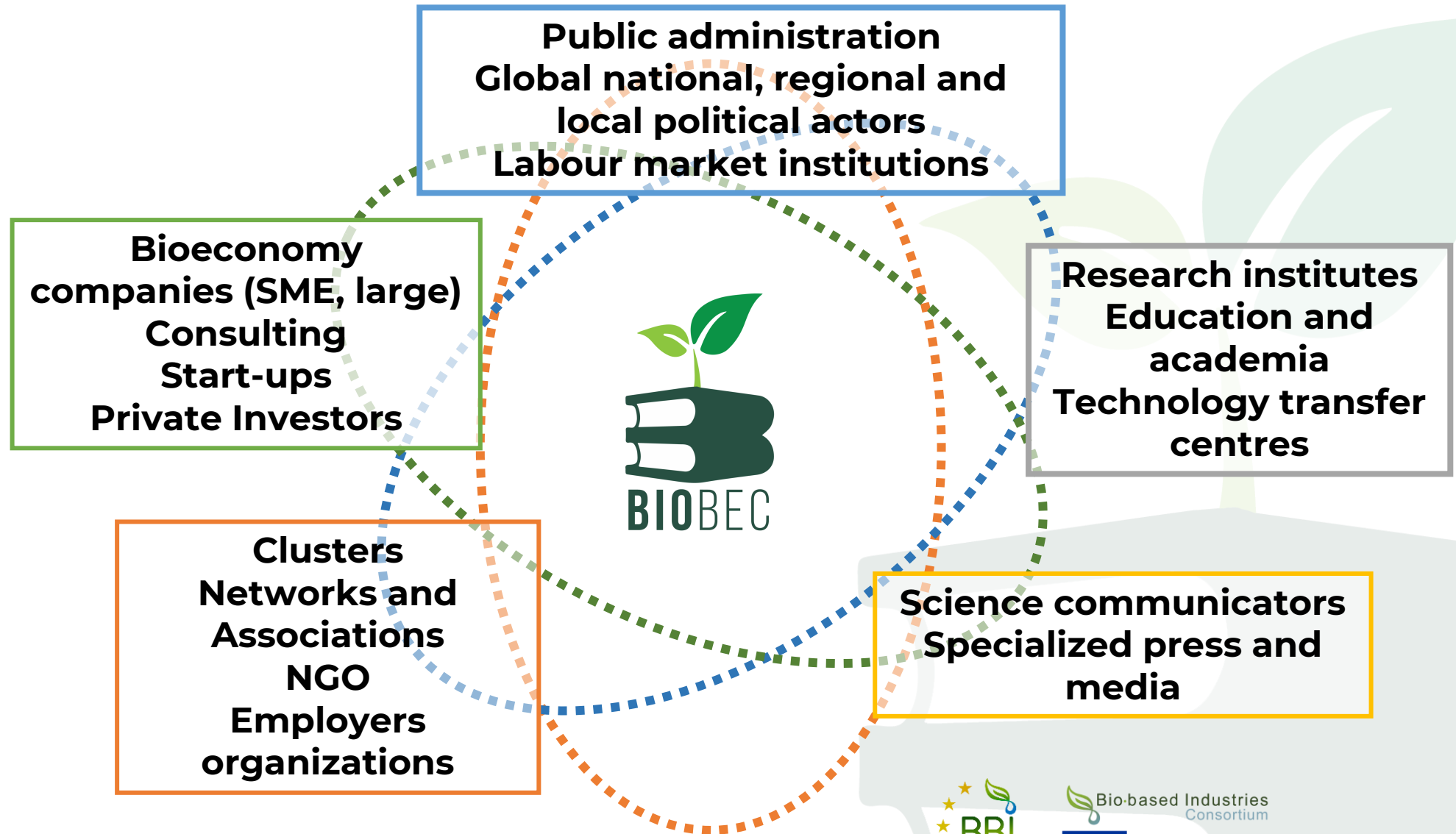


**Cooperation with other BBEC's and on-going initiatives** to boost the cooperation between CE actors and countries from Western Europe in which the bioeconomy policies are more mature and well established



**Support and participate in the regional development** of the national bioeconomy strategies and policies

# Target groups



# Planned Key Activities



**1**

**Supporting the exchange of knowledge between the stakeholders**

- On-line platform
- Events for potential members
- Study visits
- Application for funds

**2**

**Sharing information about valuable education and training opportunities**

- Data base of education and training providers
- Assessment methodology of education and training providers
- Report on educational offers
- Promotional events

**3**

**Providing educational materials and expertise to rise awareness**

- Publications
- Educational materials
- Workshops, webinars, conferences

**4**

**Supporting cooperation between science and industry**

- Report on educational needs
- Tailored made curricula
- Data base of education and training providers
- Promotional machmaking events

**5**

**Management and cooperation between the BBEC's and other initiatives**



## Educational offers status

- 1. Higher Education**
- 2. Vocational**
- 3. Primary and secondary education**
- 4. Informal**





## Needs

### 1. Raise awareness and basic knowledge about bioeconomy:

- Industry
- Society
- Non-bio sectors

### 2. Faster change of curricula:

- Anticipation of industry needs
- More flexible education

### 3. Enhance cooperation between stakeholders:

- Exchange of good practices
- Networks of partners (science – industry)
- Not creating another institutions

### 4. More experience trainers with practical skills

### 5. More opportunities for external certification of competences

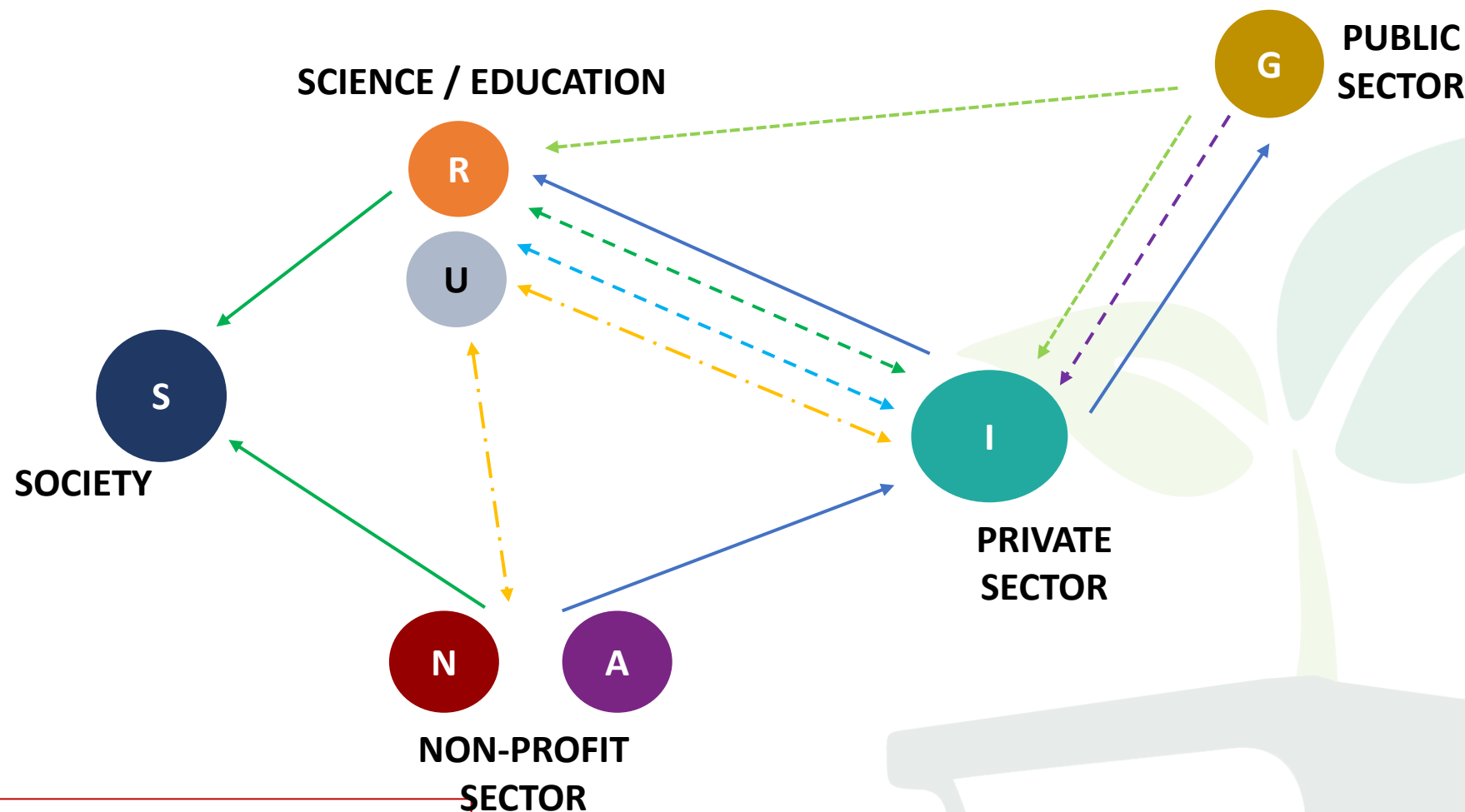
## Opportunities








- 1. Already existing educational institutions, universities, science institutes, networks**
- 2. Platforms and cooperation schemes for the stakeholders established during other projects:**
  - BIOEAST UP and BIO EAST HUB
  - BLOOM – Polish HUB
  - BIOBORD
  - BioEcon
- 3. Experienced staff willing to take part in training courses as student / lecturer**
- 4. R&D Infrastructure**



- U** • University
- R** • Research institutes
- I** • Industry
- G** • Governmental organizations
- A** • Accelerators/incubators
- N** • NGO
- O** • Other

## Stakeholders map 2035



Knowledge exchange	
Funding	
Staff/student exchange	
Joint Project	
Legislation	
Training/Education	
Dissemination	





## **KEY ACTIVITIES - ACTION PLAN**

**SUPPORTING THE EXCHANGE OF KNOWLEDGE BETWEEN THE STAKEHOLDERS**

**SHARING INFORMATION ABOUT VALUABLE EDUCATION AND TRAINING OPPORTUNITIES**

**PROVIDING EDUCATIONAL MATERIALS AND EXPERTISE TO RISE AWARENESS**

**SUPPORTING COOPERATION BETWEEN SCIENCE AND INDUSTRY**

**MANAGEMENT AND COOPERATION BETWEEN THE BBEC'S AND OTHER INITIATIVES**

# Thank You !

## More information about the Project :

<https://biobec.eu/>

[https://twitter.com/BIObec\\_eu](https://twitter.com/BIObec_eu)

<https://www.linkedin.com/company/biobec/>